

**Contract Documents and
Specifications**

for

**ENGLEWOOD WATER
DISTRICT INTERCONNECT**

CIP #55948

Bid #111305CS

**Sarasota County
Capital Management Services
1001 Sarasota Center Boulevard
Sarasota FL 34240**

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TABLE OF CONTENTS

<u>SECTION</u>		<u>PAGE</u>
1	PUBLIC BID DISCLOSURE ACT FORM	BD-1 to BD-2
	INVITATION FOR BIDS	IN-1
2	INSTRUCTIONS, TERMS, AND CONDITIONS CONSTRUCTION AND OTHER SEALED BIDS	ITC-1 to ITC-16
3	BID FORM	
	Bidder's Agreement Form	BF-1 to BF-2 & BF-5
	Price Schedule	BF-3 to BF-4
4	BIDDER'S CERTIFICATIONS	
	Drug-free Workplace Program	DWP-1
	Sworn Statement, Florida Trench Safety Act	TS-1 to TS-2
	Status of Contracts On-hand Report	SCH-1
	Contractor's Qualification Form	CQF-1 & 2
	Bidder-Info Form	BIF-1 & BIF-2
	Vendor Local Preference Checklist	VLPC-1
	List of Subcontractors	LOS-1 to LOS-2
	Stored Materials Affidavit	SMA-1
5	BONDS	
	Bid Bond	BB-1 to BB-2
	Performance and Payment Bond	PB-1 to PB-3
6	CONSTRUCTION CONTRACT	C-1 to C-10
	(including the Immigration Status Affidavit)	ISA-1
	(including the Minority Business Enterprise (MBE) Project Plan)	MBE-1 to MBE-2
7	RELEASE OF LIEN	RL-1 to RL-2
8	GENERAL CONDITIONS	GC-1 to GC-20
9	SUPPLEMENTAL GENERAL CONDITIONS	(see Section)
10	TECHNICAL SPECIFICATIONS	(see Section)
11	EPA STORMWATER MANAGEMENT GUIDANCE	(see Section)
12	FLORIDA STATUTE 556 UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT	FS-1 to FS-15
13	FDEP PERMIT AND FDOT UTILITY PERMIT	(see Section)
14	BEST MANAGEMENT PRACTICES	(see Section)

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TABLE OF CONTENTS

TS	Item
UTILITIES SPECIFICATIONS	
TS 00500	General, with Project Sign
TS 00600	Prevention, Control, and Abatement of Erosion and Water Pollution
TS 01020	Storm Water Management for Construction Activities
TS 01026	Measurement and Payment
TS 01050	Field Engineering
TS 01200	Project Meetings
TS 01203	Job Site Administration
TS 01300	Submittals
TS 01310	Construction Progress Schedules
TS 01380	Construction Photographs
TS 01400	General Quality Control
TS 01505	Mobilization
TS 01550	Maintenance of Traffic (MOT)
TS 01666	Testing Piping System
TS 01700	Project Closeout
TS 02110	Site Clearing
TS 02222	Trenching, Backfilling, and Compacting
TS 02300	Directional Drilling
TS 02400	Lawn Restoration
TS 02410	Sod Restoration
TS 02520	Groundwater Control for Open Cut Excavation
TS 02576	Open Cut Trench Repair
TS 02610	Fittings
TS 02614	Ductile Iron Pipe
TS 02615	Ductile Iron Pipe/Fitting Liners
TS 02616	Polyvinyl Chloride (PVC) Pipe
TS 02618	High Density Polyethylene (HDPE) Pipe
TS 02640	Valves and Accessories
TS 02642	Tapping Sleeves and Valves
TS 02660	Piping, General
TS 02712	Water Meter Testing
TS 03301	Concrete
TS 05500	Miscellaneous Metal Work
TS 09905	Painting and Protective Coatings
TS 11050	General Equipment Provisions

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TABLE OF CONTENTS

TS 15006	Pipe Supports
TS 16850	Control Panels Enclosures and Instruments

End of Technical Specifications

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SARASOTA COUNTY PURCHASING MANAGEMENT DIVISION

PUBLIC BID DISCLOSURE ACT FORM

Englewood Water District Interconnect, Bid # 111305CS,

Pursuant to Section 218.80, Florida Statute, Sarasota County hereby discloses that the following licenses, permits, and fees (and their costs) are issued by Sarasota County Government and/or Sarasota County elected officials for construction within Sarasota County. The licenses, permits, and fees applicable to this project are indicated below and must be obtained and/or paid by the successful bidder. Vendors are hereby warned that the licenses, permits, and fees listed below are only licenses, permits, and fees "issued by Sarasota County Government". The successful bidder is totally responsible to identify and obtain all other applicable licenses, permits, and fees. The cost of all licenses, permits, and fees applicable to this project are to be included in the price(s) bid in this invitation to bid.

I. SARASOTA COUNTY REQUIREMENTS (applicable only to firms residing in Sarasota County):

1. Sarasota County Local Business Tax: (formerly known as Occupational License)

a. **License Cost ***: Go to www.sarasotataxcollector.com b. **Applicable to Project**: Yes

2. Sarasota County Certificate of Competency and/or Operating Certificate:

	<u>Biennial Certificate Cost</u>	<u>Applicable to Project **</u>
a) General Contractor, Class A†	\$360.00	Yes
b) Building Contractor, Class B†	\$270.00	n/a
c) Residential Contractor, Class C†	\$180.00	n/a
d) Underground Utility Contractor	\$ 0.00	Yes
e) Electrical Contractor†	\$180.00	n/a
f) Plumbing Contractor†	\$180.00	n/a
g) Mechanical Contractor – Class "A" or "B" or "M" †	\$180.00	n/a
h) Roofing Contractor†	\$180.00	n/a
i) Alum. Cont., Specialty, incl. Concrete◇	\$180.00	n/a
j) Commercial Pool Contractor, Class A†	\$180.00	n/a
k) Residential Pool Contractor, Class B†	\$180.00	n/a
l) Swimming Pool Svc'g Cont., Class C†	\$180.00	n/a
m) Marine Specialty Contractor†	\$180.00	n/a
n) Specialty Structure Contractor†	\$180.00	n/a
o) Irrigation System Special. Cont. ◇	\$180.00	n/a
p) Water Conditioning Installer, Exempt	\$ 0.00	n/a
q) Journeyman Electrician or Plumber (cannot pull permits) ◇	\$ 45.00	n/a
r) State Certified Contractors (Administrative Fee)	\$ 45.00	n/a
s) House Moving◇	\$180.00	n/a
t) Hurricane Shutter◇	\$180.00	n/a
u) Fence Erection◇	\$180.00	n/a
v) Demolition◇	\$180.00	n/a
w) Window Door◇	\$180.00	n/a
x) Garage Door Installation◇	\$180.00	n/a
y) Masonry/Concrete Contractor◇	\$180.00	n/a

* Go to www.sarasotataxcollector.com / Business Tax / Fees - to determine cost.

** Only those items marked with a "YES" in this column are applicable to this project.

† Bidder must be a licensed General Contractor, Class A, B, or Underground Utility Contractor in the State of Florida. ◇ Local License only.

State-certified or licensed Contractors with state-issued certificates or licenses in one or more of the above categories need only submit proof of certification to be exempt from obtaining or paying the cost of the matching Sarasota County certificates or licenses.

II. SARASOTA COUNTY REQUIREMENTS: PROJECT-SPECIFIC (applicable to all firms):

1. List other applicable Sarasota County Government certificates/licenses and costs:

n/a

2. Sarasota County applicable permits and/or licenses fees and/or costs:

Sarasota County Earthmoving Permit	no fee
National Pollution Discharge Elimination System (NPDES) (last update 17 Feb 09)	
Large construction (5 or more acres of disturbance)	\$400.00
Small construction (1<5 acres of disturbance)	\$250.00
Sarasota County Utility Construction Permit	no fee
Sarasota County Utility, Customer Service, Water Usage:	
Meter Deposit	\$1,500.00
Meter Installation	\$100.00
Usage	\$110.00/month plus \$3.19/1,000 gal.

SARASOTA COUNTY GOVERNMENT

**INVITATION FOR BIDS
CONSTRUCTION CONTRACT**

The Sarasota County Government invites sealed bids from qualified Contractors to perform the following work, which is described in detail in the County Specifications.

Bid Number: 111305CS**CIP Number: 55948****Bid Title: Englewood Water District Interconnect**

Procurement Analyst: Rich Paquelet, rpaquele@scgov.net, 1660 Ringling Blvd., Sarasota, Florida 34236. Phone (941) 302-6326 or Fax (941) 861-5171.

Project Description: Installation of a directional drill of approximately 200 feet of 14" HDPE water main under State Road 776, 12 inch PVC open cut pipe installation, a 10 inch meter assembly and valve system, a SCADA system, sidewalk, handrail replacement and complete restoration.

Bid Opening Location: Sarasota County Administration Center
Third Floor Procurement Conference Room
1660 Ringling Boulevard
Sarasota FL 34236

Bid Submittal Deadline & Bid Opening Date/Time: May 11th, 2011 at 2:30pm

Pre-bid Conference (Non-Mandatory): **Date & Time:** April 14th, 2011 at 10:00am
Location: Sarasota County Capital
Management Services
Conference Room #12
1001 Sarasota Center Blvd.,
Sarasota, FL 34240

Specifications and bid documents are available at the Onvia/DemandStar website www.demandstar.com. Specifications and bid documents may also be obtained at Sarasota County Capital Management Services, 1001 Sarasota Center Boulevard, Sarasota FL, 941-861-0503 for **\$63.70** (non-refundable). Please call for availability. Bids must be submitted in **quadruplicate**, at least one of which must bear an original signature, in a sealed envelope marked "**Englewood Water District Interconnect, Bid #111305CS**", and mailed or delivered to Sarasota County Government, Office of Financial Planning, Procurement, County Administration Center, 1660 Ringling Boulevard, Sarasota FL 34236. The County assumes no responsibility for bids received after the bid submittal time or at any location other than that specified, no matter what the reason. Late bids will be held unopened and will not be considered for award.

A bid bond or certified cashier's check payable to the Board of County Commissioners, equal to 5% of the total bid must be enclosed with the bid. Any bonding company submitting a bid or performance bond to Sarasota County Government must be licensed to transact a fidelity and surety business in the State of Florida, must hold a Certificate of Authority from the Secretary of the Treasury under Act of Congress, approved on July 30, 1947 (U.S.C. 613), and must meet the bond requirements listed in the bid specifications. Bidders are advised that a performance and payment bond of 100% of the contract amount will be required.

Publish: April 6th, 2011

Office of Financial Planning

Open: May 11th, 2011

Sarasota County Government

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INSTRUCTIONS, TERMS AND CONDITIONS CONSTRUCTION and OTHER SEALED BIDS

1. BID DELIVERY REQUIREMENTS

Sealed bids will be received as stated in the Invitation for Bids. Any bids received after the stated time and date will not be considered. It shall be the sole responsibility of Bidders to have their bids delivered to the Sarasota County Office of Financial Planning, Procurement Office for receipt on or before the stated time and date. If a bid is sent by U.S. Mail or delivery service, the Bidder shall be responsible for its timely delivery to the Asset Management Office. Bids delayed by mail or delivery service 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.

2. SEALED AND MARKED

Submit four copies of your bid, at least one of which must bear an original signature. The bids shall be submitted in one sealed package, clearly marked on the outside with your company name, project title, and bid number to:

Sarasota County Government
Office of Financial Planning, Procurement
1660 Ringling Boulevard 3rd Floor
Sarasota FL 34236

All printed and photocopied documents related to the submission of this bid and fulfillment of any resulting contract shall be double-sided and printed on recycled paper with a minimum of 30% post-consumer content.

3. IRREVOCABLE OFFER

Any bid may be withdrawn until the date and time set for opening of the bid. Any bid not so withdrawn shall, upon opening, constitute an irrevocable offer for a period of 120 days to sell to Sarasota County the goods or services set forth in the attached specifications.

4. INTERPRETATION OF ESTIMATED QUANTITIES

- 4.1** The estimated quantities of work and materials given in the bid form are considered approximate only and are to be used solely for the comparison of bids received. The County does not expressly or by implication represent that actual quantities involved will correspond exactly therewith, nor shall the Bidder plead misunderstanding or deception because of such estimate neither of quantities nor of the character, location or other conditions pertaining to the work.
- 4.2** Payment to the Contractor will be made only for the actual quantities of work performed or materials furnished in accordance with the plans and other contract or work assignment documents.
- 4.3** It is understood that the quantities may be increased, decreased or deleted as provided in the contract documents without invalidating any of the unit or lump sum prices bid.

5. MATHEMATICAL ERRORS

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. Written prices shall prevail over figures. All bids shall be reviewed mathematically and corrected, if necessary, using these standards, prior to additional evaluation.

6. DELIVERY

Unless otherwise specified, all prices are to be FOB-delivered prices, to any location in the County. Should a bid call for delivery to either north or south County alone, with separate bid prices, the dividing line is Blackburn Point Road, between Laurel and Osprey, Florida.

7. CONTRACT FORMS

Any agreement, contract, work assignment, or purchase order resulting from the acceptance of a bid shall be in a form either supplied by or approved by the County.

8. EXAMINATION OF BID DOCUMENTS AND SITE

8.1 The Bidder shall carefully examine the site of the work, the plans, and other bid documents for the work contemplated. It is the responsibility of the Bidder to investigate and become fully informed of the construction and labor conditions, of obstructions to be encountered, of the character, quality and quantities of work to be performed, materials to be furnished, and requirements of the plans and other bid documents. Failure to do so does not relieve a successful Bidder of his obligations to furnish all materials, equipment, and labor necessary to carry out the provisions of the contract documents and to complete the contemplated work for the consideration set forth in his bid.

8.2 Submission of a bid constitutes an incontrovertible representation that the Bidder has complied with every requirement of this paragraph and that bid documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of work.

9. BID EXPENSES

Bidders shall bear all costs and expenses incurred in developing, preparing, and submitting bids.

10. LOCAL PREFERENCE

In Accordance with Section 2-219 of the Sarasota County Procurement Code, preference shall be given to a "local business" in the award of this bid.

10.1 "Local business" means the vendor has paid a local business tax either to Sarasota County or to the county in which the vendor is located, if applicable prior to bid submission that authorizes the vendor to provide the commodities or services to be purchased, and maintains a permanent physical business address located within the limits of either Sarasota, Manatee, DeSoto or

Charlotte County from which the vendor operates or performs business, and at which at least one full time employee is located.

10.1.1 In addition, fifty percent (50%) or more of the employees based at the local business location, must reside within Sarasota, Manatee, DeSoto, or Charlotte County.

10.1.2 In the event the local office is not the primary location of the vendor, at least 10% of the vendor's entire full-time employees must be based at the local office location.

10.1.2.1 Alternatively, this requirement may be satisfied if at least one corporate officer, managing partner or principal owner of the vendor resides in Sarasota, Manatee, DeSoto or Charlotte County.

10.2 To determine if you may qualify for local business preference, please refer to the local Preference Checklist for Vendors located at:

<http://www.scgov.net/CFPO/ProcurementPurchasing/procurementpurchasing.asp>

How do I determine Local Preference? 

10.3 Bidders wishing to be given preference as a local business must submit **with their bid**, a properly completed Bidder-Info Form and all of the local preference documentation identified herein.

10.4 For local preference to be granted, the name of the company represented on the bid form must be the same as the name on the Bidder-Info Form and the local business tax receipt.

10.5 Information regarding Sarasota County's Local Business Tax can be found at <http://sarasotataxcollector.governmax.com>.

11. PROTESTS OF BID DOCUMENTS OR NOTICE OF AWARD ACTION

11.1 Any protest of the terms, conditions, and specifications contained in this solicitation, or subsequent addendum(s), including but not limited to any provisions governing the methods for ranking or evaluating proposals, must be filed in writing with the Procurement Official **Jennifer Slusarz via facsimile 941-861-5171 or 941-861-5129** within five working days of the posting of this solicitation or issuance of addendum.

11.2 Any Bidder or proposer who believes that they have been aggrieved in connection with the award of this solicitation as the result of a violation of the requirements of the Sarasota County Procurement Code or any applicable provision of law, may protest the award action. Protestors must verbally notify the Procurement Official **Jennifer Slusarz at 941-861-5266** of their intent to protest within three working days of the posting of the Notice of Award Action.

12. PROTECTION OF RESIDENT WORKERS

- 12.1** Sarasota County supports the Federal Immigration and Nationality Act (INA) which includes provisions addressing employment eligibility, employment verification, and non-discrimination. The Contractor is held responsible to establish appropriate procedures and controls so no service under this contract will be performed by any worker who is not legally eligible to perform such services.
- 12.2** Sarasota County shall have the right to immediately terminate the contract if the County determines that the Contractor has failed to perform satisfactorily with respect to its employment practices in support of INA.
- 12.3** Bidders shall be required to confirm the employment eligibility of all employees through participation in E-Verify or an employment eligibility program approved by the Social Security Administration, and will require the same requirement to confirm employment eligibility of all subcontractors

13. RESERVED RIGHTS

- 13.1** The County reserves the right to accept or reject any or all bids, to waive minor irregularities and technicalities, and to request resubmission. Also, the 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 the County.
- 13.2** Furthermore, the County may reject bids, which exceed budgetary constraints, whether in total or by source(s) of funds. The County further reserves the right to extend the bid opening if no bids or only one bid is received.
- 13.3** Any sole response received by the first submission date may or may not be rejected by the County depending on available competition, budget constraints and current needs of the County.
- 13.4** To be responsive, a Bidder shall submit a bid that conforms in all material respects to the requirements set forth in the invitation for bid. To be a responsible Bidder, the Bidder shall have the capability in all respects to perform fully the contract requirements, and the tenacity, perseverance, experience, integrity, reliability, capacity, facilities, equipment, and credit which will assure good faith performance.
- 13.5** Also, the County reserves the right to make such investigation as it deems necessary to determine the ability of any Bidder, to deliver the goods or service requested in accordance with the bid documents to County's satisfaction within the prescribed time.
- 13.6** The Bidder shall provide information the County deems necessary to make this determination. Such information may include but shall not be limited to: current financial statements, projected project schedule(s), verification of availability of equipment and personnel, and past performance records.

- 13.7** The Bidder shall mean the individual, partnership, corporation, or other legal entity executing the bid form. In the event the bid form is executed by a partnership, corporation, or other legal entity, that entity alone shall be deemed to be the Bidder.
- 13.8** Bidders are required to bid their prices on the bid forms supplied by the County in the bid document. All blank spaces must be filled in as noted, in ink or typed, and no changes shall be made in the forms or in the items mentioned therein.
- 13.8.1** Bids, at the sole discretion of the County, may be deemed non-responsive if these bid forms are not used and duly signed by an authorized representative of the Bidder.
- 13.9** At the sole discretion of the County any bid may be rejected for but not limited to the following reasons: any omissions, erasures, alterations, additions, irregularities of any kind, or items not called for, or which does not contain prices set opposite to each of the several items in the bid form; a Bidder submits more than one bid for the same work by an individual, firm, partnership or corporation under the same or different names; there is evidence of collusion among those submitting bids; there is previous participation by the Bidder in collusive bids on work for the Board of County Commissioners, Sarasota County, Florida; the Bidder submits an unbalanced bid in which the prices for some items are out of proportion with the prices for other bid items or which shall in any manner fail to conform to the conditions of the published notice inviting bids; there is any uncompleted work for which the Bidder is committed by contract which, in the determination of the County Bidder is delinquent, behind schedule, or in other material ways not in compliance with said contract.
- 13.10** The County may review the scope of work with the apparent low Bidder before accepting the bid. Before award of the contract, the low Bidder shall furnish to the County an analysis of his bid prices, if requested to do so.
- 13.11** The County reserves the right, in its sole opinion, to purchase items listed in this bid through the State of Florida contracts. The County reserves the right to solicit separate bids for requirements that are a portion of a larger contract bid as a whole.
- 13.12** Additionally, at the County's sole option, additional contracts may be entered into as a result of such situations as unusual volumes, time/delivery requirements, special requirements, other brands, lease, project specific requirements, or similar situations. After award of this bid the County reserves the right to add or delete items/services at prices to be negotiated at the time of addition or deletion.
- 13.13** The Procurement Official reserves the right to cancel any Invitation For Bid during any phase of the solicitation process. The Procurement Official further reserves the right to cancel any recommended award or recommended contract at any time prior to execution. Such determination may be based upon bid mistakes, or other reasonable factors determined to be in the best interest of the County

14. CLARIFICATION AND ADDENDA

- 14.1** Any inquiries, suggestions, or requests concerning interpretation, clarification, or additional information pertaining to the bid documents shall be made in writing to the Procurement Analyst named on the Invitation For Bids, **Sarasota County Government, Procurement, 1660 Ringling Boulevard, Sarasota FL 34236, fax 941-861-5171 or 941-861-5129**, specifying the bid name and title and must be received by 5:00 PM EST seven calendar days prior to the opening of the bids to be considered.
- 14.2** After the issuance of the invitation for bid, prospective Bidders or any agent, representative or person acting at the request of such Bidder shall not contact, communicate with or discuss any matter relating in any way to the bid with any officer, agent or employee of Sarasota County other than the procurement official or procurement specialist named on the Invitation for Bid. This prohibition begins with the issuance of any invitation for bid, and ends upon execution of the final contract or when the invitation or request has been canceled.
- 14.2.1** Violation of this prohibition may result in the Bidder being considered non-responsible and their bid rejected.
- 14.3** The issuance of a written addendum is the only official method whereby interpretation, clarification or additional information can be given. If any addenda are issued to this invitation for bid, the County will attempt to notify all prospective Bidders who have secured same; however, it shall be the responsibility of each Bidder, prior to submitting their bid, to contact the Sarasota County Office of Financial Planning, Procurement Office to determine if addenda were issued and to make such addenda a part of their bid.
- 14.4** All documentation related to this solicitation is available for download at www.demandstar.com. It is solely the responsibility of each Bidder to ensure they have obtained current copies of all documents issued by the County in relation to this solicitation.
- 14.4.1** Documents obtained from sources other than DemandStar, or the County directly, may have been modified from their original form and should be reviewed with caution.
- 14.4.2** By submitting a response, offerors acknowledge receipt of any and all issued addenda, and agree to the provisions of each.
- 14.5** Should the Bidder discover any ambiguity, inconsistency, or error, Bidder will be required to seek an interpretation as described above in advance of submitting the bid or otherwise will be prohibited from taking advantage of such ambiguity, inconsistency or error. If Bidder has not received a written clarification on an ambiguity, the Bidder shall be required to submit his bid on the basis of the highest price necessary to complete the task in question.

15. QUALITY GUARANTEE

- 15.1** Unless otherwise specifically provided in the specifications, all equipment, materials and articles incorporated in the work covered by this contract shall be new and of the most suitable grade for the purpose intended.
- 15.2** Except where specifically noted (no substitutions), reference to any equipment, material, article or patented process, by trade name, brand name, make or catalog number, shall be regarded as establishing a level of quality, performance, warranty, etc. required and shall not be construed as limiting competition.
- 15.3** Where products are specified by name and accompanied by the terms "or approved," "or approved substitution," or "or approved equal", the Bidder may propose an alternative, but must do so in writing to the Procurement Analyst named on the Invitation For Bids, Procurement Analyst, Sarasota County Government, Procurement, 1660 Ringling Boulevard, Sarasota FL 34236, fax 941-861-5171 or 941-861-5129, specifying the bid name and no later than ten (10) days prior to bid opening. The submittal must consist of but may not be limited to the following:
- 15.3.1** Evidence that the proposed product does not require extensive revisions to the contract documents that it is consistent with the contract documents and will produce the indicated results, and that it is compatible with other portions of the work.
- 15.3.2** Detailed comparison of significant qualities of proposed product with those named in the specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
- 15.3.3** Evidence that proposed product provides specified warranty.
- 15.3.4** List of similar installations for completed projects with project names and addresses and names and addresses of Engineers and owners, if requested.
- 15.4** Any such substitution shall be subject to written County approval prior to bid opening. Substitutions shall be approved only if determined by the County to be equivalent to the prescribed specifications. A bid containing a substitution is subject to disqualification if the substitution is not approved by the County.

16. ROYALTIES AND PATENTS

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

17. APPLICABLE LAWS

- 17.1** Bidders 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 Sarasota County will apply to any resulting agreement. Any involvement with Sarasota County shall be in accordance with Sarasota County Procurement Code Ordinance 2003-084. It shall be the responsibility of the Bidder to assure compliance with any OSHA, EPA and/or other federal or State of Florida rules, regulations, or other requirements, as each may apply. All work shall comply with Sarasota County codes and regulations.

17.2 Bidders must possess all licenses as required by permitting authorities and any other government entities having jurisdiction. At the County's discretion, and if allowed by applicable law, some or all of said licenses may be held by a subcontractor to the Bidder.

17.3 Any proposer who, as a result of a code enforcement hearing conducted by a Sarasota County special magistrate, has been determined to be in violation of any provision of the Sarasota County Code of Ordinances (whether related to the subject matter of this solicitation or not) shall be deemed non-responsible and ineligible for award of any contract hereunder. This prohibition shall be in force until the violation has been corrected and any fine imposed by the special magistrate has been fully paid.

17.3.1 In the event a proposer is awarded a contract hereunder and subsequently is determined to be in violation of any provision of the Sarasota County Code of Ordinances as stated above, such violation shall be grounds for termination of that contract.

17.4 Bidders located in Sarasota County must comply with the Local Business Tax ordinance. It shall be the responsibility of the Bidder to obtain a current local business tax receipt from the Sarasota County Tax Collector (www.sarasotataxcollector.com) and supply a copy of that receipt to the County upon request.

17.4.1 Local Preference requirements as related to the Local Business Tax ordinance are defined in paragraph 10 of these Instructions, Terms and Conditions.

18. SWORN STATEMENT, COMPLIANCE WITH FLORIDA TRENCH ACT

Bidder shall be solely responsible for complying with the Florida Trench Safety Act (553.60-553.64 Florida Statutes) and Occupational Safety and Health Administration excavation safety standards, 29 CFR 1926.650 (subpart P) as amended. All costs associated with complying with these requirements shall be included in the separate line items of the bid and shall be as detailed in the Sworn Statement of Compliance with the Florida Trench Safety Act. Bidder shall submit the Statement of Compliance with the Florida Trench Safety Act form provided herein with his bid or with each work assignment.

19. DRUG-FREE WORKPLACE

Pursuant to Section 287.087, Florida Statutes, whenever two or more bids which are equal with respect to price, quality and service are received by the state or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process.

20. PUBLIC ENTITY CRIMES

In accordance with Section 287.133, Florida Statutes, a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017 for Category Two for a period of 36 months from the date of being placed on the convicted vendor list.

21. COLLUSION

21.1 By offering a response to this invitation for bids, the Bidder certifies that he/she has not divulged to, discussed or compared his bid with other Bidders and has not colluded with any other Bidder or parties to this invitation for bids whatsoever. Also, Bidder certifies, as to their own organization that in connection with this invitation for bids:

21.1.1 Any prices and/or 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;

21.1.2 Any prices and/or cost data quoted for this invitation for bids have not been knowingly disclosed by the Bidder, and will not be knowingly be disclosed by the Bidder prior to the scheduled opening directly or indirectly to any competitor;

21.1.3 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;

21.1.4 The only person or persons interested in this invitation for bids as principal or principals is/are named therein and that no person other than therein mentioned has any interest in this invitation for bids, or in the contract to be entered into; and

21.1.5 No person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee except bona fide employees or established commercial agencies maintained by the Bidder for the purpose of doing business.

22. PRE-BID CONFERENCE

Failure by a Bidder to attend a mandatory pre-bid conference will result in their bid being considered non-responsive.

23. BID DOCUMENTS

23.1 Unless otherwise specified the bid documents (plans and specifications), fees shall be “non-refundable” and their expense shall be considered a cost of doing business. Cancellation of a bid does not relieve the Contractor of this responsibility. When bid documents purchased through the County (plans and specifications purchased through DemandStar are not subject to refund) are classified as “refundable”, Bidders may obtain a refund on purchased plans and specifications. Refunds may be obtained by returning complete sets of plans and specifications, in good condition, to the source, no later than 14 days following the bid-opening date. Determination of “good condition” will be in the sole opinion of the County.

23.2 Primary distribution of the documents for this solicitation is paperless. Documents can be ordered through the Onvia DemandStar web site at www.demandstar.com. For vendors that are not registered members of the Onvia DemandStar system, a complimentary membership can be obtained by visiting the Onvia DemandStar registration web page at www.demandstar.com/register.rsp. Select the Onvia DemandStar BASIC option to instantly obtain a username and password. If you need technical assistance with the web site, you may call 1-800-711-1712.

23.2.1 DemandStar document costs: Plan Express cost plus shipping/handling for delivered hard copies; \$5.00 for electronically-downloaded documents for Onvia DemandStar members without subscriptions that include Sarasota County, Procurement, in their subscription service territory.

24. BID BONDS

24.1 If specified in the contract documents a bid bond or certified cashier’s check payable to the Board of County Commissioners equal to 5% of the total bid must be enclosed with the bid. Any bonding company submitting a bid to Sarasota County Government must be licensed to transact a fidelity and surety business in the State of Florida, and hold a Certificate of Authority from the Secretary of the Treasury under Act of Congress, approved on July 30, 1947 (USC 613), and with Best and “T” ratings of B+ (Very Good) or better if Contractor’s bid is under \$500,000.00 and A- (Excellent) or better, if Contractor’s bid is over \$500,000.00.

24.1.1 Bid bonds shall contain in type or print the description of the construction in the same language as in the invitation for bids.

25. PERFORMANCE AND PAYMENT BOND

Bidders are advised that, if specified in the contract documents, a performance and payment bond of 100% of the contract or work assignment amount shall be required. Any bonding company submitting a performance and payment bond to Sarasota County Government must be licensed to transact a fidelity and surety business in the State of Florida, and hold a Certificate of Authority from the Secretary of the Treasury under Act of Congress, approved on July 30, 1947 (USC 613), shall have an A.M. Best rating of: if bond is under \$500,000 “B+” (very good) or better, and over \$500,000 “A-” (excellent) or better, and a “T” Underwriting Limitation not exceeded by this project’s bond.

26. EXECUTION OF BONDS

If the Contractor is a partnership, each bond should be signed by each of the individuals who are partners; if a corporation, the bonds should be signed in the correct corporate name by a duly authorized officer, agent or attorney-in-fact. The appropriate number of bonds should be executed to correspond to the number of signatories to the contract. Each executed bond should be accompanied by (a) appropriate acknowledgment of the respective parties; (b) appropriate duly certified copy of power-of-attorney or other certification of authority where bond is executed by agent, officer or other representative of Contractor or surety; (c) duly certified extract from by-laws or resolutions of Surety under which power-of-attorney or other certificate of authority of its agent, officer or representative was issued.

27. POWER OF ATTORNEY

Attorneys-in-fact who sign bid bonds or performance and payment bonds must file with such bond a certified copy of their power-of-attorney to sign such bonds. Attorneys-in-fact must place name, address, and telephone number on this certificate.

28. FAILURE TO EXECUTE ORIGINAL CONTRACT

Following the bid opening and review of the bid(s), the County will post a Notice of Bid Action. After posting the Notice of Bid Action, the County will forward to the Contractor contract(s) and related documents to be executed. If within 10 days the successful Bidder does not execute the contract and furnish the required Contractor's bonds properly signed by the Contractor and the surety or sureties satisfactory to the County, along with the insurance as required in the contract documents, the Bidder may be deemed to be in default and the County may retain his bid bond. Award may then be made to the next lowest responsive and responsible Bidder or all bids may be rejected.

29. MINORITY BUSINESS ENTERPRISES

Contractors awarded construction contracts who intend to subcontract material or service requirements of the project are encouraged to subcontract 5% or more of the project price to Sarasota County Government certified minority business enterprises firms or show good faith effort.

29.1 When funding is being provided by an outside agency (Example: Florida Department of Environmental Protection (FDEP), Community Development Block Grant (CDBG), State Revolving Funds (SRF), Florida Department of Transportation (FDOT) Local Agency Program (LAP), etc.) their requirements will take precedence.

30. NOTICE PROVISION

Any notice or other communications concerning material changes to the contract, shall be sent via certified U.S. mail, return receipt requested, postage prepaid to the relevant address specified under "Contractor Representative" and "County's Project Administrator" as noted in the contract documents.

31. PUBLIC RECORDS

Bidder acknowledges that all information contained within its bid is a public record, as defined in Chapter 119, Florida Statutes. No information should be labeled confidential unless exempted under said laws.

32. TRAVEL EXPENSE

Travel expenses will be reimbursed in accordance with Section 112.061, Florida Statutes and the Sarasota County Board of County Commissioners Resolution No. 2010-211.

33. TAXES

Sarasota County is exempt from federal excise and state sales taxes (Department of Revenue Certification No. 85-8012515235C-5); therefore, Bidders are prohibited from delineating a separate line item in their bid for any sales or service taxes. Nothing herein shall affect the Bidder's normal tax liability. The County reserves the right, at the County's sole option, to utilize the Sarasota County direct purchase order system and to issue direct purchase orders for applicable supplies and equipment to be utilized in this project.

34. EQUAL EMPLOYMENT OPPORTUNITY

Sarasota County will affirmatively ensure that minority business enterprises will be afforded full opportunity to submit bids in response to this invitation for bid and will not be discriminated against on the grounds of race, color, sex, religion, disability or national origin in consideration for an award.

35. SUBCONTRACTING

Construction contractors shall obtain prior written approval of subcontractors and the work they will perform. A subcontractor is defined as any entity performing work within the scope of the Contractor's project who is not an employee or a leased employee of the Contractor.

36. FUNDING

The award of any contract(s) pursuant to this invitation for bids is subject to the appropriation of funds by the Sarasota County Board of County Commissioners in an amount sufficient to allow the County's performance under the terms and conditions of such contract(s). The County shall provide prompt written notice to Bidders in the event sufficient funds have not been so appropriated. Thirty days after the date of such notice, Bidders shall be released from all further obligations arising out of their bids.

37. INVOICING

Unless otherwise stipulated in Supplemental Conditions 9.3, or at the Pre-Construction Meeting, all invoices must be mailed or delivered to the Sarasota County Finance Department, Post Office Box 8, Sarasota FL 34230-0008. Invoices must contain the purchase order number, required identification information, and reflect the contract prices, terms, and conditions. Invoices containing deviations or omissions will be returned to the vendor for correction and resubmission. Vendors shall not perform any service or provide products until they have been issued a purchase order number.

38. PURCHASING COOPERATIVE

Through a cooperative purchasing agreement, the cities of Longboat Key, Palmetto, North Port, Venice, Bradenton, and Sarasota, the Sarasota County School Board, Sarasota/Bradenton Airport Authority, DeSoto County, and Sarasota Memorial Hospital may procure against Sarasota County contracts.

39. "OR EQUAL" APPROVAL PROCESS

There are two time frames when "or equal" equipment/supplies/materials alternates or substitutions may be reviewed and approved by the County. The first time frame is prior to bid opening in accordance with paragraph 15, Quality Guarantee. The second time frame is during construction, upon Contractor submittal of alternates or substitutions for equipment/supplies/materials that have been initially specified by use of a brand name and followed by the term "or equal". So as to differentiate between these two time frames, the following definitions apply to this contract:

39.1 Approved Equal reviewed and approved before bid opening under the Instruction, Terms, and Conditions, paragraph 15, Quality Guarantee, and

39.2 Or Equal: Reviewed and approved after bid opening based on the Contractor's submittal of alternates or substitutions for equipment/supplies/materials in response to the contract specifications denoting the item by a brand name followed by the term "or equal".

40. ADDITIONAL INSTRUCTIONS TO BIDDERS**40.1 Preparation of Bids**

40.1.1 Bids must be submitted on the Bid Form included in this project manual. All blank spaces in the Bid Form must be filled in legibly and correctly in ink. The Bidder shall specify the price per unit of measure and the extended total, or the lump sum bid price if such is called for, for each scheduled item of work, as well as the total price for the entire work under the contract.

40.1.2 Bidder's base bid and all alternates for the project shall contain and include an amount equal to an additional 5%. Said amount will be shown in the space provided on the Bid Form, and is defined as a construction contingency allowance.

40.1.3 If the bid is made by an individual, he must sign his name therein and state his post office address and the name and address of every other person interested in the bid as principal. If the bid is made by a firm or partnership, its name and post office address must be stated as well as the name and address of each member of the firm or partnership. If the bid is made by a corporation, the bid must be signed by some authorized officer or agent, subscribing the name of the corporation with his own name and affixing the corporate seal.

40.2 Electronic Bid Forms

40.2.1 The County may, at its discretion, provide a bid form in electronic file (EXCEL spreadsheet format). If applicable for this project, the electronic file may be downloaded from DemandStar. Electronic files of Addended Bid Forms will only be uploaded to DemandStar.

40.2.2 Be advised that use of the bid form made available electronically is at the Bidder's discretion. The Bidder assumes full responsibility for the integrity of the completed bid form submitted, and acknowledges that no changes or alterations to the bid form structure or content, other than the Bidder's pricing, are allowed. Should any changes or alterations to the bid form structure or content be detected, the bid may be determined to be non-responsive and, therefore, disqualified.

40.2.3 The County reserves the right to correct formula errors on the bid form.

41. BONDS

A Bid bond and a Performance and Payment bond will be required for this project.

42. BID AWARD

42.1 The contract will be awarded to the responsive and responsible Bidder submitting the lowest **Total Bid Price** provided the bid is reasonable and in the best interest of the County to accept. The County may review the scope of work with the successful Bidder before accepting the bid.

43. BID AWARD – LOCAL PREFERENCE (See Instructions, Terms, and Conditions paragraph 10)

43.1 In awarding this bid, preference shall be given to local businesses in accordance with Section 2-219 of the Sarasota County Procurement Code. If the responsive and responsible low Bidder is not a local business (hereafter non-local business Bidder), the lowest responsive and responsible local business Bidder shall have five (5) business days from the date they are deemed the responsive and responsible low Bidder by the Procurement Official, to submit an offer matching the bid submitted by the lowest responsive and responsible non-local Bidder, provided the original bid submitted by the lowest local Bidder is within 10% of the bid submitted by the lowest non-local Bidder.

43.2 Only the lowest responsive and responsible local business Bidder within 10% of the low bid shall have the opportunity to match the bid submitted by the lowest non-local Bidder.

43.3 If the offer submitted by the lowest responsive and responsible local business Bidder matches the bid submitted by the non-local lowest Bidder, award shall be made to the local business Bidder. If the local business Bidder fails to submit a bid that matches the bid submitted by the non-local business Bidder within five (5) business days, award shall be made to the non-local business Bidder.

44. CONTRACTOR QUALIFICATIONS

- 44.1** To demonstrate qualifications to perform the work, each Bidder must fill out and submit with their bid package in the Contractor Qualifications Form, CQF-1 & 2, documenting their firm's ability to meet the Project's experience requirements as listed below.

44.1.1 Project experience requirements are as follows:

The Bidder must provide a minimum of three (3) project references and may provide a maximum of six (6) project references, acting as prime contractor, for each of the two (2) criteria listed below.

Each project reference must have been successfully completed in the last ten (10) years.

All criteria do not need to be satisfied by each submitted project reference. Criterion 44.1.1.1 must have been satisfied three (3) times on the project references submitted. Criterion 44.1.1.2 must have been satisfied three (3) times on the project references submitted.

Portions of the work for the project reference submitted, may have been performed by a subcontractor, however, the Bidder must have been the prime contractor responsible for the overall project.

44.1.1.1 Directional drilling under public roadway 12 inches in diameter or greater and at least 150 feet long. Each project reference submitted for consideration must have a total contract price of not less than \$100,000.00;

44.1.1.2 Meter assembly installation of 6 inches in diameter or greater.

- 44.1.2** Bidders must use the indicated form (Contractor Qualifications Form, CQF-1 & 2). Bidders may submit up to a maximum of six (6) Contractor Qualification Forms for consideration of responsiveness to the minimum qualifications. Failure to submit at least three (3) Contractor Qualification Forms at the time of the bid submittal, will result in the bid being declared non-responsive.

- 44.1.3** Failure to submit three (3) qualifying project references for each criterion will result in the bid being declared non-responsible. Only project references submitted on the Contractor Qualification Forms at the time of bid submittal will be used to verify that the minimum qualifications have been met.

- 44.1.4** In addition, the Bidder must be prepared to submit, within five days of Sarasota County's request, written evidence of documents, such as financial data, additional data related to previous experience, qualifications and previous experience of superintendents and assistants, and evidence of authority to conduct business in the jurisdiction where the project is located.

45. FDOT PRE-QUALIFICATIONS - NOT APPLICABLE

~~Companies who have been prequalified or certified by Florida Department of Transportation (FDOT) for categories specifically identified under Rule 14-22.003(3), Florida Administrative Code, Classification of Work, shall be deemed qualified to perform the same type of work for Sarasota County for those projects, the cost of which consists predominantly of constructing and opening new roads or bridges and repair of and maintenance of existing roads and bridges.~~

~~45.1 Bidders must have obtained such prequalification or certification not later than the time of bid opening.~~

~~45.2 Such FDOT Prequalification or certification shall only apply to that portion of a project which the cost consists predominantly of constructing and opening new roads or bridges and repair of and maintenance of existing roads and bridges.~~

46. DESIGNATION OF CONTRACTOR AS OPERATOR

46.1 It shall be the responsibility of the Contractor to complete, sign and submit with appropriate fee amount to FDEP Form 62-621.300(4)(b) Notice of Intent (NOI) to Use Generic Permit For Storm Water Discharge From Large and Small Construction Activities (Rule 62-621.300(4), FAC).

46.2 Proof of acceptance by FDEP, including the assigned authorization number and a copy of Contractor's Storm Water Pollution Prevention Plan for the project shall be submitted to the County prior to commencement of construction activities.

46.3 The Contractor shall be considered the operator for duration of the project.

47. ORDER OF PRECEDENCE

In the event the requirements, stipulations, provisions, and guidance contained herein conflict with Sarasota County's Instructions, Terms and Conditions, Supplemental Conditions, or any other section of the contract documents, the more stringent requirement, stipulation, provision, or guidance shall apply.

48. LOCAL AGENCY PROGRAM (LAP)

For projects that involve the FDOT Local Agency Program (LAP) funding the applicable requirements will be found under the Sections as outlined in the Table of Contents. Unless otherwise specified in these documents (LAP) requirements do not apply to this project.

BID FORM

**ENGLEWOOD WATER DISTRICT INTERCONNECT
 BID #111305CS**

Board of County Commissioners, Sarasota County, Sarasota Florida, submitted:
 _____ (Date)

Commissioners: The undersigned, as Bidder, hereby declares that the only person or persons interested in this Bid as principal or principals is or are named herein and that no person other than herein mentioned has any interest in this Bid or in the Contract to be entered into, that this Bid is made without connection with any other person, company or Parties making a Bid, and that this Bid is in all respects fair and made in good faith without collusion or fraud.

The Bidder further declares that they have examined the site(s) of the work, understands all conditions pertaining to the place where the work is to be done, has examined the plans for the work and other Contract documents relative thereto and has read all of the addenda furnished prior to the opening of Bids, as acknowledged below, and that they have satisfied themselves relative to the work to be performed.

The Bidder agrees, if this Bid is accepted, to contract with the Board of County Commissioners, Sarasota County to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation, and labor necessary to construct the work covered by the Bid and other Contract documents.

The Bidder agrees to accept the prices listed in the bid form as full compensation. The Bidder understands that the quantities shown on the Bid Form are approximate only and subject to increase or decrease. Should they be increased or decreased, he will perform the work at the unit price Bid herein. Actual quantities will be determined upon completion of the work.

The Bidder agrees to commence work as set forth in the General Conditions attached hereto and to complete the work to Substantial Completion within **120 calendar days**, and an additional 30 calendar days to Final Acceptance, from the date on which contract time commences. If the Contractor fails to complete the work to Substantial Completion within the specified time, the Contractor agrees to pay the Owner **FIVE HUNDRED DOLLARS (\$500.00) per day** as liquidated damages as stipulated in the General Conditions attached hereto. If the Contractor fails to complete the work to Final Acceptance within the specified time, the Contractor agrees to pay the Owner **ONE HUNDRED TWENTY FIVE DOLLARS (\$125.00) per day** as liquidated damages as stipulated in the General Conditions attached hereto.

BID FORM

**ENGLEWOOD WATER DISTRICT INTERCONNECT
 BID #111305CS**

The Bidder hereby acknowledges receipt of the following addendum or addenda for these specifications. (If none, write "NONE").

ADDENDUM NO.		RECEIVED:
ADDENDUM NO.		RECEIVED:
ADDENDUM NO.		RECEIVED:

ADDENDUM NO.		RECEIVED:
ADDENDUM NO.		RECEIVED:
ADDENDUM NO.		RECEIVED:

REQUIRED FORMS: If checked, the following forms must be completed and submitted with the Bid Form. Failure to submit any of the checked forms with your bid, will cause the bid to be declared non-responsive:

- ☒ Bid Form (BF-1 to BF-2 & BF-5)
- ☒ Price Schedule (BF-3 through BF-4)
- ☒ Bid Bond (BB-1 through BB-2)
- ☒ Bidder-Info Form (BIF-1 & BIF-2)
- ☒ Contractor's Qualification Form (CQF-1 & CQF-2); if applicable
- ☒ Sworn Statement, The Florida Trench Safety Act (TS-1- TS-2)
- ☒ Copy of Local Business Tax receipt if applicable. See Instructions, Terms, and Conditions, paragraph 10, Local Preference and paragraph 17, Applicable Laws.

REQUESTED FORMS – NOT REQUIRED: If checked, the following forms are requested, but not required. Failure to include these forms with your bid submittal will not result in the bid being declared non-responsive. However, these forms may be required from the low bidder during the bid review process. Failure to submit the forms below upon request will result in your bid being declared non-responsive.

- ☒ Status of Contracts on hand (SCH-1)
- ☒ Copy of Contractor's State and County Licenses
- ☒ List of Subcontractors (LOS -1 to LOS-2)
- ☒ Drug-Free Workplace Program Certification (DWP-1); if applicable

**BOARD OF COUNTY COMMISSIONERS
SARASOTA COUNTY, FLORIDA**

ENGLEWOOD WATER DISTRICT INTERCONNECT

BID No. 11305CS

BID ITEM	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL AMOUNT
SARASOTA COUNTY WATER SYSTEM INTERCONNECT					
WATER SYSTEM					
1	Mobilization / Demobilization	LS	1		\$ -
2	Project Signs	EA	2		\$ -
3	Prevention, Control & Abatement of Erosion & Water Pollution	LS	1		\$ -
4	12" PVC C-900, DR-14	LF	40		\$ -
5	12" PVC C-900, DR-18	LF	120		\$ -
6	10" PVC C-900, DR-18	LF	24		\$ -
7	10" DIP, CL-53	LF	16		\$ -
8	14" HDPE SDR-11 (Directional Bore) (Bore path 175' shown on plan)	LF	210		\$ -
9	12" Gate Valve	EA	1		\$ -
10	12" x 10" Tapping Tee & Valve	EA	1		\$ -
11	14' x 34' Concrete Pad	SY	53		\$ -
12	Antenna	EA	1		\$ -
13	Bi-Directional Assembly	LS	1		\$ -
14	1" Service for Chlorination	EA	1		\$ -
15	Temporary Sheeting	LS	1		\$ -
16	Double Row Silt Fence	LF	120		\$ -
17	Remove/Replace Sidewalk	SY	50		\$ -
18	Remove and Replace Section of Handrail	LS	1		\$ -
19	Provide Temporary Walkway	LS	1		\$ -
20	Sodding - (Bahia)	SY	600		\$ -
	SUBTOTAL (Bid Items 1 - 20)				\$ -

**BOARD OF COUNTY COMMISSIONERS
SARASOTA COUNTY, FLORIDA**

**ENGLEWOOD WATER DISTRICT INTERCONNECT
BID No. 11305CS**

BID ITEM	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL AMOUNT
21	Interim Field Change Agreement (IFCA) (5% of Subtotal)	LS	1		\$ -
22	Permit Fee Allowance	LS	1	\$ 5,000.00	\$ 5,000.00
23	Testing Allowance	LS	1	\$ 5,000.00	\$ 5,000.00
TOTAL BID PRICE (Bid Items 1 - 23)					

TOTAL BID PRICE (WRITTEN IN WORDS):

Note: Bid Prices on this form correspond to the Items listed in the Measurement and Payment Section 01026 of the Technical Specifications.

BID FORM

ENGLEWOOD WATER DISTRICT INTERCONNECT
BID #111305CS

THIS BID MADE BY AND ON BEHALF OF:

Company:

Company FEI Number:

Address:

County:

(SEAL)

Phone #:

Fax #:

E-Mail

BY:

Authorized Signature

PRINT:

TITLE:

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**SARASOTA COUNTY GOVERNMENT
PROCUREMENT DEPARTMENT**

DRUG-FREE WORKPLACE PROGRAM

-----CERTIFICATION-----

DRUG FREE WORKPLACE PROGRAM REQUIREMENTS:

Pursuant to Section 287.087, Florida Statutes, whenever two or more bids which are equal with respect to price, quality and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. In order to have a drug-free workplace program, a business shall:

- A.** Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
- B.** Inform employees about the dangers of drug abuse in the workplace, the person or entity's policy of maintaining a drug-free workplace, available drug counseling, rehabilitation, employee assistance programs and the penalties that may be imposed upon employees for drug abuse violations.
- C.** Give each employee engaged in providing the commodities or contractual services that are under bid, a copy of the statement specified in subsection (A).
- D.** In the statement specified in subsection (A), notify the employees that, as a condition of working on the commodities or services that are under bid, solicitation, or contract, the employee will abide by the terms of the statement and will notify the employer of any conviction or plea of guilty or nolo contendere and violation of Chapter 893 or any controlled substance law of the United States or any state, or a violation occurring in the workplace, no later than 5 days after such conviction.
- E.** Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program, if such is available in the employee's community, any employee who is so convicted.
- F.** Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

The undersigned hereby certifies that the business named below has implemented and maintains a Drug-Free Workplace Program in compliance with the requirements of Section 287.087, Florida Statutes:

Entity Name: _____ Date _____

Printed Name: _____

Authorized Signature: _____

NOTE: IF YOUR BUSINESS MEETS THE REQUIREMENTS OF SECTION 287.087, FLORIDA STATUTES, COMPLETE AND RETURN THIS FORM WITH YOUR BID/RFP.

Bid/RFP#:

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SWORN STATEMENT: THE FLORIDA TRENCH SAFETY ACT

This form must be signed in the presence of a Notary Public by an officer authorized to administer oaths.

1. This Sworn Statement is submitted with _____
for the construction of _____.
 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. My name is _____
(printed or typed name of individual signing)
and my relationship to the above entity is _____.
 4. The Trench Safety Standards that will be in effect during the construction of this
project are Florida Statutes Sections 553.60-55.64, Trench Safety Act, and OSHA
Rules and Regulations, 29CFR1926.650, Subpart P.
 5. The undersigned assures that the entity will comply with applicable Trench Safety
Standards and agrees to indemnify and hold harmless the County and Engineer, and
any of their agents or employees from any claims arising from the failure to comply
with said standards.
 6. The undersigned has appropriated \$_____ per linear foot of trench to be
excavated over five-feet deep for compliance with the applicable standards. It is
intended to comply with these standards by instituting the following procedures:

 7. The undersigned has appropriated \$_____ * per square foot for compliance
with shoring safety requirements and intends to comply by instituting the following
procedures:

- * If shoring is not shown on plans and none is anticipated to be required by the Contractor, enter "n/a"
(not applicable). If no separate bid item for shoring is included on the bid form, the cost of any shoring
which may be required shall be included in the amount bid for the item requiring such trenching.
8. The undersigned, in submitting this bid, represents that he has reviewed and
considered all available geotechnical information and made such other investigations
and tests as he may deem necessary to adequately design the trench safety
system(s) he will utilize on this project.

Authorized Signature/Title

date

Sworn to and subscribed before me

date

Notary Public Signature

(Notary Seal)

My Commission expires: _____

STATUS OF CONTRACTS ON-HAND REPORT

List the construction contracts with a value of \$50,000 or more that your organization has underway on this date.

PROJECT NAME	General or Sub (If sub, what type of work?)	Date of Contract	Amount of Contract	Percent Complete	Design Engineer and Address	Owner Name and Address

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CONTRACTOR'S QUALIFICATION FORM

Project name					Project, Contract, or Bid number			
Contract start date			Contract end date					
Owner name			Contact name					
Address			City			State		Zip
Phone number			Fax number					
Project Manager Name			Superintendent Name					
Criteria#	Specific Experience for Project: (Refer to Section 44, Instructions, Terms and Conditions)							
44.1.1.	Were you the prime contractor for this project reference?					☐ YES ☐ NO ¹		
	Was this project completed in the last ten (10) years?					☐ YES ☐ NO ¹		
44.1.1.1	Did this project reference include directional drilling under public roadway (12) twelve inches in diameter or greater and at least 150 feet long?					☐ YES ☐ NO ² Please specify diameter _____ Please specify length _____		
	Did this project reference submitted for consideration have a total contract price of not less than \$100,000.00?					☐ YES ☐ NO ² Please specify the total contract price _____		

¹ Response of "no" will deem this project reference non-responsive

² Response of "no" will deem this project reference non-responsive for 44.1.1.1

CONTRACTOR'S QUALIFICATION FORM

44.1.1.2	Did this project reference include meter assembly installation of (6) six inches in diameter or greater?	☐ YES ☐ NO³ Please specify diameter _____
-----------------	---	---

List project references of similar size and complexity in accordance with Instructions, Terms, and Conditions, Article 44. Failure to fill out and submit a minimum of 3 (three) Contractor Qualification Forms will result in the bid being declared non-responsive. Contractor is to reproduce the form as necessary to meet specified number of projects.

³Response of "no" will deem this project reference non-responsive for 44.1.1.2

**SARASOTA COUNTY INVITATION FOR BIDS
BIDDER-INFO FORM**

BID #	
--------------	--

SECTION I: BIDDER INFORMATION

LEGAL NAME OF COMPANY¹

**YEARS IN
BUSINESS**

CONTACT (NAME/TITLE)

EMAIL

PHONE

SECTION II: LOCATION OF BIDDER'S HEADQUARTERS

ADDRESS

CITY

STATE

ZIP

**YEARS @
LOCATION**

SQ. FT.

SECTION III: LOCATION OF OFFICE TO PERFORM WORK

ANY BIDDER WHO FAILS TO PROVIDE THIS INFORMATION WILL NOT BE CONSIDERED FOR LOCAL BUSINESS PREFERENCE

ADDRESS

CITY

COUNTY

STATE

ZIP

**YEARS @
LOCATION**

SQ. FT.

IF AT ABOVE LOCATION FOR LESS THAN 3 YEARS, PROVIDE INFORMATION REGARDING PREVIOUS BUSINESS LOCATION

PREVIOUS ADDRESS

CITY

COUNTY

STATE

ZIP

**YEARS @
LOCATION**

SQ. FT.

SECTION IV: FULL TIME EMPLOYEE INFORMATION

**# OF FULL TIME EMPLOYEES
(FTE's) AT LOCAL OFFICE²**

**# OF LOCAL OFFICE FTE'S RESIDING IN SARASOTA,
MANATEE, CHARLOTTE OR DESOTO COUNTY**

**# OF FULL TIME EMPLOYEES IN THE ENTIRE COMPANY
(REGARDLESS OF OFFICE LOCATION)**

**NAME OF THE LOCAL OFFICE CORPORATE OFFICER, MANAGING PARTNER OR
PRINCIPAL OWNER**

**CHECK IF CORPORATE OFFICE, MANAGING PARTNER
OR PRINCIPAL OWNER RESIDES
IN ONE OF THE COUNTY'S BELOW**

☐ SARASOTA
☐ CHARLOTTE

☐ MANATEE
☐ DESOTO

SECTION V: LOCAL BUSINESS TAX

LOCAL BUSINESS TAX RECEIPT #³

COPY OF LOCAL BUSINESS TAX RECEIPT ATTACHED⁴

YES ☐ NO ☐ N/A ☐

¹ Insert the formal legal name of the business

² "Local Office" is defined as an office located within Sarasota, Manatee, Charlotte or DeSoto County

³ The name on the local business tax receipt must be the same as the legal name of the company listed in Section I

⁴ Manatee County does not have a local business tax

**SARASOTA COUNTY INVITATION FOR BIDS
BIDDER-INFO FORM**

When applicable, Sarasota County grants preference to local businesses in accordance with Section 2-219 and 2-220 of the Sarasota County Procurement Code. If you wish to qualify for this preference, you must submit this form and all requested documentation with your bid submittal. Any bidder who fails to submit the required local preference documentation with their bid submittal shall not be granted local preference consideration for that bid. Bidders who submit falsified data shall be disqualified from consideration as a local business in Sarasota County for a period of one (1) year.

I, _____ (print name),
the _____ (title)
of _____ (company name)

swear or affirm that all information on this affidavit and submitted with this bid is true, and that I am
authorized to complete this affidavit on behalf of the company.

Signature

Date

NOTARY

The foregoing affidavit was subscribed and sworn to before me on this _____ day of
_____, 20__.

SEAL

Notary Public: _____

Commission Expires: _____

How do I determine “Local Preference?”

*The following questions will help you determine local preference for your company.
Please answer questions 1 through 4 **FIRST**. If you answer **NO** to any questions 1 through 4, local preference does **NOT** apply.
ONLY if you answer **YES** to questions 1 through 4, may you proceed to question 5.
If you answer **YES** to any questions 5 through 7, local preference applies.
If you are unsure of how to answer any questions, please contact the Sarasota County Procurement office at 941-861-5121.*

Questions 1 – 4

1. Have you paid a local business tax either to Sarasota, DeSoto or Charlotte County (Manatee County does not have a local business tax)?

YES ☐

If yes*, proceed to step 2.

NO ☐

If no, **STOP, local preference does not apply.**

**If the name on the local business tax receipt is not the same as the name on the bid/RFP submittal, local preference does not apply.*

2. Does your company maintain a permanent physical business address located within the limits of Sarasota, Manatee, DeSoto or Charlotte County?

YES ☐

If yes, proceed to step 3.

NO ☐

If no, **STOP, local preference does not apply.**

3. Does your local business office (identified in step 2) have at least one full time employee?

YES ☐

If yes, proceed to step 4.

NO ☐

If no, **STOP, local preference does not apply.**

4. Do at least fifty percent (50%) of your company employees who are based at the local business location (identified in step 2) reside within Sarasota, Manatee, DeSoto or Charlotte County?

YES ☐

If yes, proceed to step 5.

NO ☐

If no, **STOP, local preference does not apply.**

Questions 5 – 7

5. Is your local business office (identified in step 2) the primary location (headquarters) of your company?

YES ☐

If yes, **STOP, local preference applies.**

NO ☐

If no, proceed to step 6.

6. If the local business office (identified in step 2) is not the primary location of your company, are at least 10% of your company's entire full-time employees based at the local office location?

YES ☐

If yes, **STOP, local preference applies.**

NO ☐

If no, proceed to step 7.

7. If your local business office is not the primary location of your company, does at least one corporate officer, managing partner or principal owner of the company reside in Sarasota, Manatee, DeSoto or Charlotte County?

YES ☐

If yes, **STOP, local preference applies.**

NO ☐

If no, local preference does not apply.

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LIST OF SUBCONTRACTORS

This list is an integral part of the bid. List applicable subcontractors with whom you shall contract on this project as required by the bidding documents.

Work to be Done	Firm Name	City	State	Phone
Sitework				
Concrete				
Surveyor				
Asphalt Paving				
Utility Testing				
Irrigation Sprinklers				
Sod				
Soils Testing				
Dewatering				
Trucking				
MOT				
Electrical				
Directional Drilling				
Video				
HVAC				
Plumbing				
Other				

LIST OF SUBCONTRACTORS

bidder's name

address

authorized representative

printed name

ALL SPACES MUST BE COMPLETED FOR ALL APPLICABLE SUBCONTRACTORS. DO NOT LEAVE ANY BLANKS.

NOTE: The bidder shall not remove or replace subcontractors listed above, except upon good cause shown and with written approval by the County. Bidder hereby acknowledges that all subcontractors are properly licensed to perform the work required.

STORED MATERIALS AFFIDAVIT

STATE OF FLORIDA, COUNTY OF SARASOTA

Before me, the undersigned authority, personally appeared _____, who being
duly sworn, says that he is a subcontractor for _____ of Sarasota
FL, General Contractor for _____ project, and
that all materials billed on the attached invoice are being held in the subcontractor's warehouse at _____
FL, for this project, and are fully insured against loss or damage.

(Subcontractor Firm Name)

By: _____
(Name of Representative)

(Title of Representative)

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____ DAY OF _____ 2009

Notary Public:

My commission expires:

FOR

General Contractor for this project, states that the stored materials constitute a part of the
performance, payment, and guarantee bond, and are for this project only.

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____ DAY OF _____ 2009

Notary Public:

My commission expires:

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BID BOND

State of Florida, County of Sarasota

Know all men by these presents that we, _____ as Principal, and _____, as Surety, a Corporation chartered and existing under the laws of the State of _____, with its principal offices in the City of _____, and authorized to do business in the State of Florida are held and firmly bound unto the sponsor in the full and just sum of 5% of the Total Bid Price, in good and lawful money of the United States of America, to be paid upon demand by sponsor, to which payment well and truly to be made, we bind ourselves, our heirs, executors, administrators, and assigns, joint and severally and firmly by these presents.

The condition of this obligation is such, that whereas the Principal has submitted the attached Bid, dated _____, for **Englewood Water District Interconnect, Bid # 111305CS**. Now, therefore, if the Principal shall withdraw said Bid prior to the date of opening the same, or shall within 10 days after the prescribed forms are presented to him for signature enter into a written Contract with Sarasota County Florida in accordance with the Bid as accepted and give a Performance and Payment Bond with good and sufficient surety or sureties as may be required for the faithful performance and proper fulfillment of such Contract and for the prompt payment of all persons furnishing labor or materials in connection therewith or, in the event of failure to enter into such Contract and give such bond within the time specified, if the principal shall pay the County the difference between the amount specified in said Bid and the amount for which the County may procure the required work and/or supplies provided the latter amount to be in excess of the amount specified in said Bid, then the above obligations shall be void; otherwise, to remain in full force and effect.

In witness whereof, the above written parties have executed this instrument under their several seals dated _____, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

(Sign here if the Contractor is an Individual)

IN THE PRESENCE OF: _____(SEAL)
Individual Principal

Address Business Address

(Sign here if the Contractor is a Partnership)

_____(SEAL)
Firm Name

IN THE PRESENCE OF: _____
General Partner

Address Business Address

(Sign here if the Contractor is a Corporation)

ATTEST: _____
Corporation Principal

BY: _____
As President

(AFFIX CORPORATE SEAL)

Business Address

Corporate Surety

BY: _____
As Authorized Agent

(AFFIX CORPORATE SEAL)

Business Address

State of Florida, County of Sarasota

**SARASOTA COUNTY GOVERNMENT
PERFORMANCE AND PAYMENT BOND**

In compliance with F.S. Chapter 255.05(1)(a)

BOND NO.:	_____
CONTRACTOR NAME:	_____
CONTRACTOR ADDRESS:	_____ _____ _____
CONTRACTOR PHONE NO.:	_____
SURETY COMPANY:	_____ _____ _____
SURETY AGENT:	_____ _____ _____
OWNER NAME:	Sarasota County Board of County Commissioners
OWNER ADDRESS:	1660 Ringling Boulevard Sarasota FL 34236
OWNER PHONE NO.:	941-861-5000
BOND AMOUNT:	_____
CONTRACT NO.: (if applicable)	_____ _____ _____
DESCRIPTION OF WORK:	<u>Installation of a directional drill of approximately 200 feet of 14" HDPE water main under State Road 776, 12 inch PVC open cut pipe installation, a 10 inch meter assembly and valve system, a SCADA system, sidewalk, handrail replacement and complete restoration.</u>
PROJECT ADDRESS:	50 ft north of 1300 Roosevelt Drive, Venice, FL 34293
LEGAL DESCRIPTION:	East side of State Road 776, 150 ft north of Roosevelt Drive _____ _____

By this bond, we, _____, as Principal and _____, a corporation, as Surety, are bound to Sarasota County Board of County Commissioners, herein called Owner, in the sum of \$ _____, for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

**SARASOTA COUNTY GOVERNMENT
PERFORMANCE AND PAYMENT BOND**

In compliance with F.S. Chapter 255.05(1)(a)

The conditions of this bond is that if Principal:

1. Performs the Contract dated _____, between principal and Owner for construction of **Englewood Water District Interconnect, Bid # 111305CS**, 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 Owner all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a default by principal under the contract work; 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 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.

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.

**SARASOTA COUNTY GOVERNMENT
PERFORMANCE AND PAYMENT BOND**

In compliance with F.S. Chapter 255.05(1)(a)

In witness whereof, the said Principal and Surety have signed and sealed this instrument
this _____

(date)

Principal

By: _____

As President

(SEAL)

Surety

By: _____

Approved as to form and execution:

By: _____
Attorney to Board of
County Commissioners of
Sarasota County, Florida

Any Claims under this bond may be addressed to
(name and address of Surety):

Telephone No: _____

Name and address of agent or representative in Florida if different from above:

Telephone No: _____

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CONSTRUCTION CONTRACT

Contract for **Englewood Water District Interconnect, Bid # 111305CS**,

This Contract made and entered into this day _____, by and between
_____, a _____ corporation hereinafter
called the 'Contractor' and Sarasota County, a political subdivision of the State of Florida, hereinafter
called the 'County'.

WITNESSETH:

I. **Construction Materials, Services, and Labor:** That for and in consideration of the mutual promises and covenants hereinafter contained, together with the money consideration hereinafter recited, the Contractor shall furnish all the labor, services and materials for the construction of **Englewood Water District Interconnect, Bid # 111305CS**. All work and labor shall be done in accordance with the plans and specifications on file with the Sarasota County Engineer, as listed in Article III, receipt of which is hereby acknowledged and which plans and specifications are made a part of the contract, the same as though they were set forth at length herein and by reference hereto made a part hereof.

II. **Contract Price:** In consideration of the work, labor, services and materials to be furnished by the Contractor, in accordance with said plans and specifications, the County agrees to pay to the Contractor, upon the completion and acceptance thereof by the County, or its duly authorized agent, the total contract price of \$_____.

(Contract price in words)

The contract price includes a 5% contingency amount for change orders that may be authorized in the discretion of the Administrative Agent.

III. **Contract Documents:** The contract documents, which comprise the entire contract between County and Contractor and which are made a part hereof by this reference, consist of the following:

1. Public Bid Disclosure Act Form
2. Invitation for Bids
3. Instructions, Terms, and Conditions
4. Minority Business Enterprise Project Plan
5. Additional Instructions to Bidders
6. Bidder-Info Form
7. Bid Form
8. Drug-free Workplace Program
9. Sworn Statement: Florida Trench Safety Act
10. Contractor's Qualification form
11. Performance and Payment Bond, and Power of Attorney
12. Contract
13. Immigration Status Affidavit
14. Release of Lien

15. General Conditions
16. Supplemental General Conditions
17. Technical Specifications
18. Geotechnical Report
19. Right of Way
20. FDEP Permit and FDOT Utility Permit
21. EPA Stormwater Management Guidance
22. Florida Statute 556, Underground Facility Damage Prevention and Safety Act
23. Project drawings, 8 sheets, dated August 17, 2010, prepared by Giffels-Webster Engineers, Inc.
24. All addenda issued before the bid opening date
25. All modifications and change orders issued
26. The Notice to Proceed issued by Capital Management Services
27. Project Purchase Orders

IV. Performance and Payment Bond: The Contractor shall furnish to the County, prior to the commencement of operations hereunder, a Performance and Payment Bond executed by the Contractor, and a surety company authorized to do business in the State of Florida, in an amount no less than the contract price herein, which bond shall be conditioned upon the successful completion of all work, labor, services, and materials to be provided and furnished hereunder, and the payment of all subcontractors, materialmen, and laborers. The County will only accept a Performance and Payment Bond with an A.M. Best rating of 'A-' (Excellent) or better for Bids requiring bonds of \$500,000 or greater, or 'B+' (Very Good) or better for Bids requiring a bond of less than \$500,000. Said bond shall be subject to the approval of the Board of County Commissioners of Sarasota County, Florida.

V. Insurance: Before performing any contract work, CONTRACTOR shall procure and maintain, during the life of the contract, unless otherwise specified, insurance listed below. The policies of insurance shall be primary and written on forms acceptable to the COUNTY and placed with insurance carriers approved and licensed by the Insurance Department in the State of Florida and meet a minimum financial AM Best Company rating of no less than "A- Excellent: FSC VII." No changes are to be made to these specifications without prior written specific approval by COUNTY Risk Management.

1. **WORKERS' COMPENSATION:** CONTRACTOR will provide Workers' Compensation insurance on behalf of all employees who are to provide a service under this contract, as required by the laws of the state where the contractor is domiciled. FLORIDA CONTRACTORS must provide evidence of Workers' Compensation insurance which meets the requirements of Florida Statutes, Chapter 440, **AND** Employer's Liability with limits of not less than \$100,000 per employee per accident, \$500,000 disease aggregate, and \$100,000 per employee per disease. If applicable, coverage for the Jones Act and Longshore Harbor Workers Exposures must also be included. ****NOTE**** Contractors who are exempt from Florida's Workers' Compensation law must provide proof of such exemption issued by the Florida Department of Financial Services, Bureau of Workers' Compensation and qualify for the County waiver.

In the event the CONTRACTOR has "leased" employees, the CONTRACTOR or the employee leasing company must provide evidence of a Workers' Compensation policy for all personnel on the worksite. All documentation

must be provided to Sarasota County Risk Management, 1660 Ringling Blvd., 3rd Floor, Sarasota, FL 34236.

2. **COMMERCIAL GENERAL LIABILITY:** Including but not limited to bodily injury, property damage, contractual, products and completed operations, watercraft, if under twenty-six (26) feet and Ocean Marine if over, and personal injury with limits of not less than **\$1,000,000** each occurrence, covering all work performed under this contract.
3. **BUSINESS AUTOMOBILE LIABILITY:** CONTRACTOR agrees to maintain Business Automobile Liability at a limit of liability not less than **\$1,000,000** each accident covering all work performed under this contract.

CONTRACTOR further agrees coverage shall include liability for Owned, Non-Owned & Hired automobiles. In the event CONTRACTOR does not own automobiles, CONTRACTOR agrees to maintain coverage for Hired & Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Liability policy. If private passenger automobiles are used in the business, they must be commercially insured.

If the CONTRACTOR is shipping a product via common carrier, the contractor shall be responsible for any loss or damage sustained in delivery/transit.

4. **UMBRELLA LIABILITY:** With limits of not less than **\$2,000,000** each occurrence covering all work performed under this contract.
5. **HAZARDOUS MATERIALS INSURANCE:** For the purpose of this section, the term "hazardous materials" includes all materials and substances that are now designated or defined as hazardous by Florida or Federal law or by the rules or regulations of Florida or any Federal Agency. If work being performed involves hazardous materials, the need to procure and maintain any or all of the following coverage will be specifically addressed upon review of exposure. However, if hazardous materials are identified while carrying out this contract, no further work is to be performed in the area of the hazardous material until COUNTY Risk Management has been consulted as to the potential need to procure and maintain any or all of the following coverage through an addendum to the contract:
 - a. **CONTRACTORS POLLUTION LIABILITY** – For sudden and gradual occurrences and in an amount no less than \$1,000,000 per claim and \$1,000,000 in the aggregate arising out of work performed under this contract, including but not limited to, all hazardous materials identified under the contract.
 - b. **ASBESTOS LIABILITY** – For sudden and gradual occurrences and in an amount no less than \$1,000,000 per claim and \$1,000,000 in the aggregate arising out of work performed under this contract.
 - c. **DISPOSAL** – When applicable, the CONTRACTOR shall designate the disposal site and furnish a Certificate of Insurance from the disposal facility for Environmental Impairment Liability Insurance, covering liability for sudden and accidental occurrences in an amount not less than

\$3,000,000 per claim and \$3,000,000 in the aggregate and shall include liability for non-sudden occurrences in an amount not less than \$6,000,000 per claim and \$6,000,000 in the aggregate.

- d. HAZARDOUS WASTE TRANSPORTATION** – When applicable, the CONTRACTOR shall designate the hauler and furnish a Certificate of Insurance from the hauler for Automobile Liability insurance with Endorsement MCS90 for liability arising out of the transportation of hazardous materials with an amount not less than \$1,000,000 annual aggregate and provide a valid EPA identification number.

*******Note: CERTIFICATES OF INSURANCE shall clearly state the hazardous material exposure work being performed under the contract.*******

- 6. BUILDERS' RISK – INSTALLATION COVERAGE:** For installation, CONTRACTOR must provide Builders' Risk installation coverage to include coverage for materials stored at the project site, property while in transit, and property stored at a temporary location for the amount of materials involved in this contract.

POLICY FORM

- 1.** Unless specific approval is given, all policies required by this contract with the exception of Professional Liability and Workers Compensation are to be written on an occurrence basis. Commercial General Liability policies shall name Sarasota County Government as additional insured as their interest may appear under this contract.
- 2.** Insurance requirements itemized in this contract and required of the CONTRACTOR shall be provided on behalf of all sub-contractors to cover their operations performed under this contract. The CONTRACTOR shall be held responsible for any modifications, deviations, or omissions in these insurance requirements as they apply to sub-contractors.
- 3.** Each insurance policy required by this contract shall:
 - a.** Apply separately to each insured against whom claim is made and suit is brought, except with respect to limits of the insurer's liability
 - b.** Not be suspended, voided or canceled by either party except after thirty (30) calendar days prior written notice by certified mail, return receipt requested, has been given to COUNTY Risk Management.
- 4.** The COUNTY shall retain the right to review, at any time, coverage, form, and amount of insurance.
- 5.** The procuring of required policies of insurance shall not be construed to limit CONTRACTOR'S liability nor to fulfill the indemnification provisions and requirements of this contract.
- 6.** The CONTRACTOR shall be solely responsible for payment of all premiums for insurance contributing to the satisfaction of this contract and shall be solely

responsible for the payment of all deductibles and retentions to which such policies are subject.

7. Claims Made Policies will be accepted for Professional Liability, Workers' Compensation and Hazardous Materials, and such other risks as are authorized by COUNTY Risk Management. All Claims Made Policies contributing to the satisfaction of the insurance requirements herein shall have an extended reporting period option or automatic coverage of not less than two years. If provided as an option, the CONTRACTOR agrees to purchase the extended reporting period on cancellation or termination unless a new policy is effected with a retroactive date, including at least the last policy year.
8. Certificates of Insurance evidencing Claims Made or Occurrence Form Coverage and conditions to this Contract are to be furnished to Sarasota County Risk Management (1660 Ringling Boulevard, 3rd Floor, Sarasota, FL 34236) prior to commencement of work AND a minimum of thirty (30) calendar days prior to expiration of the insurance contract, when applicable. All insurance certificates shall be received by COUNTY Risk Management before the CONTRACTOR will be allowed to commence or continue work.
9. Notices of Accidents (occurrences) and Notices of Claims associated with work being performed under this Contract, shall be provided to the CONTRACTOR'S/SUB-CONTRACTOR'S/CONSULTANT'S insurance company and COUNTY Risk Management as soon as practicable after notice to the insured.

VI. Contractor's Affidavit: When all work contemplated by the contract has been completed, inspected, and approved by the County or its duly authorized agent, the Contractor shall furnish to the County the Contractor's affidavit as required by the Construction Lien Law, Florida Statutes Chapter 713. Signed Release of Lien may also be required by the County at its option.

VII. Payment: Upon certification and approval by the County or its duly authorized agent, monthly payments may be made to the Contractor upon his application for all services or work completed or materials furnished in accordance with the contract. All pay requests must be submitted on diskette, with a hard copy attached, and in a form satisfactory to the Clerk of Court who initiates disbursements. Prior to substantial completion, monthly payments shall be made on the value of materials furnished or services and work completed up to the time of said application, less an amount retained as shown on the retainage table of General Conditions 13.2 Retainage. Retainage may be reduced upon issuance of the Certificate of Substantial Completion by the County if, in the sole opinion of the County, sufficient progress on the schedule has been accomplished, all Notices of Lien have been resolved, and the County has retained adequate retainage for the final completion of the Project and all estimated liquidated damages. The County shall inform the Contractor's Surety of any reduction in retainage. Contractors must update each new pay request in accordance with any changes made to the previous submittal. Final payment shall be made after approval by the County or its duly authorized agent of all work, materials or services required under this Contract.

1. Monthly pay requests shall be submitted each month on the anniversary date of the Notice to Proceed.

2. Monthly pay requests for less than \$200 are not acceptable and will not be processed, except for a final pay request.

VIII. Time for Performance: Time is of the essence in the performance of this Contract. The Contractor specifically agrees that contract time will begin on the date that the Notice to Proceed is issued. All work to be performed under the provisions of this Contract shall be completed to **Substantial Completion** in not more than **ONE HUNDRED TWENTY (120) calendar days** and an additional **THIRTY (30) calendar days to Final Acceptance**, subject only to delays caused through no fault of the Contractor or acts of God.

IX. Liability of the Contractor: Pursuant to F.S.S. 725.06(2), the Contractor shall indemnify and hold harmless Sarasota County Government from liabilities, damages, losses, and costs, including but not limited to attorney's reasonable fees to the extent caused by the negligence, recklessness, or intentional wrongful conduct of the Contractor and persons employed or utilized by the Contractor in the performance of the contract. This Section of the Contract will survive the completion or termination of the Contract.

X. Changes: No changes to this Contract or the performance contemplated hereunder shall be made unless the same are in writing and signed by the Parties hereto. In the event of any disagreement as to the provisions of this Contract with the plans and specifications that are made a part hereof by reference, the contract shall control.

XI. Liquidated Damages: The Parties to this Contract agree that time is of the essence in the work provided for herein and that a precise determination of actual damages which would be incurred by the County for delay in the completion of the work provided for herein, aside from the additional cost of inspection and supervision, would be difficult to ascertain. Accordingly, the Parties to the contract agree that the liquidated damages for those items of damage not otherwise provided for by this Contract, for each and every day that the time consumed in completing the work provided for in these construction documents exceeds the time(s) allowed therefore, shall be the amount(s) stated below per day, including Saturdays, Sundays, and legal holidays. The Parties specifically agree that the liquidated damages provided for herein do not constitute a penalty. Furthermore, since the additional cost of inspection and supervision arising from a delay is not difficult to ascertain, it is agreed that the Contractor shall pay, in addition to the liquidated damages provided for herein, all expenses for inspection and supervision occasioned by the failure of the Contractor to complete the work within the time(s) fixed for completion herein. The amount(s) of liquidated damages together with the additional costs for inspection and supervision occasioned by the Contractor's delay will be deducted and retained out of the monies payable to the Contractor. If not so deducted, the Contractor and sureties for the Contractor shall be liable therefore. The amount of liquidated damages to be assessed for each calendar day that Substantial Completion is delayed beyond the required date of Substantial Completion shall be **FIVE HUNDRED DOLLARS (\$500.00) per day**. The amount of liquidated damages to be assessed for each calendar day that Final Acceptance is delayed beyond the required date of Final Acceptance shall be **ONE HUNDRED TWENTY FIVE DOLLARS (\$125.00) per day**.

XII. Contractor's Representations: Contractor makes the following representations:

1. Contractor has familiarized himself with the nature and extent of the contract documents, work, locality, all local conditions, and federal, state, and local laws, ordinances, rules, and regulations that in any manner may affect cost, progress, or performance of work.
2. Contractor declares that he has visited and examined the site of the work and informed himself fully in regard to all conditions pertaining to the place where the work is to be done, that he has examined the plans for the work and other contract documents relative thereto and has read all the addenda furnished prior to the opening of bids, and that he has satisfied himself relative to the work to be performed.
3. Contractor has investigated and is fully informed of the construction and labor conditions, of obstructions to be encountered, of the character, quality, and quantities of work to be performed, materials to be furnished, and requirements of the plans and other contract documents.
4. Contractor has studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress, or performance of the work, and no additional examinations, investigations, tests, reports, or similar data are or will be required by the Contractor for such purposes.
5. Contractor has given County written notice of all conflicts, errors, or discrepancies that he has discovered in the contract documents and the written resolution thereof by Engineer is acceptable to the Contractor.
6. Contractor declares that submission of a bid for the work constitutes an incontrovertible representation that the Contractor has complied with every requirement of this Section, and that contract documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of work.
7. Equal Opportunity: The Contractor assures that no person shall be discriminated against on the grounds of race, color, creed, national origin, handicap, age or sex, in any activity under this Contract.
8. Public Entity Crimes: In accordance with Section 287.133, Florida Statutes, a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017 for Category Two for a period of 36 months from the date of being placed on the convicted vendor list.

XIII. Entire Contract: These contract documents constitute the entire understanding and contract between the parties and supersede any and all written or oral representations, statements, negotiations, or contracts previously existing between the parties with respect to the subject matters of this Contract. The Contractor recognizes that any representations, statements, or negotiations made by County

staff do not suffice to legally bind the County in a contractual relationship unless they have been reduced to writing and signed by an authorized County representative. This Contract shall inure to the benefit of and be binding upon the Parties, their respective assigns, and successors in interest.

- XIV. Notice Provision:** Any notice or other communications concerning material changes to the contract shall be sent via certified U.S. mail, return receipt requested, postage prepaid to the relevant address listed below.

Contract clarifications or questions regarding the interpretation of plans and/or specifications not involving: (a) any contract claim and/or dispute, (b) questions of time not involving extension, delay, or reduction of time, (c) monetary or compensatory issues, (d) fully executed IFCAs (Interim Field Change Agreement) and/or (e) material changes to the contract, shall be sufficiently given if delivered personally or sent via U.S. mail, postage prepaid, addressed as follows.

Contractor Representative:
print or type information

County's Administrative Agent:

Name	_____	Name	John C. Chapman		
Title	_____	Title	Capital Management Services Construction Manager		
Address	_____	Address	1001	Sarasota	Center Boulevard
	_____		Sarasota FL 34240		
Telephone	_____	Telephone	941-861-0570		
Fax	_____	Fax	941-861-0589		
e-mail	_____	e-mail	Jchapman@scgov.net		

- XV. Waivers:** Failures or waivers to insist on strict performance of any covenant, condition, or provision of this Contract by the Parties, their successors or assigns shall not be deemed a waiver of any of its rights or remedies, nor shall it relieve the other party from performing any subsequent obligations strictly in accordance with the terms of this Contract.

- XVI. Modifications:** This Contract may be modified only by instrument in writing and signed by the Parties hereto as aforesaid.

- XVII. Counterparts:** This Contract may be executed in any number of counterparts, any one of which may be taken as an original.

- XVIII. No Third Party Rights:** The parties hereto do not intend nor shall this Contract be construed to grant any rights, privileges or interest to any third party.

XIX. Remedies: The parties hereto agree that remedies for damages or any other remedies provided for herein shall be construed to be cumulative and not exclusive of any other remedy otherwise available under law.

XX. Access To Records: Contractor, its employees and agents including all subcontractors, shall allow access to its records during normal business hours to the County, its employees, and agents.

XXI. Severability: If any provision of this Contract is found by a court of competent jurisdiction to be in conflict with an applicable statute or ordinance, or is otherwise unenforceable, then such provision shall be deemed null and void to the extent of such conflict, but shall not invalidate any other provision of this Contract.

XXII. Jurisdiction and Venue: Jurisdiction and venue for purposes of any legal action founded upon this Contract shall be in Sarasota County, Florida. This Contract shall be governed by the laws of the State of Florida.

There will be no arbitration on claims allegedly arising under this Contract between the County and the Contractor.

In the event of a dispute or claim arising out of this Contract, the parties agree first to try in good faith to settle the dispute by mediation in Sarasota County, Florida under the Commercial Mediation Rules of the American Arbitration Association, before resorting to litigation. In the event such mediation does not result in a suitable resolution, then litigation will be used. The parties agree that in the event of litigation they waive any and all rights to a trial by jury.

The remainder of this page is left intentionally blank.

IN WITNESS WHEREOF, the parties have hereto set their hands and seal the day and year first above-mentioned.

WITNESS:

Print name: _____

Signed by: _____

Date: _____

CONTRACTOR:

Print name: _____

Signed by: _____

Title: _____

Date: _____

(SEAL)

SARASOTA COUNTY
BOARD OF COUNTY COMMISSIONERS
OF SARASOTA COUNTY FLORIDA

By: _____
Chair

Date: _____

(SEAL)

ATTEST:

Karen E. Rushing, Clerk of Circuit
Court and Ex-Officio Clerk of the Board
of County Commissioners

By: _____
Deputy Clerk

APPROVED AS TO FORM AND CORRECTNESS:

By: _____
County Attorney



IMMIGRATION STATUS AFFIDAVIT

Contractor agrees that it shall confirm the employment eligibility of all employees through participation in E-Verify or an employment eligibility program approved by the Social Security Administration and will require same requirement to confirm employment eligibility of all subcontractors. Contractor acknowledges and certifies that any person assigned to perform services hereunder meets the employment eligibility program requirements of the State of Florida and the United States of America.

I certify that the company shown below is in compliance and that I am authorized to sign on its behalf.

RFP or Bid# _____

Business Name: _____

Business Address: _____

Phone Number: _____ **Fax Number:** _____

Email: _____

I, _____ **(print name)**, the _____

(title) of _____ **(firm name)** swear or affirm that all the information on this affidavit and submitted with this bid or proposal is true, and that I am authorized to complete this affidavit on behalf of the firm.

Signature: _____ **Date:** _____

Notary

The foregoing affidavit was subscribed and sworn to before me on this

_____ day of _____, 20_____.

SEAL

Notary Public: _____

Commission Expires: _____

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**SARASOTA COUNTY GOVERNMENT
MINORITY BUSINESS ENTERPRISE PROJECT PLAN**

1) Project Name:		2) Total Bid Price :	3) 5% of Total Bid Price	
4) Type of Subcontract Work	5) Subcontractor or Materials-Men Name	6) Dollar Amount	7) H, I, J, K, M, AD	8) (A) (GFE)
TOTAL DOLLAR AMOUNT				

9) I certify, under penalty of perjury, for the Project shown above, that for the subcontracts, material-men Contracts and the good faith effort listed above, Certified Minority Business Enterprises shall complete the subcontracts as shown or that Good Faith Effort did occur. I further certify that this plan shall be carried out throughout the Project life and that any proposed changes shall be submitted in writing, for prior approval of the County.

Company Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____

Signature of Company Officer: _____ Date: _____

Title: _____

Notary Signature _____ Notary Seal _____ Type of Identification _____ Date _____

GENERAL INFORMATION: Only the vendor selected for award of this Bid is required to complete, sign, and submit this Minority Business Enterprise (MBE) plan. The awardee is encouraged to subcontract no less than 5% of their total Bid price with Certified MBE firms. Note: When funding is being provided by an outside agency (Example: FDEP, CDBG, State Revolving Funds, etc.) their requirements will take precedence.

MBE firms that have completed certification with the State of Florida shall be automatically eligible. Subcontractors listed in the MBE Project Plan are subject to the Subcontractor terms and requirements listed in the Bid specifications and Project Contract. (If needed continue on attached pages.)

**SARASOTA COUNTY GOVERNMENT
MINORITY BUSINESS ENTERPRISE PROJECT PLAN**

INSTRUCTIONS: (Below numbered paragraphs correspond to the numbered boxes on the Project Plan)

- 1) Enter the Project name shown on the front of the Bid Specifications.
- 2) Enter your Total Bid Price for the Project. If there are alternates involved in the Bid, enter the figure elected by the County for award purposes.
- 3) Enter 5% of the Total Bid Price shown in box number (2). If your firm does not sub-Contract 5% or more of the total Contract price you are required to list the percentage that you do intend to subcontract. The corresponding dollar amount shall be your MBE Plan goal. In such case, correct the percentage shown in the title of this box and enter the dollar amount of your MBE Plan goal.
- 4) Enter a descriptive word or name of the type of work to be performed under the subcontract listed. There may be only one MBE vendor or Good Faith Effort listed per subcontract. A subcontract may be listed only once in the plan.
- 5) List the Subcontractor or materials-men firm's name. Good Faith Effort may be included in the 5% MBE participation goal. If listing Good Faith Effort from advertising, enter the newspaper's name and advertising dates in place of the Subcontractor's name. Good Faith Effort credit may be obtained utilizing the following processes:
 - a) SUBCONTRACT OFFER TO A MBE FIRM THAT IS DECLINED: Good Faith Effort may be listed in the MBE Project Plan when an offer is made to a MBE firm who declines to accept the offer. The MBE firm must be a Certified MBE firm and normally capable of providing the service/supplies required in the subcontract. Also, if you later intend to offer such a subcontract, at an increased price or changed schedule, you must first make the same offer to the MBE firm listed under Good Faith Effort.
 - b) ADVERTISEMENT OF SUBCONTRACTS: Good Faith Effort may be listed in the MBE Project Plan for MBE solicitation advertisements in a newspaper to which no MBE firms respond. Such advertisement must be in newspapers of general circulation, unless otherwise approved by the County. If an advertisement is to appear in a newspaper emanating from outside Sarasota County, it must also appear no less than once in a Sarasota County newspaper. Qualified MBE firms responding to an advertisement must be offered the subcontract. A record must be maintained by the Contractor of respondents considered not qualified.
 - c) GOOD FAITH EFFORT CREDIT LIMIT: Good Faith Effort credit toward meeting the 5% Project Plan Goal is limited. Regardless of the estimated dollar amount of the subcontract, no more than 3% of the 5% goal may be established by Good Faith Effort. If establishing Good Faith Effort by advertising, no more than 1% may be established per advertisement, and no more than a total of 3% may be established by advertising.
- 6) Enter the dollar amount of the subcontract or the estimated amount of the subcontract, if listed as Good Faith Effort. Regardless of the dollar amount of any one subcontract, more than one MBE Subcontract or Good Faith Effort may be utilized to meet the 5% goal.
- 7) Enter the correct MBE designation: (H) Black American, (J) Asian American, (K) Native American, and (M) American Women. If entry is an advertised Good Faith Effort, with no responses, enter the designation (AD).
- 8) Enter the correct designation to indicate if the Contract was (A) awarded to the MBE firm listed, or (GFE) if the subcontract listed represents a not accepted Good Faith Effort offer to the MBE firm listed, or a qualified advertisement.
- 9) An officer of your firm must sign who has signature authority to commit the firm to compliance with this MBE Plan. The signature must also be notarized.

**Standard Form For
CONTRACTOR'S FINAL AFFIDAVIT & RELEASE of LIEN**

STATE OF FLORIDA, COUNTY OF SARASOTA

Before me, the undersigned authority, personally appeared _____,
who, after being by me first duly sworn, deposes and says that:

1. He is _____ of _____,
(Title of Officer) (Name of Company)
doing business in the State of Florida, hereinafter called "Contractor".
2. Contractor pursuant to a Contract dated _____,
hereinafter referred to as "Contract", with Sarasota County, Florida, hereinafter
referred to as "County", has heretofore furnished or caused to be furnished labor,
material and services for the construction of certain improvements as more
particularly set forth in said contract.
3. Contractor represents that all work to be performed under the aforesaid Contract has
been fully completed and that all persons and firms who furnished material, labor
and/or services incident to the completion of said work have been paid in full except
to the following:

(Write in "None" if all persons and firms have been paid in full)

<u>NAME</u>	<u>ADDRESS</u>	<u>AMOUNT DUE</u>

4. The undersigned affiant for and in consideration of final payment to him in the
amount of \$_____, and all other previous payments paid by County
to contractor, does hereby for and in behalf of the Contractor, waive, release, remise
and relinquish the contractor's right to claim, demand or impose a lien or liens for
work done or materials and/or services furnished or any other class of lien
whatsoever, on any of the premises owned by County on which improvements have
been completed in connection with the aforementioned contract.
5. The affiant herein does hereby represent that he has authority to execute a full and
final Release of Lien for and in behalf of the Contractor as set forth above.
6. The affiant herein makes this Affidavit and Release of Lien for the express purpose of
inducing County to make final disbursement and payment to the Contractor in the
amount of \$_____.
7. This Affidavit and Release of Lien is made by affiant with full knowledge of the
applicable laws of the State of Florida. In addition to such rights as may be afforded
to County under said applicable laws, affiant expressly agrees to indemnify and save
County harmless from any and all actual costs and expenses, including reasonable
attorney's fees, arising out of claims by laborers, subcontractors or materialmen who
might claim that they have not been paid for services or material furnished by or
through the contractor in connection with the work performed under the
aforementioned Contract.

Name of Corporation

By: _____
President

(CORPORATE SEAL)

ATTEST:

Name of Corporation

Secretary

Sworn to and subscribed before me
this day

(date)

Notary Public

(NOTARY SEAL)

My Commission Expires: _____

SECTION 8

**GENERAL
CONDITIONS**

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TABLE OF CONTENTS
ARTICLE**GC 1 DEFINITIONS AND TERMS****GC 2 CONTRACT DOCUMENTS****GC 3 DRAWINGS**

GC 3.1 Checking of Drawings and Dimensions

GC 3.2 Copies of Drawings and Specifications Furnished

GC 4 NOTICE TO PROCEED**GC 5 PRECONSTRUCTION CONFERENCE****GC 6 PROGRESS AND CONTROL OF THE WORK**

GC 6.1 Schedules and Progress Reports

GC 6.2 Approval of Subcontracts

GC 6.3 Performance of the Project

GC 6.4 Workmanship, Material, and Workers

GC 6.5 Delays and Extension of Time

GC 6.6 General Work Hours, Schedule

GC 7 RIGHTS AND RESPONSIBILITIES OF THE COUNTY DURING CONSTRUCTION

GC 7.1 General

GC 7.2 Surveys and Lands for Work

GC 7.3 Use of Completed Portions

GC 7.4 County's Right to do Work

GC 7.5 Right to Retain Imperfect Work

GC 7.6 Suspension of Work

GC 7.7 Termination of Contract

GC 8 RESPONSIBILITIES OF THE CONTRACTOR

GC 8.1 Contractor's Representative

GC 8.2 Contractor's Understanding

GC 8.3 Quality of Material, Equipment, or Work

GC 8.4 Permits, Licenses, Taxes, and Regulations

GC 8.5 Protection of Work, Persons, and Property

GC 8.6 Scope of the Contractor's Service

GC 8.7 Risk of Loss

GC 8.8 Contractor's Right to Terminate Contract

GC 8.9 Removal of Equipment

GC 9 AUTHORITY AND DUTIES OF THE ENGINEER

GC 9.1 Status of the Engineer

GC 9.2 Inspection and Examination of the Work

GC 9.3 Mediation

GC 10 WORK BY OTHERS**GC 11 INSURANCE REQUIREMENTS****GC 12 CHANGES**

GC 12.1 Compliance with Specifications and Drawings

GC 12.2 Changes in the Work

GC 13 PAYMENTS TO THE CONTRACTOR

GC 13.1 Contractor's Warranty of Title

GC 13.2 Progress Payments

GC 13.3 Correction of Work Before Final Payment

GC 13.4 Liens

GC 13.5 Final Inspection

GC 13.6 Final Acceptance

GC 13.7 Final Payment

GC 14 WARRANTY AND GUARANTEE PROVISIONS**GC 15 EXISTING UNDERGROUND UTILITIES****GC 16 CLAIMS AND DAMAGES**

GC 16.1 Requirement for Notice

GC 16.2 Claims for Extra Cost

- GC 16.3 Claims for Damages
- GC 16.4 Liquidated Damages
- GC 16.5 Additional Engineer Expense
- GC 17 INTERPRETATION OF CONTRACT**
- GC 18 INDEMNIFICATION**
- GC 19 ROYALTIES AND PATENTS**
- GC 20 CLEAN UP AND DISPOSAL**
- GC 21 SANITARY REGULATIONS**
- GC 22 INSPECTION AND TESTING OF MATERIALS AND EQUIPMENT**
- GC 23 SAFETY AND HEALTH REGULATIONS**
- GC 24 AS-BUILT PLAN SUBMITTALS**
- GC 25 SALVAGED EQUIPMENT AND MATERIALS**
- GC 26 NOTIFICATION**
- GC 27 STORAGE OF MATERIALS**
- GC 28 TESTING**
- GC 29 MANUFACTURER'S INSTRUCTION, SERVICE, AND PARTS MANUALS**
- GC 30 MANUFACTURER'S SUPERVISION**
- GC 31 CERTIFIED CHEMICALS**
- GC 32 AUDIO-VISUAL PRECONSTRUCTION RECORD**
- GC 33 SUBSTITUTION OF EQUIPMENT AND/OR MATERIAL**
- GC 34 CONTRACTOR'S REPRESENTATIVE COMMUNICATIONS, IDENTIFICATION**

GENERAL CONDITIONS

ARTICLE GC 1 – DEFINITIONS AND TERMS

The terms used in these specifications are defined as follows:

Administrative Agent: The County person responsible for the performance of the contract. This agent is named in the contract and has responsibility for contract development, negotiations, contractor compliance with the terms of the contract, and resolutions in cases of non-compliance.

Change Order: A form of a contract modification which results in the total contract price exceeding the amount specified in the contract.

Contract: The agreement executed by the County and the Contractor for performance of the project and including all contract documents.

Contractor: The person, firm, or corporation with whom a contract is executed by the County.

County: Sarasota County, Sarasota, Florida.

Drawings: The drawings listed and described in GC 3, Drawings.

Engineer: The County Engineer or his authorized representative.

Final Acceptance: When the construction is totally completed and certified by the Engineer, including resolution of all punch list items and record drawings.

Inspector: Authorized representative of the County Engineer assigned to make any or all necessary inspections of the work performed and materials furnished by the Contractor.

Interim Field Change Agreement: A form of a contract modification which does not result in the total contract price exceeding the amount specified in the contract.

Notice or Claim: Information rendered by either party to the other upon a condition becoming known pursuant to the following requirements. All claims, requests, substitutions, changes, notices, delays, and any and all other forms of notices or claims by the Contractor to the County must be in writing and promptly presented. If none is so made, it is presumed not to have been given by the Contractor to the County.

Owner: Board of County Commissioners of Sarasota County, Florida.

Project: The entire construction or installation to be performed as set forth in the contract documents.

Project Manager: Authorized representative of the County Engineer and has immediate charge of the engineering details of each construction project. The Project Manager is responsible for the administration and satisfactory completion of the project.

Specifications: The detailed written description of the project as set forth in the contract documents.

Subcontractor: Any person, firm, or corporation other than the Contractor supplying material or labor for the project. Such person or firm has contractual relations with the Contractor but not with the County.

Substantial Completion: When the construction is sufficiently completed, in accordance with the contract documents, so that the project or specified part of the project can be utilized for the purpose for which it was intended.

Surety: Any person, firm, or corporation that has executed, as surety, the contractor's bid and performance and payment bonds securing the performance of this contract.

ARTICLE GC 2 – CONTRACT DOCUMENTS

Refer to Section 6, Construction Contract, Article III, Contract Documents

ARTICLE GC 3 - DRAWINGS

The general character and scope of work are illustrated by the drawings, which show the scope, extent and character of the work to be furnished and performed by the Contractor, which have been prepared or approved by the Engineer, and which are referred to in the contract documents. Shop drawings are not the drawings as so defined.

GC 3.1 Checking of Drawings and Dimensions: The Contractor shall check all drawings immediately upon their receipt and shall promptly notify the Engineer in writing of any discrepancies. Anything shown on the drawings and not mentioned in the specifications, or mentioned in the specifications and not shown on the drawings, shall be of like effect as if shown or mentioned in both.

Figures marked on all drawings shall, in general, be followed in preference to scale measurements. Large-scale drawings shall, in general, govern small-scale drawings. The Contractor shall compare all drawings and verify the figures before laying out the work and will be responsible for any errors which might have been avoided thereby. When dimensions on the drawings are affected by the type of equipment selected, the Contractor shall adjust such dimensions as conditions may require.

GC 3.2 Copies of Drawings and Specifications Furnished: The Engineer will furnish to the Contractor, free of charge, four copies of the contract drawings and specifications necessary for the execution of the work. Additional copies of the drawings and specifications may be obtained from the Engineer upon payment of reproduction costs. One complete set of all contract drawings and specifications shall be maintained at the job site and shall be available to the Engineer at all times.

ARTICLE GC 4 – NOTICE TO PROCEED

A written notice given by the Owner to the Contractor (with a copy to the Engineer) affirming the date on which the contract times will commence to run (date of the Notice to Proceed) and on which the Contractor shall start to perform his obligations under the contract documents.

ARTICLE GC 5 – PRECONSTRUCTION CONFERENCE

Prior to starting the work, a preconstruction conference shall be held to review the work schedules, to establish procedures for handling shop drawings and other submissions, for processing periodical pay estimates and such other matters as may be pertinent to the project. The Contractor shall submit a summary, shop drawing schedule, project schedule, labor and equipment rate sheet, and any other information as required within at the preconstruction conference.

ARTICLE GC 6 – PROGRESS AND CONTROL OF THE WORK

GC 6.1 Schedules and Progress Reports: The Contractor must submit a proposed schedule for the project, and a list of shop drawing submissions at the preconstruction conference. The purpose of this list and schedule is to enable the County and the Engineer to govern the project, and to aid in providing appropriate oversight. The Engineer shall have the right to reschedule work provided such rescheduling is in accord with the remainder of terms of this contract. The schedule shall show, at a minimum, the approximate dates on which each phase of the project is expected to be started and finished, the proposed Maintenance of Traffic plan during each month, and the approximate number of crews and equipment to be used. The Engineer, after necessary rescheduling and obtaining additional information for specific purposes, shall review the schedule. The Contractor shall also forward to the Engineer, as soon as practicable after the first day of each month, a summary report of the progress of the various phases of the project, 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 Engineer's review. Additional and more detailed schedules may be required by the Engineer for daily control.

GC 6.2 Approval of Subcontracts: The Contractor shall provide notice to Engineer for all subcontractors proposed to be used, and no subcontractors shall be employed unless they have been approved by the Engineer. The Contractor is fully responsible to the County for the acts and omissions of its subcontractors and of persons either directly or indirectly employed by them. Nothing contained in the contract documents shall create any contractual relationship between any subcontractor and the County.

GC 6.3 Performance of the Project: The project shall be executed in such time and with such forces of workers, materials, and equipment as may be ordered by the Engineer, in writing, to complete the project as contemplated in the drawings, specifications, contract, and schedules, including such detailed, explanatory drawings as may be furnished by the Engineer from time to time. If at any time the materials and appliances to be used appear to the Engineer as insufficient or improper for securing the quality of work required, or the required rate of progress, the Engineer may order the Contractor to increase its efficiency or to improve the quality of its work and the Contractor shall conform to such an order. Failure of the Engineer to demand any increase of such efficiency or any improvement shall not release the Contractor from its obligation to provide the quality of work or the rate of progress necessary to complete the project by the contract time.

The Contractor shall perform the work and take such precautions necessary to complete the project so all work will be in acceptable condition within the contract time according to the schedule. If the Contractor desires to conduct work at night or outside the regular hours, it shall submit the request in writing to the Engineer, but shall allow ample time to enable satisfactory arrangements to be made for inspecting the work in progress. The

Engineer may grant permission unless local regulations prohibit such work. If granted permission, the Contractor shall comply with all regulations and legal requirements.

GC 6.4 Workmanship, Material, and Workers: Unless otherwise stated in the detailed specifications, all workmanship, materials, and articles incorporated in the project shall be of the most suitable grade of their respective kinds for the purpose and shall be acceptable to the Engineer. The Engineer shall decide the question of quality where the terms "or equal", "approved equal", or "equivalent" are used in the specifications following reference to a specific manufacturer of equipment or materials. When and to the extent required by the specifications or by the Engineer for review, the Contractor shall provide full information concerning the materials or articles or methods of work which he contemplates incorporating in the project. Samples of materials shall be submitted for review when requested. Machinery, materials, articles installed or used, or unusual methods of work used without such review may be rejected without liability to the Engineer or County.

The Contractor shall ensure that all key personnel, support personnel, and other agents are fully qualified and capable to perform their assigned tasks. Any change or substitution to the Contractor's key personnel must receive the County Administrative Agent's written approval before said changes or substitutions can become effective. At the discretion of the County Administrative Agent, the County shall have the sole right to require the Contractor to remove personnel assigned at any level for the performance of work.

GC 6.5 Delays and Extension of Time: If the Contractor should be delayed at any time in the progress of the work by any act or neglect of the County or its employees, by any other Contractor employed by the County, by changes ordered in the project, by fire, unusual delay in transportation, unavoidable casualties, by delay authorized by the Engineer pending arbitration, or by any cause which the Engineer determines justifies the delay, then the time of completion may be reasonably extended by the County.

No extension of time shall be made unless notice is made by the Contractor in writing to the Engineer within five calendar days of the event or incident causing the delay, and as otherwise provided by the definition in General Conditions, Article I, Definitions and Terms, paragraph Notice or Claim. The Contractor shall demonstrate in its notice the impact on the critical path of the construction schedule to justify the extension of time. Reasonable extensions of time, as determined by the Engineer, will be granted to the Contractor for time lost due to rainfall over and above the norm for the County based on US Weather Bureau statistics for the last 10 years.

If no schedule or agreement states the date upon which drawings shall be furnished from the County, then no claim for delay shall be allowed on account of failure to furnish drawings until 14 calendar days after the Contractor has provided notice demanding such drawings. Should the Contractor be delayed in the commencement, prosecution or completion of the work by the act, omission or default of County, Engineer, or anyone employed by them on the project, then the Contractor shall be entitled to an extension of time only and there shall be no damages for delays. The Contractor shall adhere to all paragraphs outlined in this article for this procedure.

GC 6.6 General Work Hours, Schedule: The Contractor shall submit his proposed work hours at the preconstruction meeting. The submittal should include days to be worked with start and stop time listed. All weekend work hours shall be listed along with potential night time or holiday work. If the work schedule is deviated, the Contractor will reimburse the County for all engineering and inspection fees. If weekend or holiday work is required, the Contractor shall provide notice to the Engineer on or before 5:00PM on the

Wednesday prior to the weekend or holiday work. If such notice is not given, no work shall be done on said dates.

The Engineer may require that water main tie-ins requiring water service to be shut off be made during the night. The Contractor shall receive no additional compensation for such night work.

ARTICLE GC 7 – RIGHTS AND RESPONSIBILITIES OF THE COUNTY DURING CONSTRUCTION

GC 7.1 General: After written notice is provided to the Contractor and a reasonable opportunity to cure, and after consultation with the Engineer, the County shall have the right to refuse to make payment, in whole or in part, and if necessary, may demand the return of a portion of or all of the amount previously paid to the Contractor due to:

- a. the quality of a portion or all of the Contractor's work not performed in accordance with the requirements of this contract;
- b. the quantity of the Contractor's work not delivered or performed as represented in the Contractor's payment request, or otherwise,
- c. the Contractor's rate of progress, not progressing such that, in the County's opinion, substantial and/or final completion may be inexcusably delayed,
- d. the contractor's failure to sue the contract funds, previously paid to the Contractor by the County, to pay the Contractor's project-related obligations, including but not limited to subcontractors, laborers, and material and equipment suppliers,
- e. claims made or likely to be made against the County or its property,
- f. loss caused by the Contractor, or
- g. the Contractor's failure or refusal to perform any of its obligations to the County after written notice and a reasonable opportunity to cure as set forth above.

In the event the County makes written demand upon the Contractor for amounts previously paid by the County as contemplated in this subsection, the Contractor shall promptly comply with such demand. The County's rights hereunder survive the term of this contract, and are not waived by final payment or acceptance, and are in addition to the Contractor's obligations stated in General Conditions, Article 8, Responsibilities of the Contractor.

GC 7.2 Surveys and Lands for Work: The County certifies that it owns the lands upon which the project is to be constructed, except that the Contractor shall provide all necessary additional land required for the erection of temporary construction facilities and storage of material, together with right of access to the same. The County shall furnish copies of all land surveys for the project. Easements for permanent structures or utilities shall be secured and paid for by the County.

GC 7.3 Use of Completed Portions: The County shall have the right to take possession of and use any completed portions of the project, although the time for completing the entire project 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.

GC 7.4 County's Right to do Work: If the Contractor should fail to perform the project, or any part thereof, properly, or fail to perform any provision of this contract, the County may, after 30 calendar days notice to the Contractor, without prejudice to any other remedy the Contractor may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

GC 7.5 Right to Retain Imperfect Work: If any part or portion of the work done or material furnished under this contract is defective and not in accord with the plans and specifications, and if the Engineer decides that any part or portion of the imperfect work is not of sufficient magnitude or importance as to make the work dangerous or undesirable, or if the removal of such work will create conditions which are dangerous or undesirable, the Engineer has the right to retain such work, but shall make such deductions in the final payment as may be just and reasonable, and such retention shall not constitute a waiver by the County of the Contractor's obligation under the contract.

GC 7.6 Suspension of Work: If the project is defective, the Contractor fails to supply sufficient skilled workmen or suitable materials or equipment, the Contractor fails to make prompt payments to subcontractors for labor, materials, or equipment, or the Contractor fails to comply with project schedules, after 30 calendar days notice the County may order the Contractor to stop all work or any portion thereof, and terminate payments to the Contractor until the cause for such order has been eliminated. No extension of contract time will be allowed for this suspension.

At any time and without cause, the County may suspend the work or any portion thereof for a period of not more than 90 calendar days by notice to the Contractor. Such notice shall fix the date on which the work shall be resumed. The Contractor shall resume the work on the date so fixed. The Contractor may request an increase in contract price or an extension of the contract time directly attributable to any suspension if a claim is made therefore as provided in General Conditions, Article 6.5, Delays and Extension of Time.

GC 7.7 Termination of Contract: The Contractor is considered in default and the County shall give written notice to the Contractor and their surety of such default if the Contractor:

- a. fails to perform the work with sufficient workers, equipment, or materials to assure the prompt completion of the work,
- b. performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable,
- c. discontinues the prosecution of the work,
- d. fails to resume discontinued work within a reasonable time after notice to do so,
- e. becomes insolvent, is declared bankrupt, or commits any act of bankruptcy or insolvency,
- f. allows any final judgment to stand against the Contractor unsatisfied for a period of 10 calendar days,
- g. makes an assignment for the benefit of creditors,
- h. fails to carry on the work in an acceptable manner, or
- i. fails to correct safety concerns within 48 hours after discovery or County notification to the Contractor.

The County will give notice in writing to the Contractor and their surety, if applicable, of such delay, neglect, or default. Within 10 calendar days after such notice, if the Contractor or surety does not proceed in accordance therewith, the County has full power

and authority without violating the contract to take the prosecution of the work away from the Contractor. The County may appropriate or use any materials and equipment as may be suitable and acceptable, and enter into an agreement for the completion of said contract according to the terms and provisions thereof, or use such other methods the County requires for the acceptable completion of said contract. All costs and charges incurred by the County to complete the work of the contract will be deducted from the monies due or which become due the Contractor. If such expense exceeds the sum which would have been payable under the contract, the Contractor and the surety are liable and will pay the County the amount of such excess.

Where the Contractor's services have been so terminated by the County, said termination shall not affect any rights of the County against the Contractor then existing or which may thereafter accrue. Any retention or payment of monies by the County due the Contractor will not release the Contractor from liability. Upon seven calendar days notice to the Contractor and the Engineer, the County may, without cause and without prejudice to any other right or remedy, elect to abandon the project and terminate the contract.

ARTICLE GC 8 – RESPONSIBILITIES OF THE CONTRACTOR

GC 8.1 Contractor's Representative: The Contractor shall keep on this project during its progress a competent superintendent and any necessary assistants, all satisfactory to the Engineer. The superintendent shall not be changed except with the written consent of the Engineer unless the superintendent ceases to be employed by the Contractor. The superintendent shall represent the Contractor in his absence, and all directions given to him shall be as binding as if given to the Contractor. The superintendent shall give adequate and appropriate supervision to the work using his best skill and attention.

GC 8.2 Contractor's Understanding: It is understood and agreed that the Contractor, by careful examination, is satisfied as to the nature and location of the work, conditions of the site, character, quality, and quantity of the materials to be employed, character of equipment and facilities needed preliminary to and during the execution of the work, general and local conditions, and all other matters which can in any way affect the performance of the project. No verbal agreement or conversation with any officer, agent, or employee of the County or the Engineer, either before or after the execution of this contract, shall affect or modify any of the terms or obligations herein contained.

If the Contractor, in the course of the work, finds any discrepancy between the drawings and the physical conditions of the project site, or any error or omissions in the drawings or in the layout as given, or discovers unforeseen underground or aboveground conditions or any other unexpected conditions requiring additional work by the Contractor, the Contractor shall immediately verbally report to the Engineer and provide written notice to the Engineer within 24 hours, and the Engineer shall promptly evaluate the information. Until any necessary changes are authorized, any work done after such discovery will be done at the Contractor's risk.

If any part of the Contractor's work depends for proper execution or results upon the work of any third part, the Contractor shall inspect and measure work already performed by such third party and shall immediately verbally report to the Engineer and provide written notice within 24 hours to the Engineer any discrepancy between the executed work and the drawings.

GC 8.3 Quality of Material, Equipment, or Work: When any material or equipment not conforming to the requirements of the specifications and drawings has been delivered to the project or incorporated in the work of the project, or whenever any work performed is of inferior quality, then such material, equipment, or work, whether known or unknown to the County or the Engineer, is deemed to be defective, and shall be removed, replaced, or made satisfactory to the County at no cost to the County.

GC 8.4 Permits, Licenses, Taxes, and Regulations: All permits and licenses necessary for the execution of the project which have not already been acquired by the Engineer shall be secured and paid for by the Contractor. Easements for permanent structures or utilities shall be secured and paid for by the County. The Contractor shall pay all sales, consumer, use, and other similar taxes required by the law of the place where the work is performed.

The Contractor shall give all notices and comply with all laws, ordinances, rules, and regulations related to the project. If the Contractor observes that the drawings and specifications are at variance therewith, he shall immediately verbally report to the Engineer and provide written notice within 24 hours, and all necessary changes shall be made as provided in Section 9. If the Contractor performs any work contrary to such laws, ordinances, rules, and regulations and does not comply with the aforesaid procedure, the Contractor shall bear all cost incident to such violation.

GC 8.5 Protection of Work, Persons, and Property: The Contractor shall continuously maintain adequate protection of all its work from damage and shall protect all property from injury or loss arising in connection with the performance of the contract. The Contractor shall make good any such damage, injury, or loss except such as may be directly due to errors in contract documents or caused by agents or employees of the County. The Contractor shall adequately protect adjacent property as provided by law and the contract documents. The Contractor shall provide and maintain all passageways, guard fences, lights, and other facilities for protection required by public authority or local conditions. The Contractor shall provide reasonable maintenance of traffic ways for the public and preservation of the continuation of the County's business, taking into full consideration all local conditions. The Contractor shall comply with the Florida Department of Commerce Safety Regulations and any local safety regulations. In case of failure on the part of the Contractor to promptly restore damaged property or make good such damage or injury, the County may, after providing 24 hours notice to the Contractor, proceed to repair, rebuild, or otherwise restore such property, and the cost thereof will be deducted from any monies due or which may become due the Contractor under this contract.

GC 8.6 Scope of the Contractor's Service: Unless otherwise stipulated, the Contractor shall provide and pay for all bonds, insurance, materials, labor, tools, equipment, light, power, water, transportation, and other facilities necessary for the execution and completion of the project. The Contractor shall furnish for the contract price, 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 construction work. Control surveys shall be by a registered land surveyor acceptable to the County and Engineer. These stakes and marks shall constitute the field control by which the Contractor shall perform the project. The Contractor will be held responsible for the preservation of all stakes and marks and if, for any reason, any of the stakes, marks, or batter boards become destroyed or disturbed, they will be immediately and accurately replaced by the Contractor's registered land surveyor. It is the responsibility of the

Contractor's registered land surveyor to establish the right-of-way line when said line is to be used in locating the proposed facilities as applicable.

GC 8.7 Risk of Loss: Prior to the completion of the project by the Contractor and the acceptance thereof by the County, risk of loss for the work shall remain at the risk of the Contractor, and said Contractor shall be required to repair, replace, renew, and make good at his own expense all damages caused by force or violence of the elements or any cause whatsoever, provided, however, that in such cases, the Contractor shall be entitled to a reasonable extension of time within which to complete said work unless the delay is due to the negligence, fault, or omission of the Contractor.

GC 8.8 Contractor's Right to Terminate Contract: If the work is stopped for a period of 90 calendar days by order of any court or public authority other than the County, through no act or fault of the Contractor or any of its employees, the Contractor may, upon providing 30 calendar days notice to the County and Engineer, terminate the contract and recover from the County payment for all work executed and any expense sustained plus a reasonable profit.

GC 8.9 Removal of Equipment: In the case of termination of this contract before completion from any cause except that stated in paragraph 8.8, Contractor's Right to Terminate Contract, the Contractor, if notified to do so by the County, shall promptly remove any part or all of his equipment and supplies at the expense of the Contractor.

ARTICLE GC 9 – AUTHORITY AND DUTIES OF THE ENGINEER

GC 9.1 Status of the Engineer: The Contractor's work shall at all times be subject to the review of the Engineer or his authorized designees. The Engineer shall decide any and all questions which may arise as to the quality and acceptability of materials furnished, work performed, rate of progress of work, areas of work, maintenance of schedules, interpretation of drawings and specifications, and all questions as to the acceptable performance of the contract by the Contractor. In case of differences between the drawings and specifications, the Engineer shall make a determination whether the specifications or drawings represent the intent of the contract, and such determination shall be communicated to the Contractor in writing. The Contractor shall immediately report verbally and provide written notice within 24 hours of such cases to the Engineer for decision. The Engineer's decision shall be made within a reasonable time and shall be final except in cases where time and/or financial considerations are involved.

GC 9.2 Inspection and Examination of the Work: The Engineer and his authorized designees shall have free access to the work of the Contractor at any time for purposes of inspection, and shall be reasonably assisted by the Contractor in conducting such inspections of the work performed and the nature of same. Such assistance of the Contractor shall, if necessary, include the uncovering, testing, or removal of portions of finished work.

Duly authorized inspectors may be assigned to the project or any part thereof at any time. The presence or absence of an inspector does not lessen the responsibility of the Contractor to perform under these contract documents. In case of dispute between the Contractor and an inspector as to materials furnished or the manner and method of performing the work, the inspector has authority to reject materials or work, and to suspend work until the issue can be referred to and decided by the Engineer. An inspector is not authorized to revoke, alter, enlarge, relax, release, or amend any of the

specifications or requirements, nor to issue any instructions on nor to approve or accept any portion of the work, materials, or equipment, nor are any of his actions, authorized or unauthorized, to be so construed.

All materials shall be subject to inspection, examination, and test by the Engineer at any time during manufacture and at all places where such manufacture is being carried on. The Engineer may reject defective materials during manufacture or before they have been incorporated into the work. If the Contractor fails to replace defective work or rejected materials, the County may replace such materials or correct such defective work and charge the cost thereof to the Contractor, or may terminate the contract pursuant to paragraph GC 7.7, Termination of the Contract. Since no inspection either final or interim can be complete within itself, no final inspection, acceptance of work, materials or equipment, or final or interim acceptance of same by the County or Engineer or certificate of Engineer shall relieve the obligation of the Contractor to the County to do the work in a good, workmanlike manner, to furnish proper specified equipment and materials, and to perform properly all terms and any obligations of the contract documents.

GC 9.3 Mediation: Any controversy or claim arising out of or relating to this contract, or the breach thereof, shall be addressed through mediation prior to the commencement of any legal proceedings. The parties shall equally share the cost of a mutually acceptable mediator. The mediation sessions shall be held in Sarasota County, Florida.

ARTICLE GC 10 – WORK BY OTHERS

The County may let other contracts in connection with the project. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and execution of their work and shall promptly coordinate this work with that of the contractors.

ARTICLE GC 11 – INSURANCE REQUIREMENTS

Before performing any work on this project, the Contractor shall furnish certificates of insurance to Sarasota County Risk Management as specified in the Construction Contract, Section V, Insurance. The appropriate insurance shall continue in force throughout the duration of any and all work performed on this project and shall include a 30 calendar day notice of cancellation or non-renewal.

ARTICLE GC 12 – CHANGES

GC 12.1 Compliance with Specifications and Drawings: All specifications, drawings, and terms of the contract shall be strictly complied with by the Contractor except as specifically provided in these contract documents.

GC 12.2 Changes in the Work: Without invalidating the contract, the County may order extra work or make changes by altering, adding to, or deducting from the project, the contract sum being adjusted accordingly. All such work shall be performed under the conditions of the original contract except that any claim for extensions of time caused thereby shall be determined at the time of ordering such changes. Interim Field Change Agreements (IFCAs) shall be reviewed by the Engineer and authorized by the Administrative Agent or his designee. If the IFCA exceeds the 5% contingency amount, an

amendment to the contract must be executed and signed by the Contractor and the Sarasota County Board of County Commissioners.

In giving instructions, the Engineer shall have the authority to make minor changes in the project, provided the change(s) does not involve additional cost and is not inconsistent with the purpose of the project. Otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless pursuant to a written order by the Engineer, and no claim for an addition to the contract sum shall be valid unless so ordered. The value of any such extra work or change shall be determined in one or more of the following ways:

- a. by contract unit price,
- b. by an agreed lump sum price,
- c. in the event that the contract unit prices are not available and a lump sum price is not agreed upon, then the value of the extra work shall be determined by the actual cost of:
 - 1) labor, including foremen,
 - 2) materials entering permanently into the work,
 - 3) ownership or rental cost of construction plant and equipment during the time of use on the extra work,
 - 4) power and consumable supplies for the operation of power equipment, and
 - 5) insurance, social security, retirement, and unemployment contributions.

As a result of these requirements, a change order in the form of an IFCA shall be prepared to be approved by the Engineer. This value of the extra work or change shall be determined at the time that the IFCA is authorized and agreed upon. In the event that the IFCA can be valued by a contract unit price, that contract unit price shall be the value of such extra work whether representing a deletion or addition, and method b. or c. shall be employed only if there is not an applicable contract unit price. To the cost under c., as established in the contractor's labor and equipment rates, there shall be added a fixed fee to be agreed upon, but not to exceed 15% of the actual cost of the work. The fee shall be compensation to cover the cost of supervision, overhead, bond, profit, and any other general expenses.

It is the Contractor's responsibility to provide notice to its surety of any changes affecting the general scope of the project or change in the contract price, and to ensure that the amount of the applicable bonds shall be adjusted accordingly. The Contractor shall furnish proof of such adjustment to the County within 15 calendar days after the issuance of the IFCA.

The contract may only be amended in writing and signed by all parties. The parties covenant and agree that each is duly authorized to enter into and perform this contract and those executing this contract have all requisite power and authority to bind the parties.

ARTICLE GC 13 – PAYMENTS TO THE CONTRACTOR

GC 13.1 Contractor's Warranty of Title: The Contractor warrants and guarantees that title to all work, materials, and equipment covered by any application for payment, whether incorporated in the project or not, will pass to the County at the time of payment,

free and clear of all liens, claims, security interests, and encumbrances (hereinafter in these General Conditions referred to as "liens").

The Contractor shall furnish an affidavit stating that all laborers, material suppliers, and subcontractors have been paid on the project for work covered by the application for payment, and shall obtain a partial or complete release of lien, as necessary, properly executed by the material suppliers, laborers, and subcontractors on the project for the work covered by the application for payment, sufficient to secure the County from any claim whatsoever arising out of the aforesaid work.

GC 13.2 Progress Payments: Progress payments will be made once a month as work progresses. Said payments will be based upon estimates prepared by the Contractor and approved by the Engineer for the value of the work performed and materials delivered. The monthly pay applications shall be submitted to the Owner on the day of the month agreed to at the preconstruction conference. The estimates shall be submitted with all required documentation specified in the contract documents. The pay application shall be prepared by the Contractor on County-prescribed forms on their web-based Primavera program. The Contractor shall coordinate with the County's Primavera team and train with them on the use of the program.

The County shall pay the Contractor through payment issued by the Clerk of Courts in accordance with the Florida Prompt Payment Act, Florida Statutes, Section 218.70, upon receipt of the invoice approved by the Engineer, and with written approval by the County Administrative Agent or his assigned designee indicating that the services have been rendered in conformity with this agreement. The Contractor shall submit an invoice for payment on a monthly basis for those specific services as described in the bid form that were completed during the invoicing period. From the total of the amounts ascertained as payable, an amount, as indicated in the Retainage Table Guidelines, shown below, will be deducted and retained by the County until completion of the entire contract in an acceptable manner. The balance less all previous payments shall be certified for payment.

Retainage Table Guidelines						
Value of Contract	% of Contract Amt Earned	% of Time Used				Total Retainage at Substantial Completion*
		0 to < 25 % Retained	25 to < 50 % Retained	50 to < 75 % Retained	75 to 100** % Retained	
Less than \$1M	=/> % Time	10%	10%	10%	10%	10.00%
	< 15% behind	10%	10%	10%	10%	
	15% or > behind	10%	10%	10%	10%	
>\$1M to <\$5M	=/> % Time	5%	5%	5%	5%	5.00%
	< 15% behind	7%	7%	7%	7%	
	15% or > behind	10%	10%	10%	10%	
>\$5M	=/> % Time	5%	5%	0%	0%	2.50%
	< 15% behind	5%	5%	5%	5%	
	15% or > behind	10%	10%	10%	10%	
* Assuming everything is on schedule						
** Additional retainage may be withheld if there are problems observed with the work or schedule. The cost for deficient work that is not corrected and remaining work items may be estimated and an amount of two times that value may be withheld in addition to the retainage amounts shown here.						

Progress payments may be made to the extent of the delivered cost of materials to be incorporated in the work, provided the materials meet the requirements of the plan and specifications when delivered to the project or stored in an acceptable storage place. In any event, progress payment for material on hand shall not exceed the bid price and shall not be made without an invoice marked "paid" and acceptable to the Engineer.

GC 13.3 Correction of Work Before Payment: The Contractor shall promptly remove from the job site all materials rejected by the Engineer as failing to conform to the contract whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute his own work in accord with the contract without expense to the County, and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement. If the Contractor does not remove such rejected work and materials within a reasonable time, the County may remove them and may store the materials at the Contractor's expense. If the Contractor does not pay the expense of such removal within 10 calendar days thereafter, the County may, upon providing 10 calendar days notice, sell such materials at auction or private sale and shall account for the net proceeds thereof after deducting all the cost and expense that should have been borne by the Contractor.

GC 13.4 Liens: Neither the final payment nor any part of the retained percentage shall become due until the Contractor delivers to the County a complete release of all liens arising out of this contract, or receipts in full in lieu thereof, and in addition thereto, in either case, an affidavit stating that so far as the Contractor has knowledge or information, the releases and receipts include all the labor and material for which a lien could be filed. The Contractor may, if any subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the County to indemnify the County against any lien. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the County all money payments that the latter may be compelled to pay in discharging such a lien, including all costs, interest, and an attorney's reasonable fees.

GC 13.5 Final Inspection: When the Contractor has completed the project and has provided all as-built information to the Engineer in compliance with contract documents, he shall notify the Engineer in writing that the project is ready for final inspection. The Engineer will advise the Contractor as to the arrangements for final inspection and what work, if any, is required to prepare the project or a portion thereof for final inspection. When the Engineer determines the project or portion thereof is ready for final inspection, he shall perform same. Upon completion of final inspection, the Engineer will prepare a punch list of defects of either commission or omission by the Contractor, reasonably observable and determined under the conditions governing and restricting said final inspection. When all such defects have been corrected, a final re-inspection will be made. The process will be repeated until, in the opinion of the Engineer, the project has been completed in compliance with the contract documents as can best and reasonably be observed and determined under the conditions governing and restricting said final inspection. The Engineer will then, pursuant to such inspection/re-inspection, certify to the County as to completion of final inspection. It is understood that the certification covers only those items which can be physically inspected, and the Engineer's certification indicates compliance within the standards of the construction industry as interpreted by the Engineer.

Should final re-inspection find items not completed from the punch list of defects prepared as part of the final inspection, the Contractor shall be responsible for all additional engineering and inspection costs associated with correcting the items on the punch list of

defects. The additional costs shall be determined as defined in Article GC 16, Claims and Damages, paragraph 16.5, Additional Engineer Expense.

GC 13.6 Final Acceptance: When the Engineer certifies the completion of the final inspection to the County, the Contractor may make request for final payment. With the request for final payment, the Contractor shall furnish satisfactory evidence that the Contractor has fully paid all claims for labor, materials, and equipment incurred in connection with the project. The Contractor shall provide all evidence required by the contract to assure the County of complete compliance with all terms of the contract. When the County has satisfied itself as to compliance with the terms of the contract and has received certification of final inspection, it will notify the Contractor of final acceptance by the County.

GC 13.7 Final Payment: Upon final acceptance by the County, the Engineer will review the amount of final request for payment and certify approval of this amount. Upon approve of the Engineer, the County will make final payment of the contract amount, plus all approved additions and less approved deductions and previous payments made.

ARTICLE GC 14 - WARRANTY AND GUARANTEE PROVISIONS

All materials and equipment furnished by the Contractor and all construction work and workmanship involved in this contract shall be free from defects due either to faulty materials or equipment or faulty workmanship, and the same is hereby guaranteed and warranted by the Contractor for a period of one year from written notice of final acceptance by the County. All materials, equipment, and workmanship furnished, installed, and performed by the Contractor shall be warranted and guaranteed by the Contractor to the County to meet the required standards and accomplish the purposes and functions of the project as defined, detailed, and specified in these contract documents. The County shall, following discovery thereof, promptly provide notice to the Contractor of faulty materials, equipment, or workmanship within the period of the guaranty. Any part of the equipment, materials, or workmanship which does not comply with the warranty and guarantee shall be promptly replaced at the Contractor's expense and without cost to the County. These warranty and guarantee provisions create no limitations on the County as to any claims or actions for breach of guaranty or of warranty that the County might have against parties other than the Contractor, and do not constitute exclusive remedies of the County against the Contractor, and do not constitute exclusive remedies of the County against the Contractor, and are not intended to and shall not limit any other rights, remedies, or causes of action which the County might exercise against the Contractor, and shall not alter or modify the application of the statute of limitations as established by the Florida State Statutes. This contract is governed by the State of Florida laws.

In addition to Article GC 8, Responsibilities of the Contractor, the Contractor is responsible to the County for all costs incurred with respect to all warranty items under this contract including all engineering expenses, such as expense for repetitive trips by the Engineer and/or County required for start up and warranty work. Such engineering expense shall be considered to be equal to the job payroll of the County and/or the Engineer plus 150% thereof for overhead plus on-the-job mileage.

ARTICLE GC 15 – EXISTING UNDERGROUND UTILITIES

Representation as to the location of existing underground utilities has been provided by various utility owners. The locations or elevations of existing utilities are not represented to be exact and are shown for the convenience of the Contractor. The Contractor shall contact the utility owner concerned for any available additional information and coordinated his construction activities accordingly, well in advance of construction. Any cost incurred for the protection of and/or damages to existing underground utilities will be considered as part of the overall contract price and no additional compensation will be paid to the Contractor. If, in the Engineer's judgment, it is impossible to construct a given improvement in the location shown on the drawings due to an existing underground utility or utilities, either the utility owner will relocate the existing underground utility or an appropriate change order/IFCA will be executed for the relocation of the existing utilities by the Contractor.

To comply with Florida Statutes, Section 553.851, to reduce the risk of interrupting the flow of existing underground utility services, all excavation contractors are required to call Sunshine State One-Call 1-800-432-4770 to obtain information on the possible location of underground utilities in the area of the proposed excavation. This includes all operations such as demolition, grading, ditching, drilling, boring, cable plowing, and other such activities. Excavators must notify the utilities a minimum of 48 hours and maximum of five days, excluding Saturdays, Sundays, and legal holidays, prior to excavating.

After all locates are completed by the utilities and 72 hours prior to progression of work, the Contractor shall verify all locates and additional information as submitted by the utilities. If the Contractor verifies that conflicts exist, the Contractor shall immediately verbally report to the Engineer and provide written notice within 24 hours. If a relocation and/or adjustment is required to the utility, the Contractor shall receive only time for the delay and will not receive monetary compensation for the delay.

ARTICLE GC 16 – CLAIMS AND DAMAGES

GC 16.1 Requirement for Notice: Any requirement of the contract documents, notice, or direction by the Engineer shall be a condition precedent to be complied with by the Contractor before any claim for extra compensation can be made (see Article GC 1, Definitions and Terms, paragraph Notice or Claim).

GC 16.2 Claims for Extra Cost: If the Contractor claims that any instructions, in writing, drawings, or otherwise, involve extra cost under this contract, the Contractor shall provide notice to the Engineer on an IFCA form to be furnished by the Engineer within five calendar days after the receipt of such instructions, and before proceeding to execute the work, except in an emergency endangering life or property. A decision by the Engineer will be made as specified in Article GC 9, Authority and Duties of the Engineer. If this decision requires a change order, the procedure shall be as provided for in Article GC 12, Changes. No claim shall be valid unless so made.

GC 16.3 Claims for Damages: Any claim for damages by the Contractor against the County arising under this contract shall be made in writing to the County within five calendar days of the first observance of such damages, except as expressly stipulated otherwise in the case of faulty work or materials, and shall be adjusted by agreement validated by change order. Any claim not reported within five calendar days shall not be considered valid.

GC 16.4 Liquidated Damages: For each calendar day any work remains uncompleted after the contract time specified, the sum of money per calendar day specified as liquidated damages in the contract and written in the contract will be deducted from any money due the Contractor. The Contractor will not pay liquidated damages for days in which an extension of time was granted pursuant to the terms and conditions of the contract. Allowing the Contractor to finish any work after the contract time or the contract time extension does not waive the County's rights under the contract. The County may waive such portions of the liquidated damages as may accrue after the work is in condition for safe and convenient use by the public.

GC 16.5 Additional Engineer Expense: Should the Contractor fail to complete the project during the specified number of calendar days, it is agreed that for each day of overrun until final completion, all costs of engineering supervision and inspection furnished by the County and/or Engineer shall be at the costs of the Contractor and/or his surety. Such engineering costs shall be considered to be equal to the job payroll of the County and/or the Engineer plus 150% thereof for overhead plus on-the-job mileage. Such costs will be deducted from monies due the Contractor on his next periodical estimate for progress payment form. The amount of such expenses shall be construed to be in addition to other damages for delays that might be assessed by the County.

ARTICLE GC 17 – INTERPRETATION OF CONTRACT

The contract documents comprise the entire agreement between County and Contractor concerning the project. The contract documents are complementary – what is called for by one is as binding as if called for by all. The contract documents will be construed in accordance with the laws of the State of Florida. In general, figures shown on drawings shall be followed in preference to scale measurements. Large-scale drawings shall, in general, govern small-scale drawings. The Contractor shall compare all drawings and verify the figures before laying out the work, and shall be responsible for any errors which might have been avoided thereby. When dimensions on the drawings are affected by the type of equipment selected by the Contractor, the Contractor shall adjust such dimensions as conditions may require at no expense to the Owner.

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 shall 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, law, or regulation in effect at the time of opening of bids, or on the effective date of the agreement if there were no bids, 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 the County, Contractor, Engineer, or any of their consultants, agents, or employees from those set forth in the contract documents, nor shall it be effective to assign to Engineer, agents, or employees, any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibility.

If, during the performance of the work, the Contractor finds a conflict, error, or discrepancy in the contract documents, the Contractor shall immediately verbally report to the Engineer and provide written notice along with a fully-detailed explanation within 24 hours. The Contractor shall obtain a written interpretation or clarification from the Engineer prior to proceeding with the said work.

ARTICLE GC 18 – INDEMNIFICATION

The Contractor shall indemnify and hold harmless the County and its officers and employees from liabilities, damages, losses, and costs, including but not limited to an attorney's reasonable fees, to the extent caused by the negligence, recklessness, or intentional wrongful conduct of the Contractor and persons employed or utilized by the Contractor in the performance of the contract. This section of the contract will survive the completion or termination of the contract.

ARTICLE GC 19 – ROYALTIES AND PATENTS

See Section 2, Instructions, Terms, and Conditions, paragraph 16, Royalties and Patents.

ARTICLE GC 20 – CLEANUP AND DISPOSAL

The Contractor shall keep the construction site free of rubbish and waste materials and shall restore to their original condition those portions of the site disrupted by the construction. Cleanup and restoration shall be accomplished on a continuing basis throughout the contract period and in such a manner as to maintain a minimum of nuisance and interference to the County, residents, and workers at or adjacent to the project site. The Contractor shall also remove all temporary structures and equipment used in his operations when no longer needed. It is the intent of this specification that any areas altered, damaged, or degraded by the work of the Contractor or subcontractor shall be restored to its original condition or better by the Contractor.

All materials removed from the project site for disposal as called for in the plans and specifications shall be done in a legal manner in conformance with all local, state, and federal guidelines.

ARTICLE GC 21 – SANITARY REGULATIONS

Adequate sanitary facilities for the use of persons employed on the project, properly secluded from public observations, shall be provided and maintained by the Contractor in such a manner and at such points as shall be approved by the Engineer. These facilities shall be maintained at all times without nuisance and their use shall be strictly enforced. Upon completion of the project, they shall be removed from the project site, leaving the site clean and free from nuisance.

ARTICLE GC 22 – INSPECTION AND TESTING OF MATERIALS AND EQUIPMENT

The Contractor shall pay for all factory tests required on equipment and materials. Copies of tests or certifications on pipe, brick, or other materials made at the factory shall be furnished in triplicate to the Engineer. Test reports on equipment shall be reviewed by the Engineer before the equipment covered by the tests is delivered to the project site. Test requirements are set out in the detailed specifications for the particular material.

ARTICLE GC 23 – SAFETY AND HEALTH REGULATIONS

The Contractor shall comply with and ensure that the Contractor's personnel and subcontracted personnel comply with all current applicable local, state, and federal policies, regulations, and standards relating to safety and health, including the Occupational Safety and Health Administration (OSHA) for General Industry (29 CFR 1910) and for the Construction Industry (29 CFR 1926). The Contractor shall follow the Federal Environmental Protection Agency standards and the Florida Trench and Safety Act under Florida Statutes, Section 553.60-553.64. The Contractor shall observe, follow, and comply with all OSHA permitting instruction and regulations for Confined Space Entry (29 CFR 1910.146) as related to the project. These forms can be obtained electronically from OSHA's website www.oshacfr.com or www.osha.gov.

ARTICLE GC 24 – AS-BUILT PLAN SUBMITTALS

During the progress of the project, the Contractor shall maintain accurate daily records of the location, length, and elevation of all underground valves, fittings, piping, and of all architectural, electrical, mechanical, or structural features of the project. All locations and dimensions shall be referenced by two-point swing-tie method taken from permanent and readily identifiable reference points such as building walls, columns, etc. All depths or elevations are to be taken from finished floors or grades or from a permanent benchmark shown on the project plans.

The Contractor shall keep a set of as-built plans at the job site. As-built plans shall be submitted for work completed at the end of each pay period. The pay request will not be processed until the surveyor's as-built plans are reviewed and determined to be adequate by the Engineer. The Contractor shall be held responsible for the accuracy of such data, and shall bear any costs incurred in finding utilities as a result of incorrect data furnished by the Contractor. The reviewing of as-built plans by the Engineer does not relieve the Contractor of providing necessary information on work completed for the Engineer's certification.

ARTICLE GC 25 – SALVAGED EQUIPMENT AND MATERIALS

Unless otherwise directed by the Engineer, salvaged materials, equipment, or supplies are the property of the County and shall be cleaned and stored as directed by the Engineer.

ARTICLE GC 26 – NOTIFICATION

The Contractor shall notify the County utility companies and the Engineer 48 hours prior to any work at the site.

ARTICLE GC 27 – STORAGE OF MATERIALS

Suitable storage facilities shall be provided by the Contractor at his own expense. All materials, supplies, and equipment intended for use in the project shall be stored by the Contractor to prevent damage from exposure, mixture with foreign substances, vandalism, or theft. The Engineer will refuse to accept or sample for testing any materials, supplies, or equipment that have been improperly stored. Materials found unfit for use shall not be incorporated in the project and shall immediately be removed from the construction or storage site.

ARTICLE GC 28 – TESTING

All testing shall be at the expense of the Contractor.

**ARTICLE GC 29 – MANUFACTURER’S INSTRUCTION, SERVICE, AND PARTS
MANUALS**

Before the final payment is made, the Contractor shall furnish to the Engineer, for the County’s use, complete manufacturer’s instruction, service, and parts manuals on each piece of equipment furnished under this contract. This includes descriptive literature, installation and operating instructions, maintenance recommendations, lubrication requirements, parts lists, and other pertinent data. All data shall be bound in a single hardback three-ring loose-leaf binder. All individual sheets not bound in groups shall be reinforced at the ring holes with gummed tape reinforcements.

ARTICLE GC 30 – MANUFACTURER’S SUPERVISION

The Contractor shall provide the service of a qualified representative of the manufacturer as required to supervise the installation, testing, adjusting, start-up, and initial operation of each item of equipment furnished under this contract. This representative shall also instruct the County’s personnel as to the proper operation and maintenance of the equipment.

ARTICLE GC 31 – CERTIFIED CHEMICALS

The Contractor shall use only USDA-, EPA-, or FDA-certified chemicals during the performance of all work under this contract. All chemicals used during the project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant, or other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residue shall be in strict conformance with manufacturer’s instructions and all local, state, and federal regulations. The Contractor shall submit three copies of all chemical Material Safety Data (MSD) information forms to the Engineer; one set of such forms shall be on site at all times and available for inspection.

ARTICLE GC 32 – AUDIO-VISUAL PRECONSTRUCTION RECORD

Prior to commencing work, the Contractor shall have a continuous color audio-video tape recording taken along the length of the proposed pipeline through improved areas to serve as a record of preconstruction conditions. No construction shall begin prior to review and acceptance of the tapes covering the construction area by the Engineer. The Engineer shall have the authority to reject all or any portion of the videotape not conforming to the specifications and order that it be redone at no additional charge. The Contractor shall reschedule unacceptable coverage within five days after being notified. The Engineer will designate those areas, if any, to be omitted from or added to the audio-video coverage. Tape recordings shall not be more than 90 days prior to construction in any area. All tapes and written records shall become property of the Owner. Videotapes will be required as specified in the Technical Provisions.

ARTICLE GC 33 – SUBSTITUTION OF EQUIPMENT AND/OR MATERIAL

After the contract is executed, the Contractor’s request to substitute equipment and/or material of makes and/or types for those named in the contract will only be considered if the equipment and/or material proposed for substitution is equal or superior in construction and/or efficiency to that named in the contract. It will be assumed that the

cost to the Contractor for the equipment and/or material proposed to be substituted is less than the cost for the equipment and/or material named in the contract and, if the substitution is approved, the contract price shall be reduced in a corresponding amount. No request will be considered unless submitted in writing to the County; County approval shall also be in writing. To receive consideration, request for substitution shall be accompanied by documentary proof of the actual difference in the cost to the Contractor, consisting of certified copies of equipment and/or materials, supplier's and manufacturer's quotations to the Contractor covering the original and the proposed substitution equipment and/or materials, or other proof satisfactory to the County. It is the intention that the County shall receive the full benefit of the savings in cost involved in any substitution.

The burden of proof that the equipment and/or material offered for substitution is equal or superior in construction and/or efficiency to that named in the contract shall rest on the Contractor, and the proof shall be submitted to the Engineer who will make recommendations to the County and, unless the proof is satisfactory to the County, the substitution shall not be approved. Requests for substitution solely on the grounds that better delivery can be obtained on the equipment and/or material proposed for substitution shall not be approved for it will be considered that the Contractor, in his bid, has named equipment and/or material which will permit completion of the project within the contract time. Request for substitution of equipment and/or material which the Contractor cannot prove to the satisfaction of the County that it is equal or superior in construction and/or efficiency to that named in the contract will not be approved.

ARTICLE GC 34 – CONTRACTOR'S REPRESENTATIVE, COMMUNICATIONS, AND IDENTIFICATION

The timely performance and completion of the work are vitally important to the interests of the County. The Contractor's representative named in the construction contract shall be responsible for the timely performance and completion of the work, and shall personally oversee and direct the work on a daily basis. Upon written notification to the Engineer and the County, the Contractor may assign a designee to provide daily supervision of and full responsibility for the work. The Contractor shall assign other supervisory personnel as necessary to assure faithful prosecution and timely delivery of services pursuant to the requirements of this contract. The Contractor shall notify the County in writing of the Contractor's representative or designee for the contract at the preconstruction conference. The notice shall stipulate the Contractor representative or name his/her designee clearly stating the responsibilities and authority of such person to fully represent the Contractor in making field decisions and other duties. The Contractor's representative shall be the point of contact for the Engineer and the County. The County and the Engineer will not entertain or accept information, correspondence, or notices pertaining to this contract unless submitted by the Contractor's representative as listed in the construction contract or his/her authorized designee.

The Contractor's representative or named designee shall not be changed except with the written consent of the County and the Engineer, unless this person ceases to be employed by the Contractor. The Contractor shall provide notice for such a change with two working days.

The Contractor shall require that all supervisory personnel have some type of visible personnel identification on the individual employee. The Contractor shall submit to the County each employee's name, position, and title.

SECTION 9

SUPPLEMENTAL GENERAL CONDITIONS

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SUPPLEMENTAL GENERAL CONDITIONS

PART 1 - GENERAL

1.01 CONTRACT DOCUMENTS

Should a conflict exist within the Contract Documents, the order of authority is as follows with IFCA's as highest authority:

1. Interim Field Change Agreements (IFCA)
2. Addenda
3. Specifications*
4. Plans*

These Supplemental General Conditions compliment and enhance the General Conditions and in case of conflict, the Supplemental General Conditions take precedence. Where a conflict may exist between the EPA Supplemental General Conditions, the General Conditions, the FDEP Supplementary Conditions, and the Supplemental General Conditions, the more stringent division will take precedence.

* If a conflict exists between Sarasota County Public Works' *Special Provisions* and Sarasota County Capital Management Services' *General Conditions*, the more stringent division will take precedence.

1.02 INSURANCE/INDEMNIFICATION

Before any work at the site is started, Contractor shall deliver to Owner, with a copy to Engineer, Certificates of Insurance which contractor is requested to purchase and maintain in accordance with the requirements of the General Conditions.

1.03 CLAIM PERIOD

No claim of the Contractor shall be allowed unless 1) Contractor has given written notice within 5 days of the incident, and 2) within fifteen days after Contractor has given the written notice, Contractor submits to Owner a detailed claim setting forth Contractor's right to recover any additional costs and lost time as provided in the General Conditions. No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this Contract.

1.04 REGULAR WORKING HOURS

- A. Regular working hours are defined as up to ten hours per day, Monday through Friday, beginning no earlier than 7:00 A.M. and ending no later than 7:00 P.M., excluding holidays. Whenever the Contractor is performing any part of the work, with the exception of equipment maintenance and cleanup, Owner's representative and/or inspection will be required. Requests to work other than regular working hours must be submitted to the Owner's designated representative, at least 48 hours prior to any proposed weekend work or scheduled extended workweeks, to give the Owner ample time to arrange for representation and/or inspection during those periods.

Periodic unscheduled overtime on weekdays will be permitted provided that two hours

notice is provided to the Owner's designated representative. Maintenance and cleanup may be performed during hours other than regular working hours.

- B. Contractor shall reimburse the Owner for additional engineering and/or inspection costs incurred as a result of overtime work in excess of the regular working hours. At Owner's option, overtime costs may either be deducted from the Contractor's monthly payment request or deducted from the Contractor's retention prior to release of final payment. Engineering/Inspection costs shall be calculated at the following rates:

Field Representative	\$50/hour
Construction Manager	\$70/hour
Engineer	\$75-85/hour

1.05 SUBSTITUTIONS

Contractor shall reimburse Owner for the charges of Engineer and 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.

Any material or article of which the specifications allow for an or equal which will perform the duties imposed by the general material or article so proposed is of equal substance, form and function in the opinion of the Engineer. Such substitutions shall not be purchased or installed without written approval of the Engineer. Time extensions will not be granted for any delays encountered in the procurement, shipment or installation of substitutions.

1.06 SUBCONTRACTORS

A subcontractor or other person or organization identified in the Contractor's bid and not objected to in writing by Owner or Engineer prior to the execution of the Agreement will be deemed acceptable to Owner and Engineer. All other sub-contractors shall be deemed to have been accepted if Owner or Engineer deliver no written objection thereto within 45 days after Contractor's written identification of such subcontractor. However, if Owner or Engineer has reasonable objection to any subcontractor, wherever identified in the Bid or subsequently, Contractor shall submit an acceptable substitute without entitlement to any change in Contract Price. After acceptance by the Owner or Engineer of any particular subcontractor, the Contractor shall make no substitution without written approval of the Owner, which may be granted or withheld at Owner's sole discretion.

No acceptance by Owner or Engineer of any such subcontractor, supplier or other person or organization shall constitute a waiver of any right of Owner or Engineer to reject defective work.

1.07 ENGINEER'S RESIDENT PROJECT REPRESENTATIVE

Engineer will furnish a Resident Project Representative to assist Engineer in observing the performance of the work. The duties, responsibilities and limitations of authority of this Resident Project Representative and assistance are set forth at the end of these

1.08 CHANGES IN WORK

At any time Engineer may request a quotation from Contractor for a proposed change in the work. Within 10 calendar days after receipt of a request for a quotation for a proposed change, Contractor shall proceed to submit a written and detailed proposal for an increase or decrease in the Contract Price or Contract Time for the proposed change. Engineer shall have 10 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. Itemized estimates shall be in sufficient detail reasonably to permit an analysis by 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. Any amount claimed for subcontracts shall be similarly supported. Itemized scheduled adjustments shall be in sufficient detail to permit an analysis of impact. 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 not be considered as basis for a time extension.

1.09 DEFECTIVE WORK

The Contractor shall not be entitled to an extension of the Contract Time for correcting or removing defective work.

1.10 CORRECTIVE WORK

- A. If within one year after the date of substantial completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any special guarantee required by the contract documents or by any specific provision of 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: (i) correct such defective work, or, if it has been rejected by Owner, remove it from the site and replace it with work that is not defective, and (ii) satisfactorily correct or remove and replace any damage to other work or the work of others resulting therefrom.

If Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risks of loss or damage, Owner may have the defective work corrected or the rejected work removed and replaced, and all claims, costs, losses and damages caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

- B. Where defective work (and damage to other work resulting therefrom) has been corrected, removed or replaced, the correction period hereunder with respect to such work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

1.11 MONTHLY STATUS REPORTS

Each monthly application for progress payment shall incorporate the corresponding "Monthly Progress Status Report" prepared per the requirements of the contract documents. Payment requirements will not be processed unless the status report is provided.

1.12 STORED EQUIPMENT AND MATERIALS

The Contractor shall furnish evidence that payment received on the basis of materials and equipment, not incorporated and suitably stored, has in fact been paid to the respective supplier(s) within sixty (60) days of the Application of Payment on which the material/equipment first appeared. Failure to procure said evidence of payment shall result in the withdrawal of previous approval(s) and removal of the related equipment and materials from the Application of Payment.

The Contractor is also responsible to properly unload, transport, store, and protect all materials, equipment and supplies furnished by the Owner to be installed by the Contractor. The Contractor shall purchase and secure an insurance policy for all items furnished by the Owner, and shall replace all items damaged, lost, or stolen at no additional expense to the Owner.

1.13 SUBCONTRACTOR OBLIGATIONS

Notwithstanding any other provision of these Contract Documents to the contrary, Owner and Engineer are under no duty or obligation whatsoever to any Subcontractor, laborer or other party to ensure that payments due and owing by the Contractor to any of them will be made. Such parties shall rely only on the Contractor's surety bonds for remedy of nonpayment by the Contractor.

1.14 SUBSTANTIAL COMPLETION

The Work will be considered substantially complete when each of the following portions of the Work is completed to the satisfaction of the Owner:

- All components of the Work have been installed, tested and approved.
- All training and instructions have been provided to the designated Owner's representative(s) in accordance with the Contract Documents.
- Record drawings and other "as-built" information have been provided in accordance with the Contract Documents.
- 90% of all private property has been restored.
- 90% of all restoration in the right-of-way is completed.

The one-year warranty period shall commence upon the date of substantial completion for the entire project unless otherwise authorized by the Owner.

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

1.16 OWNER OCCUPANCY

It is assumed that portions of the work will be completed prior to completion of the entire work. The Owner, at its sole discretion, may begin use of the system. However, the one-year guaranty period shall commence on the date of substantial completion for the entire project issued by the Engineer unless otherwise agreed to by the Owner.

1.17 WORK IN 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 Proposal. If at any time such personnel appears to the Engineer 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 Engineer to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the work and rate of progress required.

1.18 WORK LOCATIONS

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

1.19 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 vehicles, pedestrians and workmen. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, the Engineer may require special construction procedures such as limiting the length of open trench and prohibiting stacking excavated material in the street. Access to driveways must be maintained as soon as practical by the Contractor.

- B. Trenches shall not remain open overnight.
- C. 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.
- D. The maximum length of open trench shall be 40 feet at any one time.

1.20 UTILITY SYSTEMS AND FACILITIES

- A. The Contractor shall minimize the interruption of water, telephone, power, cable TV, sewer, gas or other related utility services and disturb the normal functioning of the system as little as possible. He shall notify the appropriate agency well in advance of any requirements for dewatering, isolating, or relocating a section of a utility, so that necessary arrangements may be made with the appropriate agency.
- 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. All costs or charges resulting from damage to any utility or structure shall be paid by the Contractor at no additional cost to the Owner.
- 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 no separate payment will be made for this work.
- D. If, in the opinion of the Engineer, permanent relocation of a utility owned by the Owner 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. If relocation of a privately owned utility is required, the Owner will notify the utility to perform the work as expeditiously as possible. The Contractor shall fully cooperate with the Owner and utility and shall have no claim for delay due to such relocation. The Contractor shall notify all utility companies in writing at least 48 hours (excluding Saturdays, Sundays, and legal holidays) before excavating near their utilities.
- E. The Contractor shall be responsible to maintain water, telephone, power, cable TV, sewer, gas and other related utilities throughout construction at no additional cost to the Owner.
- F. The Contractor shall fully cooperate with all private and public utilities during the installation of new facilities, or relocation of existing facilities. The Contractor

shall coordinate his work accordingly and shall have no claim except for time extension for delays associated with the proposed utility improvements.

- G. The Contractor shall be fully responsible for providing all temporary piping, electrical hook-ups, lighting, temporary structures, or whatever is required to maintain the existing utility systems. 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 create unacceptable interruptions.

1.21 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 at the direction of the Engineer. Test pits shall be backfilled immediately after their purpose has been satisfied and the surface restored and maintained in a manner satisfactory to the Engineer. No separate payment will be made.

1.22 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 similar or equal to that existing before the damage was done, or he shall make good the damage in another manner acceptable to the Engineer.
- B. All sidewalks, streets, and driveways 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.
- C. Along the location of the work, all walks, bushes, trees, shrubbery, irrigation systems and other physical features shall be protected and restored to their original or better condition by use of similar or comparable materials. Fences and other features removed by the Contractor shall be replaced in the location indicated by the Engineer as soon as conditions permit. All grass areas, which have been damaged by the Contractor, shall be regraded, and sodded or seeded and mulched as directed by the Engineer.
- D. Trees close to the work 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 of the Engineer. 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 other items in the Proposal.

1.23 MAINTENANCE OF FLOW

- A. The Contractor shall, at his own costs, provide for the flow of sewers, drains, and water courses interrupted during the progress of the work, and shall immediately remove all offensive matter. The entire procedure of maintaining existing flow shall be fully discussed with the Engineer well in advance of the interruption of any flow. The Contractor shall prepare a written plan on maintenance of flow as requested by the Engineer.

1.24 CLEANING-UP

1. Sarasota County is subject to severe weather conditions such as hurricanes, tropical storms, tornadoes, strong winds, heavy rains, lightning, and the like. It is the Contractor's responsibility at all times to: (1) monitor current and developing weather conditions; and (2) to develop and implement appropriate contingency plans to ensure proper storage of materials, supplies, and equipment, and to secure the Project site so as to not endanger public health and safety, or public and private property.
2. The Contractor shall be solely 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:
 - a. Persons on and adjacent to the Site.
 - b. The Work, including materials, supplies, and equipment incorporated therein.
 - c. Public and private property adjacent to the Site.

1.25 COOPERATION WITH THIS CONTRACT

- A. All firms or persons authorized to perform any work under this contract shall cooperate with the Contractor and his sub-contractors 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 or directed by the Engineer.
- C. Contractor shall coordinate his work with other contractors that may be working in the project vicinity performing other work. The Contractor shall make the necessary connections and adjustments as required to complete the work.

1.26 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 Engineer. Should any 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 Engineer. 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 guarantee period described in the Contract.
- C. 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 Owner.

1.27 THE FLORIDA TRENCH SAFETY ACT

The Contractor shall adhere to the requirements of the Florida Trench Safety Act, and O.S.H.A. Excavation Safety Standards 29 CFRs 1926.650 Subpart P.

1.28 PUBLIC NOTIFICATION

Before construction commences within each street, the Contractor shall notify each property owner of the pending construction one-week in advance by attaching a door hanger to each residence and business. The door hanger format shall be developed by the Engineer for use by the Contractor. The Contractor is also responsible for all other notices to the public during construction including boil water notices, service repairs, etc.

1.29 EMERGENCY VEHICLE NOTIFICATION

The Contractor shall notify the police, fire department and ambulance service of the proposed construction schedule one week in advance of the proposed work.

1.30 MINIMUM SHEETING AND SHORING REQUIREMENTS

Contractor shall provide sheeting and shoring to protect workman, structures, utilities and other facilities as necessary. No separate payment shall be made for this item.

1.31 SCHEDULES

The Contractor shall submit a CPM construction schedule using Primavera compatible software to the Engineer in both electronic and hard format for all work to be accomplished under the contract along with an anticipated schedule of payments he will earn during the course of the construction. Said schedule shall be submitted to the Engineer following Contractor's receipt of Notice of Award, but prior to issuance of Notice to Proceed. The schedule format shall be submitted to the Engineer for approval.

1.32 SUBMITTAL DATA

The Contractor shall be required to submit a minimum of five (5) copies of pertinent

information, shop drawings and literature on all materials and items of equipment to be installed in conjunction with these specifications. Before ordering or installing any of the equipment or materials, the Contractor shall have one copy of submittal data on each item approved by the Engineer in writing and returned to him. The Engineer will retain three (3) copies; therefore, if the Contractor wishes to have more copies, he shall submit the additional copies.

1.33 INSPECTIONS SCHEDULED BY CONTRACTOR

The following is a list of items for which the Contractor is to give the Engineer a minimum of 48 hours notice prior to performing the work:

1. Gravity sewer and vacuum sewer construction.
2. Reinforcing steel prior to concrete placement.
3. Placement of concrete and concrete structures.
4. Paving operations.
5. Hydrostatic tests of pressure pipework.
6. Final clean up of sites.
7. Start-up.

The Contractor shall verify that the above items are ready to be inspected and/or tested prior to notifying the Engineer. Following notification, the Engineer will then make the necessary trip to witness the test or inspection. If the inspection is not ready to be made or the required testing fails to meet specifications, then the Contractor shall pay all costs associated with that inspection trip. These costs shall include time spent by the Engineer and/or inspector and the direct expenses (i.e. mileage, etc.) associated with the failing inspection. Only the test in which the system passes will be included in the general inspection of the job for the Owner.

1.34 SEQUENCE OF CONSTRUCTION

The Contractor shall submit a Construction Sequence Schedule to the Engineer for approval prior to any construction activity. The Contractor shall take into consideration the following restrictions and allowances when developing his schedule and implementing the work. These restrictions are provided to minimize inconvenience to the general public and to expedite the restoration efforts. All property owners' complaints and concerns must be addressed and resolved by the Contractor promptly to the satisfaction of the Engineer.

The Owner, through the Engineer, will notify the Contractor in writing of the observed deficiencies in which the Contractor has five (5) days to properly correct the deficiency. After this five (5) day period, the Owner may stop all work until these deficiencies are corrected and the Contractor shall have no claim for additional time or additional costs associated with the work being stopped.

1. Construction of all transmission force mains shall be concurrent with the other related construction for each street.

1.35 UPDATED SCHEDULES

The Contractor shall submit an updated schedule with each pay request for the next month's activities. Pay requests will only be processed if an updated schedule is submitted and acceptable to the Engineer.

1.36 CONSTRUCTION DOCUMENTS

The Engineer will provide the Contractor up to five sets of plans and specifications without cost to the Contractor. Additional sets may be ordered by the Contractor at the actual reproduction cost incurred by the Engineer.

1.37 PERMITS

The Contractor shall obtain the necessary permits required by Sarasota County prior to constructing the Work. The Contractor shall adhere to the permit conditions provided in the permits issued by Southwest Florida Water Management District and Florida Department of Environmental Protection. The Contractor shall post all permits in a conspicuous location.

1.38 EXCAVATED MATERIAL

All materials excavated by the Contractor and suitable for fill shall be stockpiled and used by the Contractor as fill material for this project. Excess suitable fill material not required for the project shall remain the property of the Owner and shall be transported by the Contractor within a 5 mile radius and unloaded at a location determined by the Owner at no additional cost.

All materials excavated by the Contractor and not suitable for fill, and material not required by the Owner shall be hauled and be properly disposed by the Contractor at no additional expense to the Owner.

1.39 FP&L SERVICE

The Contractor shall provide all necessary coordination with FP&L for power supply to the proposed project and shall incorporate FP&L's schedule within his construction schedule. All costs associated with temporary and permanent power shall be borne by the Contractor. The Contractor is responsible for all on-site improvements including poles, transformers, panels, conduit, power wiring, concrete and related equipment and materials necessary for a complete and fully operational system. The Contractor shall transfer service to the Owner upon the date of Substantial Completion of the project.

1.40 DUTIES, RESPONSIBILITIES AND LIMITATIONS OF AUTHORITY OF RESIDENT PROJECT REPRESENTATIVE

A. GENERAL

Resident Project Representative as Engineer's agent, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding his actions. Resident Project Representative's dealings in matters pertaining to the on-site work shall, in general, be only with Engineer and Contractor, and dealings with sub-contractors shall only be through or with the full knowledge of Contractor. Written communication with Owner will be only through or as directed by Engineer.

B. DUTIES AND RESPONSIBILITIES

Resident Project Engineer will:

1. Schedules: Review the progress schedule, schedule of shop drawing submissions and schedule of values prepared by Contractor and consult with Engineer concerning their acceptability.
2. Conferences: Attend pre-construction conferences. Arrange a schedule of progress meetings and other job conferences as required in consultation with Engineer and notify those expected to attend in advance. Attend meetings and maintain and circulate copies of minutes thereof.
3. Liaison:
 - a. Serve as Engineer's liaison with Contractor, working principally through Contractor's superintendent and assist him in understanding the intent of the Contract Documents. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-site operations.
 - b. As requested by Engineer, assist in obtaining from Owner additional details or information when required at the job site for proper execution of the work.
4. Shop Drawings and Samples:
 - a. Receive and record date of receipt of shop drawings and samples, receive samples which are furnished at the site by Contractor and notify Engineer of their availability for examination.
 - b. Advise Engineer and Contractor or his superintendent immediately of the commencement of any work requiring shop drawing or sample submission if the submission has not been approved by the Engineer.
5. Review of work, rejection of defective work, inspections and tests:
 - a. Conduct on-site observations of the work in progress to assist Engineer in determining if the work is proceeding in accordance with the Contract Documents and that completed work will conform to the Contract Documents.
 - b. Report to Engineer wherever he believes that any work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or does not meet the requirements of any inspections, tests or approval required to be made or has been damaged prior to final payment; and advise Engineer when he believes

work should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

- c. Verify that tests, equipment and systems start-ups and operating and maintenance instructions are conducted as required by the Contract Documents and in presence of the required personnel and that Contractor maintains adequate records thereof; observe, record and report to Engineer appropriate details relative to the test procedures and start-ups.
 - d. Accompany visiting inspectors representing public or other agencies having jurisdiction over the project, record the outcome of these inspections and report to Engineer.
- 6. Interpretation of Contract Documents: Transmit to Contractor Engineer's clarifications and interpretations of the Contract Documents.
 - 7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings and Specifications and report them with recommendations to Engineer.
 - 8. Records:
 - a. Maintain at the job site orderly files for correspondence, reports of job conferences, shop drawings and samples submissions, reproductions of original Contract Documents including all Addenda, change orders, field orders, additional drawings issued subsequent to the execution of the Contract, Engineer's clarifications and interpretations of the Contract Documents, progress reports, and other project related documents.

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 of manufacturers, fabricators, suppliers and distributors, daily activities, decisions, observations in general and specific observations in more detail as the case of observing test procedures. Send copies to Engineer.

- c. Record names, addresses and telephone numbers of all contractors, sub-contractors and major suppliers of materials and equipment.
- 9. Reports:
 - a. Furnish 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.
 - b. Consult with Engineer in advance of scheduling major tests, inspections or start of important phases of the work.
 - c. Report immediately to Engineer upon the occurrence of any accident.
 - 10. Payment Requisitions: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward them

with recommendations to Engineer, noting particularly their relation to the schedule of values, work completed and materials and equipment delivered at the site but not incorporated in the work.

11. Certificates, Maintenance and Operation Manuals: During the course of the work, verify that certificates, maintenance and operation manuals and other data required to be assembled and furnished by Contractor are applicable to the items actually installed; and deliver this material to Engineer for his review and forwarding to Owner prior to final acceptance of the work.
12. Completion:
 - a. Conduct final inspection in the company of Engineer, Owner and Contractor and prepare a final list of items to be completed or corrected.
 - b. Verify that all items on final list have been completed or corrected and make recommendations to Engineer concerning acceptance.

C. LIMITATIONS OF AUTHORITY

Except upon written instructions of Engineer, Resident Project Representative:

1. Shall not authorize any deviation from the Contract Documents or approve any substitute materials or equipment.
2. Shall not exceed limitations or Engineer's authority as set forth in the Contract Documents.
3. Shall not undertake any of the responsibilities of Contractor, sub-contractors or contractor's superintendent, or expedite the work.
4. Shall not 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. Shall not advise on or issue directions as to safety precautions and programs in connection with the work.
6. Shall not authorize Owner to occupy the project in whole or in part.
7. Shall not participate in specialized field or laboratory tests.

D. WEATHER CONDITIONS:

- A. Sarasota County is subject to severe weather conditions such as hurricanes, tropical storms, tornadoes, strong winds, heavy rains, lightning, and the like. It is the Contractor's responsibility at all times to: (1) monitor current and developing weather conditions; and (2) to develop and implement appropriate contingency plans to ensure proper storage of materials, supplies, and equipment, and to secure the

Project site so as to not endanger public health and safety, or public and private property.

- B. The Contractor shall be solely 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) Persons on and adjacent to the Site.
 - 2) The Work, including materials, supplies, and equipment incorporated therein.
 - 3) Public and private property adjacent to the Site.

END OF SECTION

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SECTION 10

TECHNICAL SPECIFICATIONS

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SECTION 00500

GENERAL

PART 1 – GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The Contractor performing the utility work covered by this contract shall be qualified by the County to perform utility work. The work covered by these specifications includes the furnishing of all labor, equipment, materials and performing all operations in connection with the installation of utility mains, lift stations, pump stations, and all appurtenant work, in compliance with the drawings, specifications and Contract Documents. The Contractor shall perform all operations and incidentals necessary to complete the work in a turnkey condition. The Prime Contractor may sublet a portion of the work, but shall perform with his own organization work amounting to not less than **51%** of the Total Contract Amount.

1.02 SUMMARY OF WORK

- A. Installation of a directional drill of approximately 200 feet of 14" HDPE water main under State Road 776, 12 inch PVC open cut pipe installation, a 10 inch meter assembly and valve system, a SCADA system, sidewalk, handrail replacement and complete restoration.

Note: Where applicable, actual distances are as shown on the plans.

1.03 UTILITY

- A. The Contractor shall recognize that the primary function of this project is to provide utility service to the residents of Sarasota County. The Contractor shall provide temporary utility service to any businesses or dwellings affected during the construction of this contract.

1.04 MATERIALS

- A. It is the Contractor's responsibility to inspect materials for damage or abnormalities. All materials shall be new. No used, remanufactured, damaged or rebuilt materials shall be used.

1.05 LOCATION

- A. Work covered under this project is located within Sarasota County.

1.06 SEQUENCE OF WORK

- A. The Contractor shall:
 - 1) Schedule his work as set forth in the General Conditions and as described in Section 01310.
 - 2) Construct 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.
 - 3) Construct the work in stages to provide for public convenience.
 - 4) Not close off public use of facilities until completion of one stage of construction will provide alternative usage.
 - 5) Construct the stages of the project as indicated on the drawings.

1.07 SALVAGED EQUIPMENT AND MATERIALS

- A. Salvaged materials, equipment or supplies are the property of the Sarasota County Environmental Services, Utilities and shall be delivered to Field Operations. Should the County choose to not accept these materials they shall be removed from the project site as soon as practical. The Contractor shall dispose of surplus excavated materials in accordance with state and local laws in a legal manner at no additional cost to the County. Contact Field Operations to coordinate delivery of salvage material (316-1071).

1.08 RECORD DATA

- A. The Contractor shall maintain, during the progress of the project, accurate records of the location, length and shall include elevation of all new and existing pipelines and appurtenances. A set of drawings will be provided for the Contractor to be kept at the job site for this purpose. Promptly after completion of any portion of the work provided, as paid for in this Contract, the Contractor shall deliver to the Engineer the drawings with accurate notations recorded thereon as necessary to revise the drawings for record purposes. Record drawing data shall be submitted with each pay application, said pay application shall not be accepted until record drawing is deemed up to date by the Engineer of Record and the County Project Manager. Information to be shown for utility mains shall include the location of all crosses, tees, wyes, bends, valves, curb stops, meter boxes, hydrants, stub-outs, blow-offs, air release valves, etc., by using a two (2) point swing measurement from permanent physical features that can readily be found on the drawing and in the field, in a table format. The Contractor shall furnish "as-built" top of pipe elevations and finish grade for top of trench for all utility mains at maximum intervals of one hundred feet (100') and at all utility crossings, at all fittings and valves and all changes in grade and pipe type. For directional drilled utility mains, the "as-built" top of pipe elevations shall be recorded every rod length change and plotted on the plan and profile drawings sheets. In addition, the Contractor shall reference all new utility mains by the distance to the right-of-way or property markers. The Contractor shall be held responsible for the accuracy of such data and shall bear any costs incurred in finding utilities as a result of incorrect data furnished by the Contractor.
- B. All visible utility features shall be surveyed using conventional and/or GPS equipment at survey grade level and in accordance with Sarasota County Survey/GPS Standards. The recorded/blue booked GPS control monument, recorded benchmark elevation, and the vertical datum used shall be noted on the record drawings. Coordinates shall be based on the State Plane, Florida West 1983.

1.09 LINE, VALVE AND FIRE HYDRANT PLACEMENT

- A. The Contractor and the County's representative shall inspect the location of all lines, valves and fire hydrants in the field at the time of construction, and adjustments shall be made as directed by the County's representative. It is the intent to have valves and hydrants located out of the ditch and curb lines.

1.10 CONNECTIONS TO EXISTING MAINS

- A. Where connections are required between new work and existing utility mains, the connection shall be made in a thorough and first class manner, using proper fittings to suit the actual conditions. Ductile iron mechanical joint sleeve shall be used for connection to existing utility mains. When a connection is made to an existing fitting in the line, the Contractor shall schedule his work so that excavation and locating the existing fittings can be completed prior to starting trench work on the line. Cut-ins into lines shall be done at a time approved by the Engineer. The Contractor shall not make any connections or service taps into existing utility mains until their work has been tested and accepted by the Engineer.

1.11 UTILITY SERVICE INTERRUPTIONS

- A. Interruptions to any utility service or operation shall be **minimized**. The Contractor shall submit plans and schedules to the Engineer for approval by the proper authority before any shutdown or any interruption in service takes place. The Contractor shall provide a minimum five (5)-business day notice to the Utility to locate and exercise valves prior to the shut down. The Inspector will complete a Water Shut Down Request to the utility Operations and shall include a utility map with all valves identified within the shutdown service area. After the plans and schedule for the utility service interruption shut-downs have been approved, the Contractor shall be responsible for posting shut-off notices to customers five (5) business days prior to shut down. The County Project Manager shall be present at the time of the shutdown and assure the shut down requirements are coordinated during the tie-in. All work to be done in accordance with Department of Health rules and policies. If commercial properties are affected, then the Contractor shall provide bottled water to the consumers/businesses that cannot boil water onsite. Cost shall be included in the cost of "Furnish and Install Pipe".
- B. During all phases of the utility main construction and removal, interruptions to existing services shall be kept to a **minimum**. No interruptions shall take place without the approval of the Engineer.

1.12 EXISTING UTILITY MAINS

- A. Elevations of existing utilities as shown on the drawings are approximate. The Contractor shall be responsible for verifying the location (horizontal and vertical) of any utilities that have been identified by Sunshine One locating service or shown on the construction drawings within the work area limits and the areas that may pose a potential conflict with any work. Soft digs/potholes or other exploratory methods to determine specific locations and elevations of existing utilities shall be performed by the Contractor where needed at no additional cost to the County. The Contractor shall field verify the line and grade of existing utilities. Based on the identified grade and alignment of the existing utilities, changes in the construction plans may be required. Discrepancies in alignment or grade shall be brought to the immediate attention of the Engineer. In addition to verifying the grade when making tie-ins, the Contractor shall accurately verify the pipe outside diameter and material type of the existing pipe. The Contractor shall not proceed with tie-in until all information has been confirmed with the Engineer. The Contractor shall verify all location information well in advance to avoid work delays.

1.13 UTILITY SYSTEM CODES

- A. All construction shall meet or exceed the requirements of the Sarasota County "Uniform Water, Wastewater and Reuse System Code", the latest revision, and these Specifications. In case there is a conflict between the Code and Specification, the most stringent requirement shall be met.

1.14 CONFLICT MANHOLE

- A. Conflict manholes are not permitted for water or sanitary sewer mains.

1.15 SERVICES

- A. Existing service locations as shown on the drawings are approximate. Upon completion of service relocation or replacement as called for on the drawings, the Contractor shall relocate or install the meter and/or reconnect the building service line as directed by the Engineer and Environmental Services, Utilities. A Florida Licensed Plumber shall complete all plumbing work on the discharge side of the meter.

1.16 MAINTENANCE OF TRAFFIC (MOT)

- A. Contractor shall be responsible to design and submit all maintenance of traffic (MOT) plans to the proper reviewing agencies. It will be the Contractor's responsibility to set up and maintain the MOT according to the state and/or local transportation agency regulations.
- B. All cost for setting up and maintaining the (MOT) will be included in the Contract per pipe installed. No special line item will be allowed for this task.

1.17 BY-PASS PIPING/PUMPING:

- A. The Contractor shall submit a by-pass plan to both Utilities Operations and Engineering for approval. After approval by the County, by-pass plans can be implemented with a one (1) week notice to the County. Unless otherwise provided for in the Bid Schedule, the cost for all by-pass piping/pumping shall be incidental to the contract, and the Contractor shall bear all costs associated with this task.

1.18 WORK WITHIN SARASOTA COUNTY RIGHTS-OF-WAY:

- A. The Contractor shall refer to the latest revised editions of Sarasota County Public Works and/or Florida Department of Transportation specifications and regulations for all work within private and public rights-of-way.
- B. The Contractor shall notify the County Project Manager five (5) days prior to starting construction to prepare a "Notice of Construction" letter. The Contractor shall deliver the letter to all residents and/or commercial businesses affected by the construction and along the pipe route 5 days after receiving the letter from the County.
- C. Any public or private property, which is used or affected by a project, will be maintained and preserved from damage during the operation and restored to its original condition upon completion or cessation of work.
- D. The County (Sarasota County Environmental Services, Utilities) shall not be responsible to reimburse the Contractor for work around unpermitted structures as described herein.
- E. Upon completion, the Contractor shall deliver a "Notification of Completion" letter to all residents along the project route. The letter shall be prepared by the County Project Manager and given to the Contractor for his use.

1.19 INSPECTION OF MATERIALS:

- A. The Contractor, 24 hours prior to delivery, shall notify the County and Engineer to schedule an inspection of the materials.

1.20 PROJECT SIGN

- A. The Contractor shall furnish and erect under the County's direction, **two (2)** signs conforming to the Specifications and sample on the following sheets. The signs shall be the property of the Contractor for the duration of the project and shall be maintained by the Contractor to the satisfaction of the County. The Contractor shall be responsible for the relocation of the signs during the progress of construction as directed by the County.
- B. PROJECT SIGN LOCATION: The project signs shall be placed:
 - 1. At locations designated by the County
 - 2. Within County Right-of-Way
 - 3. To be highly visible
 - 4. At a position that will not obstruct pedestrian or vehicular traffic
 - 5. At a location where they will not be a roadside hazard.

C. PROJECT SIGN CONSTRUCTION

1. The project signs shall be constructed of wood or other substantial material (example: plywood sheet with 4" x 4" supports and 2" x 4" cross braces).
2. The sign face dimensions shall be as shown on the following details, with four feet of clearance provided from the bottom of the sign face to ground.
3. All sign supports shall be installed in accordance with Florida Department of Transportation (FDOT) Standard Indexes, as applicable.
4. Upon completion of the contract, the Contractor shall remove and dispose of the sign and supports and restore the site to the satisfaction of the County.

D. PROJECT SIGN CONTENT

1. Sign content shown on the following sheets is for illustrative purposes only. The names of the members of the Boards of County Commissioners will be provided at the pre-construction conference. Relationship of lettering size will be similar to that depicted.

scgov.net



Sarasota County

Project Name L1
Project Name L2
Project Name L3

Construction:

from (enter start date)
to (enter end date)

Board of County Commissioners

Carolyn J. Mason - District 1
Joseph A. Barbetta - District 2
Christine Robinson - District 3
Nora Patterson - District 4
Jon Thaxton - District 5

County Administrator

James L. Ley

Questions? Call 941-861-5000

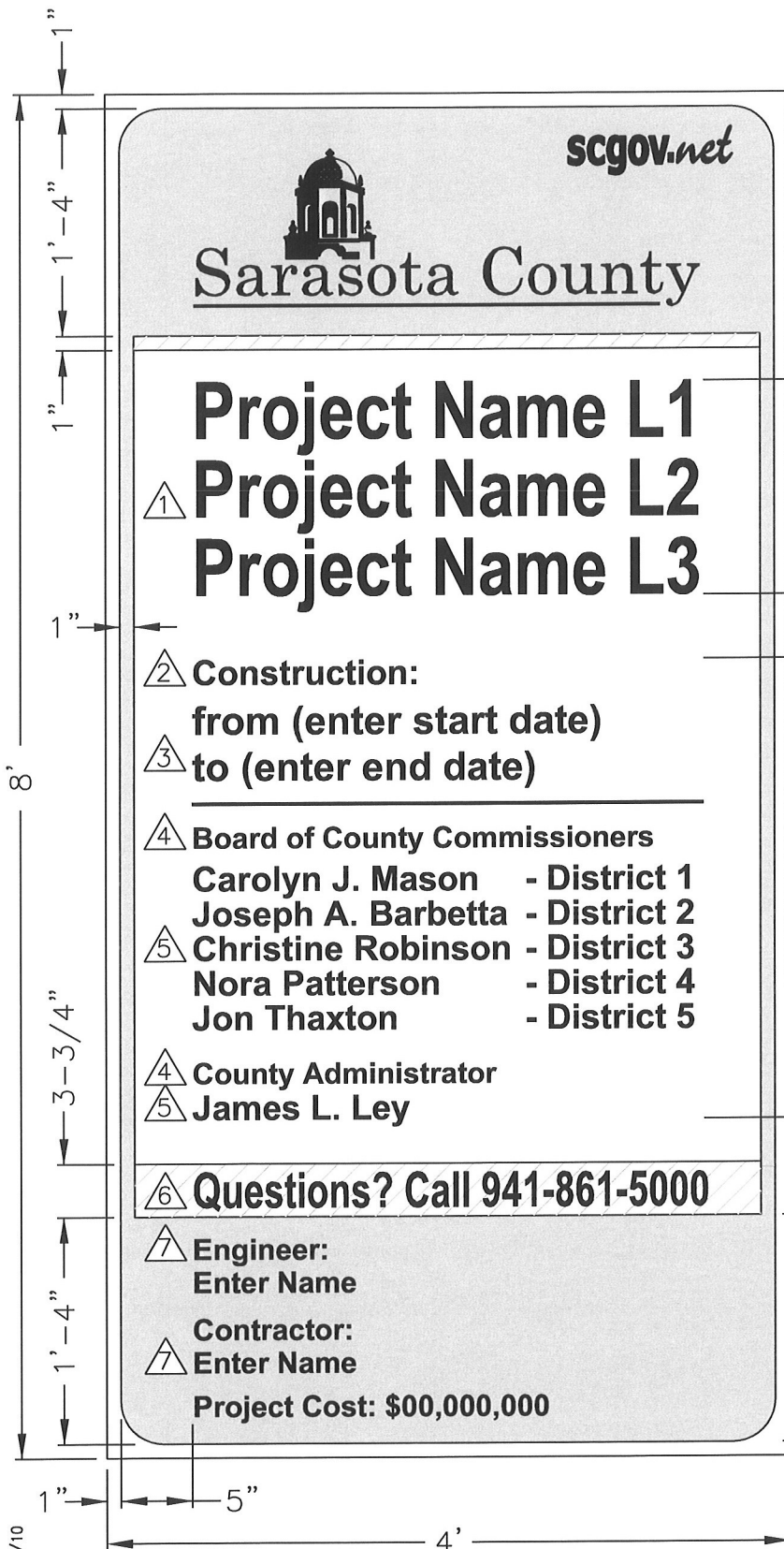
Engineer:
Enter Name

Contractor:
Enter Name

Project Cost: \$00,000,000

PROJECT SIGN DETAIL

N.T.S.



The signs shall be 4' x 8' high, constructed of high density 1/2" exterior plywood, primed and painted White. It shall be mounted and braced with pressure-treated lumber as necessary and maintained and kept in presentable condition for the duration of the project. The sign shall be in place prior to commencement of work.

The signs will be placed in accordance with Sarasota County zoning ordinance.

The paint shall be exterior type enamel with lettering as shown.

Placement of all items, Text and Logo, shall be FLUSH LEFT and placed 5" from outside of blue border.

- ① Project Name-Arial Narrow, bold 4" High Blue (PMS 288C)
- ② Body Info-Arial bold 1-3/4" High Green (PMS 355C)
- ③ Body Info-Arial bold 2" High Blue (PMS 288C)
- ④ Body Info-Arial bold 1-1/2" High Green (PMS 355C)
- ⑤ Body Info-Arial bold 1-3/4" High Blue (PMS 288C)
- ⑥ Questions-Arial Narrow, bold 2-1/2" High White on Green (PMS 355C) background
- ⑦ Footer Info-Arial bold and Arial 1-1/2" High White on Blue (PMS 288C) background

In order to prevent the creation of a traffic hazard by limiting visibility at a street intersection, or intersection of a street and railroad crossing, the bottom most part of the sign shall be 4' above the ground. On corner lots, the sign shall be placed outside the visibility triangle.

- Blue (PMS 288C)
- Green (PMS 355C)

Note:
Electronic files for sign vendors are available for download from www.scgov.net/CIPsign.asp

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SECTION 00600

PREVENTION, CONTROL, & ABATEMENT OF EROSION & WATER POLLUTION

PART 1 – GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Prevention, control and abatement of erosion and water pollution shall conform to the requirements of Section 11000 and shall produce end results as required by the rules of the Department of Environmental Protection and other regulatory agencies having jurisdiction.
- B. The Contractor is required to present his schedules for construction of the project at the preconstruction conference as required. This schedule shall include a complete outline for the proposed construction of any and/or all of the pollution control and erosion abatement items detailed in Section 11000. The Contractor is responsible for the implementation of the schedule after approval by the Engineer.
- C. The Contractor shall prepare a Stormwater Pollution Prevention Plan (SWPPP) in accordance with Chapter 62-621, F.A.C. Contractor shall complete the necessary permit forms and pay the applicable fees for Notice of Intent and Notice of Termination, and comply with weekly inspection requirements as noted in the generic permit. The SWPPP shall be presented to the Engineer at the preconstruction conference. . The SWPPP shall conform to the guidelines contained in The Environmental Protection Agency "Storm Water Management for Construction Activities - Developing Pollution Prevention Plans and Best Management Practices - Summary Guidance".

1.02 METHOD OF MEASUREMENT

- A. The quantity to be paid for under this section shall be included in the cost to furnish and install pipe and shall include all baled hay, straw, staked silt fence, floating turbidity barrier, or other material or equipment necessary for the prevention, control, and abatement of water pollution, labor; preparation of a storm water pollution prevention plan; and all monitoring, record keeping or reporting required under the SWPPP or permit conditions as provided by law or specifically identified in the Contract.

1.03 BASIS OF PAYMENT

- A. Payment shall be made under the various unit costs and lump sums found in the bid form.

PREVENTION, CONTROL AND ABATEMENT OF EROSION AND WATER POLLUTION

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01020

STORM WATER MANAGEMENT FOR CONSTRUCTION ACTIVITIES

PART 1 – GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Prevention, control and abatement of erosion and water pollution shall conform to the requirements of Appendix A – Storm Water Management for Construction Activities, and shall produce end results as required by the rules of the Department of Environmental Protection and other regulatory agencies having jurisdiction.
- B. The Contractor shall present his schedule for construction of the project at the pre-construction conference. This schedule shall include a complete outline for the proposed construction of any and all of the pollution control and erosion abatement items as detailed in Appendix A. The Contractor is responsible for the implementation of the schedule, once approved.
- C. The Contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) in accordance with F.A.C. Chapter 62-621. Contractor shall complete the necessary permit forms and pay the applicable fees for Notice of Intent (NOI), and comply with weekly inspection requirements as noted in the generic permit (See Appendix A). Copies of the SWPPP and NOI shall be presented to the Engineer at the pre-construction conference. The Contractor's SWPPP shall conform to the guidelines contained in Appendix A.
- D. This item of work shall include all baled hay, straw, staked silt fence, floating turbidity barrier, temporary retention/detention areas, and other methods, materials, and equipment necessary for the prevention, control, and abatement of water pollution; all labor; preparation of a storm water pollution prevention plan; and all monitoring, record keeping or reporting required under the SWPPP or permit conditions as provided by law and specifically identified in the Contract.
- E. Once construction has been completed, and all disturbed areas stabilized, the Contractor shall complete and send to the DEP the NPDES Notice of Termination (NOT), as prescribed in the Generic Permit. (See Appendix A).

1.02 METHOD OF MEASUREMENT AND PAYMENT

- A. Unless otherwise provided for in the Bid Schedule, payment for this item of work shall be incidental to the other items bid under this Contract.

END OF SECTION

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SECTION 01026

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 EXPLANATION AND DEFINITIONS

- A. The following explanation of the measurement and payment for the bid form items is made for information and guidance. The omission of reference to any item in this description shall not, however, alter the intent of the bid form or relieve the contractor of the necessity of furnishing such as a part of the contract.

1.02 MEASUREMENT

- A. The quantities set forth in the bid form are approximate and are given to establish a uniform basis for the comparison of bids. The County reserves the right to increase or decrease the quantity of any class or portion of the work during the progress of construction in accord with the terms of the contract.

1.03 PAYMENT

- A. Payment shall be made for the items listed on the bid form on the basis of the work actually performed, completed, and accepted by the engineer. Such work includes but is not limited to, the furnishing of all necessary labor, materials, equipment, transportation, cleanup, restoration of disturbed areas, and all other appurtenances to complete the construction and installation of the work as shown on the drawings, as described in the specifications, and as directed by the engineer.
- B. Unit prices are used as a means of computing the final figures for bid and contract purposes, for periodic payments for work performed, for determining value of additions or deletions and wherever else reasonable.
- C. Basis of payment for lump sum items shall be in accordance with the approved schedule of values. Level of detail in schedule of values shall match the pay items and include additional detail where indicated herein.

PART 2 – PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

- A. Measurement and payment shall be made on the basis of work actually performed completing each item in the contract proposal, such work including, but not limited to, the furnishing of all necessary labor, materials, equipment, transportation, cleanup, and all other appurtenances to complete the construction and installation of the work to the configuration and extent as shown on the drawings and described in the specifications. Payment for each item includes compensation for cleanup and restorations. Cleanup and surface restorations (including pavement replacement) will be considered as ten percent (10%) of each pay item, and complete payment will not be made until cleanup, restorations and record drawings are completed.
- B. Measurement and payment for lump sum bid items will be made based on a percentage of completion, as approved by the owner and recommended by the engineer, on a monthly basis for the lump sum bid item listed on the bid form of the contract documents.

3.02 PAY ITEMS

- A. **Mobilization / Demobilization: (Item 1).** Payment for all work included under this bid item will be made at the lump sum price bid for mobilization and demobilization of all labor, equipment, materials and appurtenances necessary for construction of the project and shall not exceed 5% of line item 23. Mobilization shall include all items detailed in Article 101-1 of the FDOT Standard Specification. Also included, but not limited to, as part of this bid item is the cost for project performance indemnifications, photographs, videotaping, shop drawings, working drawings, schedules, redline record drawings and documents, coordination, and phasing and other miscellaneous items associated with the work. Seventy-five percent of the lump sum price will be payable with the first month's partial payment. The remaining twenty-five percent will be payable with the final payment.
- B. **Project Signs: (Item 2).** Project signs shall be paid at the unit price of each.
- C. **Prevention, Control & Abatement of Erosion & Water Pollution: (Item 3).** This item will be paid as a percentage of the lump sum based on the percentage of project completion as certified in the monthly pay request.
- D. **Furnish and Install Utility Main: (Items 4, 5, 6, and 7).** Payment for furnishing and installing utility mains (various sizes and types) will be made at the contract unit price per linear foot for the pipe completed and approved in place, and shall include all necessary fittings, labor, equipment and materials for the furnishing and laying of the pipe, dewatering, sheeting, construction of concrete thrust blocks and/or restrained joint piping, as required and shown on the plans and details, mylar detectable tape and locator wire, polyethylene sleeve on all ductile iron pipe and fittings, clamps, harnessing, adapters, restraining utility poles, coordinating with other utilities for locating buried cables and other utilities during construction, clearing and grubbing, excavation of all material encountered including rock, backfill, compaction, density testing, replacement of grass, sod, driveways, unpaved roadway, culverts and other surface materials disturbed but not specifically designated in the bid proposal, cleanup, repair of existing utilities that are disturbed during construction, protection of existing facilities, relocation of fencing as needed, flushing and/or pigging, pressure testing, record drawings, and all other work incidental to the installation of the water mains complete in place. Price includes the removal and replacement of obstructions located in the path of the work including signs, fences, trees, ornamental vegetation, irrigation lines, etc. Price also includes preparing a maintenance of traffic plan for each work site that will affect traffic safety; obtaining construction permits and approvals; construction and maintenance of any necessary detour facilities; providing of personnel and facilities to provide access to residences and businesses along the project; furnishing, installing and maintaining of traffic control barricades, railings, warning lights, and other safety devices during construction; the control of dust; and any other special requirements for safe and expeditious movements of traffic as called for in the maintenance of traffic plan developed by the contractor and approved by the agency(ies) governing traffic safety in specific work areas. Measurement of the pipe shall be to the nearest foot along the centerline of the pipe including the lengths of valves and fittings. Linear footage measurement shall be horizontal. Work includes flushing, disinfection, testing, and approval of a complete system, including all work incidental to the installation.
- E. **Furnish and Install Directional Bore: (Item 8).** Payment for furnishing and installing directional bores will be made at the contract unit price per linear foot for the pipe completed and approved in place, and shall include all necessary materials, labor, equipment, dewatering, signs, traffic control, sheeting, harnessing, adjacent pipe adapters, transition fittings, restraining power poles, coordination with other

utilities for relocating, locating existing facilities during construction, project staging, excavation, removal of drillers bentonite mud, cleanup and restoration, flushing, testing, record drawing preparation, and all other work incidental to the installation of the pipe complete in place. Measurement of the pipe shall be to the nearest foot along the centerline in the horizontal plane between the limits shown on the plans. If minimum radius or installation requires the beginning and end of directional bores to be extended, the extension will be paid for at the unit price of utility main.

- F. **Furnish and Install Buried Valves and Valve Boxes: (Item 9).** Payment for furnishing and installing valves will be made at the contract unit price for each size and type of valve completed and approved in place. Payment shall include compensation for the valve, valve box and cover, concrete pad around valve box, embedded valve identification tag, and all necessary labor, materials and equipment for installation, including valve stem and valve box extensions. Payment shall also include the installation of base material below the valve per the detail. Work includes dewatering, excavating, backfilling, compacting and testing, and all materials for a complete assembly as shown in the details and other work incidental to the acceptable installation.
- G. **Furnish and Install Tapping Sleeves and Valves: (Item 10).** Payment for furnishing and installing tapping sleeves and valves will be made at the contract unit price for each size of tapping sleeve and valve in concrete pad around valve box, and all necessary labor, materials and equipment for installation, including valve stem and valve box extensions. Payment shall also include the installation of base material below the valve per the detail. Work includes testing and all materials for a complete assembly as shown in the details and other work incidental to the acceptable installation.
- H. **Concrete Pad: (Item 11).** Payment for concrete pad shall be paid at the unit price per square yard. Payment for this item shall include base material, compaction, testing, concrete, materials, steel reinforcing and the labor and equipment necessary for the installation as required in accordance with the contract specifications and details.
- I. **Antenna: (Item 12).** Antenna shall be paid for as a lump sum for supplying, assembling, installing and all footing and concrete pads as recommended by the manufacturer.
- J. **Furnish and Install Bi-Directional Assembly: (Item 13).** Payment for furnishing and installing the bi-directional assembly will be made at the contract lump sum price for the bi-directional assembly constructed, tested, and deemed fully operational. Payment shall include all excavation backfilling, compaction, sheeting and shoring, dewatering, concrete work and reinforcing, if applicable, landscaping, site grading, pipes, fittings, and supports. Payment shall also include receiving, handling, and installation of the bi-directional meter assemblies provided by the County. Cleanup, testing, and all necessary labor, materials, and equipment to complete the installation of the bi-directional assembly is also included. Sarasota County will supply the photocell apparatus to supply power to their SCADA systems.
- K. **Water Services: (Item 14).** Water service lines of the type specified will be paid for at the contract unit price on a per each basis completed and approved in place. Price paid shall be payment in full for furnishing and installing all items and incidentals necessary to complete the work including trenching, excavating, dewatering, backfilling, compacting, water service pipe, casing pipe, saddle, fittings, corporation stop, curb stop, meter box and pipe assembly, restoration, and all other necessary incidental items of work. Measurement for work under this bid item will be based on each service connection installed, tested and approved.

- L. **Temporary Sheeting: (Item 15).** Temporary sheeting shall be paid for as a lump sum for supplying, installing and removing.
- M. **Double Row Silt Fence: (Item 16).** Double row silt fencing shall be paid for at the unit price for each foot of double fencing.
- N. **Sidewalk Replacement: (Item 17).** Payment for removing and replacing existing sidewalk will be made at the appropriate contract unit price per square yard of sidewalk shown on the plans to be removed and replaced for utility main construction. Sidewalks shall be replaced to match existing elevations and materials of construction. The sidewalk replacement shall meet or exceed SDOT requirements. Surface restoration required for sidewalk removal and replacement shall be included in this item. This item also includes all labor, equipment and materials for removal and replacement of existing sidewalk.
- O. **Surface Restoration: (Items 18, 19, and 20).** Payment for work under this bid item will be made at the respective unit price for furnishing and placing all restoration items including asphalt roads and shell roads, asphalt concrete, shell and other driveways, grassing and sod. Restoration shall be in accordance with the contract documents. Payments shall include all items and incidentals necessary to complete the work including, but limited to, testing, pavement, base, sub-base, tack coats, compaction, leveling, sawcutting (for road restoration), shell, asphalt, pea rock, paver block base, sawcutting, concrete, formwork, expansion joints, surface treatments, and sod, seed, mulch, fertilizer, water (for seeding and sod). Sod and seed shall match existing conditions and type. Measurement for work included under this bid item will be based on the actual number of square yards, acres, or linear feet of restoration provided.

It shall be the contractor's responsibility to conduct operations to minimize the area of restoration required. Restoration beyond the limits necessary to construct the facilities and/or comply with all OSHA regulations will not be measured for payment.

- P. **Approved Contract Interim Field Change Agreement (IFCA): (Item 21).** This line item is a contingent construction cost calculated as 5% of the bid schedule Sub-Total. Payment for all work included under this bid item will be in the amount mutually agreed to by the Owner and Contractor as indicated on a properly authorized form prepared by the Engineer and signed and dated by the Contractor, Engineer, and Owner.
- Q. **Permit Fee Allowance: (Item 22).** Permit fee allowance will be paid at actual cost for permits required but not identified and priced in the contract documents.
- R. **Testing Allowance: (Item 23).** Testing allowance is to be used for pipe line force main testing only and will be paid based on the percentage of completion.

END OF SECTION

SECTION 01050

FIELD ENGINEERING

PART 1 – GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The work of all crafts and trades shall be laid out to lines and elevations as established by the Contractor from the Drawings, or from instructions by the Engineer.
- B. Unless otherwise shown, all work shall be plumb and level, in straight lines and true planes, parallel or square to the established lines and levels. The work shall be accurately measured and fitted to tolerances as established by the best practices of the crafts and trades involved, and shall be as required to fit all parts of the work carefully and neatly together.

1.02 SURVEY REFERENCE POINTS

- A. The Contractor shall hire a Florida Professional Land Surveyor (PLS) to identify the existing control points indicated on the Drawings as required.
- B. Existing major horizontal and vertical control points for the Project are those designated on Drawings. Additional control points may be established as approved by the Engineer.
- C. The Contractor shall:
 - 1) protect control points prior to starting work;
 - 2) preserve all permanent reference points during construction;
 - 3) make no changes or relocations unless directed by the Engineer.
 - 4) report to Engineer when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations;
 - 5) re-establish any control or reference points and/or property pins destroyed at his expense.

1.03 LINES AND GRADES

- A. The Contractor's PLS shall lay out the axes of all structures and set permanent hubs marking these lines. The Contractor's PLS shall also set a bench mark or marks near the site of all structures to furnish the Contractor with the elevation. The Contractor shall be responsible for establishing all other lines and grades required for the construction for the project.
- B. When waterlines, sewer force mains and other such pressure pipelines are involved, the Contractor's PLS will stake the location of these lines on the site. Bench marks are required for reference, these shall be established by the Contractor's PLS.
- C. The Contractor shall furnish a Florida Professional Licensed Land Surveyor with all materials, stakes and grade boards that are required for all utility construction layout. In addition, the Contractor shall furnish any aides required by the Engineer in marking the location of the various facilities on the ground, establishing bench levels and determining as-built conditions after the work is completed. The Contractor's personnel engaged in the layout work described herein and the aides furnished to the Engineer shall be fully capable of performing the duties set out herein and shall be fully qualified chiefs and/or chairmen, as required.

END OF SECTION

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SECTION 01200

PROJECT MEETINGS

PART 1 – GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The Engineer shall schedule and administer a preconstruction meeting, periodic progress meetings and specially called meetings throughout the progress of the work and shall be responsible for the following:
 - 1) Prepare agenda for meeting.
 - 2) Distribute written notice of each meeting.
 - 3) Make physical arrangements for meeting. Designate who is to bring the plans and specifications.
 - 4) Preside at meetings.
 - 5) Record the minutes; include all significant proceedings and decisions.
 - 6) Reproduce and distribute copies of minutes:
 - a. To all participants in the meeting.
 - b. To all parties affected by decisions made at the meeting.
- B. Representatives of the Design and Construction Engineer, other utility companies, Department of Transportation, Public Works, Development Services, Contractors, subcontractors and suppliers attending the meetings shall be qualified and authorized to act on behalf of the entity each represents.

1.02 PRE-CONSTRUCTION MEETING

- A. Schedule promptly after the date of execution of the Contract.
- B. Location: A central site located within Sarasota County, convenient for all parties.
- C. Attendance:
 - 1) Representative from Sarasota County Environmental Services, Utilities.
 - 2) Inspector(s).
 - 3) Engineer.
 - 4) Contractor's Superintendent.
 - 5) Contractor's Project Manager
 - 6) Major Subcontractors.
 - 7) Major Suppliers.
 - 8) Applicable Utility Companies.
 - 9) Safety Officer(s).
 - 10) Others as Appropriate.
- D. Suggested Agenda:
 - 1) Distribution and discussion of:
 - a. List of major subcontractors and suppliers.
 - b. Projected construction schedules.
 - c. Schedule of values.
 - d. Pipe laying schedule.
 - e. Schedule of submittals.
 - 2) Critical Work Sequencing.
 - 3) Major equipment deliveries and priorities.
 - 4) Project Coordination.
 - a. Designation of responsible personnel.
 - 5) Procedures and processing of:
 - a. Field decisions.

- b. Proposal requests.
 - c. Submittals.
 - d. Change Orders/Interim Field Change Agreement (IFCA).
 - e. Request for Information (RFI).
 - f. Applications for Payment.
- 6) Adequacy of distribution of Contract Documents.
- 7) Procedures for maintaining record documents.
- 8) Use of premises:
 - a. Office, work and storage areas.
 - b. County's requirements.
- 9) Construction facilities, controls and construction aids.
- 10) Temporary utilities.
- 11) Safety and first-aid procedures.
- 12) Security procedures.
- 13) Housekeeping procedures.

1.03 PROGRESS MEETINGS

- A. Schedule regular periodic meetings, as required.
- B. Hold called meetings as required by progress of the work.
- C. Attendance:
 - 1) Sarasota County Environmental Services, Utilities Representative.
 - 2) Inspector(s).
 - 3) Contractor and subcontractor as appropriate to the agenda.
 - 4) Suppliers as appropriate to the agenda.
 - 5) Other utility companies.
- D. Suggested Agenda:
 - 1) Review, approval of minutes of previous meeting.
 - 2) Review of work progress since previous meeting.
 - 3) Field observation, problems, and conflicts.
 - 4) Issues which impede construction schedule.
 - 5) Review of delivery schedules.
 - 6) Corrective measures and procedures to regain projected schedule.
 - 7) Revisions to construction schedule.
 - 8) Safety.
 - 9) Coordination of schedules.
 - 10) Review submittal schedules; expedite as required.
 - 11) Maintenance of quality standards.
 - 12) Review proposed changes for:
 - a. Affect on construction schedule and on completion date.
 - b. Affect on other contracts of the Project.
 - 13) Other business.

1.04 FIELD MEETINGS

- A. The Contractor may call for meetings in the field to review requirements, conflict, or to coordinate the progress of work. At any such meetings between the Contractor and any regulatory agency, utility, or other Contractor that may affect the design or progress of the project, the Contractor shall give 24 hour written notice of the meeting to all parties.

END OF SECTION

SECTION 01203

JOB SITE ADMINISTRATION

PART 1 – GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

A. The County's Construction Project Manager or his designee and the Resident County Inspector shall be the contact persons for the County with the Contractor. The Contractor shall direct all questions concerning this Project to the County's Construction Project Manager through the Resident County Inspector. The job site administrative duties of the County's Construction Project Manager and/or Resident County Inspector are as follows:

- 1) Coordinate and provide general direction of the work and its progress.
- 2) Review Contractor's progress and construction schedules regularly.
- 3) Assist in resolution of construction problems.
- 4) Evaluate Contractor claims for the County.
- 5) Maintain log of Contractor's submittals.
- 6) Maintain log of IFCA's and Change Orders.
- 7) Maintain log of RFI's with responses.
- 8) Develop and administer a quality control (QC) program:
 - a. Proofs of compliance.
 - b. Qualifications of testing services.
 - c. Define required tests.
 - d. Maintain QC reporting system.
 - e. Maintain QC records of all tests and test results.
 - f. Establish frequency of testing.
- 9) Physically inspect all construction as required.
- 10) Observe all contractor tests.
- 11) Maintain daily log and construction records.
- 12) Check and verify record drawing data.
- 13) Review Contractor's progress payment requests.
- 14) Review Contractor's IFCA's and Change Order requests for County.
- 15) Participate in field management meetings.
- 16) Provide negotiation assistance on Contractor claims.
- 17) Report field conditions that prevent construction as designed per the conformed contract documents.
- 18) On unit-price projects, obtain accurate field measurements.
- 19) On all jobs, verify Contractor's monthly work quantities.
- 20) Assist scheduling and ordering required field services.

END OF SECTION 01203

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SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The types of submittals controlled by these general requirements include shop drawings, product data, samples, construction schedule and miscellaneous work-related submittals. The individual submittal requirements are specified in applicable sections for each unit of work.
 - 1) Unless otherwise noted, each item of submittal shall be submitted to the Engineer for review prior to construction or installation.
 - 2) Engineer's review is for general conformance with the design concept and Contract Documents.
- B. The submittal will not be accepted for review unless it is clear, legible, and contains complete information and complies with the specifications. Submittals that are not accepted will be returned with attached notations of requirements necessary for acceptance. Resubmit after the material has been amended to comply with the comments.
- C. If submittals show deviations from Contract requirements because of standard shop practice or for other reasons, the Contractor shall clearly describe such deviations in his letter of transmittal. If the Contractor fails to describe such deviations, he shall not be relieved of the responsibility of executing the work in accordance with the Contract, even though such submittals have been reviewed.
- D. "Or equal" submittals for review, shall be in accordance with General Conditions, Substitution of Equipment and/or Material.

1.02 DEFINITIONS

- A. The work-related submittals of this section, in addition to the definitions of the General Conditions and elsewhere in the Contract Documents, are defined as follows:
 - 1) Shop drawings include custom-prepared data of all forms including drawings, diagrams, pipe laying schedule, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form applicable to other projects.
 - 2) Product data includes standard printed information on materials, products and systems not custom-prepared for this project, other than the designation of selections from available choices.
 - 3) Samples include both fabricated and un-fabricated physical examples of materials, products and work; both as complete units and as smaller portions of units of work; either for limited visual inspection or (where indicated) for detailed testing and analysis.
 - 4) Mock-ups are a special form of samples, which are, because of size, usually constructed on the project site.
 - 5) Construction schedule includes custom-prepared data for the construction of said project. All stages of work shall be included. Contractor shall revise during the course of construction as needed, and submit to the Engineer with monthly application for payment.
- B. Miscellaneous submittals related directly to the work (non administrative) include extended warranties or guarantees, maintenance agreements, project photographs, videotapes (VHS Format), survey data and reports, physical work records, statements of applicability, quality testing, calculation, and certifying reports, copies of industry standards, record drawings, operating and maintenance materials, overrun stock, and similar information, devices and materials applicable to the work.

1.03 GENERAL SUBMITTAL REQUIREMENTS

A. Coordination and Sequencing:

- 1) Coordinate the preparation and processing of submittals with the performance of the work and in accordance with the schedules prepared and referred to in the paragraph on Schedules and Progress Reports in the Contract, so that work will not be delayed by submittals. Coordinate and sequence different categories of submittals for the same work, and for interfacing units of work, so that one will not be delayed for coordination with another. Do not proceed with purchasing, fabrication and delivery of work related to a submittal until submittal procedure has been successfully completed.
- 2) No extension of time will be allowed because of failure to properly coordinate and sequence submittals or for delays caused by failure to make complete submittals.

B. Preparation of Submittals:

- 1) Provide permanent marking on each submittal to identify it by project, date, Contractor, subcontractor, submittal name, project specification reference section and sequential number of each submittal to distinguish it from other submittals. If a bound booklet format is to be used then provide a table of contents and tab by title or specification number. Contractor's approval marking shall be on each submittal. Package each submittal appropriately for transmittal and handling. Submittals, which are received directly from sources other than through the Contractor's office, will be returned without review.
- 2) Where manufacturer's data sheets, catalog pages or drawings have several items shown or a selection of characteristics shown in chart and graphs, clearly mark the information to indicate exactly what will be supplied.

C. Number of Submittals Required:

- 1) Submit six (6) prints of shop drawings and/or copies of manufacturer's product data.

1.04 SPECIFIC CATEGORY SUBMITTAL REQUIREMENTS

A. General: Except as otherwise indicated in individual work sections, comply with the general requirements specified for each indicated category of submittal. Provide and process intermediate submittals (where required between initial and final) similar to initial submittals.

B. Shop Drawings:

- 1) Provide newly-prepared information, show dimensions and note which are based on field measure, identify materials and products in the work shown, indicate compliance with standards, and special coordination requirements.
- 2) Only shop drawing copies with the appropriate markings by the Engineer are to be used in connection with the work.

C. Product Data:

- 1) Collect the required data into one submittal for each materials, product or system; and mark each copy to show which choices and options are applicable to the project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements, which have been checked, and special coordination requirements. Maintain one set of product data (for each submittal) at the project site, available for reference by the Engineer or others.
- 2) Installer's Copy: Do not proceed with the installation of materials, products or systems until a copy of the applicable product data, approved by the Engineer, is in the possession of the Installer.

D. Samples:

- 1) Provide units identical with the final condition of the proposed materials or products for the work. Include "range" samples (not less than three units) where variations occur, and identify each unit of each set. Provide full set of optional samples where Engineer's selection is required. Prepare samples to match the Engineer's sample where so indicated. Include information with each sample to

- show generic description, source or product name and manufacturer, limitations, and compliances with standards.
- 2) Samples are submitted for review and confirmation of color, pattern, texture and "kind" by the Engineer, who will not "test" them (except as otherwise indicated) for other requirements, which are therefore the exclusive responsibility of the Contractor.
- 3) Submittal: At his option, the Contractor may provide a preliminary submittal of a single set of samples for the Engineer's review and "Action". Otherwise, the initial submittal is the final submittal unless it is returned with "Action" which requires resubmittal.
 - a) Submit three sets of samples in the final submittal; two sets will be returned.
- 4) Quality Control Set: Maintain one of the returned final sets of samples at the project site, in suitable condition and available for quality control comparisons by the Engineer, and by others.
- 5) Reusable Samples: Samples which are intended or permitted to be returned and actually incorporated in the work are so indicated in the individual work sections, but must be in undamaged condition at the time of use.
- E. Inspection and Test Reports:
 - 1) Submittal is classified either as "shop drawings" or "product data", depending upon whether the report is uniquely prepared for the project or a standard publication of regular product or workmanship control testing at the point of production (respectively).
- F. Pre and Post Construction Audio-Video Records: (Refer to Specification Section)
 - 1) The Contractor shall provide two (2) copies of the approved project pre-construction audio-visual record to the Engineer prior to submittal of the first payment application.
 - 2) The Contractor shall provide three (3) copies of the approved project post-construction audio-visual record to the Engineer prior to submittal of the final payment application.
- G. Warranties:
 - 1) Refer to individual sections for specific general requirements on the submittal of warranties, guaranties, product/workmanship bonds, and maintenance agreements, which are uniquely prepared and executed for the site specific scope of the project. Furnish two executed copies and when applicable furnish additional (conformed) copies for inclusion in the maintenance manuals.

1.05 ENGINEER'S ACTION

- A. The Engineer will review each submittal and return it with the action required marked on it.
- B. The mark will be a self-explanatory action stamp, marked and executed to indicate whether submittal is accepted or returned for re-submittal.
- C. When marked RESUBMIT, do not proceed with work covered by submittal (purchasing, fabrication, delivery or other activity); revise submittal or prepare a new submittal and resubmit without delay, in accordance with Engineer's notations stating reasons for returning submittal; repeat if necessary to obtain a different action marking.
- D. Submit the required number of prints of shop drawings or copies of manufacturer's product data; two will be retained and the remainder will be returned, one of which is to be marked-up and maintained by the Contractor as the Record Document.

1.06 CLOSEOUT SUBMITTALS

- A. Refer to Section 01700 for specific general requirements on the submittal of closeout information, materials, tools and similar items.
 - 1) Record Document Copies: Furnish two sets
 - 2) Maintenance/Operating Manuals: Furnish three (3) complete bound copies.
 - 3) Materials and Tools: Refer to individual work sections for required quantities of spare parts, extra and overrun stock, maintenance tools and devices, keys, and

similar physical units to be submitted.

END OF SECTION

SECTION 01310

CONSTRUCTION PROGRESS SCHEDULE

PART I - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Within ten (10) days of the date of the Notice to Proceed, or at the Pre-Construction meeting, whichever occurs first, the Contractor shall prepare and submit to the County the estimated construction progress schedule, in calendar days, based on the work items schedules and sub-schedules of related activities essential to the progress of the Work.
- B. Contractor shall submit revised progress schedules on a monthly basis. No partial payments shall be approved by the County until there is an updated and approved construction progress schedule on file.
- C. The Contractor shall designate an authorized representative of the Contractor 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 Construction progress schedule.
- D. The project scheduling software shall be **Primavera compatible**, as approved by the County.
- E. The progress schedule shall demonstrate complete fulfillment of the Contract Document requirements utilizing a Critical Path Method (CPM) precedence method to coordinate, plan, schedule, and perform the Work (including the activities of Subcontractors and suppliers) within the Contract Times or authorized extensions.

1.02 FORM OF SCHEDULE

- A. Prepare schedules in the form of a horizontal bar chart.
 - 1) Provide a separate horizontal bar for each activity of each work item. Work items shall, at a minimum correlate to the Schedule of Values work items. Activities shall further break down the work items into smaller components, as approved by the County.
 - 2) Horizontal time scale: In weeks from start of construction and identify the first work day of each month. The schedule shall identify the day, month, and year of starting and finishing each activity.
 - 3) Scale and spacing: Scale to fit on sheet size provided, and sufficient space provided for notations and future revisions.
 - 4) Minimum sheet size: 8 ½" X 11". Maximum sheet size: 11" X 17".
- B. Format: Provide a chronological order of the start and finish of each work item and each activity under each work item.

1.03 CONTENT OF SCHEDULE

- A. Show the complete sequence of construction by activity including: Activity beginning and ending date; Activity duration; Early start date; Early finish date; Late start date; Late finish date; Float time for each activity, Total float time; and Predecessor and Successor relationships. **NOTE: Float is not time for the exclusive use or benefit of either the County or the Contractor. Extensions of time for performance may be granted by the County only to the extent that equitable time adjustments for the activity or activities affected exceed the total float.**
- B. Show the dates for the beginning of and completion of each element of Construction in no more than a one-week increment scale, including but not limited to:
 - 1) Submittals schedule and review timelines

- 2) Mobilization
 - 3) Individual Work Items as defined by the Contract Documents
 - 4) Activities under each Work Item
 - 5) Equipment and materials delivery of long lead items
 - 6) Substantial Completion Milestone
 - 7) Final Completion Milestone
 - 8) Other Milestones as required by the Contract Documents
- C. Show projected percentage of completion for each item, as of the progress schedule revision date (date of regular payment application).
- D. Show projected dollar cash flow requirements for each month of construction updated as of the date of regular payment application.
- E. The schedule shall clearly identify the project's critical path.

1.04 PROGRESS REVISIONS

- A. Indicate progress of each activity as of the date of the progress schedule revision, while maintaining the original approved (baseline) schedule. Show actual start and finish dates, and actual milestone dates on the progress schedule.
- B. Show changes occurring since the previous revision of progress schedule:
- 1) Major changes in scope.
 - 2) Activities modified since previous revision.
 - 3) Revised projections of progress and completion.
 - 4) Other identifiable changes.
- C. Provide a narrative report as needed to define:
- 1) Problem areas, anticipated delays, and the impact on the schedule.
 - 2) Corrective action recommended and its effect.
 - 3) The effect of changes on schedules of other prime contractor(s) and others.

1.05 SUBMISSIONS

- A. Submit initial schedule to the Engineer within ten (10) days of the date of the NTP or at the Pre-Construction meeting, whichever occurs first.
- 1) The County will review schedule and return it to the Contractor for revisions, if required.
 - 2) The Contractor shall resubmit a revised schedule within 7 days after return of review copy, if required.
 - 3) Submit two (2) electronic copy and two (2) hard copy of the approved initial progress schedule, and each approved monthly update thereof, to the County.
- B. Submit revised monthly progress schedules with each month's application for payment.
A payment application will not be considered for payment unless it is accompanied by an updated and approved progress schedule.

1.06 DISTRIBUTION

- A. Distribute copies of the approved schedule to:
- 1) The County (two (2) electronic copies, two(2) hard copies)
 - 2) Subcontractors and Suppliers (as needed)
- B. Instruct recipients to report promptly to the Contractor, in writing, any problems anticipated by the projections shown in the schedules.

END OF SECTION

SECTION 01380

CONSTRUCTION PHOTOGRAPHS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Requirements for photographic documentation during construction.

1.02 REQUIREMENTS

A. The CONTRACTOR shall employ a competent photographer to take construction record photographs periodically during the course of the WORK.

1.03 PHOTOGRAPHY REQUIRED

A. Photographs shall be taken in strict conformance with this Section and shall be furnished to the OWNER with each payment application.

B. Photographs shall be taken at each of the major stages of construction listed below.

- 1)
- 2)
- 3) Completion of site restoration.
- 4) Installation of equipment and facilities as directed by the ENGINEER.

C. Views and Quantities Required:

- 1) Two (2) views of each item listed in Article 1.03(B) above.
- 2) Five (5) views of overall PROJECT site weekly, where WORK is in progress.
- 3) Each time photographs are taken, at least one (1) photograph shall be taken from the same overall view as was taken during the previous photograph session.
- 4) The CONTRACTOR shall consult with the ENGINEER for instructions concerning views required.
- 5) Furnish two (2) prints of each view, to be distributed to the OWNER'S construction manager and the ENGINEER.
- 6) Aerial photographs may be used upon prior approval by the OWNER.

D. Negatives:

- 1) The CONTRACTOR shall maintain negatives and shall convey the negatives to the OWNER within thirty (30) days after SUBSTANTIAL COMPLETION of entire PROJECT.
- 2) The CONTRACTOR shall furnish additional prints to OWNER and the ENGINEER at commercial rates prevailing at time of purchase.

1.04 COSTS OF PHOTOGRAPHY

A. The CONTRACTOR shall pay costs for specified photography and prints. Parties requiring additional photography or prints will pay photographer directly.

PART 2 - PRODUCTS

2.01 PRINTS

A. Color Prints:

- 1) Paper: Single weight, color print paper.
- 2) Finish: Smooth surface, glossy.
- 3) Size: 8-inch x 10-inch.

B. Each print shall be identified, listing:

- 1) Name of PROJECT
- 2) Orientation of view

- 3) Date and time of exposure
- 4) Name and address of photographer
- 5) Photographer's numbered identification of exposure
- C. Aerial photographs shall be color.
- D. Each set of prints shall be submitted in standard plastic protectors punched for insertion into a standard 3-ring binder.
- E. The CONTRACTOR shall provide standard 3-ring binders for insertion of photographs.

PART 3 - EXECUTION

3.01 TECHNIQUE

- A. The photography shall be a factual presentation of the condition and progress of the WORK.
- B. The photography shall be of correct exposure and focus and:
 - 1) High resolution and sharpness
 - 2) Maximum depth-of-field
 - 3) Minimum distortion

END OF SECTION

SECTION 01400

GENERAL QUALITY CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Definitions: Specific quality control requirements for the work are indicated throughout the Contract Documents. In particular, quality control provisions for manufactured products are specified in individual work sections and in other related sections of Division 1; and are not repeated in this section. The requirements of this section are primarily related to the performance of the work beyond the furnishing of manufactured products. The term "Quality Control" includes, but is not necessarily limited to, inspection and testing and associated requirements. This section does not specify or modify the Engineer's duties relating to Contract quality review and observation.

1.02 QUALITY ASSURANCE

- A. General Workmanship Standards: Except as more definitively specified in other sections of Division 1, comply with the recognized workmanship quality standards within the industry as applicable to each unit of work, including ANSI standards where applicable. It is a requirement that each category of tradesman or installer performing the work be pre-qualified, to the extent of being familiar with the applicable and recognized quality standards for his category of work, and being capable of workmanship complying with those standards.

1.03 SUBMITTALS

- A. Refer to Section 01300 for the general submittal requirements applicable to inspection and test reports, project photographs, damage surveys, quality control samples, maintenance agreements, guaranties, warranties, and similar documentation of quality compliances as required. Refer to the applicable individual work sections of Division 2 through 16 where applicable for specific certification and submittal requirements.
 - 1) Copies and Distribution: Where inspection and test reports and certifications are required by governing authorities, provide additional copies as required, and, where required, send copies directly from inspection or testing agency to governing authority.

1.04 PRODUCT DELIVERY-STORAGE-HANDLING

- A. Materials, supplies, and equipment delivered to the site shall be inspected for damage, unloaded, and stored with a minimum of handling. Delivered items shall not be stored directly on the ground. Handle, store and protect materials and products, including fabricated components, by methods and means recommended by the manufacturer which will prevent damage, deterioration and losses (and resulting delays), thereby ensuring highest quality results as the performance of the work progresses. Control delivery schedules so as to minimize unnecessary long-term storage at the project site prior to installation. Periodically exercise equipment stored in accordance with the manufacturer's recommendations.
- B. The Engineer will refuse to accept, or sample for testing, materials, supplies, or equipment that have been improperly or unsuitably stored.
- C. Materials, supplies or equipment found defective or unfit for use shall not be incorporated in the work and shall immediately be removed from the construction or storage sites and replaced with new materials, supplies or equipment by the Contractor at no additional cost to the County.

1.05 RESPONSIBILITY FOR INSPECTIONS AND TESTS

A. Contractor's Responsibility:

- 1) It will be the Contractor's responsibility to employ and pay for the services of certified independent testing laboratories. In addition, the Contractor shall pay for all retests required due to failure to meet specifications.
 - a. The certified independent testing laboratories qualifications, test procedures, forms and quality control program description shall be submitted to the Engineer for review and approval.
- 2) No failure of test agencies, whether engaged by the County or Contractor, to perform adequate inspections or tests or to properly analyze or report results, shall relieve the Contractor of responsibility for the fulfillment of the requirements of the Contract Documents. It is recognized that the required inspection and testing program is intended to assist the Contractor, County, Engineer and governing authorities in the nominal determination of probable compliances with requirements for certain crucial elements of work. The program is not intended to limit the Contractor in his regular quality control program, as needed for general assurance of compliances.

B. Coordination with County's Agencies:

- 1) Afford access and reasonable time in the construction sequence for County's inspections and tests to be performed. Cooperate with agencies and provide incidental labor and services needed for the removal and delivery of test samples, and for inspections and taking measurements. Provide patching and restoration services where test samples have been removed.

C. Test Agency Responsibilities:

- 1) Test agencies, regardless of whether engaged by the County or Contractor, are not authorized to change or negate the requirements of the Contract Documents. Each agency shall coordinate its assigned work with the construction schedule as maintained by the Contractor, and shall perform its work promptly so as not to delay the work avoidably. Observations (by agencies) having a bearing on the work shall be reported to the Engineer, in the most expeditious way possible, and shall be recorded in writing by the agency. Agency personnel shall not interfere with or assume the duties of the Contractor.

PART 2 - PRODUCTS

2.01 EQUIPMENT AND MATERIALS

- A. All equipment and materials furnished under these specifications shall be new and unused.

2.02 PROJECT AUDIO-VIDEO RECORDS

- A. The CONTRACTOR shall provide dated color DVD Audio-Video Recordings of the entire project area, before construction begins and after final restoration has been completed, and will furnish the County with copies before construction begins and after construction is completed. The audio-video DVD's must be submitted to and approved by the ENGINEER prior to starting construction work and after all survey stake-out is complete. The CONTRACTOR shall submit data sheets, which indicate problem areas by index number and brief description of condition.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Pre-Installation Conferences:

- 1) Well in advance of the installation of every major unit of work which requires coordination with other work, the Contractor shall meet at the project

site with installers and representatives of manufacturers and fabricators who are involved in or affected by the unit of work, and in its coordination or integration with other work which has preceded or will follow. The Contractor shall advise Engineer of scheduled meeting dates. At each meeting, review the progress of other work and preparations for the particular work under consideration including, but not limited to, the requirements of the Contract Documents, options, related change orders, purchases, deliveries, shop drawings, product data, quality control samples, possible conflicts, compatibility problems, time schedules, weather limitations, temporary facilities, space and access limitations, structural limitations, governing regulations, safety, inspection and testing requirements, required performance results, recording requirements, and protection. The Engineer will record the significant discussions of each conference, and the agreements and disagreements, along with the final plan of action. The Engineer will distribute record of meeting promptly to everyone concerned.

- 2) The Contractor shall not proceed with the work if the associated pre-installation conference cannot be concluded successfully. The Contractor shall instigate actions to resolve impediments to the performance of the work, and reconvene the conference at the earliest date feasible, but no longer than five (5) calendar days.

B. Installer's Inspection of Conditions:

- 1) The Contractor shall require the installer of each major unit of work to inspect the substrate to receive the work, and the conditions under which the work will be performed, and to report (in writing to the Contractor) unsatisfactory conditions. The Contractor shall not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

3.02 INSTALLATION QUALITY CONTROL

A. Manufacturer's Instructions:

- 1) Where installations include manufactured products, the Contractor shall comply with the manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in the Contract Documents.

B. The Contractor shall inspect each item of materials or equipment immediately prior to installation, and reject damaged and defective items.

- 1) The Contractor shall provide attachment and connection devices and methods for securing work properly as it is installed; true to line and level, and within recognized industry tolerances if not otherwise indicated. Allow for expansions and building movements. Provide uniform joint widths in exposed work, organized for best possible visual effect. Refer questionable visual effect choices to Engineer for final decision.
- 2) The Contractor shall recheck measurements and dimensions of the work, as an integral step of starting each installation.
- 3) The Contractor shall install work during conditions of temperature, humidity, exposure, forecasted weather, and status of project completion, which will ensure the best possible results for each unit of work, in coordination with the entire work. Isolate each unit of work from non-compatible work, as required to prevent deterioration.
- 4) The Contractor shall coordinate enclosure (closing-in) of work with required inspections and tests, so as to avoid the necessity of uncovering work for that purpose.

C. Mounting Heights:

- 1) Except as otherwise indicated, the Contractor shall mount individual units of work at the industry-recognized standard mounting heights, for the applications indicated. Refer questionable mounting height choices to the Engineer for final decision.

D. Adjust, clean, lubricate, restore marred finishes, and protect newly installed work, to ensure that it will remain without damage or deterioration during the remainder of

the construction period.

END OF SECTION

SECTION 01505

MOBILIZATION

PART 1 - GENERAL

1.01 GENERAL

- A. CONTRACTOR shall mobilize as required for the proper performance and completion of the WORK and in accordance with the Contract Documents.
- B. Mobilization shall include at least the following items:
 - 1) Moving onto the Site of CONTRACTOR's plant and equipment necessary for the first month of operations.
 - 2) Installing temporary construction power, wiring, and lighting facilities.
 - 3) Establishing fire protection system.
 - 4) Developing construction water supply.
 - 5) Providing field offices for the CONTRACTOR, complete with furnishings, equipment, and utility services.
 - 6) Providing on-Site communication facilities, including telephones, and radio pagers.
 - 7) Providing on-Site sanitary facilities and potable water facilities.
 - 8) Arranging for and erection of CONTRACTOR's WORK and storage yards.
 - 9) Obtaining required permits.
 - 10) Having OSHA required notices and establishing safety programs.
 - 11) Having the CONTRACTOR's superintendent at the Site full time.
 - 12) Submitting initial submittals.

1.02 PAYMENT FOR MOBILIZATION

- A. The CONTRACTOR's attention is directed to the condition that no payment for mobilization, or any part thereof, will be recommended for payment under the Contract until mobilization items listed above have been completed.
- B. The costs of bonds, permits, and any required insurance, and any other pre-construction expense necessary for the start of the WORK, excluding cost of construction materials, shall also be included in the payment for Mobilization.
- C. The Work involved in the demobilization is also included in the Mobilization.
- D. As soon as practicable after receipt of the Notice to Proceed, the CONTRACTOR shall submit a breakdown to the ENGINEER for approval, which shall show the estimated value of each major component of mobilization. When approved by the ENGINEER, the breakdown will be the basis for initial progress payments in which mobilization is included.
- E. The dollar value listed in the Schedule of Values for mobilization/demobilization shall not be greater than 5% of the total of the other items (excluding IFCA) in the Schedule of Values.
- F. Payment for mobilization will be made at such time when the Contractor has completed mobilization and will not exceed 75% of the Schedule of Values item for mobilization/demobilization.
- G. Payment for demobilization will be made at such time when the Contractor has completed demobilization.

END OF SECTION

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SECTION 01550

MAINTENANCE OF TRAFFIC (MOT)

PART 1 – GENERAL

1.01 DESCRIPTION

- A. The work of this Section consists of maintaining traffic within the project limits during the entire construction period, including any temporary suspensions of work, and includes all traffic control plans, facilities, devices, and operations as required for the safety and convenience of the public and to minimize public nuisance, as specified herein. The Contractor's work includes preparing approved traffic control plans, construction and maintenance of approved detour facilities, providing necessary facilities for access to residences and businesses along the project, furnishing, installing, and maintaining traffic control markings, signs, and safety devices, and any other special requirements for safe and expeditious movement of traffic in the project area and other impacted areas as specified herein.

1.02 STANDARD REQUIREMENTS FOR MAINTENANCE OF TRAFFIC

- A. All MOT work shall conform with Part VI, The Federal Highway Administration's Manual on Uniform Control Devices; FDOT's 1995 issue of Roadway Plans Preparation Manual, Chapter 10, Work Zone Traffic Control; FDOT's January 1994 issue of Transportation Roadway and Traffic Design Standards, Indexes 415, 600-651, and 700; and FDOT's 1991 issue of Standard Specifications for Road and Bridge Construction, Section 102. Regardless of the MOT standards and specific traffic control plan used, it is the Contractor's responsibility to maintain the work zone in a safe condition.

1.03 SUBMITTALS

- A. Traffic Control Plan - Preparing detailed work zone traffic control plans for the Engineer's approval is included in this Section. The plan will indicate a traffic control plan for each phase of the Contractor's activities. The Contractor may not begin work until a traffic control plan is approved in writing by the Engineer. Traffic control plans modifications require the Engineer's written approval. Except in an emergency, no changes to the approved plan are allowed until written approval is received.

1.04 SPECIFIC REQUIREMENTS

- A. The work for MOT includes the following:
 - 1. All roads will be kept open to two-way traffic during construction, except one-way roads and where otherwise approved in the MOT. Except in approved detoured areas, the Contractor will maintain one lane of traffic in each direction (each lane 11-foot wide minimum) at all times by using existing or constructing temporary pavement.
 - 2. Portions of work phases may be worked concurrently with the approval of the Engineer while maintaining traffic.
 - 3. Temporary pavement will consist of six-inch thick suitable base and one-inch thick asphalt concrete surface; cost is included in MOT.

4. Construction of major side streets can be phased similarly to maintain one lane of traffic in each direction (each lane 11-foot wide minimum) at all times by using existing or constructing temporary pavement.
5. Cost of all barricades, temporary pavement marking, and signing are included in the cost of MOT. The Contractor will erect and maintain all barricades, warning signs, and delineators.
6. Detouring of traffic to other roads to by-pass the project area must be Engineer-approved before implemented.
7. The Contractor shall remove any existing striping conflicting with MOT during construction and provide adequate signing and/or striping. Advanced "road closed" warning signs shall be placed at side street at the direction of the Engineer.
8. Paved temporary connections shall be provided at intersections as directed by the Engineer.
9. Alternate access will be provided to all residences and businesses whenever construction interferes with the existing means of access. The Contractor is not permitted to isolate residences or businesses.
10. Major intersections shall have through movements maintained at all times during construction except during short periods of time approved by the Engineer.
11. Traffic shall be maintained on paved, dust free surfaces at all times.
12. The resetting of traffic signs on side streets and the resurfacing and/or pavement marking on detour roads and/or side streets before and after construction is completed shall be included in the cost of Maintenance of Traffic.
13. The Engineer shall approve any alteration of approved traffic patterns prior to implementation.
14. The Contractor is responsible for establishing a work schedule so that any location under construction will not be left in hazardous condition at the completion of any work period.
15. When construction activities require flagmen for traffic control, the Contractor will employ the appropriate number of trained, competent flagmen, and will provide them with appropriate equipment in good condition.
16. Temporary approaches or crossings and intersections with trails, roads, streets, businesses, parking lots, residences, and garages will be provided and maintained in a safe condition by the Contractor. The Contractor shall take precautions to protect the work and the safety of the public.

1.05 PAYMENT

- A. The cost for Maintenance of Traffic shall be included in the contract price for pipe installation. No additional payment will be made.

END OF SECTION

SECTION 01666

TESTING PIPING SYSTEM

PART 1 - GENERAL

1.01 GENERAL TESTING REQUIREMENTS

- A. The County Inspector (Inspector) will witness all tests and inspect each individual line and its appurtenances, to determine whether the completed lines have met all test requirements, and are constructed true to line and grade as specified in the Contract Documents, and as directed by the Engineer. The Inspector will notify the Engineer of any deviations from the approved drawings.
- B. All pipelines or sections of pipelines that are found to be installed improperly with respect to line or grade, joint deflection, broken or leaking sections of pipe, or are constructed in such a manner that they cannot be satisfactorily corrected otherwise, shall be removed and replaced at the Contractor's expense. All pipelines shall meet or exceed recommendations in the latest revision of the Sarasota County Uniform Water, Wastewater and Reuse System Code (the Code).
- C. The Contractor shall provide all testing equipment needed to complete all necessary tests listed in this section and per all applicable state and local regulations.

1.02 TYPES OF TESTING

- A. Hydrostatic
 - 1) Water mains, including fire hydrants, reuse mains, force mains, and appurtenances shall be hydrostatically tested according to the latest revision of the Code.
 - 2) Force mains and reuse mains shall be hydrostatically tested according to the latest revision of the Code.
 - 3) Pump stations shall be given a running test of all equipment. During the test, all piping and seals shall be checked to insure no leaks occur. Controls shall be carefully checked and balanced for proper operation.
- B. Low-pressure Air: Gravity sewers and service laterals shall be low-pressure air tested according to the latest revision of the Code.

1.03 DEFLECTION TESTS/T.V. INSPECTION/LAMPING

- A. For gravity sewers, deflection tests, T.V. inspections, and lamping shall be performed in accordance with the Code.

PART 2 - PRODUCTS

2.01 WATER, REUSE, AND FORCE MAIN

- A. The Contractor shall furnish a new calibrated Type A oil filled gauge for measuring pressure used during hydrostatic test and shall remain the property of the County at conclusion of tests. The Engineer shall approve the gauge to be used with increments not more than 2 psi. The Contractor will supply water, pumps, backflow preventors, and all appurtenances required for pressurizing the line.

2.02 SEWER

- A. Air Test: Sewer plugs, air compressor, and air test controls shall be supplied by the Contractor and approved by Engineer.
- B. Deflection: Deflection tests shall be conducted with a ninety-five percent (95%) go/no go mandrel, supplied by the Contractor.

- C. TV Testing: The Contractor shall supply all equipment to complete test or hire an approved testing company and will supply the County with one complete copy of all video tapes of testing.
- D. Lamping: The Contractor shall supply all ladders, lamps and personnel to complete test as directed by Engineer.
- E. Contractor shall abide by OSHA requirement for Confined Space Entry.
- F. The Contractor shall provide all equipment, personnel, approved permit forms, and monitoring equipment to perform manhole or vault entries and inspections.

PART 3 - EXECUTION

3.01 WATER, REUSE, AND FORCE MAINS

- A. Where practicable, pipelines shall be tested between line valves or plugs in lengths of not more than 1000 feet.
- B. Duration of test shall be not less than two (2) hours.
- C. Where leaks are visually evident, the joints shall be repaired such that no visible leakage remains, regardless of whether total leakage shown by the leakage test is within allowable limits.
- D. All pipe, fittings and other materials found to be defective under test shall be removed and replaced.
- E. Lines, which fail to meet test, shall be repaired and retested as necessary until test requirements are complied with.

3.02 SEWER

- A. It shall be the Contractor's responsibility to have the pipe cleaned. Prior to testing, the pipe will be checked by the Inspector to see that it is clean, clear, and free of all debris and dirt.
- B. The completed sewer lines, manholes, and wet wells, shall be inspected and tested for leakage. The tests shall be conducted by the Contractor at the direction of the Engineer. The Contractor shall furnish all work, materials, equipment and water required to conduct the tests as specified.
- C. Before testing, the Contractor shall rod out the section to be tested with whatever tools are required to remove any and all dirt, debris and trash from the lines.
- D. The Inspector will then inspect the line from manhole to manhole by use of lights and TV testing (supplied by Contractor) to determine whether the completed line is true to line and grade.
- E. All lines or sections of lines that are found to be laid improperly with respect to line and grade, or that are found to contain broken or leaking sections of pipe, shall be removed and replaced at the Contractor's expense.
- F. Tests: The Engineer will determine which test or tests will be required for each section of sewer line.
 - 1) The ex-filtration test will be made on each section of pipe between manholes after it has been laid and preferably prior to backfilling of joints and tests shall be conducted by plugging the lower end of the section of the sewer to be tested and filling the sewer to a point approximately five feet above the invert at the upper end, observing for leakage at all joints and measuring the amount of leakage for the required interval of time.
 - 2) The test for infiltration, will be made by plugging the open ends of all lines at the manhole so that measurements may be made at each section of the sewer line. This infiltration test will not be made until the sewer line is completed, and the Contractor will be required to correct all conditions that are conducive to excessive infiltration and may be required to relay such sections of the line that may not be corrected otherwise. All observed leaks shall be corrected even though infiltration is within allowable limits.
 - 3) The air test will be made after all house connections have been installed to property lines, plugged, backfilled and compacted.
 - 4) All tees and ends of sewer services shall be plugged with flexible joint plugs or

caps securely fastened to withstand the internal tests pressures. Such plugs or caps shall be readily removable, and their removal shall provide a socket suitable for making a flexible jointed lateral connection or extension.

- 5) Air shall be slowly supplied to the plugged pipe installation until the internal air pressure reaches 4.0 pounds per square inch greater than the average back pressure of any ground water that may submerge the pipe. At least two minutes shall be allowed for temperature stabilization. Allowable leakage shall not exceed the Code requirements.
- G. Deflection: Deflection tests to be conducted with a go/no go mandrel following the manufacturer's instructions and accomplished on a manhole-to-manhole basis, following complete flushing of the line. Deflection test failures will be cause for replacement or relaying of failed sections.

END OF SECTION

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SECTION 01700

PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Closeout is defined to include the general requirements near the end of the Contract Time, in preparation for final acceptance, final payment, normal termination of the Contract, occupancy by the County and similar actions evidencing completion of the work.
- B. Specific requirements for individual units of work are specified in applicable sections of Division 2 through 17.

1.02 PREREQUISITES FOR SUBSTANTIAL COMPLETION

- A. Prior to requesting Engineer's inspection for certification of substantial completion, as required by the General Conditions (for either the entire work or portions thereof), Contractor shall complete the following and list known exceptions in request to the Engineer:
 - 1) Submit statement showing final accounting to the Contract Sum.
 - 2) Submit special guarantees, warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 - 3) Obtain and submit occupancy permits, operating certificates, final inspection/test certificates, and similar releases enabling County's full and unrestricted use of the work and access to services and utilities.
 - 4) Submit final record drawings, maintenance manuals, final project videos, damage or settlement survey, property survey, and similar final record information.
 - 5) Deliver tools, spare parts, extra stocks of materials, and similar physical items to County.
 - 6) Make final change-over of locks and transmit keys to County, and advise County's personnel of change-over in security provisions.
 - 7) Complete start-up testing of systems, and instruction of County's operating/maintenance personnel.
 - 8) Discontinue (or change over) and remove from the project site temporary facilities and services, along with construction tools and facilities, mock-ups, and similar elements.
 - 9) Complete the final cleaning.
 - 10) Touch-up and otherwise repair and restore marred exposed finishes.
 - 11) Submit an executed Certificate of Substantial Completion.

1.03 PREREQUISITES FOR FINAL ACCEPTANCE

- A. Prior to requesting Engineer's final inspection for certification of final acceptance and final payment, as required by the General Conditions, Contractor shall complete the following and list known exceptions (if any) in request to the Engineer:
 - 1) Submit final payment request with final releases and supports not previously submitted and accepted, as requested by the Contract Documents.
 - 2) Submit updated final statement, accounting for additional changes to the Contract Sum.
 - 3) Submit certified copy of Engineer's final punch-list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by the Engineer.
 - 4) Submit final meter readings for utilities, measured record of stored fuel, and similar data as of the time of substantial completion or when County took

possession of and responsibility for corresponding elements of the work.

5) Submit and Execute the "Final Certification" form to the Engineer.

1.04 RECORD DOCUMENT SUBMITTALS

- A. Specific requirements for record documents are indicated in individual sections of these specifications. The general requirements are indicated in General Conditions. The general submittal requirements are indicated in Section 01300. Do not use record documents for construction purposes; protect from deterioration and loss in a secure fire-resistive location; provide access to record documents for the Engineer's inspection during normal working hours.
- B. Record Drawings:
 - 1) The Contractor shall maintain a white-print set (blue-line or black-line) of Contract Drawings and Shop Drawings in clean, undamaged condition, with mark-up of actual installations which vary substantially from the work as originally shown. The Contractor shall mark whichever drawings is most capable of showing the as-built condition fully and accurately; however, where shop drawings are used for mark-up, record a cross-reference at the corresponding location on the Contract Drawings. The Contractor shall mark with red erasable pencil and, where feasible, use other colors to distinguish between variations of separate categories of work. The Contractor shall mark-up new information which is recognized to be of importance to the County, but was for some reason not shown on either the Contract Drawings or Shop Drawings. The Contractor shall give particular attention to concealed work, which would be difficult to measure and record at a later date. The Contractor shall note related IFCA and change order numbers where applicable. The Contractor shall organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.
 - a. Information to be shown for construction project shall be in accordance with Section 00500 Part 1.08 "Record Data".
 - 2) The Contractor shall be held responsible for the accuracy of such data and shall bear any costs incurred in finding utilities as a result of incorrect data furnished by the Contractor.

PART 2 – PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 CLOSEOUT PROCEDURE

- A. General Operating/Maintenance Instructions:
 - 1) The Contractor shall arrange for each installer of work requiring continuing maintenance (by the County) or operation, to meet with the County's personnel, at the project site, for a time period required provide basic instruction needed for proper operation and maintenance of the entire work. The Contractor shall include instruction by manufacturer's representatives where installers are not expert in the required procedures. The Contractor shall review maintenance manuals, record documentation, tools, spare parts and materials, lubricants, fuels, identification system, control sequences, hazards, cleaning and similar procedures and facilities. For operational equipment, demonstrate start-up, shut-down emergency operations, noise and vibration adjustments, safety, economy/efficiency adjustments, and similar operations. The Contractor shall review maintenance and operations in relation to applicable guaranties, warranties, agreements to maintain, bonds, and similar continuing commitments.

3.02 FINAL CLEANING

- A. The Contractor shall provide final cleaning of the work, at the time indicated, consisting of cleaning each surface or unit of work to the normal "clean" condition expected for a first-class cleaning and maintenance program. Comply with manufacturers' instructions for cleaning operations. The following are examples, but not by way of limitation, of the cleaning levels required:
- 1) Remove labels which are not required as permanent labels.
 - 2) Clean transparent materials, including mirrors and window/door glass, to a polished condition, removing substances which are noticeable as vision-obscuring materials.
 - 3) Clean exposed exterior and interior hard-surfaced finishes, including metals, masonry, stone, concrete, painted surfaces, plastics, tile, wood, special coating, and similar surfaces, to a dirt-free condition, free of dust, stains, films and similar noticeable distracting substances. Except as otherwise indicated; avoid the disturbance of natural weathering of exterior surfaces. Restore reflective surfaces to original reflective condition.
 - 4) Wipe surfaces of mechanical and electrical equipment clean, including elevator equipment and similar equipment, and remove excess lubrication and other substances.
 - 5) Remove dirt and surface dust from limited-access spaces including roofs, plenums, shafts, trenches, equipment vaults, manholes and similar spaces.
 - 6) Broom clean concrete floors in nonoccupied spaces.
 - 7) Vacuum clean carpeted surfaces and similar soft surfaces.
 - 8) Clean plumbing fixtures to a sanitary condition, free of stains including those resulting from water exposure.
 - 9) Clean food service equipment to a condition of sanitation ready and acceptable for the intended food service use.
 - 10) Clean light fixtures and lamps so as to function with full efficiency.
 - 11) Clean project site, yard and grounds, including landscape and development areas, of litter and foreign substances. Sweep paved areas to a broom-clean condition; remove stains, petrochemical spills and other foreign deposits. Rake grounds, which are neither planted nor paved, to a smooth, even-textured surface.
- B. Time of Final Cleaning:
- 1) Following the Contractor's certification of "Substantial Completion", and immediately before the Engineer's "Final Acceptance" inspection.
- C. Removal of Protection:
- 1) Except as otherwise indicated or requested by the Engineer, the Contractor shall remove temporary protection devices and facilities, which were installed during the course of the work to protect previously completed work during the remainder of the construction period.
- D. Compliances:
- 1) The Contractor shall comply with safety standards and governing regulations for cleaning operations. The Contractor shall not burn waste materials at the site, or bury debris or excess materials on the County's property, or discharge volatile or other harmful or dangerous materials into drainage systems; remove waste materials from the site and dispose of in a lawful manner.
 - 2) Where extra materials of value remaining after completion of the associated work have become the County's property, the Contractor shall legally dispose or store at the site as directed by the County or Engineer.

END OF SECTION

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SECTION 02110

SITE CLEARING

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. The extent of site clearing shall be limited to clearing those trees and brush necessary to provide access to the construction site. All trees which will not interfere with construction shall be protected from damage. Cost to protect trees, shrubs and etc. is incidental to the project cost. All Protection and Removal of trees shall be in accordance with County ordinances.
- B. Site clearing work includes, but is not limited to, the following:
 - 1) Protection of existing trees
 - 2) Removal of trees and other vegetation
 - 3) Muck
 - 4) Asphalt
 - 5) Curb and Gutter
 - 6) Culvert Pipes
 - 7) General Pipes
 - 8) Other types of obstructions (direct or indirect) with the construction of the project. This does not limit to only conflicts shown on the plans.

1.02 JOB CONDITIONS – CONTRACTOR RESPONSIBILITY

- A. Protection of Existing Improvements:
 - 1) Provide protection necessary to prevent damage to existing improvements indicated to remain in place.
 - 2) Protect improvements on adjoining properties and on the County's property.
 - 3) Restore damaged improvements to their original condition, as acceptable to parties having jurisdiction.
- B. Protection of Existing Trees and Vegetation:
 - 1) Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip lines, excess foot or vehicular traffic, or parking of vehicles within drip line.
 - 2) Provide temporary guards to protect trees and vegetation to be left standing.
 - 3) Water trees and other vegetation to remain within the limits of the Contract work as required to maintain their health during the course of construction operations.
 - 4) Provide protection for roots over 2-inch diameter cut during construction operations. Coat the cut faces with an emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 SITE CLEARING

A. General:

- 1) The Contractor shall remove vegetation, improvements, or obstructions interfering with installation of new construction.

- 2) The Contractor shall carefully and cleanly cut roots and branches of trees indicated to be left standing, where such roots and branches obstruct new construction.
- B. Removal of Improvements:
 - 1) The Contractor shall remove above-grade and below-grade improvements necessary to permit construction, and other work as indicated.

3.02 DISPOSAL OF WASTE MATERIALS

- A. Burning on County's Property: Burning is not permitted on the County's property.
- B. Removal from County's Property: The Contractor shall remove waste materials and unsuitable and excess topsoil from the County's property and dispose of legally.

END OF SECTION

SECTION 02222

TRENCHING, BACKFILLING AND COMPACTING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The extent of excavation, backfilling and compacting as shown on the drawings.
- B. This section includes furnishing equipment, labor and materials, and performing all operations necessary and incidental to perform the required work.
- C. All work shall be in accordance with all local, state, and federal ordinances and regulations.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 EXCAVATION

- A. General: The Contractor shall perform excavation described of substance encountered to the dimensions and depths specified or shown on the drawings. Undercutting shall not be permitted, except when ordered by the Engineer in writing. Material suitable for backfill shall be stockpiled near the site. Rock or other material undesirable for backfill shall be spoiled outside the area in a neat manner, as directed by the Engineer. Where it is necessary to cut roots projecting into an excavation or where it is necessary to trim branches for equipment clearance, all severed root ends or cuts to branches over 2" diameter shall be treated with an asphalt base pruning paint. Backfill with earth over exposed roots as soon as possible.
- B. Rock: Where encountered in the trench bed, rock shall be excavated to a depth of 6" below the bottom of the pipe bell. All undercut trench excavation shall be backfilled with earth and tamped with materials as specified in the following paragraphs under unstable subgrade. All cost for rock removal is incidental to the project.
- C. Unstable Subgrade: In the event that unsuitable material is encountered at or below the excavation depth specified or shown on the drawings, the Engineer shall be notified in writing. Such material shall be removed and replaced with suitable material. Methods and materials used for replacement shall be one of the following as directed by the Engineer in writing.
 - 1) Suitable earth or sand, compacted in the trench and paid for under the bid item noted "special pipe bedding" as approved by the Engineer in writing.
 - 2) Gravel or crushed limerock, compacted in the trench and paid for under the bid item noted "special pipe bedding" as approved by the Engineer in writing.
 - 3) Existing materials, stabilized after removal and then replaced and compacted in the trench at no additional cost to the County.
 - 4) The Engineer shall determine the methods and materials to be used, based upon the condition of the excavation, the pipe structure to be supported, and the availability and character of stabilizing materials.
- D. Trenches:
 - 1) The Contractor shall keep pipe laying operation as close to the excavation operation as possible during the prosecution of the work. The Engineer reserves the right to stop the excavation at any time when, in his opinion, the excavation is opened too far in advance of the pipe laying.
 - 2) Pipe trenches shall be excavated to a depth that will insure a minimum of 36", or as shown on the plans, of cover for all types of pipe, except service laterals. Trenches shall be only of sufficient width to provide a free working space on each side of the pipe. To prevent excess pressure on the pipe, the maximum width of trench at the top of the pipe and at the bottom of the trench shall not be greater than 2' more than the greatest exterior diameter of the pipe. If this maximum width is exceeded, it shall be the Contractor's

responsibility to provide, at no additional cost to the County, such additional bedding or select backfill materials as the Engineer may require. The excavation below the spring line shall be made to conform as near as possible to the shape of the lower third of the pipe. To protect the pipelines from unusual stresses, all work shall be done in open trenches. Excavation shall be made for bells of all pipes and of sufficient depth to permit access to the joint for construction and inspections. In no case will the bells be used to support the body of the pipe.

- 3) In order to avoid existing utilities, at times it may be necessary for the pipe to be laid deeper than the minimum cover specified in the preceding paragraph. At such time the Contractor will not be allowed extra compensation for additional excavation involved.
- 4) In case excavation has been made deeper than necessary, a layer of concrete, fine gravel or other material satisfactory to the Engineer shall be placed, at no extra cost, to secure a firm foundation for the lower third of each pipe. Where possible, excavated material shall be placed so as not to interfere with public travel. Bridging shall be provided to afford necessary access to public or private premises. Bridging shall be considered as part of the excavation operation and shall be supplied at no additional cost to the County.

E. Structural: (For inlets, manholes, valve pits and similar structures)

- 1) Remove sufficient material to allow proper space for erecting and removing forms. The elevations of the bottoms of footings, if shown on the drawings, shall be considered as approximate only, and the Engineer may order, in writing, such changes in dimensions or elevations of footings as may be deemed necessary to secure a satisfactory foundation. Excavation for structures shall be sufficient to leave at least 12" in the clear between their outer surfaces and the embankment or timber that may be used to protect them. Backfill of earth under structures shall be filled with thoroughly compacted sand, gravel, or concrete at the expense of the Contractor.
- 2) After excavation for a structure is completed, the Contractor shall notify the Engineer to that effect. No concrete or reinforcing steel shall be placed until the Engineer has approved the depth of the excavation and the character of the foundation material.

F. Sheet piling and Shoring:

- 1) The Contractor shall provide all trench and structural bracing, sheet piling or shoring as necessary to construct and protect the excavation, existing utilities, structures and private property of all types and as required for the safety of the employees. Sheet piling shall be removed or cut off by the Contractor during backfilling operations as directed by the Engineer. Removal of shoring for structures shall be done in such a manner as not to disturb or mar finished masonry or concrete surfaces. Sheet piling and shoring plans shall be provided as required by local, state, and federal regulations and ordinances. Sheet piling and shoring plans shall be signed and sealed by the Contractor's Engineer who designed system.

3.02 DRAINAGE

- A. Grading shall be controlled in the vicinity of excavations so that the surface of the ground will be properly sloped to prevent water from running into trenches or other excavated areas. Any water, which accumulates in the excavations, shall be removed promptly by well point or by other means satisfactory to the Engineer in such a manner as to not create a nuisance to adjacent property or public thoroughfare. Trenches shall be kept dry while pipe is being laid. Bridging of dewatering pipe shall be provided where necessary. Pumps and engines for well point systems shall be operated with mufflers, and at a minimum noise level as described by the most current noise ordinance. The Contractor will not be allowed to discharge water into the County's storm drainage system without the written approval of the Engineer. Such approval will be subject to the condition that the storm sewer be returned to its original condition, and all

environmental requirements are met. The Contractor will not be allowed to discharge water into private property without consent to the Contractor from the property owner(s) or owner(s) association.

- B. The Contractor is responsible for following all environmental requirements. The Contractor shall be financially responsible for any nuisance created due to discharge of water from his drainage system.

3.03 DEWATERING

- A. All installations shall be within a dry area, unless otherwise approved by the Engineer. Dewatering system shall be utilized in accordance with good standard practice and must be efficient enough to lower the ground water level in advance of the excavation and maintain it continuously to keep the trench bottom and sides firm and dry. Sewer systems shall not be used as a drainage system for ground water.
- B. The Contractor shall have on site or available for immediate use at all times, dewatering equipment adequate to handle the ground water present. When well points are used, sufficient header pipe and points shall be provided to maintain a dry and workable excavation. All well points shall be installed with a shell or sand filter around the head of the point. If ground water is present, well points shall be installed prior to any installation, at no additional cost to the County.
- C. Water pumped or drained from the site shall be handled in accordance with local, state, and federal rules and regulations.
- D. Upon removal of well points, holes shall be filled with clean suitable material and compacted. No additional compensation shall be given for this task.

3.04 BACKFILL

A. Trenches:

- 1) Trenches shall be backfilled immediately after the pipe is laid unless other protection for the pipeline is provided. Clean earth, sand, crushed limerock or other material approved by the Engineer shall be used for backfill. Backfill material shall be selected, deposited and compacted (simultaneously on both sides of the pipe) so as to eliminate the possibility of lateral displacement of the pipe. Backfill material shall be solidly tamped around the pipes in layers to a level at least 1-foot above the top of the pipe. Each layer shall be compacted to a maximum thickness of 6-inches.
- 2) In paved areas, the remainder of the backfill shall be deposited and then compacted by mechanical tampers. Mechanical tamping of lifts in unpaved areas shall be to a maximum thickness of 12-inches. In areas to be paved or repaved, the entire depth of backfill shall be deposited in lifts and compacted by hand or mechanical tampers to a maximum thickness of 6-inches. Compaction shall be carried out to achieve a density of at least 98% of the maximum density as determined by AASHTO, Method T-180. Density test shall be done every lift and shall include a test at the spring line of the pipeline.
- 3) In areas to be paved and unpaved areas, density tests for determination of the specified compaction shall be made by a testing laboratory and spaced a minimum of one in every 300 feet of trench cut per lift and shall include a test at the spring line of the pipe. It is the intent of this specification to secure a condition where no further settlement of trenches will occur. When backfilling and compaction is completed, the roadway base for pavement replacement may be placed immediately. It will be the responsibility of the Contractor to restore the surface to the original grade wherever settlement occurs.

B. Wet Trenches:

- 1) Backfill for the pipe bed in wet trenches shall be crushed, graded limerock, compacted in the trench. After the pipe is laid, a graded limerock backfill shall be placed and worked in around the haunches to a point 6-inches above

the pipe. The width of the limerock material around the pipe shall not be less than the outside diameter of the pipe plus 6-inches on each side of the pipe. Material shall be carefully distributed along the pipe so as to provide full and uniform support under and around the pipe. Six inches above the top of the pipe and up to the water level, material from the excavation with no rock or earth exceeding 4-inches in any one dimension shall then be lifted to the trench and released at the water level. Material shall be uniformly distributed for the full width of the trench. Backfill and compaction above the water level in the trench shall be as specified above. All cost for graded limerock placed in wet trenches shall be included in the cost of excavation and backfill for the various sizes of pipe.

C. Structural:

- 1) To include, but not limited, manholes, vaults, wetwells, etc. After completion of foundation footings and walls and other construction below the elevation of the final grades, and prior to backfilling, forms shall be removed and the excavation shall be cleared of all trash and debris. Material for backfilling shall consist of the excavation, borrow sand or other approved materials, and shall be free of trash, lumber or other debris. Backfill shall be placed in horizontal layers not in excess of 9-inches in thickness, and have a moisture content such that a density may be obtained to prevent excessive settlement or shrinkage. Each layer shall be compacted by hand or approved machine tampers with extreme care being exerted not to damage pipe or structures. Backfill shall be placed and compacted evenly against the exposed surface to prevent undue stress on any surface. Density tests shall be taken as follows; within three (3) feet of centerline of the structure, every lift not to exceed twelve (12) inches and shall achieve at least 98% of the maximum density as determined by AASHTO, Method T-180.

3.05 RESTORATION OF SURFACE IMPROVEMENTS

- A. Roadways, including shoulders, alleys and driveways of shell, limerock, stabilized soil or gravel, grass plots, sod, shrubbery, ornamental trees, signs, fences, or other surface improvements on public or private property which have been damaged or removed in excavating, shall be restored to conditions equal to or better than conditions existing prior to beginning work. Restoration of shoulders shall consist of two (2) feet of sodding adjacent to roadway, remainder seeding and mulch or stabilizing with limerock as selected by the Engineer and as shown on the construction drawings. The cost of doing this work shall be included in the cost of the various applicable items.
- B. Materials for unpaved roadways, road shoulders, alleys, or driveways, shall be compacted to a minimum of 95% of the maximum density as determined by AASHTO, Method T-180. The cost of this work and furnishing new materials shall be included in the cost of the applicable items of work as no separate payment will be made, unless a separate bid item is provided. Density test shall be completed every lift (12") to finish grade. Also a test shall be done at the spring line of the pipe.

3.06 FINE GRADING

- A. Finished areas around structures shall be graded smooth and hand raked and shall meet the elevations and contours shown on the drawings. Lumber, earth clods, rocks and other undesirable materials shall be removed from the site.

3.07 DISPOSAL OF MATERIALS

- A. Such portions of the excavated materials as needed and as suitable, shall be used for backfilling and grading above the completed work to the elevations as shown on the drawings or as directed. Excavated material in excess of the quantity required for this purpose shall be disposed of by the Contractor in accordance with local, state, and federal laws by the Contractor in a legal manner at no additional cost to the County. The Contractor shall leave the earth over the trenches or other excavations in a neat and

uniform condition acceptable to the County.

3.08 ROADWAY REPLACEMENT

- A. Asphalt pavement shall be removed by saw cutting on a straight line with edges as vertical as possible. Concrete pavement or asphalt surfaced concrete shall be removed by cutting with a concrete saw in as straight a line and vertically as possible. Materials to replace State Highway paving shall conform to the specifications required by the Florida Department of Transportation. Other asphalt pavement replacement shall conform to the requirements of the construction drawings and any other applicable Sarasota County Public Works standards for the replacement of pavement.
- B. The Contractor shall have tests made by a certified independent testing laboratory, approved by the County, to verify roadway compaction results. Tests will be made, spaced a minimum of one in every 300 feet of trench cut. A minimum of one (1) test shall be taken per lift in situations less than 300' of pipe run. All density tests shall be taken at each twelve-inch (12") lift to finish grade and will include a test at the spring line of the pipe.
- C. Where asphalt or built-up asphalt pavement is replaced by concrete, the concrete shall have a minimum of 6-inches in thickness and be reinforced with 6 by 6 No. 10 gage welded wire fabric. Concrete for paving shall be 3,000 psi design strength. Where the pavement replacement is of like material, it shall be replaced in thickness equal to or better than that existing at the time of removal. (The same shall apply for concrete driveway replacement).
- D. Unless the base is sealed or other temporary paving is applied over areas to be repaved, pavement shall be replaced not later than 3-weeks after completion of backfill.

3.09 TESTS

- A. The Contractor shall furnish facilities for making all density tests and make such restorations as may be necessary due to test operations. All density tests on backfill or base replacement shall be made by a certified commercial testing laboratory employed by the Contractor and at such locations as may be recommended by the Engineer. If the densities as determined by the specified tests fall below the required minimums, the Contractor shall pay for all retests.
 - 1) Density shall be at least 98% of the maximum density as determined by AASHTO, method T-180 for road crossing and shoulders.
 - 2) Density shall be at least 95% of the maximum density as determined by AASHTO, method T-180, for all unpaved areas. Tests shall be taken every 300' of trench cut per lift.
 - 3) Two (2) sets of density tests shall be taken per road crossing.
 - 4) The Contractor shall submit two (2) copies of certified test results to the County on a weekly basis.
 - 5) Density test shall be taken within seven (7) days after the installation.

3.10 SIDEWALK, CURB AND GUTTER REMOVAL AND REPLACEMENT

- A. Sidewalk, curb and gutter removal and replacement required in the construction of this work shall be done by the Contractor. Reasonable care shall be exercised in removing sidewalk and curb and gutter, and the Contractor shall legally dispose of this material as directed by the Engineer on a weekly basis. Brick, concrete or built-up asphalt sidewalk replacement and curb and gutter replacement shall be replaced with like material in a manner and condition equal to or better than that existing at the time of removal.
- B. Materials and methods of replacing State Highway sidewalks or curbs shall conform to the Florida Department of Transportation specifications.

END OF SECTION

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SECTION 02300

DIRECTIONAL DRILLING

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The Contractor shall provide all necessary tools, materials and equipment to successfully complete the installation of directionally drilled piping as specified herein and shown on the drawings. The Contractor shall be responsible for the final constructed product, and for furnishing the qualified labor and supervision necessary for this method of construction.
- B. The Contractor shall furnish all items necessary to perform the horizontal directional drilling operation and construct the pipe to the lines and grade shown on the drawings
- C. Boring must use techniques of creating or directing a borehole along a predetermined path to a specified target location. This must involve use of mechanical and hydraulic deviation equipment to change the boring course and must use instrumentation to monitor the location and orientation of the boring head assembly along a predetermined course
- D. Drilling must be accomplished with fluid-assisted mechanical cutting. Boring fluids shall be a mixture of bentonite and water or polymers and additives. Bentonite sealants and water will be used to lubricate and seal the mini-tunnel. It is mandatory that minimum pressures and flow rates be used during drilling operation as not to fracture the sub-grade material around and or above the bore.
- E. The mobile drilling system shall utilize small diameter fluid jets to fracture and mechanical cutters to cut and excavate the soil as the head advances forward
- F. Steering shall be accomplished by the installation of an offset section of drill stem that causes the cutterhead to turn eccentrically about its centerline when it is rotating. When steering adjustments are required, the cutterhead offset section is rotated toward the desired direction of travel and the drill stem is advanced forward without rotation.
- G. The mobile drilling system must be capable of being launched from the surface at an inclined angle and drilling a 2" to 3" diameter pilot hole. The pilot hole will then be enlarged with reamers as required.

1.02 REFERENCE STANDARDS

- A. American Association of State Highway and Transportation Officials (AASHTO).
- B. Occupational Safety and Health Administration (OSHA).

1.03 DEFINITIONS

- A. Contractor's Construction Drawings. Shall be defined as drawings by which the Contractor proposes to construct, operate, build, etc., the referenced item. The submission of these drawings shall be required for the sole purpose of providing the sufficient details to verify that the Contractor's work in progress is in accordance with the intent of the design

1.04 SUBMITTALS

- A. The Engineer will base the review of submitted details and data on the requirements of the completed work, safety of the work in regards to the public, potential for damage to public or utilities and other existing structures and facilities, and the potential for unnecessary delay in the execution of the work. Such review shall not be construed to relieve the Contractor in any way of his responsibilities under the contract. Contractor shall not commence work on any items requiring Contractor's construction drawings or other submittals until the drawings and submittals are reviewed and accepted by the Engineer
- B. The Contractor shall:
 - 1) Submit for review complete construction drawings and/or complete written description identifying details of the proposed method of construction and the sequence of operations to be performed during construction, as required by

the method of tunnel excavation approved. The drawings and descriptions shall be sufficiently detailed to demonstrate to the Engineer whether the proposed materials and procedures will meet the requirements of this specification. Contractor shall submit arrangement drawings and technical specifications of the machine and trailing equipment (including any modifications), three-year experience record with this type of machine and a copy of the manufacturer's operation manual for the machine.

- a. Complete details of the equipment, methods and procedures to be used, including but not limited to primary lining installation, timing of installation in relation to the excavation plan and sequence, bulkheads, etc.
 - b. Grouting techniques, including equipment, pumping procedures, pressure grout types, mixtures and plug systems.
 - c. Method of controlling line and grade of excavation.
 - d. Details of muck removal, including equipment type, number, and disposal location.
 - e. Proposed contingency plans for critical phases and areas of directional drilling
- C. Quality Control Methods. At least 10 days prior to the start of directional drilling, Contractor shall submit a description of his quality control methods he proposes to use in his operations to the Engineer. The submittal shall describe
- 1) Procedures for controlling and checking line and grade
 - 2) Field forms for establishing and checking line and grade
- D. Safety. Procedures including, but not limited to, monitoring for gases encountered shall be submitted.
- E. Hazardous chemical list as well as all MSDS and technical data sheets

1.05 DESIGN CRITERIA

A. Compatibility of Methods

- 1) The methods of excavation, lining, and groundwater control shall be compatible

1.06 JOB CONDITIONS

A. Safety Requirements

- 1) Perform work in a manner to maximize safety and reduce exposure of men and equipment to hazardous and potentially hazardous conditions, in accordance with applicable safety standards.
- 2) Whenever there is an emergency or stoppage of work which is likely to endanger the excavation or adjacent structures, operate a full work force for 24 hours a day, including weekends and holidays, without intermission until the emergency or hazardous conditions no longer jeopardize the stability and safety of the work

B. Air Quality

- 1) Conduct directional drilling operations by methods and with equipment, which will positively control dust, fumes, vapors, gases or other atmospheric impurities in accordance with applicable safety requirements

1.07 PERMITS

- A. Obtain any and all other permits required for prosecution of the work

PART 2 – PRODUCTS

2.01 GENERAL

- A. Refer to Section 02618 for HDPE pipe material
- B. Contractor shall install #8 copper wire with directional drilled HDPE pipe for location purposes. Detection wire shall be securely attached to each end of the directionally drilled pipe and intermittently as needed.

PART 3 - EXECUTION

3.01 GENERAL

- A. The Contractor shall be responsible for his means and methods of directional drilling construction and shall ensure the safety of the work, the Contractor's employees, the public, and adjacent property, whether public or .
- B. Contractor should anticipate that portions of the drilled excavation will be below the groundwater table
- C. Comply with all local, state and federal laws, rules and regulations at all times to prevent pollution of the air, ground and water

3.02 EQUIPMENT

- A. Diesel, electrical, or air-powered equipment will be acceptable, subject to applicable federal and state regulations.
- B. Any method or equipment that the Contractor can demonstrate will produce the specified results will be considered
- C. Contractor shall employ equipment that will be capable of handling the various anticipated ground conditions. In addition, the equipment shall:
 - 1) Be capable of minimizing loss of ground ahead of and around the machine and providing satisfactory support of the excavated face at all times.
 - 2) Provide a system to indicate whether the amount of earth material removed is equivalent to that displaced by the advance of the machine such that the advance rate may be controlled accordingly.
- D. Provide adequate secondary containment for any and all portable storage tanks

3.03 DIRECTIONAL DRILLING DATA

- A. Daily logs of construction events and observations shall be submitted on at least the following:
 - 1) Location and elevation of significant soil strata boundaries and brief soil descriptions.
 - 2) Jacking pressures and torsional forces, if applicable

3.04 CONTROL OF THE DRILL LINE AND GRADE

- A. Construction Control.
 - 1) The Contractor shall establish and be fully responsible for the accuracy of his own control for the construction of the entire project, including structures, drill line and grade.
 - 2) The Contractor's control points shall be established sufficiently far from the drilling operation not to be affected by construction operations.
 - 3) The Contractor shall maintain daily records of alignment and grade and shall submit three copies of these records to the Engineer. However, the Contractor remains fully responsible for the accuracy of his work and the correction of it, as required.
 - 4) The Contractor shall check his control for the bore alignment against an above ground undisturbed reference at least once for each rod length of bore constructed, or more often as needed or directed by the Engineer. Contractor shall furnish a "Directional Bore Log" for each bore completed.

3.05 DISPOSAL OF EXCESS MATERIAL

- A. Where such effort is necessary, cost for groundwater control during the course of the drilling work shall be included in the unit contract price for the work.
- B. Dewatering required during the course of the project to lower water table, to remove standing water, surface drainage seepage, or to protect ongoing work against rising waters or floods shall be considered incidental to the work being performed.
- C. Contractor shall remove all puddled bentonite (drillers mud) and dispose of off-site in a legal manner, at no additional cost to the County.

END OF SECTION

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SECTION 02400

LAWN RESTORATION

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS:

- A. Work under this section consists of furnishing all labor, material and equipment to install, replace, and maintain all areas disturbed during construction or as indicated, with a stand of grass by sodding, seeding, and/or seeding and mulching, as shown on the Construction Plans and directed by the Engineer.
- B. All areas of private lawns, and areas in close proximity thereto, disturbed during construction, shall be replaced in kind with sod matching the originally undisturbed grass.
- C. Hydro-seeding may be used in place of seeding and/or seeding and mulching, provided the same results are achieved as specified in this Section.
- D. The application of fertilizer shall comply with Chapter 54 – Article XXXII of the Sarasota County Code of Ordinances entitled “Fertilizer and Landscape Management”.
- E. The watering of seed or sod shall comply with the current Sarasota County and State of Florida Watering Restrictions.

1.02 REFERENCE DOCUMENTS:

- A. The materials used in this work shall conform to the requirements of the current edition of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction (Standard Specifications), as follows:
 - 1) Seed, Sod, and Mulch - Section 981.
 - 2) Fertilizer - Section 982.

1.03 SUBMITTALS:

- A. Submit certifications and identification labels for all seed, sod, mulch, and fertilizers supplied, as specified in this Section and Section 01300.

PART 2 - PRODUCTS

- 2.01 SEED: As specified in Section 981-1 of the Standard Specifications. St. Augustine grass shall be included where Bermuda grass is referenced.

2.02 SOD:

- A. Sod shall be as specified in Section 981-2 of the Standard Specifications. St. Augustine grass shall be included where Bermuda grass is referenced. When replacing sod in areas that had an established stand of grass, the sod shall be of the same type as the pre-existing grass.
- B. The sod shall be taken up in 12 inch wide (minimum) rolls, or in commercial-size rectangles, preferably 12-inch by 24-inch or larger, except where 6-inch strip sodding is called for.
- C. The sod shall be:
 - 1) sufficiently thick to secure a dense stand of live grass.
 - 2) live, fresh and uninjured at the time of planting.
 - 3) a soil mat of sufficient thickness adhering firmly to the roots to withstand all necessary

handling.

- 4) reasonably free of weeds and other grasses.
- 5) planted as soon as possible after being dug. Use of sod which has been cut more than 72 hours prior to placement, must be approved by the Engineer.
- 6) shaded and kept moist from the time it is dug until it is planted.

D. Sod shall be handled in a manner to prevent breaking or other damage. Sod shall not be handled by pitch forks or by dumping from trucks or other vehicles. Care shall be taken at all times to retain the native soil on the roots of each sod roll during stripping and handling. Sod that has been damaged by handling during delivery, storage or installation will be rejected.

2.03 MULCH: As specified in Section 981-3 of the Standard Specifications.

2.04 FERTILIZER:

- A. As specified in Section 982 of the Standard Specifications (Except where more stringent requirements are specified in this Section).
- B. Chemical fertilizer shall be supplied in suitable bags with the net weight certification of the shipment. Fertilizer shall be 16-4-8, unless otherwise indicated on the Construction Plans.
- C. The numerical designations for fertilizer indicate the minimum percentages (respectively) of (1) total nitrogen, (2) available phosphoric acid, and (3) water soluble potash, contained in the fertilizer.
- D. Provide the chemical designation of the fertilizer specified, with at least 50% of the nitrogen containing Slow Release Nitrogen per Guaranteed Analysis Label. The nitrogen source may be a urea-formaldehyde source provided it is not derived from a waste product of the plastics industry.

2.05 SOURCE REQUIREMENTS FOR SOD AND MULCH: The Contractor shall comply with all current restrictions in regard to movement of sod and mulch material, into or within areas which are outside of quarantine boundaries for the white fringed beetle, witchweed, and West Indian sugar cane borer weevil, as issued by the Division of Plant Industry, Florida Department of Agriculture and the Animal and Plant Health Inspection Services, U.S. Department of Agriculture.

2.06 EQUIPMENT: The device(s) used for spreading seed, mulch, and fertilizer shall be capable of uniformly distributing the material at the specified rate.

2.07 NETTING: Any netting contained within the sod shall be certified by the manufacturer to be bio-degradable within a period of three (3) months following installation.

2.08 WATER: The water used in the grassing operations may be obtained from any approved source. The water shall be free of any substance which might be harmful to plant growth. Effluent water shall meet all Federal, State and local requirements.

PART 3 - EXECUTION

3.01 SEED/SOD BED PREPARATION

- A. Areas to be seeded and/or sodded shall be cleared of all rough grass, weeds, and debris, and brought to an even grade.
- B. All material shall be suitable for plant growth. The organic matter content of the prepared soil layer after mixing shall be a minimum of 2.5%, a maximum of 10%, and have a pH value of 4.5 or greater and less than or equal to 8.5.
- C. The soil shall then be thoroughly tilled to a minimum 6-inch depth.

D. The areas shall then be brought to proper grade, free of sticks, stones, or other foreign matter over 1/2-inch in diameter or dimension. The surface shall conform to finish grade, less the thickness of sod (where indicated), free of water-retaining depressions. The soil shall be friable and of uniformly firm texture.

E. Roll and pre-wet the area prior to placing sod.

3.02 INSPECTION

A. Verify that soil preparation and related preceding work has been completed.

B. Do not start work until conditions are satisfactory.

3.03 SEED & SEED AND MULCH

A. Seed:

- 1) General: Do not seed or mulch when wind velocities exceed 15 mph. Sow seed only when the soil is moist. Do not perform any seeding when the ground is unduly wet or otherwise not in a tillable condition.
- 2) Whenever a suitable area has been graded, prepare the area and perform grassing in accordance with the Contract Documents. Incorporate grassing into the project at the earliest practical time.
- 3) Complete all grassing on shoulder areas prior to the placement of the friction course on adjacent pavement.

B. Sequence of Operations:

- 1) Apply finished soil layer as required, and prepare the area to be seeded. Spread specified seed, and cut-in mulch and fertilizer.
- 2) In preparing the ground for sowing of seeds, disk-harrow and thoroughly pulverize the soil to an average depth of 6 inches. Make the soil true to grade, not compacted and free of clods, roots, and other material which will interfere with the work or subsequent mowing and maintenance operations. Do not begin subsequent operations until the Engineer has approved the condition of the prepared areas.
- 3) Seeding: While the soil is still loose, scatter the seed uniformly over the grassing area and immediately mix it into the seed bed to a depth of 1/4 inch using the specified seed.
- 4) Thoroughly dry-mix the separate types of seed immediately before sowing. Do not use wet seed.

C. Mulching:

- 1) When areas require mulch, as shown on the plans, apply approximately 2 inches, loose thickness, of the mulch material uniformly over the seeded area, and cut the mulch material into the soil to produce a loose mulched thickness of 3 to 4 inches. Do not use harrows.
- 2) When mulching on steep slopes, where the use of a machine for the cutting-in process is not practicable, secure the mulch after the seeding operation by either using an erosion control fabric, or spread a string net over the mulch using stakes driven flush with the top of the mulch at 6 foot centers and string parallel and perpendicular with diagonals in both directions.

D. Rolling: Immediately after seeding, roll the entire grassed or mulched area with a Cultipacker, lightweight turf roller, or a horticultural roller. Make at least two passes over the entire area.

3.04 FERTILIZING

A. For both seeding and sodding operations, spread the fertilizer with approved equipment, over the grassed areas as follows:

- 1) Spread an initial application of 265 lbs/acre of 16-4-8.
 - 2) Spread subsequent applications of 135 lbs/acre of 16-4-8 approximately 60 calendar days after the initial application without mixing into the soil.
- B. Following the initial 60 day establishment period, fertilizers containing nitrogen and/or phosphorus shall not be applied during the Restricted Season (June 1st through September 30th).
 - C. Fertilizers shall only be applied by an Applicator who has successfully completed a Sarasota County approved Best Management Practices training Program, and received a Certificate of Completion for such training.
 - D. A vehicle decal, provided by Sarasota County, shall be affixed and maintained on the exterior of all vehicles and trailers used in connection with the application of fertilizer within Sarasota County.
 - E. Following the initial 60 day establishment period, fertilizers containing phosphorus shall be applied at a rate not to exceeding 0.25 lbs. per 1,000 s.f. per application, nor exceed a rate of 0.50 lbs. per 1,000 s.f. per year.
 - F. Following the initial 60 day establishment period, no more than 4 lbs of nitrogen per 1,000 s.f. shall be applied to any grass area in any calendar year.
 - G. Fertilizer shall not be applied within 10' of any pond, stream, watercourse, lake or canal, or within 10' of any wetland or top of seawall.
 - H. Fertilizers shall not be deposited on impervious areas. If this occurs, the fertilizer shall be immediately and completely removed from the impervious area.
 - I. Spreader deflector shields are required when fertilizing with a broadcast spreader, to ensure that fertilizer granules are deflected away from impervious areas, fertilizer free zones, and water bodies.
 - J. The restricted season and application rates indicated above shall not apply to fertilizing newly established grass areas for the first 60-day period after installation.

3.05 SOD HANDLING AND INSTALLATION

- A. During delivery, prior to planting, and during the planting of sod areas, the sod panels shall at all times be protected from excessive drying and unnecessary exposure of the roots to the sun. All sod shall be stacked during construction and planting so as not to be damaged by sweating or excessive heat and moisture.
- B. After completion of soil conditioning and preparation as specified above, sod panels shall be laid tightly together so as to make a solid sodded lawn area. Provide a true and even surface without any displacement or deformation.
- C. Place the sod to the edge of all the paving and shrub areas and one (1") inch below adjoining pavement with an even surface and edge. Place rolled sod parallel with the roadway and cut any exposed netting even with the sod edge.
- D. Sod shall be placed at all areas where sod existed prior to construction, on slopes of 3 horizontal on 1 vertical (3:1) or greater, in areas where erosion of soils will likely occur, along edge of roads, driveways and structures; and as directed by the Engineer. On mounds and other slopes, the long dimension of the sod shall be laid perpendicular to the slope. On areas where the sod may slide, due to height and slope, the Engineer may direct that the sod be pegged, with pegs driven through the sod blocks into firm earth, at suitable intervals, and at no additional cost to the County.

- E. Where sodding in drainage ditches, stagger the setting of the sod pieces to avoid a continuous seam along the line of flow.
- F. Immediately following sod laying the lawn areas shall be rolled with a lightweight turf roller customarily used for such purposes, and then thoroughly watered.

3.06 SEED AND SOD MAINTENANCE

- A. The germinated seed or sod shall produce a dense, well established growth. The Contractor shall be responsible for:
 - 1) Mowing when grass height reaches a maximum of six inches (6")
 - 2) Repairing seed/sod areas, including filling and leveling
 - 3) Re-seeding, re-mulching, and re-sodding of all washed-out, eroded or bare spots
 - 4) Treatment of grassed areas for pest plants and/or noxious weeds
- B. Watering: The Contractor shall provide a vehicle for applying water to the grass areas equipped with either a calibrated tank or an approved metering device installed at such point on the vehicle to measure the water at time of application.
- C. Watering Schedule:
 - 1) Sufficient watering shall be performed by the Contractor to maintain adequate moisture for optimum development of the seeded and sod areas.
 - 2) Seeded and Sod areas shall receive no less than 1.5" inches of water per week for the first 2 weeks.
 - 3) The Contractor shall apply water to the grass areas for a minimum of 60 days, and as required thereafter throughout the maintenance period.
 - 4) Current Year-Round Water Conservation Measures (F.A.C. 40D-22.201) shall apply as follows:
 - a) Best Management practices shall be employed by the Contractor in order to avoid wasteful and unnecessary water usage.
 - b) Any New Plant Materials may be irrigated on any day of the week as needed, for the purpose of maintaining plant health and encourage root grow-in, during a 60-day establishment period.
 - c) Irrigation of new Turfgrass areas or other New Plant Material associated with a public works project, when and where conducted using tanker trucks or other vehicles, is allowable without regard to the normally allowable watering times for the entire 60-day establishment period.
 - d) Irrigation using Reclaimed Water is not restricted.
 - e) Following the 60-day establishment period, irrigation is limited to a maximum of two (2) applications of $\frac{3}{4}$ " of water in any seven-day period.
 - f) Above requirements may, from time to time, be further restricted by Southwest Florida Water Management District (SWFWMD) with the declaration of a water shortage. <http://www.watermatters.org>
- D. The Contractor shall maintain the seeded and sod areas in a manner acceptable to the Engineer and the County, during the course of construction and for a period of six (6) months beyond the date of Final Completion and Acceptance of the Project, unless otherwise authorized in writing by the Engineer.

3.07 CLEANING

- A. The Contractor shall continually remove and properly dispose of all debris and excess materials from the project site.

END OF SECTION

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SECTION 02410

SOD RESTORATION

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Work under this section consists of furnishing all labor, material and equipment to replace and maintain all grassed areas disturbed during construction by the furnishing and placing sod, as specified and as directed by the Engineer.

1.02 REFERENCE DOCUMENTS

- A. The materials used in this work shall conform to the requirements of Florida Department of Transportation Standard Specifications for Road and Bridge Construction as follows:
 - 1) Sod - Section 981-2
 - 2) Fertilizer - Section 982
 - 3) Water - Section 983

1.03 SUBMITTALS

- A. Submit certifications and identification labels for all sod, seed, and mulch supplied.

PART 2 - PRODUCTS

2.01 SOD

- A. Types: When replacing sod in areas that are already sodded, the sod shall be the same type as the existing sod.
- B. The sod shall be taken up in commercial-size rectangles, preferably 12-inch by 24-inch or larger, except where 6-inch strip sodding is called for.
- C. The sod shall be sufficiently thick to secure a dense stand of live grass. The sod shall be live, fresh and uninjured at the time of planting. It shall have a soil mat of sufficient thickness adhering firmly to the roots to withstand all necessary handling. It shall be reasonably free of weeds and other grasses. It shall be planted as soon as possible after being dug and shall be shaded and kept moist from the time it is dug until it is planted.
- D. Sod should be handled in a manner to prevent breaking or other damage. Sod shall not be handled by pitch forks or by dumping from trucks or other vehicles. Care shall be taken at all times to retain the native soil on the roots of each sod roll during stripping and handling. Sod that has been damaged by handling during delivery, storage or installation will be rejected.

2.02 FERTILIZER

- A. Chemical fertilizer shall be supplied in suitable bags with the net weight certification of the shipment. Fertilizer shall be 16-4-8 and comply with Section 982 of the FDOT Standard Specification for Road and Bridge Construction
- B. The numerical designations for fertilizer indicate the minimum percentages (respectively) of (1) total nitrogen, (2) available phosphoric acid and (3) water soluble potash, contained in the fertilizer
- C. The chemical designation of the fertilizer shall be 16-4-8, with at least 50 percent of the nitrogen from a non water-soluble organic source. The nitrogen source may be a urea-formaldehyde source provided it is not derived from a waste product of the plastic industry.

2.03 EQUIPMENT

- A. The device used for spreading fertilizer shall be capable of uniformly distributing the material at the specified rate.

PART 3 - EXECUTION

3.01 SOD BED PREPARATION

- A. Areas to be sodded shall be cleared of all rough grass, weeds, and debris, and brought to an even grade.
- B. The soil shall then be thoroughly tilled to a minimum 6-inch depth.
- C. The areas shall then be brought to proper grade, free of sticks, stones, or other foreign matter over ½ inch in diameter or dimension. The surface shall conform to finish grade, less the thickness of sod, free of water-retaining depressions, the soil friable and of uniformly firm texture.

3.02 INSPECTION

- A. Verify that soil preparation and related preceding work has been completed. Do not start work until conditions are satisfactory.

3.03 SOD HANDLING AND INSTALLATION

- A. During delivery, prior to planting, and during the planting of sod areas, the sod panels shall at all times be protected from excessive drying and unnecessary exposure of the roots to the sun. All sod shall be stacked during construction and planting so as not to be damaged by sweating or excessive heat and moisture.
- B. After completion of soil conditioning as specified above, sod panels shall be laid tightly together so as to make a solid sodded lawn area. On mounds and other slopes, the long dimension of the sod shall be laid perpendicular to the slope. Immediately following sod laying the lawn areas shall be rolled with a lawn roller customarily used for such purposes, and then thoroughly watered.
- C. Sod shall be placed at all areas where sod existed prior to construction, on slopes of 3 horizontal on 1 vertical (3:1) or greater, in areas where erosion of soils will occur, along edge of roads, driveways and structures; and as directed by the Engineer.

3.04 SOD MAINTENANCE

- A. The sod shall produce a dense, well established growth. The Contractor shall be responsible for the repair, mowing (6" maximum height) and re-sodding of all eroded or bare spots until project acceptance. Repair to sodding shall be accomplished as in the original work
- B. Sufficient watering shall be done by the Contractor to maintain adequate moisture for optimum development of the seeded and sodded areas. Sodded areas shall receive no less than 1.5 inches of water per week for at least 2 weeks. Thereafter, the Contractor shall apply water for a minimum of 60 days as needed until the sod takes root and starts to grow or until final acceptance, whichever is latest.

END OF SECTION

SECTION 02520

GROUNDWATER CONTROL FOR OPEN CUT EXCAVATION

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. This section provides for furnishing all labor, materials, equipment, power and incidentals for performing all operations necessary to dewater, depressurize, drain and maintain excavations as described herein and as necessary for installation of utility pipeline and appurtenances. Included are installing, maintaining, operating and removing dewatering systems and other approved devices for the control of surface and groundwater during the construction of open cut excavations for the construction, maintenance and repair of utility pipelines, structures, and appurtenances; protecting work against rising waters, and repair of any resulting damage.

1.02 CONTRACTOR'S RESPONSIBILITY

- A. It is the sole responsibility of the Contractor to identify groundwater conditions and to provide any and all labor, material, equipment, techniques and methods to lower, control and handle the groundwater as necessary for his construction methods and to monitor the effectiveness of this installed system and its effect on adjacent facilities.
- B. The Contractor shall operate, maintain and modify the system(s) as required to conform to these Specifications. Upon completion of the Construction, Contractor shall remove the system(s). The development, drilling and abandonment of all wells used in the dewatering system shall comply with regulations of the Florida Department of Environmental Protection and the governing Water Management District.
- C. The Contractor shall assume sole responsibility for dewatering systems and for all loss or damage resulting from partial or complete failure of protective measures and any settlement or resultant damage caused by the dewatering operation

1.03 PLANS AND OTHER DATA TO BE SUBMITTED

- A. Prior to commencement of work, submit complete drawings, details and layouts showing the proposed dewatering plans in accordance with Section 01300. The submittals shall be sufficiently detailed (i.e., general arrangements, procedures to be used, etc.) to allow the Engineer to evaluate the proposed dewatering systems. Include the following, as required by the Contractor's proposed operation:
 - 1) Names of equipment suppliers
 - 2) Names of installation subcontractors.
 - 3) Plan for dewatering at access shafts and control of surface drainage.
 - 4) Plan for dewatering for cut-and-cover excavations, or otherwise controlling groundwater
 - 5) Eductor system layout and details
 - 6) Deep well locations and details
 - 7) Well point system layout and details
 - 8) Installation reports for eductors, deep wells and well points.
 - 9) Water level readings from piezometers or observation wells, and method of maintenance.
 - 10) As part of his request for approval of a dewatering system, the Contractor shall demonstrate the adequacy of the proposed system and well point filler sand by means of a test installation.

PART 2 - PRODUCTS

- 2.01 A. Select equipment including but not limited to pumps, educators, well points and piping and other material desired.

PART 3 - EXECUTION

3.01 DEWATERING EXCAVATIONS

- A. Furnish, install, operate and maintain all necessary equipment for dewatering the various parts of the Work and for maintaining free of water the excavations and such other parts of the Work as required for Construction operations. Dewatering system should provide for continuous operation including nights, weekends, holidays, etc. Appropriate backup shall be provided if electrical power is primary energy source for dewatering system. Well point pumps that run 24 hours shall be baffled and muffled to reduce noise.
- B. Continue dewatering in all required areas, until the involved work is completed, including the placing and compaction of backfill materials in dry conditions.
- C. Provide a uniform diameter for each pipe drain run constructed for dewatering. Remove the pipe drain when it has served its purpose. If removal of the pipe is impractical, provide grout connections at 50-foot intervals, and fill the pipe with clay grout or cement and sand grout when the pipe has served its purpose.

3.02 DEWATERING TRENCH

- A. No pipeline shall be laid in a trench in the presence of water. All water shall be removed from the trench sufficiently ahead of the pipeline placing operation. The Engineer shall have full and final authority to require dewatering of the trench to ensure a dry, firm bed on which to place the pipeline. As a minimum, water levels shall be maintained at least 6" below the bottom of the trench. Trench shall continue to be dewatered until trench backfilling operations have been completed.
- B. Removal of water may be accomplished by pumping or pumping in connection with well point installation as the particular situation may warrant.
- C. If the soils encountered at the trench grade are suitable for the passage of water, without destroying the sides or utility foundation of the trench, sumps may be provided at intervals at the side of the main trench excavation. Pumps shall be used to lower the water level by taking their suction from said sumps.

3.03 REQUIREMENTS FOR EDUCTOR, WELL POINTS OR DEEP WELLS

- A. Eductor, well points or deep wells, where used, must be furnished, installed and operated by a reputable contractor regularly engaged in this business, and approved.
- B. Submit the design criteria of the dewatering system and a certification that the system was designed according to that criteria.
- C. Install sufficient piezometers or observation wells to show that all trench excavation in sandy material is predrained prior to excavation. Install piezometers or observation wells not less than 1 week in advance of beginning of nearest excavation.
- D. Dewatering may be omitted for portions of underdrains or other trenches, only where auger borings and piezometers or observation wells show that the soil is predrained by an exterior system.
- E. Contractor shall backfill, with proper compaction, or grout all well point penetrations inside or outside the excavation area.

3.04 MAINTENANCE AND OBSERVATION

- A. Maintenance and observation of piezometers or observation wells is the responsibility of the Contractor and shall consist of keeping them in good condition and observing and recording the elevation of the water level daily, as long as the dewatering system is in operation, and weekly thereafter until the work is completed or the piezometers or wells are removed.
- B. Submit a record of the water level to the Engineer each day.
- C. Replace damaged and destroyed piezometers or observation wells, unless otherwise accepted by the Engineer, with new piezometers or wells within 48 hours, at no additional cost to the County.
- D. Cut off piezometers or observation wells in excavation areas, where exposed, as excavation proceeds, and continue to maintain and make observations as specified.
- E. Remove, backfill or grout piezometers or observation wells inside or outside the excavation area, as approved by the Engineer.

3.05 DURATION OF DRAINAGE

- A. In areas where concrete is to be placed, carry out the foundation drainage so that the required lowering of the water table will be effected prior to placing reinforcing steel. Keep foundation beds free from water to the same levels for 3 days after placing concrete.

3.06 PROTECTION OF STRUCTURES

- A. Provide adequate protection for all structures to avoid damage to concrete.
- B. Operate construction equipment over completed concrete slabs or structures only with approval. Rubber tire equipment heavier than 5 tons and crawlers heavier than 7 tons will require adequate load spreading by sand fill or other means.

3.07 DISCHARGE OF WATER

- A. Do not discharge pumped drainage water into the sanitary sewer system or inhibit pedestrian or vehicular traffic with the groundwater control system.
- B. Discharge pumped drainage water into the storm sewer system or drainage ditch by direct means (i.e., discharge hose to inlet, burying header, etc.). Contractor shall monitor the discharged water to determine that soil particles are not being removed.
- C. All discharge shall be in conformance with regulatory permits and if discharged into receiving waters, shall not exceed 29 N.T.U.'s above background.

3.08 REPAIR OF DAMAGE

- A. The Contractor shall assume full responsibility for all loss and damage due to flooding, rising water or seepage resulting from dewatering operations in any part of the work. Repair any damage to partially completed work from these or other causes, including the removal of slides, repair of foundation beds and performance of any other work necessitated by lack of adequate dewatering or drainage facilities.

END OF SECTION

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SECTION 02576

OPEN CUT TRENCH REPAIR

PART 1 – GENERAL

1.01 SCOPE

- A. The work included under this specification shall include the furnishing of all labor, material, and equipment necessary to restore open cut trenches perpendicular to travel lanes to satisfactory condition meeting current standards of the County

1.03 REFERENCE SPECIFICATIONS

- A. See Section 02222 - Trenching, Backfilling and Compacting for Utilities
- B. See Section TP-200 - Lime Rock Base
- C. See Section TP-250 - Shell Base
- D. See Section TP-300 - Prime and Tack Coats
- E. See Section TP-331 - Type S Asphaltic Concrete
- F. See Section TP-333 – Type III Asphaltic Concrete

PART 2 EXECUTION

2.01 GENERAL

- A. The Contractor shall be responsible for providing a Maintenance of Traffic (MOT) Plan, as required by the County for any work completed within the road right-of-way. The Contractor shall be responsible for temporary restoration of all roadway cuts and for maintaining all cuts in a drivable condition prior to final restoration. All settled areas shall be immediately refilled by the Contractor and maintenance of crossings and construction within paved areas must meet County requirements. The Contractor shall be responsible for final restoration (within 28 days) of construction of the trench.
- B. The Contractor shall give a written notice to the Engineer at least 72 hours prior to commencement of resurfacing. If resurfacing will not be accomplished as a single operation, then individual notices shall be given for each section to be resurfaced.
- C. The Contractor shall be responsible for the integrity of the Pavement Restoration for a minimum period of two years following the final acceptance of the project. All costs associated with pavement restoration shall be borne by the Contractor.

2.02 STATE ROAD CROSSINGS

- A. State roadways, which are open cut in areas where resurfacing is required, shall be restored in accordance with details shown on the plans and Standard specifications for highway construction of the Florida State Road Department, latest edition.

2.03 COUNTY SECONDARY ROAD CROSSINGS

- A. County secondary road crossings which are open cut in areas where resurfacing is required shall be restored in accordance with the details shown on the plans and Standard Specifications for Road Construction of the County.
- B. County secondary road crossings made in unpaved and/or un-surfaced areas are to be restored in accordance with the details shown on the plans. Sufficient amount of approved material must be distributed on the roadway to provide a condition equal or greater than the condition of the road, which existed prior to the commencement of construction.

2.04 PRIVATE ROADWAYS

- A. Private road crossings, which are open cut in areas where the roadway is surfaced with bituminous material, shall be restored in accordance with the details shown on the plans. Private road crossings, which are open cut in unpaved areas, shall be restored in accordance with the details shown on the plans. Sufficient amounts of approved material shall be distributed on the roadway in such a manner as to leave the roadway in condition substantially equal to that which existed prior to the commencement of construction.

2.05 COMPACTION AND TESTING

- A. State, County and private road crossings which are open cut shall be compacted and as described herein. Backfill below the road base material shall be compacted as shown on the plans.
- B. Road base material shall be replaced and compacted in two or three layers, to attain a thickness of two (2) times the original base material thickness or a minimum of 12", and extend a minimum of 6" outside the existing roadway. Lime rock and shell bases shall be compacted to the density shown the plans.
- C. The Contractor shall obtain a testing company to perform the required compaction density tests. The testing firm must have the approval of the Engineer prior to the commencement of construction. Each crossing must have two (2) tests performed on the compacted sub-grade, and two (2) tests performed on the compacted base, at a minimum separation of 1/3 the traversed roadway distance. If any tested work fails to meet the specified compaction requirements, the testing company shall determine the extent of the faulty work, and all faulty work shall be re-excavated and replaced in accordance with this section, and the tests shall be repeated until specified requirements are met. Test data shall be submitted to the Engineer and approved by the Engineer prior to resurfacing of asphaltic concrete roads.
- D. The contractor shall submit two (2) certified copies of all compaction tests specified below.

2.06 APPROVALS

- A. The work under this specification will not be considered complete or satisfactory until approved by the Engineer as well as the applicable governmental agency.

END OF SECTION

SECTION 02610

FITTINGS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The Contractor shall furnish and install fittings as shown on the drawings and as directed by the Engineer.

1.02 QUALITY ASSURANCE

- A. The Contractor shall install fittings to meet the latest revision of the Sarasota County Utilities Uniform Water, Wastewater and Reuse Systems Code.

1.03 SUBMITTALS

- A. Submit manufacturers' certificates of conformance.
- B. Shop Drawings: Submit manufacturer's drawings and data sheets for material to be supplied under this Section. Indicate sizes and types to be installed.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Upon delivery and before unloading, the Contractor must inspect the fittings for any damage which may have occurred in transit and note such damage on the delivery ticket.
- B. The means by which the fittings are unloaded is the decision and responsibility of the Contractor. The Contractor shall follow recommendations of the manufacturer.
- C. The Contractor shall follow manufacturer's recommendations for storage of fittings in order to minimize damage prior to installation.
- D. The Contractor shall adhere to the standard procedures given by the manufacturer for handling the fittings.

PART 2 - PRODUCTS

2.01 BENDS, REDUCERS AND TEES

- A. Non-Pressure Pipe: All bends, reducers and tees required shall conform to the same standards as the pipe.
- B. Pressure Pipe: All bends, reducers and tees required shall conform to the following requirement:
 - 1) Ductile Iron Fittings: Shall be used for all pressure pipe. They shall conform to the latest revision of AWWA C110 "Gray-Iron and Ductile-Iron Fittings, Three Inches Through Forty Eight Inches for Water and Other Liquids". They shall be mechanical joint ends with a pressure rating of 250 psi. Compact fittings, three inches through sixty-four inches (3"-64") will be acceptable. The compact fitting shall conform to the latest revision of AWWA C153 "Ductile Iron Compact Fitting, Three Inches Through Sixty-four Inches for Water and Other Liquids". All joints materials, including rubber gaskets, glands, tee-head bolts, and hex-head nuts, shall conform to the latest revisions of AWWA C111, "Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings".
 - 2. Solid sleeves and adapter fittings shall be long body pattern and conform to the latest revision of AWWA C110 Gray-Iron and Ductile-Iron fittings,

three inches (3") through forty-eight inches (48") for water and other liquids.

2.02 JOINT RESTRAINT SYSTEM

- A. Restraint system for fittings shall be "MEGA LUG 1100 Series" Joint Restraint System as manufactured by EBAA Iron, Inc. or approved equal. Restraint system for fittings on PVC pipe shall be as specified in Section 02616. The Engineer shall determine length and location of restraining. All fittings sixteen inches (16") in diameter and larger shall be restrained as shown on the plans.

2.03 SLEEVES

- A. Connection of existing utility mains to the new mains will be accomplished with a long pattern solid sleeve, as approved by the Engineer. Repair clamps will not be allowed.

2.04 LININGS

- A. For sewer and other piping the liners shall be in accordance with Section 02615, Ductile Iron Pipe/ Fitting Liners.

2.05 CORROSION PROTECTION

- A. Corrosion protection shall be in accordance with Section 02614, Ductile Iron Pipe

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Installation of ductile iron (DIP) fittings shall be in accordance with the latest revision of AWWA C600, "Installation of Gray and Ductile Cast Iron Water Mains and Appurtenances" for ductile iron. For PVC fittings, installations shall be in accordance with manufacturer's recommendations.
- B. Joint restraint system shall be installed on all fittings sixteen inches (16") in diameter and larger, in accordance with manufacturer's instructions so as to prevent joint separation under operating conditions.
- C. Reverse thrust blocks (RTB) shall be installed as directed by the Engineer and shall be installed as indicated on the drawings and details. The Contractor shall install $\frac{3}{4}$ " stainless steel all-thread from the fitting to the thrust block.

END OF SECTION

SECTION 02614

DUCTILE IRON PIPE

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The extent of the ductile iron pipe (DIP) is shown on the drawings.
- B. Reference to industry standard specifications shall be construed to mean the latest edition or revision.

1.02 SUBMITTALS

- A. One original certified test report and two copies of the tests made by the manufacturer or by a reliable commercial laboratory shall be submitted to the Engineer with each shipment of pipe. The certification shall include all tests results required by AWWA.

PART 2 - PRODUCTS

2.01 PIPE

- A. Upon delivery and before unloading, the Contractor must inspect the pipe for any damage incurred in transit and note such damage on the delivery ticket.
- B. For Aboveground Installation: Ductile iron pipe for the interior of structures and aboveground installation shall conform to ANSI A21.15, latest revision (AWWA C-115) and be flanged. Thickness class shall be Standard Thickness Class 53 for all sizes. Flanges shall conform to ANSI A21.15, and shall be ductile iron.
- C. For Underground Installation: Ductile iron pipe shall conform to ANSI A21.51 (AWWA C-151). The pipe shall have a wall thickness designed in compliance with ANSI A21.50/AWWA C-150, "American National Standard for Nominal Thicknesses for Pressure Classes of Ductile Iron Pipe" and shall be the minimum Pressure Class of 150 for water, reuse and sewer pipe, unless otherwise called for on the plans. Where ductile iron pipe is threaded for flanges, the thickness shall not be less than Standard Thickness Class 51.

2.02 PIPE JOINTS

- A. Generally, joints for ductile iron pipe shall be push-on type designed in accordance with ANSI A21.11 (AWWA C111). Joint lubrication shall be as furnished by the manufacturer.
- B. At certain locations, restrained joint pipe, fittings, specials, etc., shall be used as shown on the drawings. Restrained joints shall meet all applicable requirements of ANSI, Standard A21.11, latest revision and shall be Underwriters Laboratory (UL) listed and/or Factory Mutual (FM) approved. All special joints shall be capable of withstanding dead-end axial thrusts and end separations resulting from an internal pressure of 250 psi with an adequate factor of safety, and shall remain watertight.
 - 1) Restrained joints shall be Fast Grip Gaskets, Flex-Ring or Lok-Ring as manufactured by American Cast Iron Pipe Company, or TR Flex as manufactured by United States Pipe and Foundry Company.
 - 2) Mechanical joint retainer glands may be used to restrain mechanical joint pipe and fittings to the plain end of ductile iron pipe and fittings. Restrainer glands shall be manufactured of ductile iron per ASTM A536. Restrainer glands shall be "MEGALUG" as manufactured by EBAA Iron Inc or Uni-Flange manufactured by Ford.
 - 3) If required, and as approved by the Engineer, push-on bell and spigot ductile iron

pipe may be restrained using "Tie anchor III" joint restrainers by Star National Products. These joint restrainers shall be used in conjunction with eyebolts, threaded rods, rod couplings, nuts and washers furnished by Star National Products as specified herein.

2.03 LINING

- A. The interior of ductile iron pipe and fittings shall have cement lining and bituminous seal coat in accordance with ANSI A21.4 (AWWA C104) for potable water and reuse water. The lining thickness shall be standard thickness.
- B. For sewer and other piping the liners shall be in accordance with this section.

2.04 EXTERIOR FINISH

- A. For aboveground installation, the exterior surfaces of interior and exposed pipe and fittings shall be painted in accordance with the provisions of Section 09905 - Paint and Coatings.
- B. For underground installation, pipe and fittings shall have the standard bituminous coat on the exterior, in accordance w/ANSI A21.5 (AWWA C151), and painted or otherwise identifiably marked as required by the Sarasota Uniform Water, Wastewater and Reuse System Code.

2.05 CORROSION PROTECTION

- A. All underground ductile iron pipe and fittings shall be enclosed in an 8 mil linear low density polyethylene sheet or tube and each length joined with a two inch (2") wide colored polyethylene adhesive tape, 10 mils thick. Slip the tube around the pipe, centering it to provide a 12-inch overlap on each of the pipe bell section. A full circumferential wrap of tape or plastic tie straps shall be made at two (2') foot intervals along the pipe to minimize the space between the polyethylene sheet and the pipe. The sheet or tube shall be made from polyethylene resin meeting the requirements of ASTM D1248 and shall be Type III, Class B, Grade P-33 and eight (8) mils thickness. The sheet or tube shall be as manufactured by Trumbull Industries, Inc., Youngstown, Ohio, or approved equal. The sheet or tube shall be in accordance with the provisions of ANSI, Standard A21.5 - AWWA C105. Installation methods shall be such as to minimize damage to the sheet or tube but where required the adhesive tape should also be used to repair tears or punctures.
- B. Polyethylene sheets shall be the following colors for specific purpose:
 - 1) Potable Water - Blue
 - 2) Reuse Water - Purple
 - 3) Gravity Sewer - Green
 - 4) Vacuum Sewer - White
- C. The Engineer shall determine the color of the polyethylene sheet for all other specific purposes.

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 02615

DUCTILE IRON PIPE/FITTING LINERS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. All ductile iron pipe (DIP) and fittings furnished and installed under this contract shall be lined as defined in this Section.
- B. Reference to industry standard specifications shall mean the latest edition or revision.

1.02 SUBMITTALS

- A. One original certified test report and two copies of the tests made by the manufacturer or by a reliable commercial laboratory shall be submitted to the Engineer with each shipment of pipe. The certification shall include all tests results required by AWWA and ASTM.

PART 2 - PRODUCTS

2.01 AMERICAN POLYBONDPLUS LINING

A. General:

- 1) The lining shall be a composite lining utilizing a primer coating containing fusion bonded epoxy (FBE) and a surface coating containing fusion bonded polyethylene (FBP). All PolybondPlus lining application must be performed by the pipe manufacturer at the pipe manufacturer's facility.

B. Lining Materials:

- 1) Primer: The primer shall contain fusion bonded epoxy (FBE), which is applied in sufficient quantity to achieve a nominal thickness of 5 mils for the pipe or fitting. The FBE material used in the primer formulation should be capable of meeting the following requirements:

TEST PARAMETER	ASTM TEST METHOD	TYPICAL VALUE
Tensile Strength	D-2370	9,300 psi
Compressive Strength	D-695	11,600 psi
Ultimate Elongation	D-2370	6.9%
Impact (1/8"x3"x3" panel) 5/8" dia. Tup	G-14	160 in-lbs

- 2) Surface Layer: The surface layer shall be comprised of medium density modified fusion bonded polyethylene (FBP) meeting the requirements of ANSI/ASTM D1248 and compounded with an inert filler. The FBP shall be formulated to be ultra-violet (UV) resistant for a minimum of three (3) years exposure. The color of the FBP shall have a light reflectance value (LRV) of at least 40% to aid in the in-situ inspection of the pipeline with video equipment.
- 3) The fusion bonded polyethylene used in the surface coating material shall be capable of meeting the following requirements:

TEST PARAMETER	ASTM TEST METHOD	TYPICAL VALUE
Tensile Strength	D-638	1,650 psi
Ultimate Elongation	D-638	300 %
Taber Abrasion Resistance	D-4060	25.0 mg wt. Loss/1,000 cycles @ 1,000 gram

		load
Notched Izod Impact @ 23° @ 60° C	D-256	8.0 ft.-lbs./in. (no break) 6.1 ft.-lbs./in. (no break)
Brittleness Temperature	D-746	-76° C

C. Application:

- 1) Pre-Application Inspection: Prior to blast cleaning, all interior surfaces of the pipe and fitting shall be inspected to verify that all interior surfaces are free of hydraulic fluid, grease, or other foreign substances.
- 2) Surface Preparation: Surface preparation shall consist of grit/shot blasting or sandblasting the ductile iron surface to a near-gray blast finish. This degree of cleanliness is comparable to a SSPC-SP10, "Near White Blast Cleaning" for steel with the exception that ductile iron attains a gray color when blast cleaned. (The color difference is due to the higher carbon content of ductile iron versus steel.) The blast cleaning operation shall remove 95% of all surface contaminants, including tightly adhered annealing scale. The anchor tooth pattern, resulting from the blasting operation, shall have a minimum height of 3.0 mils. All interior surfaces to be lined shall be blast cleaned to this standard.
- 3) Application Requirements: The pipe or fitting shall be heated in a regulated oven to produce a temperature that will insure proper adhesion between the primer and the pipe substrate. The lining shall be applied in one operation with the primer coat applied immediately prior to the application of the surface coat. The resultant composite lining shall be tightly bonded.
- 4) Thickness Requirements: Total thickness for the fusion bonded epoxy/fusion bonded polyethylene lining shall be 60 mils nominal with a 50 mil minimum in the barrel of the pipe.
- 5) Lining Coverage: The fusion bonded epoxy/fusion bonded polyethylene lining shall cover the interior surfaces of the pipe and fitting from the interior of the spigot end to a point sufficiently forward in the bell socket such that the Fastite ® gasket, in the assembled joint, seals over the end of the lining.
- 6) Joint Surface Coating: The joint surface coatings shall be comprised of a two component epoxy. The use of joint surface coatings containing coal tar is prohibited. Total thickness for the joint coating shall be 8 mils nominal.
 - a. The joint surface coating shall cover the spigot end across the end of the spigot bevel and extending over the outer surface of the spigot including the gasket sealing area. The joint surface coating shall also cover the socket from the face of the bell, through the gasket sealing area overlapping onto the edge of the FBE/FPB lining.

D. Testing:

- 1) Lining Holiday Test: At the manufacturer's facility, the lining shall be tested over 100% of the pipe barrel surface with a high voltage spark tester as recommended by ASTM Designation G-62 Method B of the latest revision. The minimum test voltage shall be as determined by Method B, as described in the ASTM Designation Section 11.2.3, which is the recommended voltage for all linings with possible areas thicker than 41 mils:

$$V = 1250 * T^{1/2}$$

where V = voltage and, T = thickness of lining in mils.

Example: $V = 1250 * 60^{1/2}$ Minimum Voltage = 9,683 volts.

- a. If holidays are found in the lining by the above test at the manufacturer's plant, the holiday shall be repaired per the lining manufacturer's recommendation.

- b. The holiday detector shall be a commercially available detector available from holiday detection equipment manufacturers such as SPY, TINKER, AND RASOR, and ZORELCO.
 - 2) Voltage Confirmation Test: To confirm that the voltage is sufficient to detect holidays, the following voltage confirmation test should be performed for each shift or change in detector operator. The holiday detector should be set to the calculated minimum voltage as calculated (V). A known holiday should be made in the lining of randomly selected pipe using a small sharp pin. The operator should demonstrate that the holiday can be consistently and satisfactorily located at this voltage setting and detector wand speed. If the holiday is not detected at the calculated voltage, then the voltage should be slowly increased until the known holiday is consistently detected by the operator. This voltage should then become the minimum voltage at which all pipe linings shall be tested.
 - a. The detector's voltage (and voltage meter) shall be tested once each day by a separate voltmeter and the results certified by the pipe manufacturer, to confirm the accuracy of the detector's voltage meter.
- E. Field Cutting:
- 1) Where pipes are cut in the field, it will be necessary to repair the cut end as per the manufacturer's written procedure. The repair shall be inspected by the Engineer's Representative for compliance to the manufacturer's recommendation.
- F. Site Delivery:
- 1) The Engineer's Representative shall be notified prior to delivery to the site of any and all pipe and/or fittings. During the delivery inspection, the representative shall inspect the liner for damage to include shipment, loading and unloading damage. Any pipe that is noted as damaged shall be removed from the site and replaced by the manufacturer. The delay caused by such action shall be borne by the Contractor.

2.02 PROTECTO 401 CERAMIC EPOXY LINING

- A. General:
- 1) All ductile pipe and/or fittings shall be delivered to the application facility without asphalt, cement lining, or any other lining on the interior surface.
- B. Lining Materials:
- 1) The standard of quality is Protecto 401 Ceramic Epoxy. The material shall be an amine cured novalac epoxy containing at least 20% by volume of ceramic quartz pigment.
- C. Application:
- 1) Applicator: The lining shall be applied by a competent firm with a successful history of applying linings to the interior of ductile iron pipe and/or fittings. The applicator shall submit a certification from the pipe manufacturer certifying that they in fact qualified to apply the Protecto 401.
 - 2) Surface Preparation: Prior to abrasive blasting, the entire area to receive the protective compound shall be inspected for oil, grease, etc. Any area where oil, grease, or any substance which can be removed by solvent is present shall be solvent cleaned using guidelines outlined in DIPRA-1 Solvent Cleaning. After the surface has been made free of grease, oil or other substances, all areas to receive the protective compounds shall be abrasive blasted using compressed air nozzles with sand or grit abrasive media. The entire surface to be lined shall be struck with the blast media so that all rust, loose oxides, etc., are removed from the surface. Only slight stains and tightly adhering oxide may be left on the surface. Any area where rust reappears before lining must be reblasted.
 - 3) Linings: After the surface preparation and within eight (8) hours of surface preparation, the interior of the pipe shall receive 40 mils nominal dry film thickness of Protecto 401. No lining shall take place when the substrate or

ambient temperature is below 40 degrees Fahrenheit. The surface also must be dry and dust free. If flange pipe or fittings are included in the project the lining shall not be used on the face of the flange.

- 4) Coating of Bell Sockets and Spigot Ends: Due to the tolerances involved, the gasket area and spigot end up to six-inches (6") back from the end of the spigot end must be coated with 6 mils nominal, 10 mils maximum Protecto Joint Compound. The Joint Compound shall be applied by brush to ensure coverage. Care should be taken that the Joint Compound is smooth without excess buildup in the gasket seat or on the spigot ends. Coating of the gasket seat and spigot ends shall be done after the application of the lining.
- 5) Number of Coats: The number of coats of lining material applied shall be as recommended by the lining manufacturer. However, in no case shall this material be applied above the dry thickness per coat recommended by the lining manufacturer in printed literature. The maximum or minimum time between coats shall be that time recommended by the lining material manufacturer. No material shall be used for lining, which is not indefinitely recoatable with itself without roughening of the surface.
- 6) Touch-Up and Repair: Protecto Joint Compound shall be used for touch-up or repair in accordance with manufacturer's recommendation. The repair shall be inspected by the Engineer's Representative for compliance to the manufacturer's recommendation.

D. Inspection and Certification:

1) Inspection:

- a. All ductile iron pipe and fitting liners shall be checked for thickness using a magnetic film thickness gauge. The thickness testing shall be done using the method outlined in SSPC-PA-2 Film Thickness Rating.
- b. The interior lining of all pipe and fittings shall be tested for pinholes with a nondestructive 2,500 volt test. Any defects found shall be repaired prior to shipment in accordance to the manufacture's recommendation.
- c. Each pipe joint and fitting shall be marked with the date of application of the lining system along with its numerical sequence of application on that date and records maintained by the applicator of his work.
- d. All fittings with Protecto 401 shall be shrink wrapped prior to shipment from the applicator's facility. This should prevent shipment damage.

- 2) Certification: The pipe or fitting manufacturer must supply a certification attesting to the fact that the applicator met the requirements of this specification, and that the material used was as specified.

E. Handling:

- 1) Protecto 401 lined pipe and fittings must be handled only from the outside of the pipe and fittings. No forks, chains, straps, hooks, etc. shall be placed inside the pipe and fittings for lifting, positioning, or laying.

F. Site Delivery:

- 1) The Engineer's Representative shall be notified prior to delivery to the site of any and all pipe and/or fittings. During the delivery inspection, the representative shall inspect the liner for damage to include shipment, loading and unloading damage. Any pipe that is noted as damaged shall be removed from the site and replaced by the manufacturer. The delay caused by such action shall be borne by the Contractor.

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 02616

POLYVINYL CHLORIDE (PVC) AND POLYETHYLENE (PE) PIPE

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The extent of PVC pipe is shown on the drawings.
- B. Reference to standard specifications herein shall be construed as to be in reference to the latest revision or edition.

1.02 SUBMITTALS

- A. One original certified test report and two copies of all required test reports shall be submitted to the Engineer with each shipment of pipe. Certification shall include all test results required by AWWA. The Contractor shall include the following data:
 - 1) Quick Burst Test, ASTM D1599
 - 2) Drop Impact Test, ASTM D2444
 - 3) Pipe Impact Test, CSA B137.3
 - 4) Physical and chemical properties of all pipe
 - 5) Maximum allowable deformation and penetration of the pipe wall
 - 6) Hydrostatic test reports
 - 7) Manufacturer's affidavit that the pipe furnished complies with all applicable provisions of these specifications and all applicable AWWA, CSA, ISO, and ASTM standards

1.03 DELIVERY AND STORAGE

- A. Upon delivery and before unloading, the Contractor must inspect the pipe for any damage occurred in transit and note such damage on the delivery ticket.
- B. In storing pipe, units shall be protected by dunnage in the same way they were protected while loaded on the truck. Pipe shall be stored flat to protect against bending. If pipe is to be stored outside longer than 7-days the pipe shall be covered with canvas or other opaque material to protect it from prolonged exposure to the sun.

PART 2 - PRODUCTS

2.01 PVC PIPE (4-INCHES AND LARGER)

A. USES OF PIPE

- 1) WATER: Unless otherwise shown on the plans, PVC water pipe 4" through 12" shall be DR-18, Class 150 and meet the requirements of AWWA C900 for PVC pipe in ductile iron pipe equivalent O.D., having elastomeric gasket bell ends and elastomeric seals. Blue is color for water. PVC water pipe 14" and greater shall conform to the requirements of AWWA standard C905, DR-18, with working pressure rating of 235 psig.
- 2) SEWER: Force main pipe from 4" up to 12" shall be DR-25, Class 100 and meet the requirements of AWWA C900 for PVC pipe in ductile iron pipe equivalent O.D. Pipe shall be furnished in standard 20' lengths. Gravity sewer pipe shall be SDR-26, D-3034 ASTM. Green in color for sewer pipe. PVC sewer force main pipe 14" and greater shall conform to the requirements of AWWA standard C905, DR-18, with a working pressure rating of 235 psig.
- 3) REUSE: Unless otherwise shown on the plans, PVC reuse pipe 4" through 12"

shall be DR-18, Class 150 and meet the requirements of AWWA C900 for PVC pipe in ductile iron pipe equivalent O.D., having elastomeric gasket bell ends and elastomeric seals. Purple in color for reuse water. PVC pipe 14" and greater shall conform to the requirements of AWWA standard C905, DR-18, with a working pressure rating of 235 psig.

- 4) GENERAL: PVC pipe diameters of 4" to 12" shall conform to the requirements of AWWA standard C900, DR-14, with a working pressure rating of 200 psig as shown on the drawings and shall be color coded to meet County's standards.
- B. The joints for PVC pipe shall be rubber ring type consisting of integral, thickened, solid wall bells which maintain the same standard dimension ratio as the pipe barrel. Joint lubrication shall be as furnished by the manufacturer of the pipe and joints made in accordance with the manufacturer's instructions and recommendations. Joint restraint for PVC pipe shall be EBAA Series 2800 or approved equal. Restraint for PVC pipe to mechanical joint fittings shall be EBBA Series 2000PV or approved equal.
- C. Solid long pattern sleeves or adapter fittings shall be furnished and installed where plastic pipe is connected to pipes or fittings of other materials. When pipe material changes from one type to another, long pattern solid repair sleeves shall be used to transition.

2.02 PVC PIPE (SMALLER THAN 4-INCHES)

- A. Unless otherwise specified, all PVC pipes smaller than 4" nominal diameter shall be Schedule 80 PVC in accordance with ASTM D1785. Schedule 80 pipe shall have either solvent welded or threaded joints. PVC pressure pipe shall bear the approved seal of the National Sanitary Foundation (NSF). PVC pipe that is exposed to sunlight shall be manufactured with additives to provide resistance to ultraviolet deterioration.
- B. FITTINGS; Socket type, solvent welded fittings for schedule 80 PVC pipe shall be in conformance with ASTM D2467. Threaded type fittings for Schedule 80 PVC pipe shall be in conformance with ASTM D2464. All solvent welded or threaded joints shall be watertight.
- C. FLANGES; Flanges for Schedule 80 PVC pipe shall be rated for a 150 psi working pressure with ANSI B16.1 dimensions and bolting pattern. Flanges shall be connected to PVC piping with either solvent welded or threaded joints in accordance with ASTM D2467 or ASTM 2464, respectively. Gasket shall be neoprene; full faced type with a minimum thickness of 1/8-inch. Nuts and bolts shall be hexagonal with machine threads, manufactured of Type 316 stainless steel in accordance with ASTM A320, Class 2. Type 316 stainless steel flat washer shall be used against PVC flanges.
- D. SOLVENT CEMENT: PVC solvent cement shall be in compliance with ASTM D2564 and in accordance with the pipe manufacturer's recommendations.
- E. THREAD LUBRICANT: Lubricant for Schedule 80 threaded joints shall be Teflon tape only.

2.03 POLYETHYLENE (PE) PIPE

- A. Service Pipe and Fittings:
 - 1) Plastic pipe for service pipe shall conform to AWWA C-901 and ASTM D-2737 and shall be 200 psi pipe, SDR PR 9 for copper tube size.
 - 2) Polyethylene extrusion compound from which the polyethylene pipe is extruded shall comply with applicable requirements for PE-3408 ultra-high molecular weight polyethylene plastic material. Material shall be as described in ASTM D-1248 and shall comply with the following:
 - a. Be of virgin quality approved for potable water service by the National

Sanitation Foundation.

- b. Pipe resin shall have a minimum inherent viscosity of 2.5 when tested according to ASTM D-1601.
 - c. Exceed 1,000 hours on ESC as determined by ASTM D-1693.
 - d. Have a specific gravity of between 0.950 and 0.955.
 - e. Contain a minimum of two percent (2%) and a maximum of three percent (3%) of carbon black and shall produce a finished product that is uniformly black.
- 3) The polyethylene pipe shall be rated for use with water at 73.4 degrees Fahrenheit at a hydrostatic design stress of 630 psi and a maximum working pressure of 160 psi.
- 4) The Standard Dimension Ratio (SDR) shall be nine (9) for copper tube size. The average inside diameters, minimum wall thickness for respective tolerances for any cross section shall be as hereinafter specified when measured in accordance with ASTM D-2122. Copper Tube Size: SDR 9 dimensions and tolerances shall be as shown in AWWA C-901, as follows:

<u>Nom. Pipe Size In.</u>	<u>Ave. Outside Diameter In.</u>	<u>Minimum Wall In.</u>	<u>Wall Tolerance In.</u>
1	1.125 +/- .005	0.125	+ 0.012
1-1/2	1.625 +/- .006	0.181	+ 0.018
2	2.125 +/- .006	0.236	+ 0.024

- 5) The minimum burst pressure at 73.4 degrees Fahrenheit determined in accordance with ASTM D-1599, latest revision, shall be 630 psi. The time of testing of each specimen shall be between 60 and 70 seconds.
- 6) The pipe shall not fail, balloon, burst or weep as defined in ASTM D-1598 when tested in accordance with the sustained pressure test method of ASTM D-2239 and ASTM D-2737 but under the test conditions hereinafter tabulated.

<u>Temperature</u>	<u>Time</u>	<u>Pressure</u>
73.4 Degrees F	1000 hrs	350 psi
150 Degrees F	1000 hrs	200 psi
190 Degrees F	300 hrs	125 psi

- 7) The polyethylene pipe shall not show any loss of pressure in the six (6) specimen tested for three (3) hours in accordance with the requirements of ASTM D-2239 and ASTM D-2737 using the test pressure of 330 psi at 73.4 degrees Fahrenheit. The polyethylene pipe or tubing shall be homogenous throughout and free of visible cracks, holes, foreign inclusions or other injurious defects. It shall be uniform in color, opacity, density and other physical properties.
- 8) Marking on the pipe or tubing shall include at intervals of not more than five feet (5') the nominal pipe or tubing size, the type of plastic material; i.e., PE 3408, the standard thermoplastic pipe dimension ratio or the pressure rating in psi for water at 73.4 degrees Fahrenheit (200 psi), the ASTM designation with which the pipe complies, and manufacturer's name or trade mark and code. It shall also include the seal of approval (NSF mark) of the National Sanitation Foundation.
- a. All coils of polyethylene pipe or tubing shall be spirally wrapped in heavy water resistant kraft paper or packaged in cardboard boxes.
 - b. Each coil shall be labeled clearly to show the size, coil length and pressure rating of the pipe.
- 9) All polyethylene pipe or tubing shall be rejected for failure to comply with any requirements of these specifications or additional tests that are specified in

ASTM D-2239, ASTM D-2737 and ASTM D-1248.

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 02618

HIGH DENSITY POLYETHYLENE (HDPE) PIPE

PART I –GENERAL

1.01 DESCRIPTION OF WORK

- A. The extent of the HDPE pipe is shown on the drawings.
- B. Reference to standard specifications herein shall be constructed as to be in reference to the latest revision or edition.

1.02 SUBMITTALS

- A. One original certified test report and two copies of all required test reports shall be submitted to the Engineer with each shipment of pipe. Certification shall also include all test results required by AWWA.

1.03 DELIVERY AND STORAGE

- A. In storing pipe, units shall be protected by dunnage in the same way they were protected while loaded on the truck, pipe shall be stored flat to protect against bending.
- B. In storing pipe, units shall be protected by dunnage in the same way they were protected while loaded on the truck. If pipe is to be outside longer than 15 days the pipe shall be covered with canvas or other opaque material to protect it from prolonged exposure to the sun.

PART 2 – PRODUCTS

2.01 HIGH DENSITY POLYETHYLENE (HDPE) PIPE

- A. HDPE pipe and fittings shall be a PE3408 high density, extra-high molecular weight polyethylene manufactured from first-quality high density polyethylene resin containing no additives, fillers, or extenders. The HDPE pipe shall have an ASTM D3350 cell classification of PE 345434C, and shall meet or exceed the properties listed in Table 02618-1 of this specification. The HDPE pipe shall meet the requirements of AWWA C906 and shall match ductile iron OD pipe sizing. The HDPE pipe and fittings shall be SDR-11 Phillips Driscopipe Series 1000, Chevron Plexco, or approved equal, and shall bear the approval seal of the National Sanitation Foundation (NSF).
- B. Joints: A continuous pipe shall be formed by butt fusing sections of pipe using manufacturer-approved equipment. The fused joints shall have equal or greater tensile and hydrostatic strength than the pipe.
- C. Fittings shall be MJ DIP meeting the requirements of Section 02610. The pipe shall have fusion welded restrainer ring, follower gland, and a 12" stainless steel insert for the MJ connection.

PART 3 – EXECUTION

3.01 TESTING HDPE PIPE

- A. Refer to section 1666 for testing of the pipe system and section 2300 for directional drilling, where applicable.

Table 02618-1

Property	Specification	Unit	Nominal Value
Material Designation	PPI/ASTM		PE 3408
Material Classification	ASTM D-1248		III C 5 P34
Cell Classification	ASTM D-3350		345434C
Density	ASTM D-1505	gm/cm ³	0.955
Melt Index	ASTM D-1238	gm/10 min.	0.11
Flex Modulus	ASTM D-790	Psi	135,000
Tensile Strength	ASTM D-638	Psi	3,200
HDB @ 73NF	ASTM D-2837	Psi	1,600
U-V Stabilizer	ASTM D-1603	% C (Carbon Black)	2.5
Hardness	ASTM D-2240	Shore "D"	65
Compressive Strength (yield)	ASTM D-695	Psi	1,600
Tensile Strength @ Yield (Type VI Spec.)	ASTM D-638 (2"/min.)	Psi	3,200
Elongation @ Yield	ASTM D-638	%, minimum	8
Tensile Strength @ Break (Type VI Spec.)	ASTM D-638	Psi	5,000
Elongation @ Break	ASTM D-638	%, minimum	750
Modulus of Elasticity	ASTM D-638	Psi	130,000
Linear Thermal Expansion Coefficient	ASTM D-696	In./in./NF	1.2×10^{-4}
Brittleness Temperature	ASTM D-746	NF	< -180
Vicat Softening Temperature	ASTM D-1525	NF	257

END OF SECTION

SECTION 02640

VALVES AND ACCESSORIES

PART 1 – GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The Contractor shall furnish and install all gate valves, butterfly valves, plug valves, check valves, and other special valves and piping accessories as shown on the drawings and as specified herein.
- B. Valve input shaft shall be furnished with a two (2) inch square AWWA operating nut with an arrow cast on to show the direction of turning to close the valve.
- C. Extension shaft as manufactured by the valve manufacturer shall be provided to place the operating nut between six (6) inches and eighteen (18) inches below proposed grade along with stainless steel centering plate.
- D. Contractor shall install a brass disk within the valve pad according to standard detail.

1.02 SUBMITTALS

- A. The Contractor shall submit:
 - 1) Shop drawings or manufacturer's product data on all items in PART 2.
 - 2) One (1) original certified test report and two (2) copies of the test reports. Certification shall include all test results required by AWWA. The test shall include but not be limited to the following: Hydrostatic and leakage tests conducted in accordance with AWWA C504, Section 12.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. All valve operators shall be designed as not to require over 80 pounds pull to meet the required torque to operate the valves.
- B. All manually operated, shut-off or isolation valves, above grade, shall be furnished with handwheel or lever operators.
- C. All manually operated, shut-off or isolation valves that are mounted over six (6) feet above finish floor elevations shall be furnished with chain wheel operators. Chain for chain wheel operators shall be galvanized or stainless steel.
- D. All manually operated, shut-off or isolation valves, below grade, shall be furnished with AWWA 2" square actuating nuts and valve boxes. Valve boxes shall consist of cast iron base and adjustable top section with cover which shall be marked for the appropriate service, i.e. "WATER", "SEWER", "REUSE", ETC.
- E. Where called for on the drawings, electric valve actuators shall be provided. The electric actuators shall be powered by a high torque, reversible motor with integral thermal overload protection. The gear train shall be heat treated high alloy steel and shall be sized to withstand all imposed valve torque loads. The gear train shall be permanently lubricated. The actuator shall be furnished with a manual override capable of preventing electrical operation of the actuator when the override is engaged. The actuator, complete with integral positioner, shall be housed in a NEMA 4 enclosure and shall operate on 120 VAC, 1-phase, 60 Hz power supply.
- F. All valves shall open by turning to the left or counter-clockwise when viewed from the stem. The operating nut shall have an arrow cast in the metal indicating the direction of opening. Each valve shall have the manufacturer's distinctive marking, pressure rating and year of manufacture cast on the body. All valves shall be tested in accordance with applicable AWWA pressure testing procedures.
- G. All valves shall be corrosion protected in accordance with Section 2614 of this document.

2.02 GATE VALVES

- A. Resilient seat gate valves shall be ductile iron bodied, bronze mounted, resilient rubber seated with wedge type disk. Valves shall be manufactured in accordance with AWWA C515. Valves shall be suitable for buried service, be designed for 200 psi working pressure, shall be of O-ring type, and shall have a permanently lubricated thrust collar sealed with an O-ring above and below. Valves shall have mechanical joint ends, except above ground valves shall be flanged. Valves shall be coated in accordance with AWWA C550, as manufactured by American Flow Control, Mueller, McWane, or U.S. Pipe and Foundry. No substitutions allowed.

2.03 BUTTERFLY VALVES (Liquid Service)

- A. Butterfly valves shall conform to AWWA C504. Laying length of all classes shall be Table 1 (AWWA C504), short body. Valves shall be rated at 150 psi working pressure. Valves shall be bubble tight at rated pressures and shall be satisfactory for applications involving valve operation after long periods of inactivity. Valves shall have mechanical joint ends for buried service and flanged joints in the vaults and above grade. Butterfly valves shall be as manufactured by Pratt, Mueller, U.S. Pipe and Foundry, or McWane. No substitutions allowed.
- B. Valve body shall be ductile iron per AWWA C-504 with integrally cast hubs for shaft bearing housing. All exterior bolts, nuts, studs, and washers, including mechanical joint bolting accessories, shall be stainless steel.
- C. The valve disc shall be of heat treated ductile iron, cast iron or alloy cast iron per ASTM A126, Class B, with a 316 SST edge. All materials shall meet AWWA C-504. The disc shall rotate 90 degrees from full open to tight shut position. The contractor shall verify clearance dimensions required for the valve disc to be compatible with the pipe.
- D. Valve shaft shall be of a solid one-piece design or stub shaft. Shaft, taper pins, lockwashers and nuts shall be Type 304 or 316 stainless steel. A shaft seal and bronze gland follower, studs and nuts shall be provided in the valve body. Shaft seals shall be in accordance with Section AWWA C-504 for Class 150B, of the O-ring or split "V" type, suitable for buried service.
- E. Valve seat shall be of molded natural or synthetic rubber, recess mounted, bonded to the valve body. All mechanical securing devices shall be stainless steel. Seats shall not be located on the disc.
- F. Valves shall be fitted with sleeve type bearings of self-lubricating corrosion resistant material.
- G. Valve operators shall be in accordance with AWWA C504 and for buried service shall be permanently lubricated with totally enclosed gearing and designed to operate indefinitely either buried or fully submerged. All operator components between the input and stop limit shall be designed to withstand, without damage, a pull of 200 pounds for handwheel or chain wheel operators and an input torque of 300 foot pounds for operating nuts. Operators shall be designed to require not over 150 foot pounds to meet the required operating torque. Operators shall be designed to hold the valve disc in any intermediate position between fully closed and fully open without creeping or fluttering.
- H. All valves shall receive a protective inside lining. The lining shall be a two-part thermosetting epoxy protective lining and shall function as a physical, chemical and electrical barrier between the base metal to which it is applied and the surroundings. The lining shall be approved by both AWWA and NSF61. The lining shall be nontoxic and shall not impart taste to water. The lining must be formulated from materials deemed acceptable per the FOOD AND DRUG ADMINISTRATION DOCUMENT TITLE 21 of the FEDERAL REGULATIONS ON FOOD ADDITIVES, SECTION 121.2514 entitled, RESINS AND POLYMERIC COATINGS.

2.04 CHECK VALVES

- A. Check valves shall be installed where shown on the drawings.
- B. Swing Check Valves:
 - 1) Check valves three (3) inches and larger shall be horizontal swing check valves of the iron body bronze mounted, full opening type. Check valves shall be in accordance with AWWA C508 and equipped with outside levers and weights. Check valves smaller than three (3) inches shall be bronze, suitable for the service required.
 - 2) Swing check valves shall be used at all locations where a specific type of check valve is not specified or noted on the drawings. Swing check valves shall be American Flow Control, McWane, Mueller, or U.S. Pipe and Foundry. No substitutions allowed.
- C. Rubber Flapper Check Valves:
 - 1) Check valves shall be rubber flapper swing check valves of long pattern design (not wafer). Check valves shall have a heavy ductile iron body. Cover, bolts, nuts, and washers shall be 304SS; flange gaskets shall be rubber. Flapper shall be Buna-N with an O-ring seating edge, an elastic spring, molded internally, and shall be reinforced with steel. The flapper shall be easily removed from the check valve without needing to remove the valve from the line. Check valves will have full pipe size flow area. Check valves shall be APCO, Val-Matic, or Crispin rubber flapper swing check valves. No substitutions allowed.

2.05 PVC BALL VALVES

- A. Ball valves shall be the true union types, PVC (rigid, unplasticized, Type 1, polyvinyl chloride). PVC Ball Valves shall be of the full port area type with Teflon seat and "T" handle manufactured by Hayward Manufacturing Co., Inc., or equal, as per AWWA 507.

2.06 PLUG VALVES

- A. Plug valves shall be of the non-lubricated eccentric round port design. Valves shall be designed for a working pressure of 175 psi through twelve (12) inches and 150 psi for fourteen (14) inches and larger. Plug valves shall be Pratt or Milliken. No substitutions allowed.
- B. Plug valves up through twenty-four (24) inches shall have a round port. Plug valves thirty (30) inches and larger may have a rectangular port.
- C. The valve plug shall be constructed of cast iron ASTM A126, Class B, with Buna-N resilient seating surface to mate with the body seat.
- D. Plug valves shall be furnished with permanently lubricated grit excluder seals shall be provided to isolate the bearings.
- E. Plug valve shaft seals shall be the self adjusting type. All packing shall be replaceable without removing the valve bonnet.
- F. Each valve shall be given a test against the seat at the full rated working pressure and a hydrostatic shell test at twice the rated working pressure. Certified copies of individual tests shall be submitted when requested. Certified copies of proof-of-design tests shall be submitted upon request.
- G. Manual valves shall have a worm gear type actuator with handwheels, two (2) inch square nuts, chainwheels attached. Worm gear type actuators shall be furnished on all six (6) inches or larger valves where the maximum unseating pressure is 25 psig or more.
- H. All valves shall receive a protective inside lining. The lining shall be a two-part thermosetting epoxy protective coating Amerlock 400 or equal and shall function as a physical, chemical and electrical barrier between the base metal to which it is applied and the surroundings.

2.07 REDUCED PRESSURE DEVICE

- A. Reduced pressure devices shall be furnished and installed according to the latest revision to the Sarasota County Cross Connection Control Ordinance.

2.08 FLANGED COUPLING ADAPTERS

- A. Flanged coupling adapters shall be used for joining plain end pipe to flanged valves, pumps, and fittings located as shown on the drawings and/or as required. The adapters shall be equipped with anchor studs designed to withstand the end thrust of the piping. Harnessing shall be provided on sizes above twelve (12) inches.
 - 1) The flanged adapters shall be fabricated steel, Rockwell International Type 913, Baker Type 602, or Dresser Type 128. No substitutions allowed.

2.09 WATER AIR RELEASE VALVES

- A. Air release valves shall be two (2) inches in size, and meet NSF 61 and/or AWWA C512. Water air release valves shall be manufactured by A.R.I. Model D-040 reinforced nylon body combination air valve, or Val-Matic Single Body Model 202C.2 cast iron body combination air valve. All valves must be ISO-9000 certified and NSF 61 Compliant. No other substitutions will be allowed.
- B. Valves shall be rated at 200 psi, and factory tested at 300 psi. Test results shall be supplied to Utilities upon request.
- C. Valve Construction:
 - 1) The combination air valve shall be designed to allow large quantities of air to escape out the orifice when the water line is being charged and close water-tight when liquid enters the valve. The air valve shall also permit large quantities of air to re-enter through the orifice to prevent a vacuum from forming in the water line. The minimum size discharge nozzle shall be one and one half (1-1/2) inch diameter. Inlet connection shall be male or female 2" NPT.
 - 2) The A.R.I. valve shall consist of a reinforced nylon body, seal plug assembly, float and base. The seal plug assembly shall be attached to the body of the air release valve by a reinforced nylon clamping stem that slides in preformed grooves of the body. The body/base assembly shall be capable of being unscrewed for easy maintenance.
 - 3) Except for the resilient seal member, all internal components of the Val-Matic valve shall be constructed of type 316 stainless steel.
 - 4) Materials:

	A.R.I.	Val-Matic
Body Base	Reinforced Nylon	Cast Iron ASTM A126
Float	Foamed Polypropylene	316 Stainless Steel
Seat	EPDM	EPDM
Hardware	SAE 316 Stainless Steel	SAE 316 Stainless Stl.
Coating/Color	None/Blue Outlet	Universal Alkyd (Blue)

- 5) Connection to the waterline shall be constructed as indicated on the Sarasota County Standard Detail entitled "Automatic Air Release Valve", Water Dwg. No. 3, as modified herein:
 - a. Specific Drawing Modifications: 1) Eliminate concrete slab at enclosure, and 2) use 4 - 45 degree bends rather than 2 - 90 degree bends on offset pipe run.
 - b. All valves shall be installed in accordance with manufacturer's recommendations, and shall have a brass ball valve(s) constructed upstream of the air release valve.
- 6) Above Ground Enclosure:
 - a. All air release valves shall be enclosed in a 16" Wide X 13" Deep X 32" High above ground enclosure. Enclosures shall consist of high quality,

UV resistant molded high impact resistant polyethylene poly-plastic construction with stainless steel hardware and galvanized steel mounting stakes. All enclosures shall be dark blue in color for potable water and shall be equipped with a Pin Allen lock and key.

- b. The word "WATER" shall be embossed on the enclosure, visible at roadside. A Pin Allen key shall be provided with each installation. Enclosures shall be supplied by Water Plus Corporation, Model # 131632, Color: DARK BLUE.

2.10 WASTEWATER & RE-USE WATER AIR RELEASE VALVES

- A. Air release valves shall be two (2) inches in size. Wastewater & Re-use Water air release valves shall be manufactured by **A.R.I. Model D-025** reinforced nylon body combination air valve. Valves must be ISO-9000 certified. No substitutions will be allowed.
- B. Valves shall be rated at 150 psi, and factory tested at 230 psi. Test results shall be supplied to Utilities upon request.
- C. Valve Construction:

- 1) The combination air valve shall be specifically designed to operate with liquids carrying solid particles, and allow large quantities of air to escape out the orifice when the pipeline is being charged and close water-tight when liquid enters the valve. The combination valve shall also permit large quantities of air to re-enter through the orifice to prevent a vacuum from forming in the pipeline. The valve shall have a two (2) inch male N.P.T. inlet and a one and one-half (1-1/2) inch male Kamlok discharge. All valves shall be installed in accordance with manufacturer's recommendations, and shall have isolation valve connections for control.
- 2) The A.R.I. valve shall be conical in shape, and consist of a reinforced nylon body, seal plug assembly, float and base. The valve design and operation shall not allow contact between the sewage or re-use water and the sealing mechanism by providing an air gap at the top of the valve. The seal plug assembly shall be attached to the body of the air release valve by a reinforced nylon clamping stem that slides in preformed grooves of the body. The body/base seal shall consist of a BUNA-N O-Ring Gasket and SAE 316 Stainless Steel clamp which can be disassembled for easy maintenance.
- 3) Air release valves shall also be furnished with a one half (1/2) inch outlet drain plug.

- 4) Materials:

Body Base	Reinforced Nylon
Float	Foamed Polypropylene
Seat	EPDM
Interior Components	SAE 316 Stainless Steel
Exterior Hardware	SAE 316 Stainless Steel
Coating/Color	Green Flushing Connection (Sewer) Pantone Purple Flushing Connection (Re-Use)

- 5) Wherever possible, above grade air release valves for wastewater and re-use water lines shall be designed and installed. Connection to the wastewater line, or re-use water line, shall be constructed as indicated on the Sarasota County Standard Detail entitled "Automatic Air Release Valve", Water Dwg. No. 3, as modified herein.
- 6) Where underground installations of wastewater and re-use water air release valves are required, connection to the lines shall be constructed as indicated on the Sarasota County Standard Detail entitled "Automatic Air Release Valve", Sewer Dwg. No. 15, as modified herein.
 - a. Specific Drawing Modifications: 1) Pre-Cast Concrete Manhole shall be 5' minimum diameter, and 2) eliminate fill inside of manhole.
- 7) Above Ground Enclosures:
 - a. All above grade air release valves shall be enclosed in a 16" Wide X

13" Deep X 32" High above ground enclosure. Enclosures shall consist of high quality, UV resistant molded high impact resistant polyethylene poly-plastic construction with stainless steel hardware and galvanized steel mounting stakes. All enclosures shall be equipped with a Pin Allen lock and key.

- b. The word "SEWER" shall be embossed on the wastewater line enclosure, visible at roadside. A Pin Allen key shall be provided with each installation. Enclosures shall be supplied by Water Plus Corporation, Model # 131632, Color: STANDARD MEDIUM GREEN.
- c. The word "RE-USE" shall be embossed on the wastewater line enclosure, visible at roadside. A Pin Allen key shall be provided with each installation. Enclosures shall be supplied by Water Plus Corporation, Model # 131632, Color: GRAY.

2.11 PRESSURE SUSTAINING VALVES

- A. This valve shall maintain a constant upstream pressure regardless of fluctuations in the demand, and shall also close tight when pressure reversal occurs.
- B. The main valve shall be a hydraulically operated, diaphragm-actuated, globe or angle pattern valve. It shall contain a resilient, synthetic rubber disc, having a rectangular cross-section, contained on three and one-half sides by a disc retainer and forming a tight seal against a single removable seat insert. The diaphragm assembly containing a valve stem shall be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. This diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. The diaphragm shall consist of nylon fabric bonded with synthetic rubber and shall not be used as a seating surface. Packing glands and/or stuffing boxes are not permitted and there shall be no pistons operating the valve or pilot controls. All necessary repairs shall be possible without removing valve from the line.
- C. The pilot control shall be a direct-acting, adjustable spring-loaded, diaphragm valve, designed to permit flow when controlling pressure exceeds the spring setting.
- D. When downstream pressure exceeds the inlet pressure, the valve shall close tight to prevent reverse flow.
- E. Valve shall be similar in all respects to the CLAYTON 51-01 COMBINATION PRESSURE SUSTAINING AND CHECK VALVE as manufactured by Cla-Val, Bermad, or equal.
- F. Provide pressure gauges upstream and downstream of the valve.

2.12 VALVE BOXES

- A. Valve boxes shall be the five and one quarter (5-1/4) inches standard cast iron two-piece, screw type valve box with drop cover marker "WATER." The marker shall denote type of service, i.e. WATER, SEWER, RAW, REUSE, etc. They shall be of sufficient height to allow them to be raised an additional two (2) inches above the final elevation at each location that a valve is required on this project. PVC sleeves will not be allowed. Valve boxes shall be manufactured in the United States of America.

2.13 SLEEVES

- A. Sleeves shall be cast iron, and of the size and in the location shown on the drawings. Sleeves shall comply with section 2610 of this document.

2.14 GAUGES

- A. Gauges shall be furnished for the discharge side of all pumps and downstream side

of pressure sustaining valves. Gauges shall be bourdon tube types, with bronze movement, plexiglass covers and shall be four and one-half (4-1/2) inches in diameter. Each gauge shall have a one-quarter ($\frac{1}{4}$) inch NPT pumped liquid flushing connection with brass level handle blow-off pet cock. All surfaces exposed to the pumped liquid shall be of stainless steel. Gauges shall be calibrated in feet. All pump discharge gauges shall be equipped with electrical contacts for pump failure indication. The contacts shall be field adjustable and have a contact rating of one-quarter ($\frac{1}{4}$) A 120 VAC. Gauges for sewage shall be oil filled and be constructed with a diaphragm to prevent contact between the wastewater and the gauge. All gauges must be pre-approved by the Engineer before ordering.

END OF SECTION

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SECTION 02642

TAPPING SLEEVES AND TAPPING VALVES

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The Contractor shall furnish and install tapping sleeves and tapping valves as shown on the drawings or as directed by the Engineer.

1.02 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. Ductile Iron Pipe: Section 02614
- B. Polyvinyl Chloride: Section 02616
- C. Submittals: Section 01300

1.03 QUALITY ASSURANCE

- A. Install tapping sleeves and tapping valves to meet requirements of Sarasota County Utilities, manufacturer's recommendations, and AWWA C-500.

1.04 SUBMITTALS

- A. Submit manufacturer's certificate of conformance.
- B. Shop Drawings: Submit manufacturer's drawings and data sheets for material to be supplied under this Section. Indicate sizes and types to be installed.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Upon delivery and before unloading, the Contractor must inspect the fittings for any damage occurring in transit and note such damage on the delivery ticket.
- B. The means by which the tapping sleeves and tapping valves are unloaded is the decision and responsibility of the Contractor. He should follow recommendations of the manufacturer.
- C. The Contractor shall follow manufacturer's recommendations for storage of tapping sleeves and tapping valves in order to minimize damage prior to installation.
- D. The Contractor shall adhere to the standard procedures given by the manufacturer for handling the material.

PART 2 - PRODUCTS

2.01 TAPPING SLEEVES

- A. Tapping Sleeves for connection to existing mains for line sizes twenty-four (24) inches or less shall be split housing stainless steel with full 360 degree gasket, suitable for working pressures of 200 psi and shall be Mueller H-304 or approved equal. Sizes larger than twenty-four (24) inches shall be prefabricated steel, epoxy coated, with stainless steel bolts. Test ports shall be supplied on all sleeves. Size on size tapping sleeves shall be cast iron, mechanical joint, split housing, tapping sleeve, Mueller H-615, or approved equal. Provide shop drawing prior to purchasing the tapping sleeve.
- B. Tapping sleeves for connection to existing pipe shall be suitable for the appropriate type of pipe to be tapped. Contractor shall be responsible for uncovering and determining type, class and the exact O.D. of the pipe to be tapped prior to ordering material.
- C. Acceptable materials are as follows:
 - 1) Stainless steel tapping sleeves for tapping mains up to twenty-four (24) inches

in diameter shall be fully passivated, split housing design with full 360 degree gasket. Stainless Steel Tapping Sleeves shall be furnished with:

- a. Sleeve Shell – 304 Stainless Steel.
 - b. Lugs, Nuts, Bolts – 304 Stainless Steel drop in bolt style.
 - c. Washers – 304 Stainless Steel.
 - d. Flange Gasket – Glued to flange face.
 - e. Flange – 304 Stainless Steel
 - f. Flange, Nuts, Bolts – 304 Stainless Steel
 - g. Seal Gasket – Full Circumference and full length.
 - h. Test Plug – 304 Stainless Steel, ¾ inch NPT.
- 2) Epoxy Coated Steel for tapping mains larger than twenty-four (24) inches in diameter shall be furnished with:
- a. Body - Heavy welded steel, full support body, not strapped.
 - b. Epoxy Coating - Epoxy resin, free of voids, lamination, or blisters, dry film thickness of 8-10 mils.
 - c. Bolts and Nuts - 304 Stainless Steel.
 - d. Flange - Steel flat face with gasket.
 - e. Flange Nuts and Bolts - 304 Stainless Steel.
 - f. Test Plug - 304 Stainless Steel, ¾ inch NPT.
 - g. Seal Gasket - Water service Buna N.
- 3) Mechanical joint tapping sleeves for size on size taps shall be furnished with:
- a. Body - Cast Iron (Mueller H-615 or equal).
 - b. Flange - Shall be flat faced with gasket.
 - c. Flange Bolts and Nuts - 304 Stainless Steel.
 - d. Body Bolts, Nuts, and Gasket - Shall be furnished by sleeve manufacturer.

2.02 TAPPING VALVES

- A. All tapping valves shall conform with the latest revision of AWWA C500 "AWWA Standards for Gate Valves for Ordinary Water Works Service". The tapping valve shall be flanged inlet with centering lip, Class 125, ANSI B16.1 with mechanical joint outlet. Valve shall be resilient seat type by Mueller or approved equal.
- B. All tapping valves shall be pressures of 200 psi. Valves shall be of standard 200 psi manufacture and of the highest quality both as to materials and workmanship.
- C. All tapping valves shall be furnished with mechanical joint end connections, unless otherwise shown on the Drawings or specified hereinafter and shall be compatible with the tapping sleeve used.
- D. All tapping valves shall have the name or monogram of the manufacturer, the year the valve casting was made, the size of the valve, and the working water pressure cast on the body of the valve.
- E. Gate valves shall be provided with a 2" square operating nut and shall be opened by turning to the left (counter-clockwise).

2.03 VALVE BOXES

- A. Valve boxes shall be the 5-1/4" standard cast iron two-piece, screw type valve box with drop cover marker "WATER" and "SEWER" for all sewer valves. The marker shall denote type of service, i.e. WATER, SEWER, RAW, REUSE, REJECT, etc. They shall be of sufficient height to allow them to be raised an additional 2" above the final elevation at each location that a gate valves is required on this Project. PVC sleeves will not be allowed. Valve boxes shall be manufactured in the United States.

PART 3 - EXECUTION

3.01 DESCRIPTION

- A. All sleeves and valves shall be installed in accordance with the Standard Detail

Drawings and in accordance with AWWA C600, "Installation of Gray and Ductile Cast-Iron Water Mains and Appurtenances".

3.02 WET TAPS

- A. Wet taps on existing water mains shall be performed by an approved Contractor in the presence of a County Inspector. The Contractor shall pay any required fees for each wet tap required. It is the Contractor's responsibility to install and test the tapping sleeve and tapping valve. The Contractor shall excavate a trench of sufficient size for tapping machine and work. Refer to the Uniform Water, Wastewater, and Reuse System Code, Section 12, for additional requirements.

3.03 TAPPING VALVE AND SLEEVE TEST

- A. The assembly shall be tested at 150 psi for 30 minutes with zero loss in the presence of a County Inspector. The valve shall have a cap installed and shall be open during the test. After 30 minutes, the valve shall be closed and the valve seat shall be checked for leaks. Caution - do not pour thrust block before assembly has been tested and accepted by the Engineer.

3.04 CONCRETE CRADLE SUPPORT

- A. Concrete cradle support shall be installed under all tapping sleeves in accordance with tapping sleeve and valve details. Concrete cradle support shall be installed 48 hours prior to tapping.

3.05 VALVE BOXES

- A. Valve boxes shall be accurately centered over valve operating nut, and backfilled, thoroughly tamping around them. Valve box bases shall not rest on the valves but shall be supported by crushed stone fill. They shall be set vertically and properly adjusted so that the tops of boxes will be at grade in any paving, walk or road surface, and two to three inches above ground in grass plots, fields, woods or other open terrain. A 24"x24"x6" concrete pad shall be poured around the valve box at finished grade, as per the standard detail drawing.

END OF SECTION

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SECTION 02660

PIPING - GENERAL

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The work covered by this section and related sections, consists of providing all labor, equipment, material and supplies and performing all operations required to install the various piping, valves, accessories, and fire hydrant assemblies for waterlines, as specified, as shown on the drawings, and as directed by the Engineer.
- B. Related Work Specified Elsewhere: (As Applicable)
 - Section 02222 - Trenching, Backfilling and Compacting
 - Section 02610 - Fittings
 - Section 02614 - Ductile Iron Pipe
 - Section 02616 - Polyvinyl Chloride (PVC) Pipe
 - Section 02618 - High Density Polyethylene (HDPE) Pipe
 - Section 02640 - Valves and Accessories.

1.02 SUBMITTALS

- A. Submittals for the various types of pipe and fittings are specified in the individual sections.
- B. Shop drawings or catalog cuts shall be submitted for all valves, boxes and restrained joints.
- C. Record drawings shall be submitted in accordance with the requirements of Section 01300 – Submittals of Section 01700: Project Closeout. The type of pipe used shall also be noted on the drawings.
- D. Pipe elevations shall be submitted as specified under "Installation", in this Section.
- E. The manufacturer shall furnish a sworn affidavit that the pipe, fittings and lining furnished under the Contract or Agreement comply with all applicable provisions of the ANSI and/or AWWA Standards.
- F. The Contractor shall submit reports on pressure and leakage tests.
- G. Reports on bacteriological tests shall be submitted by the Contractor.

1.03 JOB CONDITIONS

- A. Interruptions to utility service shall be minimized. The Contractor shall submit plans and schedules to the Engineer for approval by the proper authority before any shutdown or any interruption in service takes place.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 INSPECTION

- A. All pipes shall be subject to inspection at the factory by the Engineer or County. The Contractor shall provide a production schedule in sufficient time so plans can be made for in-plant inspection of the pipe or fittings during production, should it be required.
- B. Special markings shall be plainly marked on the applicable pipe indicating the weight, proper location of the pipe or fitting in the line by reference to layout drawings and schedules, class of pipe, casting period, manufacturer's mark and year pipe was produced.

3.02 TESTS

- A. All tests shall be made in the presence of the County or Engineer unless waived in writing. The Contractor shall notify the Engineer in sufficient time when tests are being conducted to allow for travel time to the manufacturer's plant.

3.03 INSTALLATION OF ABOVE GROUND PIPING

- A. Piping shall be installed as shown on the drawings. Flanged joints shall be made up tight, care being taken to prevent undue strain upon pump nozzles, valves, and other pieces of equipment. Where stainless steel bolts are used, an anti-seize compound shall be applied on the bolt threads to prevent corrosion and galling of threads for easy disassembly, manufactured by Never-Seez Compound with Teflon, by Bostik, or approved equal. Piping within structures shall be adequately supported from floors, walls, or ceilings. Supports from the floor shall be by approved saddle stands or suitable concrete piers as shown or approved by the Engineer. Pipe saddles shall be shaped to fit the pipe with which they will be used and shall be capable of screw adjustment. Concrete piers shall conform accurately to the bottom $\frac{1}{3}$ to $\frac{1}{4}$ of the pipe. Piping along walls shall be supported by approved wall brackets with attached pipe rolls or saddles or by wall brackets with adjustable hanger rods. For piping supported from above, approved rod hangers of a type capable of screw adjustment after erection of the piping and with suitable adjustable concrete inserts or beam clamps shall be used. Supports shall be located where shown, or specified, and in no case shall they exceed 8' on centers.
- B. Unions and Flanges:
 - 1) Unions and flanges are not, in every case, shown on the drawings but are to be provided where necessary and adjacent to all equipment installed or provided for under this Contract. Ground joint unions shall be provided on pipe sizes up to and including 2-inches. Flanged unions shall be used on all pipes larger than 2-inches. Use malleable iron on steel piping, black or galvanized as specified for piping. Unions in copper piping shall be brass.
- C. Wall Sleeves:
 - 1) Pipe through concrete or masonry walls shall be placed in wall sleeves except where wall pipe is shown on the drawings. Wall sleeves shall be standard weight, Class D, of the sizes shown on the drawings. Sleeves through walls and floors on grade shall be of sufficient length to extend through to finished surface. All sleeves shall be of adequate size to permit clearance for pipe movement and proper grading of pipe.

3.04 INSTALLATION OF UNDERGROUND PIPING

- A. Excavation, trenching and backfilling for the installation of underground piping system shall be as specified in Section 02222 - Trenching, Backfilling and Compacting. Pipe shall be laid in a level trench. Irregularities shall be smoothed out or filled in with sand and tamped. Holes shall be scooped out where the bells occur leaving the entire barrel of the pipe bearing on the pipe bed. Locate tape shall be installed 18" below finished grade. It shall state "Caution, buried potable main below" for water, "Caution, buried force main below" for force main, and "Caution, buried gravity main below" for sewer, and "Caution, buried reuse water main below" for reuse water.
- B. Laying of the pipe shall be commenced immediately after the excavation is started, and every means must be used to keep pipe laying closely behind the trenching. The Engineer may stop trenching when, in his opinion, the trench is open too far in advance of the pipe laying operation. Pipe may be laid in the best manner adapted to securing speed and good results. It shall, however, be in accordance with the manufacturer's instructions and recommendations. Damaged or unsound pipe or fittings will be removed and replaced by the Contractor at no additional cost to the County. Before jointing of the

pipe, all lumps, blisters, excess coating material or oil shall be removed from the bell and spigot ends of the pipe. Pipelines shall be restrained to prevent movement of lines under pressure. For ductile iron pipe, restrained joints shall be installed at all bends, tees, crosses, wyes, plugs, and reducers. The number of feet of pipe with restrained joints necessary for each size pipe shall be as shown on the drawings.

- C. Where there is no adequate natural foundation upon which to construct a pipe bed, the pipe shall be constructed on a prepared stabilized subgrade or rock bedding of Class I materials as defined in ASTM D2321. Unsuitable subgrade materials shall be replaced or stabilized as described in Section 02222. Gravel or graded limerock used for pipe bedding, when ordered in writing, shall be paid for under bid item for such material. Where dewatering is required, Class I materials shall be used as described in ASTM D2321.
- D. Pipe and fittings shall be strung out for 1 day's construction along the route of construction with the spigots pointing in the direction of the flow. Pipe shall be placed where it will cause least interference with traffic. Pipe shall be handled by mechanical equipment. Before the pipe is lowered into the trench, it shall be swabbed or brushed out to insure that no dirt or foreign material gets into the finished line. Trench waters shall be kept out of the pipe and the pipe kept closed by means of a test plug whenever work is not in progress. The Contractor shall provide the means for dewatering the trench and the cost thereof shall be included in the price for installing the pipe.
- E. Deflections from a straight line or grade made necessary by vertical curves or horizontal curves or offsets shall not exceed the manufacturer's recommendations. If the specified or required alignment requires deflection in excess of those recommended, the Contractor shall either provide special bends as approved by the Engineer or a sufficient number of shorter lengths of pipe to provide angular deflections within the required limit.
- F. All joints shall be watertight and any leaks or defects discovered shall be immediately repaired to the satisfaction of the Engineer. Any pipe which has been disturbed after being laid shall be taken up, the joints cleaned and the pipes properly relaid. Any superfluous material inside the pipe shall be flushed or removed by means of an approved follower or scraper after joints are made. Installation of fittings and pipe joints shall be in strict accordance with the manufacturer's recommendations.
- G. Where pipelines are stubbed out, the stubouts shall be restrained to the main line fittings.
- H. For the protection of exposed reinforcing any all-thread restraint methods, the Contractor shall furnish and apply two coats of Koppers Bitumastic No. 505 protective coating.
- I. Before backfilling, the Contractor shall obtain elevations on the top of the pipe barrel at 100-foot intervals along the pipeline and fittings and at any change in grade. These elevations shall be submitted to the Engineer.
- J. Plastic pipe shall be installed in strict accordance with the provisions of ASTM D2321-74, including those provisions in respect to compaction of bedding and haunching material. Class IV or Class V materials as defined in ASTM D2321 shall not be used for bedding, haunching or initial backfill.

3.05 CONNECTIONS TO EXISTING MAINS

- A. Where connections are required between new work and existing utility mains, the connection shall be made in a thorough and first class manner, using proper specials and fittings to suit the actual conditions. Use ductile iron mechanical joint sleeve for connection to existing utility mains. In case a connection is made to an existing fitting in the line, the Contractor shall schedule his work so that digging and locating the existing fittings can be completed prior to starting trench work on the line. Cut-ins into lines shall be done at a time approved by the Engineer and proper authority. The Contractor shall not make any connections or service taps into existing utility mains until their work has been tested and accepted by the Engineer.

3.06 TESTING PIPING SYSTEM (Refer to Section 01666)

3.07 FLUSHING

- A. After the mains have been laid and pressure tested, each run of pipe shall be thoroughly flushed so as to remove all debris and foreign matter from the lines. Flushing will ordinarily be done by opening fire hydrants or blowoffs along the pipe line. Where fire hydrants or blowoffs are not available or are of insufficient capacity to permit adequate flushing, the pipe line shall be opened and flumes or piping shall be provided by the Contractor to waste the water to the nearest approved disposal point. Sufficient flushing water shall be introduced into the mains to produce a scouring velocity of not less than 3.5 feet per second to resuspend the solids, and this rate of flow shall be continued until the discharge is clear and no evidence of silt or foreign matter is visible.
- B. In the event that the Contractor cannot obtain the flushing velocity, a poly-pig swab may be used to clean the pipeline. The Contractor shall submit pigging plan to the Engineer for review. The plan shall include type of pig material, water flow rate, discharge points, poly-pig detector and retrieval options. Pigs shall be manufactured by Knapp Polly Pig, Houston, Texas or approved equal.

3.08 DISINFECTION AND TESTS

- A. Disinfection of all equipment, pipelines, tanks, and other parts of the project with which water comes in contact and which have been contaminated by the Contractor's operations shall be accomplished after completion of construction and immediately before the system or unit is placed in operation. The Contractor shall procure and pay for all water required for disinfection and tests, and shall supply all test taps and equipment necessary to complete all testing per local Florida Department of Health and Engineer. All test points will be determined by local Florida Department of Health and Engineer prior to testing.
- B. The disinfecting agent shall be liquid chlorine or sodium hypochlorite solution conforming to Federal Specification O-S-602b Sodium Hypochlorite, Grade D.
- C. The piping shall be disinfected by introducing the disinfecting agent into the water, which is being pumped into the system, in such manner that the entire system will be filled with water containing a minimum chlorine concentration of 50 ppm at any point. This water shall be allowed to remain in the system for a minimum contact period of twenty-four hours before the system is flushed out. The Contractor shall supply the Engineer with the type and quantity of chlorine to be used for disinfection.
- D. After the disinfecting agents have been permitted to remain for the specified contact periods, the structures, pipelines, pumps and valves shall be thoroughly flushed with water until the residual chlorine tests are less than 0.2 ppm for each test. The determination of the amount of residual chlorine in the system shall be made at such points and by means of an orthotolodine test set in accord with standard procedures.
- E. After any units or portions of the system have been disinfected and flushed as specified, samples of water shall be taken from several points as applicable in suitable sterilized containers by the local Florida Department of Health for bacterial examination. If repeated tests of such samples show the presence of coliform organisms, the disinfection shall be repeated or continued until tests indicate the absence of pollution. Two consecutive daily samples shall be satisfactorily tested before the system is placed in service.
- F. The complete disinfection program and methods followed, especially if materially different from those specified, shall be in accordance with directives of the Florida Department of Environmental Regulation, Division of Health and all methods employed shall have their approval. Definite instructions as to the collection and shipment of the samples shall be requested from the Florida Division of Health and shall be followed in all respects. Final written approval of the bacterial samples shall be received by the Engineer from the Florida Division of Health prior to the time that the system is placed into operation.

END OF SECTION

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SECTION 02712

WATER METER TESTING

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The Contractor shall furnish all labor, equipment, tools, and materials necessary and required to test water meters.

1.02 QUALITY ASSURANCE

- A. Testing of water meters is to be performed using a comparative type large meter test unit capable of maintaining an accuracy of +/- 2% and have a performance range of ½ gpm to 1,800 gpm.

1.03 SUBMITTALS

- A. The Contractor shall submit a detailed test report for all meters tested which will include the following data:
 - 1) Address.
 - 2) Meter brand, size, type, and identification number.
 - 3) Test date.
 - 4) Meter register reading prior to and upon completion of field testing.
 - 5) Service pressure at meter site.
 - 6) Test results after each flow.
 - 7) Note quantities run on both test unit and subject meter for each flow.
 - 8) Note any problems with valve failure or hazardous setting conditions.
- B. The Contractor shall submit proof of the accuracy of the meter testing equipment.

PART 2 – PRODUCTS (N/A)

PART 3 - EXECUTION

3.01 INSTALLATION

- A. A minimum of two (2) technicians will be required to perform the field testing and repair work, and the Contractor will be fully equipped to conduct the testing and repair work without assistance from County personnel. Truck mounted equipment shall be equal to the following minimums:
 - 1) One (1) 4" turbine high flow test unit with digital read-out and rate of flow indicator.
 - 2) One (1) 5/8" low flow test unit with digital read-out and rate of flow indicator.
 - 3) One (1) calibrated test tank with rate of flow indicator to measure minimum flows.
 - 4) Communications systems to provide accurate communications between the test unit and the meter being tested.
 - 5) Electrical generating unit to provide power for lighting and necessary tools, where needed.
 - 6) Pump to remove water from meter pit, where necessary.
 - 7) Any and all additional tools and equipment needed to do the required work, including equipment necessary to work in confined entry spaces, where necessary.
- B. The lead technician must be certified and have a minimum of five (5) years experience in large meter testing. The test crew will operate under all applicable OSHA regulations

- regarding working within confined spaces, should meters be located in a below grade vault
- C. The County reserves the right to assign a County employee to accompany the Contractor to the site in order to help locate the meter, the proper valves, the bypass, etc., to serve as the County's liaison between the Contractor and the customer, and to facilitate with water service interruption, when necessary.
 - D. All meters tested or repaired shall be calibrated to be as near 100% accuracy as practicable and within current AWWA Standards C701, C702, C703, and M6. All meters shall be tested at the following approximate flow rates:
 - 1) Maximum Flow Rate – 75% of the meter's rated capacity up to maximum flow available through the test outlet.
 - 2) Intermediate Flow Rate – 10% of the meter's rated capacity.
 - 3) Minimum Flow Rate – as indicated on the appropriate AWWA Standard.
 - E. There shall be a minimum of:
 - 1) Three (3) flows per test for each turbine meter.
 - 2) Six (6) flows per test for each compound meter.
 - 3) Nine (9) flows per test for each fire meter.

END OF SECTION

SECTION 03301

CONCRETE

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The extent of concrete work is shown on the drawings.

1.02 CODES AND STANDARDS

- A. ACI 350 "Environmental Engineering Structures"; ACI 347 "Recommended Practice for Concrete Formwork"; ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete"; comply with applicable provisions.
- B. Reference to standard specifications herein shall be construed as to be in reference to the latest revision or edition.

1.03 STORAGE

- A. Immediately upon receipt at the site, cement that is to be site mixed shall be stored in a dry, weather tight building, properly ventilated and with provisions for prevention of moisture absorption.
- B. Reinforcing shall be protected from the weather.

PART 2 - PRODUCTS

2.01 CONCRETE MATERIALS

- A. Cement: Cement shall conform to standard specifications for "Portland Cement", ASTM C150, Type II.
- B. Aggregate: Concrete aggregate shall conform to the current specifications for "Concrete Aggregate", ASTM Designation C33.
- C. Water: Water used in mixing concrete shall be fresh, clean, and free from injurious amounts of oil, acid, alkali or organic matter, conforming to ASTM C 94.
- D. Ready-Mix Concrete: Ready-mixed concrete may be used at the option of the Contractor provided that such concrete meets the requirements of these specifications and of ASTM Designation C94 for "Ready-Mixed Concrete".
- E. High-Early-Strength Concrete: Concrete made with high-early-strength Portland cement shall be used only when specifically authorized by the Engineer. The 7-day compressive strength of concrete made with high-early-strength cement shall be at least equal to the minimum 28-day compressive strength specified. All provisions of these specifications shall be applicable to high-early-strength concrete except the cement shall conform to ASTM Designation C150, Type III.

2.02 RELATED MATERIALS

- A. Reinforcing: Deformed Reinforcing Bars, ASTM A615; Grade 60 unless otherwise indicated.
- B. Welded Wire Fabric: ASTM A185.
- C. Liquid Membrane-Forming Curing Compound: ASTM C309, Type I.
- D. Form Materials:
 - 1) Provide form materials with sufficient stability to withstand pressure of placed concrete without bow or deflection.
 - 2) Exposed Concrete Surfaces: Suitable material to suit project conditions.
- E. Waterstops: Waterstops to be used in joints shall be three-eighths (3/8) inch by six (6)

- inch wide PVC by Greenstreak, or approved equal.
- F. Chemical Floor Hardener: Colorless aqueous solution containing a blend of magnesium fluosilicate and zinc fluosilicate combined with a wetting agent, containing not less than 2 lbs. of fluosilicates per gallon.
- 1) Apply to exposed concrete slabs not indicated or scheduled to receive subsequent finishes.

2.03 QUALITY

- A. Reinforced Concrete: The minimum 28-day compressive strength of reinforced concrete shall be 4,000 psi, unless shown otherwise on the drawings.
- 1) Each cubic yard of 4,000 psi concrete shall contain no less than 480 lbs. of cement. The water to cement ratio shall not exceed 0.45.
- B. Reinforced Concrete: The minimum 28-day compressive strength of non-reinforced concrete shall be 2,500 psi, unless shown otherwise on the drawings.
- 1) Each cubic yard of 2,500 psi concrete shall contain no less than 440 lbs. of cement. The total water content per bag shall not exceed 7.5 gallons.
- C. Mix Proportions: All concrete materials shall be proportioned so as to produce a workable mixture with a slump between 2" and 4".
- D. Tests:
- 1) The Contractor shall provide, for test purposes, one set of three cylinders taken from each day's pour or each 100 yards placed, whichever is least or as directed by the Engineer. The Contractor at his expense shall supply test samples and an independent testing laboratory at the Contractor's expense will perform tests. The standard age of test shall be 28 days; but, when approved by the Engineer, 7 day tests may be used provided that the relation between the 7 and 28-day strengths of the concrete is established by test for materials and proportions used. If the test strength of the cylinders falls below the minimum allowable compressive strength, the Engineer shall have the right to order the Contractor to remove and renew that day's pour of concrete or the Contractor shall accept such deductions in the final payment as the County may deem reasonable.
- 2) Sampling and testing of concrete materials shall be made in accordance with ASTM Designations. The Contractor at his expense shall supply test samples, and an independent testing laboratory at the Contractor's expense shall make tests. The source from which concrete aggregates are to be obtained shall be selected by the Contractor well in advance of the time when they will be required in the work; and suitable samples, as they are to be used in the concrete, shall be furnished in advance of the time when the placing of the concrete is expected to begin.

PART 3 - EXECUTION

3.01 FORMING AND PLACING CONCRETE

- A. Formwork: Construct so that concrete members and structures are of correct size, shape, alignment, elevation and position, complying with ACI 347.
- B. Clean and adjust forms prior to concrete placement. Apply form release agents for wet forms, as required. Retighten forms during and after concrete placement if required to eliminate mortar leaks.

3.02 REINFORCEMENT

- A. Position, support and secure reinforcement against displacement. Locate and support with metal chairs, runners, bolsters, spacers and hangers, as required. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
- B. Install welded wire fabric in lengths as long as possible, lapping at least one complete mesh.
- C. Installation of Embedded Items: Set and build into the work anchorage devices and

other embedded items required for other work that is attached to, or supported by cast-in-place concrete. Use setting diagrams, templates and instructions provided by others for locating and setting.

3.03 CONCRETE PLACEMENT

- A. Comply with ACI 304, placing concrete in a continuous operation within planned joints or sections. Do not begin placement until work of other trades affecting concrete is completed.
- B. Consolidate placed concrete using mechanical vibrating equipment with hand rodding and tamping, so that concrete is worked around reinforcement and other embedded items and into all parts of the forms.
- C. Protect concrete from physical damage or reduced strength due to weather extremes during mixing, placement and curing. Concrete shall not be placed when the surrounding air temperature is below 40°F. and dropping.
 - 1) In cold weather comply with ACI 306.
 - 2) In hot weather comply with ACI 305.

3.04 CONCRETE FINISHES

- A. Non-slip Broom Finish: Apply non-slip broom finish to exterior concrete, sidewalks and pump station top slab.
 - 1) Immediately after trowel finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with the Engineer before application.
- B. Monolithic Trowel Finish: For all slab and flatwork surfaces not otherwise indicated or specified. After surface water disappears and floated surface is sufficiently hardened, steel trowel and retrowel to smooth surface. After concrete has set enough to ring trowel, retrowel to a smooth uniform finish free free of trowel marks or other blemishes. Avoid excessive trowelling that produces burnished areas.

3.05 BONDING AND GROUTING

- A. Before depositing new concrete on or against concrete that has set, existing surfaces shall be thoroughly roughened and cleaned of glaze, foreign matter, and loose particles. An epoxy coating, as approved by the Engineer, shall be applied for bonding the new concrete to the old.

3.06 CURING

- A. Concrete shall be kept continuously (not periodically) wet for a period of at least five consecutive days by covering with water or with an approved water saturated covering. Water for curing shall be clean and free from any elements, which might cause staining, or discoloration of the concrete surface.
- B. Sidewalks and floor slabs may be cured by spraying with a Membrane-Forming curing compound, applied as per manufacturer's recommendations and as approved by the Engineer. This material shall not be used on any interior slabs to which an applied finish is to be bonded.

3.07 PATCHING

- A. Any concrete which is not formed as shown on the drawings, or is out of alignment or level or shows a defective surface, shall be considered as not conforming with the intent of these specifications and shall be removed from the job by the Contractor at his expense, unless the Engineer grants permission to patch the defective area. This shall be done in accordance with the procedures above. Honeycomb consisting of 3/4" diameter holes or greater shall be considered a defective surface. Permission to patch any such area shall not be considered a waiver of the Engineer's right to require complete removal of the defective work if the patching does not, in his opinion,

satisfactorily restore the quality of the concrete and appearance of the surface.

- B. As the forms are removed, fins, rough edges, and offsets shall be ground smooth. Holes to 3/4", slight honeycomb, and minor defects shall be wet and filled with a 1:2 mix of cement mortar, matching color of surrounding concrete, and then troweled to a uniform plane. As soon as they have been troweled, the patched areas shall be sprayed with a curing compound, which will not destroy future bonding properties. Three days after application of curing compound, the entire surface shall be finished by wetting and applying a 1:2 mix of cement mortar with a cement brick. Using the brick, mortar shall be rubbed into pits or indentations and excess mortar rubbed off to provide a uniformly textured surface. When the surface has dried, all loose sand and dust shall be removed and the surface then hosed down with water.

3.08 TOLERANCES

- A. Tolerances for concrete work shall be in accordance with ACI 347.

END OF SECTION

SECTION 05500

MISCELLANEOUS METALWORK

PART 1 - GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall provide miscellaneous metalwork and appurtenances, complete and in place, in accordance with the Contract Documents.

1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Federal Specifications

- 1) MIL-G-18015 A (3) (Ships) Aluminum Planks. (6063-T6)
- 2) MIL-A-907E Antiseize Thread Compound, High Temperature

B. Commercial Standards

- 1) AA-M32C22A41 Aluminum Assn.
- 2) AASHTO HS-20 Truck Loading
- 3) AISC Manual of Steel Construction
- 4) AISI Design of Light Gauge, Cold-Formed Steel Structural Members
- 5) ASTM A 36 Carbon Structural Steel
- 6) ASTM A 48 Gray Iron Castings
- 7) ASTM A 53 Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
- 8) ASTM A 123 Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
- 9) ASTM A 153 Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- 10) ASTM A 193 Alloy Steel and Stainless Steel Bolting Materials for High Temperature Service
- 11) ASTM A 194 Carbon and Alloy Steel Nuts for Bolts for High Pressure and High Temperature Service
- 12) ASTM A 307 Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength
- 13) ASTM A 325 Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
- 14) ASTM A 500 Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- 15) ASTM A 992 Steel for Structural Shapes for Use in Building Framing
- 16) ANSI/AWS D1.1 Structural Welding Code - Steel
- 17) ANSI/AWS D1.2 Structural Welding Code - Aluminum
- 18) ANSI/AWS QC1 Qualification and Certification of Welding Inspectors

1.03 CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with Section 01300 - Contractor Submittals.
- B. **Shop Drawings:** Shop Drawings shall conform to AISC recommendations and specifications and shall show holes, etc. required for other parts of the WORK. Drawings shall include complete details of members and connections, anchor bolt layouts, schedules for fabrication procedures, and diagrams for the sequence of erection.

- 1) Layout drawings for grating, showing the direction of span, type and depth of grating, size and shape of grating panels, seat angle details, and details of grating hold down fasteners. Load and deflection tables shall be submitted for each style and depth of grating used.
- 2) An ICBO report listing the ultimate load capacity in tension and shear for each size and type of concrete anchor. CONTRACTOR shall submit manufacturer's recommended installation instructions and procedures for adhesive anchors. Upon review by ENGINEER, these instructions shall be followed specifically.
- 3) No substitution for the indicated adhesive anchors will be considered unless accompanied with ICBO report verifying strength and material equivalency, including temperature at which load capacity is reduced to 90 percent of that determined at 75 degrees F.

1.04 QUALITY ASSURANCE

- A. Weld procedures and welder qualifications shall be available in the CONTRACTOR's field office for review.
- B. Welding shall be inspected by a CONTRACTOR-furnished inspector qualified in accordance with AWS requirements and approved by the ENGINEER.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Steel

Wide Flange Shapes	ASTM A 992
Shapes, Plates, Bars	ASTM A 36
Pipe, Pipe Columns, Bollards	ASTM A 53, Type E or S, Grade B standard weight unless indicated otherwise
HSS	ASTM A 500 Grade B

- B. **Corrosion Protection:** Unless otherwise indicated, fabricated steel metalwork which will be used in a corrosive environment and/or will be submerged in water/wastewater shall be coated in accordance with Section 09800 - Protective Coating and shall not be galvanized prior to coating. Other miscellaneous steel metalwork shall be hot-dip galvanized after fabrication.
- C. **Stainless Steel:** Unless otherwise indicated, stainless steel metalwork and bolts shall be of Type 316 stainless steel.
- D. **Aluminum:** Unless otherwise indicated, aluminum metalwork shall be of Alloy 6061-T6. Aluminum in contact with concrete, masonry, wood, porous materials, or dissimilar metals shall have contact surfaces coated in accordance with Section 09905.
- E. **Cast Iron:** Unless otherwise indicated, iron castings shall conform to the requirements of ASTM A 48, Class 50B or better.

2.02 HATCHES

- A. Where access hatches are mounted on a floor slab (including top slabs that are not covered with a roofing membrane) or on a concrete curb, the hatch shall be a flush type as indicated.
- B. Hatches shall be fabricated from aluminum 5086 H34, 6063-T5 or 6061-T6, unless otherwise indicated. Hatch hardware shall be Type 316 stainless steel. Hatches shall be gutter-type; **Bilco Type J or JD, Babcock-Davis Type B-FGA** or equal.
- C. The design live load shall be 300 psf, unless indicated otherwise.
- D. Hatch opening sizes, number and swing direction of door leaves, and locations, shall be as indicated. Sizes are for the clear opening. Where the number of leaves is not given, openings larger than 42-inches in either direction shall have double-leaf

- doors. Unless indicated otherwise, hinges shall be located on the longer dimension side. Unless indicated otherwise, ladder hatches shall be a minimum of 30-inches wide by 36-inches long, with the ladder centered on the shorter dimension, and the door hinge opposite the ladder.
- E. Door leaves shall be a minimum of 1/4-inch thick checkered pattern plate. Channel frames shall be a minimum of 1/4-inch material with an anchor flange around the perimeter. Hatches shall be provided with an automatic hold-open arm with release handle. Hatches shall be designed for easy opening from both inside and outside.
 - F. Hatches shall be designed to be water-tight and shall be equipped with a joint gutter and moat-type edge drain. A minimum 1-1/2 inch diameter drain connection shall be provided, located by the manufacturer.
 - G. Hatches for submersible pump stations shall include a unistrut channel around the frame perimeter. The face of the unistrut channel shall be flush with the face of the frame and be compatible with the upper guide rail bracket of the submersible wastewater pump manufacturer.
 - H. Hatches shall include a recessed hasp for a padlock that is covered by a hinged lid flush with the surface.
 - I. Unless indicated otherwise, hatch nets shall be installed on floor hatches. Hatch nets shall conform to OSHA requirements and shall be **Hatch Net 121**, as manufactured by **Safe Approach, Inc**, Auburn, ME, or equal

2.03 IRON CASTINGS

- A. Iron castings shall be of uniform quality, free from blowholes, porosity, hard spots, shrinkage, distortion, or other defects. They shall be smooth and well cleaned by shotblasting.
- B. Covers and grates shall fit together evenly, so that the cover fits flush with the surrounding finished surface and so that the cover does not rock or rattle when loading is applied. Round covers and frames shall have machined bearing surfaces.
- C. Covers and grates with matching frames shall be designed to support the following loadings:
 - 1) Where located within a structure, the design loading shall match that required for the adjacent floor area, or, if no floor loading is given, a minimum of 300 pounds per square foot.
 - 2) Exterior covers and grates shall be designed for AASHTO HS-20 loading unless indicated otherwise.

2.04 MANHOLE RUNGS

- A. Rungs shall meet ASTM C 478 - Precast Reinforced Concrete Manhole Sections and the following:
 - 1) Rungs shall be spaced not less than 10-inches apart nor more than 14-inches apart as measured between centerlines of the rungs.
 - 2) Rungs shall be parallel, level, and uniformly spaced.
 - 3) The rungs shall be shaped such that feet cannot slide off the end of the rungs.
 - 4) Rungs shall be surfaced so as to prevent injury from punctures or lacerations, and to prevent snagging of clothing.
 - 5) The minimum perpendicular clearance between rungs and any obstruction behind the ladder shall be 6-inches.
 - 6) The minimum width of rungs shall be 14-inches.
- B. CONTRACTOR shall submit certified test results in accordance with ASTM C 497 - Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile, Section 10, for the following loads:
 - 1) Horizontal pull out load shall be 400 pounds
 - 2) Vertical load shall be 800 pounds
- C. Rungs shall be made of co-polymer polypropylene that encapsulates a minimum 1/2-inch grade 60 steel reinforcing rod. The co-polymer polypropylene shall meet ASTM D 4101, Type PP200B33430.

2.05BOLTS AND ANCHORS

- A. **Standard Service (Non-Corrosive Application):** Unless otherwise indicated, bolts, anchor bolts, washers, and nuts shall be steel as indicated. Threads on galvanized bolts and nuts shall be formed with suitable taps and dies such that they retain their normal clearance after hot-dip galvanizing. Except as otherwise indicated, steel for bolt material, anchor bolts, and cap screws shall be in accordance with the following:
- 1) Structural connections: ASTM A 307, Grade A or B, hot-dip galvanized.
 - 2) Anchor Bolts: ASTM A 307, Grade A or B, or ASTM A 36, hot-dip galvanized.
 - 3) High strength bolts where indicated: ASTM A 325.
 - 4) Pipe and equipment flange bolts: ASTM A 193, Grade B-7.
- B. **Corrosive Service:** Bolts, nuts, and washers in the locations listed below shall be stainless steel as indicated.
- 1) Buried locations.
 - 2) Submerged locations.
 - 3) Locations subject to seasonal or occasional flooding.
 - 4) Inside hydraulic structures below the top of the structure.
 - 5) Inside buried vaults, manholes, and structures that do not drain through a gravity sewer or to a sump with a pump.
 - 6) Chemical handling areas.
 - 7) Inside trenches, containment walls, and curbed areas.
 - 8) Locations indicated by the Contract Documents or designated by the ENGINEER to be provided with stainless steel bolts.
- C. Unless otherwise indicated, stainless steel bolts, anchor bolts, nuts, and washers shall be Type 316 stainless steel, Class 2, conforming to ASTM A 193 for bolts and to ASTM A 194 for nuts. Buried pipe flange bolts and nuts on pipe of Class 275 and greater shall be ASTM A193/A194, Grade B7. Threads on stainless steel bolts shall be protected with an antiseize lubricant suitable for submerged stainless steel bolts, to meet government specification MIL-A-907E. Buried bolts in poorly drained soil shall be coated the same as the buried pipe.
- 1) Antiseize lubricant shall be classified as acceptable for potable water use by the NSF.
 - 2) Antiseize lubricant shall be "PURE WHITE" by **Anti-Seize Technology**, Franklin Park, IL, 60131, AS-470 by **Dixon Ticonderoga Company**, Lakehurst, NJ, 08733, or equal.
- D. Bolt Requirements
- 1) The bolt and nut material shall be free-cutting steel.
 - 2) The nuts shall be capable of developing the full strength of the bolts. Threads shall be Coarse Thread Series conforming to the requirements of the American Standard for Screw Threads. Bolts and cap screws shall have hexagon heads and nuts shall be Heavy Hexagon Series.
 - 3) Bolts and nuts shall be installed with washers fabricated of material matching the base material of bolts, except that hardened washers for high strength bolts shall conform to the requirements of the AISC Specification. Lock washers fabricated of material matching the bolts shall be installed where indicated.
 - 4) The length of each bolt shall be such that the bolt extends at least 1/8-inch beyond the outside face of the nut before tightening, except for anchor bolts, which shall be flush with the face of the nut before tightening.
- E. **Adhesive Anchors:** Unless otherwise indicated, drilled concrete or masonry anchors shall be adhesive anchors. No substitutions will be considered unless accompanied with ICBO report verifying strength and material equivalency.
- 1) Epoxy adhesive anchors are required for drilled anchors for indoor installations, in submerged, wet, splash, overhead, and corrosive conditions, and for anchoring handrails and reinforcing bars. Epoxy shall comply with Section 03600 - Grout. Threaded rod shall be galvanized for general purpose

applications and stainless steel Type 316 for corrosive applications. Epoxy anchors shall not be permitted in areas where the concrete temperature is in excess of 100 degrees F or higher than the limiting temperature recommended by the manufacturer, whichever is lower. Epoxy anchors shall not be used where anchors are subject to vibration or fire. Embedment depth shall be as the manufacturer recommends for the load to be supported.

- 2) Unless otherwise indicated, glass capsule, polyester resin adhesive anchors will be permitted in locations not included above and shall be **Hilti HVA** or **Cobra Anchors**. Threaded rod shall be galvanized steel.

- F. **Expanding-Type Anchors:** Expanding-type anchors if indicated or permitted, shall be galvanized steel expansion type **ITW Ramset/Redhead Trubolt** anchors, **McCullock Industries Kwick-Bolt**, or equal. Lead caulking anchors will not be permitted. Size shall be as indicated. Embedment depth shall be as the manufacturer recommends for the load to be supported. Expansion type anchors that are to be embedded in grout may be steel. Non-embedded buried or submerged anchors shall be stainless steel.
- G. **Non-Shrink Grouted Anchors:** Anchors, if indicated or permitted, shall be grouted with a non-shrink cementitious grout in accordance with the manufacturer's recommendation. Embedment depth shall be as the manufacturer recommends for the load to be supported. Non-shrink grout material shall be Class B or C in accordance with Section 03600 - Grout.

2.06 POWDER-DRIVEN PINS

- A. **Materials:** Powder-driven pins for installation in concrete or steel shall be heat-treated steel alloy. If the pins are not inherently sufficiently corrosion-resistant for the conditions to which they will be exposed, they shall be protected in an acceptable manner. Pins shall have capped or threaded heads capable of transmitting the loads the shanks are required to support. Pins that are connected to steel shall have longitudinal serrations around the circumference of the shank.

2.07 IMPACT ANCHOR

- A. Impact anchors shall be an expansion type anchor in which a nail type pin is driven to produce the expansive force. The pin shall have a zinc sleeve with a mushroom style head and stainless steel nail pin. Anchors shall be **Metal Hit Anchors**, manufactured by **Hilti, Inc.**, **Rawl Zamac Nailin**, manufactured by the **Rawlplug Company**, or equal.

PART 3 - EXECUTION

3.01 FABRICATION AND INSTALLATION REQUIREMENTS

- A. **Fabrication and Erection:** Except as otherwise indicated, the fabrication and erection of structural steel shall conform to the requirements of the American Institute of Steel Construction "Manual of Steel Construction."
- B. **Aluminum Railings:** Aluminum railing fabrication and installation shall be performed by craftsmen experienced in the fabrication of architectural metalwork. Exposed surfaces shall be free from defects or other surface blemishes. Dimensions and conditions shall be verified in the field. Joints, junctions, miters, and butting sections shall be precision fitted with no gaps occurring between sections, and with surfaces flush and aligned. Electrolysis protection of materials shall be provided.
- C. **Floor Hatches:** Unless otherwise indicated, the CONTRACTOR shall provide a 1/2-inch drain line to the nearest floor drain for floor hatches.
- D. **Powder-Driven Pins:** Powder-driven pins shall be installed by a craftsperson certified by the manufacturer as being qualified to install the manufacturer's pins. Pins shall be driven in one initial movement by an instantaneous force that has been

carefully selected to attain the required penetration. Driven pins shall conform to the following requirements where "D" = pin's shank diameter:

Material Penetrated by Pin	Material Minimum Thickness	Pin Shank Penetration in Supporting Material	Minimum Space From Pin's CL to Edge of Penetrated Material	Minimum Pin Spacing
Concrete	16D	6D minimum	14D	20D
Steel	1/4-inch	Steel thickness	4D	7D

3.02 WELDING

- A. **Method:** Welding shall be by the metal-arc method or gas-shielded arc method as described in the American Welding Society's "Welding Handbook" as supplemented by other pertinent standards of the AWS. Qualification of welders shall be in accordance with the AWS Standards governing same.
- B. **Quality:** In assembly and during welding, the component parts shall be adequately clamped, supported, and restrained to minimize distortion and for control of dimensions. Weld reinforcement shall be as indicated by the AWS Code. Upon completion of welding, weld splatter, flux, slag, and burrs left by attachments shall be removed. Welds shall be repaired to produce a workmanlike appearance, with uniform weld contours and dimensions. Sharp corners of material that is to be painted or coated shall be ground to a minimum of 1/32-inch on the flat.

3.03 GALVANIZING

- A. Structural steel plates shapes, bars, and fabricated assemblies required to be galvanized shall, after the steel has been thoroughly cleaned of rust and scale, be galvanized in accordance with the requirements of ASTM A 123. Any galvanized part that becomes warped during the galvanizing operation shall be straightened. Bolts, anchor bolts, nuts, and similar threaded fasteners, after being properly cleaned, shall be galvanized in accordance with the requirements of ASTM A 153.
- B. Field repairs to damaged galvanizing shall be made by preparing the surface and applying a coating.
 - 1) Surface preparation shall consist of removing oil, grease, soil, and soluble material by cleaning with water and detergent (SSPC SP1) followed by brush off blast cleaning (SSPC SP7), over an area extending at least 4-inches into the undamaged area.
 - 2) Coating shall be applied to at least 3-mils dry film thickness. Use **Zinc-Clad XI** by **Sherwin-Williams**, **Galvax** by **Alvin Products**, or **Galvite** by **ZRC Worldwide**.

3.04 DRILLED ANCHORS

- A. Drilled anchors and reinforcing bars shall be installed in strict accordance with the manufacturer's instructions. Holes shall be roughened with a brush on a power drill, cleaned and dry. Drilled anchors shall not be installed until the concrete has reached the required 28-day compressive strength. Adhesive anchors shall not be loaded until the adhesive has reached its indicated strength in accordance with the manufacturer's instructions.

END OF SECTION

SECTION 09905

PAINTING AND PROTECTIVE COATINGS

PART 1 – GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Requirement specified in Conditions of Contract and Division 1 form a part of this section. Provide all labor, materials, apparatus, scaffolding, and all appurtenant work in connection with painting and protective coatings, complete as indicated, specified, and required.
- B. Principal items include, but are not limited to:
 - 1) All exposed piping, conduits, tanks, equipment, and other metal surfaces, interior and exterior, except as hereinafter specifically excluded.
 - 2) All structural and miscellaneous steel.
 - 3) Equipment furnished without factory finished surfaces.
 - 4) Any tanks or equipment, on which factory applied finishes have been marred, abraded, scratched, nicked, or otherwise damages.
 - 5) The interior of concrete tanks, manholes, and similar structures, except drainage structures.
 - 6) CMU surfaces and other architectural work as specified and shown on the drawings.
- C. The following surfaces, in general, shall not be field painted:
 - 1) Concrete surfaces subject to pedestrian or vehicular traffic, except as herein specified.
 - 2) Nonferrous metals and stainless steel unless otherwise noted or indicated. Galvanized steel shall not be considered as a nonferrous metal.
 - 3) Mechanical equipment and prefabricated roof and side panels, gutters and downspouts with factory finish as specified herein.
 - 4) Electrical and instrumentation equipment with approved factory finish or of stainless steel/nonferrous metal construction, unless otherwise specified.
 - 5) Aluminum grating.
 - 6) Drainage structures.
- D. The Contractor shall furnish to the Engineer, at no charge for use during this project, one dry film thickness gages and one electrical flaw detection equipment systems.

1.02 REFERENCE SPECIFICATIONS AND STANDARDS

- A. Without limiting the generality of other requirements of these specifications, all cleaning, surface preparation, and coating shall conform to the applicable requirements of the referenced portions of the standards specified herein to the extent that the requirements therein specified are not in conflict with the provisions of this section.
- B. Unless otherwise specified, all work and materials for the preparation and coating of all metal surfaces shall conform to the applicable requirements specified in the Steel Structures Painting Manual, Volume 2, Systems and Specifications Revised, latest edition, published by the Steel Structures Painting Council.
- C. The following referenced surface preparation specifications of the Steel Structures Painting Council shall form a part of this section.
 - 1) White Metal Blast Cleaning (SSPC-SP5). Removal of all visible rust, mill scale, paint, and foreign matter by blast cleaning by wheel or nozzle (dry) using sand, grit, or shot. (For very corrosive atmosphere.)
 - 2) Near-White Blast Cleaning (SSPC-SP10). Blast cleaning nearly to White Metal Cleanliness, until at least 95 percent of each element of surface area is free of all visible residues. (For high humidity, chemical atmosphere, marine or other corrosive environment.)
 - 3) Commercial Blast (SSPC-SP6). Blast cleaning until at least 67 percent of each element of surface area is free of all visible residues.

- 4) Brush-Off Blast Cleaning (SSPC-SP7). Blast cleaning of all except tightly adhering residues of mill scale, rust and coatings, exposing numerous evenly distributed flecks of underlying metal.
- 5) Solvent Cleaning (SSPC-SP1). Removal of oil, grease, dirt, soil, salts, and contaminants by cleaning with solvent, vapor, alkali, emulsion or steam.
- D. Quality Assurance. Evaluation of surface preparation for ferrous metals will be based upon NACE Standard TM-01-Visual Standard for Surface Preparation.

1.03 SUBMITTALS.

- A. Submittals shall be in accordance with the General Conditions, and the following.
- B. Samples.
 - 1) Prepare and submit for Engineer's approval six (6) copies of color samples on 8-1/2" x 11" size cards for each paint and protective coating system. Each sample card shall clearly show each coat of the finish system, and shall be clearly marked with the manufacturer's name and product identification, and shall be submitted in sufficient time to allow for approval and, if necessary, resubmitted without causing any delay of the project.
- C. Coating Materials List.
 - 1) The Contractor shall provide six (6) copies of a paint and coatings materials list which indicates the manufacturer and paint number, keyed to the coating schedule herein, for approval by the Engineer prior to or at the time of submittal of samples required herein.
 - 2) The Contractor shall include with his submittal, his protective coating schedule for shop and field coatings of items to receive protection. The schedule shall conform to the specified requirements for surface preparation, priming, and coating for items covered, and shall follow the same requirements for similar work where such work has not been specifically called-out. No bare ferrous nonworking surfaces shall be omitted from the schedule. Particular care shall be taken to cover in sufficient detail the coating of mechanical joints and other mechanical devices, which shall conform to the recommended practice of the manufacturer of the joint or other mechanical devices.
 - 3) Submittal shall be within 60 calendar days of notice of award to permit Engineer's review and then Contractor's coordination with affected material and equipment suppliers to assure their use of approved shop coats of same manufacture as field coats and compatibility with field applied coats for respective coating systems.
 - 4) Coatings to be used on plastic and fiberglass materials shall be certified as acceptable by all plastic and fiberglass manufacturers whose products are to be coated. Certification copies shall be submitted to the Engineer. The Contractor shall be certified in writing by the painting and coating material manufacturers as qualified applicators of their products with copies of the certification submitted to the Engineer.
- D. Product Data Sheets. Contractor shall submit paint and coatings material manufacturers' printed technical data sheets for products intended for use in each paint and coating system. Data sheets shall fully describe material as to its intended use, makeup, recommended surface preparation and application conditions, primers, material mixing and application (including recommended dry mil thickness recoat time), precautions, safety and maintenance cleaning directions.
- E. Material Safety Data Sheets. Material Safety Data Sheets (MSDS) shall accompany all paint submittals and shall be prominently displayed at the job site during all painting activities.

1.04 PROTECTION OF WORK

- A. The Contractor shall be responsible for any and all damage to his work or the work of others caused by Contractor's painting activities during the time his work is in progress.

1.05 EXTRA STOCK

- A. The Contractor shall deliver to the County one (1) gallon can of each type and color of finish paint and coating used on the project for every ten (10) gallons applied. As a minimum, one (1) gallon of each type and color of finish paint and coating used on the project shall be provided as extra

stock. Extra stock paint shall be supplied in appropriate sealed containers and be clearly labeled as to paint type, formula, and color.

1.06 RIGHT OF REJECTION

- A. The Engineer shall have the right to reject all material or work that is unsatisfactory, and require the replacement of either or both.

1.07 ONE MANUFACTURER

- A. To the maximum extent possible, all products shall be the products of one manufacturer unless a specific specialty coating system is specified. Without exception, all coatings for any service condition specified herein shall be by one manufacturer. Once a paint manufacturer has been selected by the Contractor and approved by the Engineer, the Contractor shall ensure that all equipment manufacturers primer their equipment with the same or a compatible primer.

1.08 JOB CONFERENCE

- A. Prior to commencing painting work a pre-job conference shall be held for the purpose of reviewing the painting and coating requirements of the project. The County, Engineer, Contractor, and Applicator representative shall be present. A schedule of work to be accomplished will be established.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Surfaces to receive paint and protective coating materials as herein specified in this section shall be coated in conformance with the applicable coating systems specified herein. All materials specified by name and/or manufacturer or approved for use under these specifications, shall be delivered unopened at the job site in their original containers and shall not be opened until inspected by the Engineer.
- B. Whenever a manufacturer's brand name is specified, it is intended to define the general type and quality of paint or coating desired. Other coatings or paints of equal quality may be used. Coating materials shall be products of Scott Paint Company System and TNEMEC System, unless otherwise specified, or approved equal. All paint and coatings shall be produced and applied as herein called for or, if not specifically called for, it shall be applied in accordance with the manufacturer's printed recommendations as approved by Engineer. Coating materials shall meet Volatile Organic Compounds (VOC) requirements of not more than 3.5 lbs./gal. as applied after thinning.
- C. General.
 - 1) Paint and protective coating materials shall be sealed in containers that plainly show the designated name, formula or specification number, batch number, color, date of manufacture, manufacturer's directions, and name of manufacturer, all of which shall be plainly legible at the time of use. Pigmented paints shall be furnished in containers not larger than five (5) gallons. Materials shall conform to the specifications shown herein and to the requirements hereinafter specified.
 - 2) Products shall be standard of recognized manufacturer engaged in production of such materials for essentially identical or similar applications in the water and wastewater treatment industry.
- D. Compatibility. Only compatible materials shall be used in the work. Particular attention shall be directed to compatibility of primers and finish coats. If necessary, subject to approval of the Engineer, a compatible barrier coat shall be applied between existing prime coat and subsequent field coats to ensure compatibility.
- E. Colors. All colors and shades of colors of all coats of paints and protective-coating material shall be as identified in the color schedule, attached architectural sketches or as modified by the County.

Each coat shall be of a slightly different shade, as directed by the Engineer to facilitate inspection of surface coverage of each coat.

2.02 SERVICE CONDITION A

- A. Ferrous metals, other than stainless steel, within wet wells or similar corrosive atmospheres, submerged or intermittently submerged in chemical mixtures or similar corrosive liquids shall be prepared and coated in accordance with the following requirements.
- B. Surface Preparation. All metal surfaces shall be field sandblasted in accordance with Steel Structures Painting Council Specification SSPC-SP10 (Near White Blast Cleaning). Weld surface, edges, and sharp corners shall be ground smoothly and all weld splatter removed. Grind welds per SSPC-SP11 - Power Tool Cleaning to Bare Metal.
- C. Application. Application shall be in strict conformance with the manufacturer's painted recommendations. All sharp edges, nuts, bolts, or other items difficult to coat shall receive a brush-applied coat of the specified coating prior to application of each coat.
- D. Except as otherwise noted, the prime coat shall have a minimum total dry film thickness (dft) of 3 mils and the two finish coats shall have a minimum total dry film thickness of 13 mils. If the finish coat is not applied within the manufacturer's recommended time period, an intermediate special surface conditioner shall be applied in advance of finish coats or a light brush blast. The total system shall have a minimum dry film thickness of 16 mils.
 - 1) Scott System: Not Available
 - 2) TNEMEC System: Shop Primer – Series 27WB-1211 @ 4-6 mils dft
Field Primer – Series 104
Finish Coats – Series 104

2.03 SERVICE CONDITION B

- A. Ferrous metals, other than stainless steel, subject to chemical attack, shall be prepared and coated in accordance with the following requirements. See Paragraph 2.09 for asphaltic/bituminous coated pipe.
- B. Surface Preparation.
 - 1) New Construction (No Existing Coating): Ferrous metals shall be prepared per SSPC-SP6 – Commercial Blast Cleaning.
 - 2) Surfaces with Existing Coating: All surfaces shall be free of dirt, dust, grease, or other foreign matter before coating. Ferrous surfaces shall be cleaned in accordance with the Steel Structures Painting Council Specification SSPC-SP7 (Brush Off Blast Cleaning). Weld surface, edges and sharp corners shall be ground smooth and all weld splatter shall be removed per SSPC-SP3 or SP2.
- C. Application. Application shall be in strict conformance with the manufacturer's printed recommendations. All sharp edges, nuts, bolts, or other items difficult to coat shall receive a brush-applied coat of the specified coating prior to application of each coat.
- D. Except as specified below, the prime coat shall have a minimum thickness of 3 mils, intermediate coat shall have minimum thickness of 4 mils, and one or more finish coats minimum total dry film thickness of 8.0 mils.
 - 1) Scott System: Primer – Scott #931 Encapsulon Surface Tolerant Epoxy Mastic Primer
Intermediate Coat – Scott #931 Encapsulon Surface Tolerant Epoxy Mastic Primer
Finish Coats – Rust-Oleum 5200 DTM Acrylic System
 - 2) TNEMEC System: Primer – Series 27WB @ 4-6 mils dft
Intermediate Coat – Series 27WB @ 4-6 mils dft
Finish Coats – Series 73U

2.04 SERVICE CONDITION C

- A. Coating aluminum and galvanized metal surfaces, including frames, and checkered plate, subject to corrosive atmosphere and condensation shall be prepared and coated with the following requirements.

- B. Surface Preparation. Clean non-ferrous surfaces in accordance with SSPC-SP1 (Solvent Cleaning).
- C. Application. Application shall be in strict conformance with manufacturer's painted recommendations.
- D. Conform with the following to provide a minimum total dry mil thickness of 5.5 mils:
 - 1) Scott System: Primer – Scott #692 Aquaseal Latex Surface Conditioner White
Finish Coats – Rust-Oleum 5200 DTM Acrylic System
 - 2) TNEMEC System: Primer – Series 27WB @ 4-6 mils dft
Finish Coats – Series 27WB @ 4-6 mils dft

2.05 SERVICE CONDITION D

- A. Coating exposed PVC pipe shall be prepared and coated in accordance with the following requirements.
- B. Surface preparation. Clean surfaces with SSPC-SP1 solvent cleaner. Lightly sand all surfaces. Degrease prior to sanding.
- C. Application. Application shall be in strict conformance with the manufacturer's printed recommendations.
- D. Conform with the following to provide a minimum total dry mil thickness of 8 mils.
 - 1) Scott System: Primer – Scott #692 Aquaseal Latex Surface Conditioner White
Intermediate Coat – Rust-Oleum 5200 DTM Acrylic System
Finish Coat – Rust-Oleum 5200 DTM Acrylic System
 - 2) TNEMEC System: Provide a max. total dry mil thickness of 6 mils.
Intermediate Coat – Series 73 @ 2.5 – 3.5 mils dft
Finish Coats – Series 73 @ 2.5 – 3.5 mils dft

2.06 SERVICE CONDITION E

- A. Concrete, which is subject to submergence and intermittent submergence in water or groundwater, shall be prepared and coated in accordance with the following requirements.
- B. Surface Preparation. All surfaces shall be cleaned of all dirt, dust, oil, curing compounds, and other deleterious compounds. In general, the concrete shall be reasonably smooth and free of pockets and cavities. Horizontal surfaces shall be etched with a 15 to 20 percent solution of muriatic acid and thoroughly rinsed with clean water. Vertical walls shall be cleaned by brush blasting (NACE #4 or SSPC-SP7). All surfaces shall be completely dry before application of the coating.
- C. Application. Application shall be in strict conformance with the manufacturer's printed recommendations. All coats shall be applied within 24 hours of the previous coat.
- D. The prime coat shall have a minimum dry film thickness of 3 mils and two finish coats shall have a minimum total dry film thickness of 8 mils. The total system shall have a minimum dry film thickness of 11 mils.
 - 1) Scott System: Not Available
 - 2) TNEMEC System: Primer – Series 27WB
Two Finish Coats – Series 27WB

2.07 ARCHITECTURAL PAINT FINISHES

- A. Manufacture. Unless otherwise noted, products listed below are the products of Scott coating system or TNEMEC system. Approved equivalent products will be acceptable.
- B. Concrete block walls in aggressive areas (Service Condition CBW).
 - 1) Surface Preparation. Surfaces shall be cured for 28 days, clean, dry and free from curing compounds, oil, grease, dirt, or chalk.
 - 2) Filler. Induron Polyfill Epoxy Block Filler.
 - 3) Prime Coat. One coat of Scott #931 Encapsulon Surface Tolerant Epoxy Mastic Primer applied at 6.0 mils dry film thickness.

- 4) Finish Coats. Two coats of Rust-Oleum 5200 DTM Acrylic System applied at 2.0 mils dry film thickness per coat.
- C. TNEMEC - Concrete block walls in aggressive areas (Service Condition CBW).
 - 1) Surface Preparation. Surfaces shall be cured for 28 days, clean, dry and free from curing compounds, oil, grease, dirt, or chalk.
 - 2) Filler. TNEMEC Series 27WB @ 165 s.f./gallon.
 - 3) Prime Coat. One coat of TNEMEC Series 27WB @ 4-6 mils dft.
 - 4) Finish Coats. Two coats of TNEMEC Series 27WB @ 4-6 mils dft per coat.
- D. Concrete Sealed (Service Condition ECB): Two (2) coats on Tnemec/Chemprobe Prime a Pell Plus at a rate of between 75 and 150 s.f./gal. Application shall be sufficient to guarantee complete water repelling for five (5) years.

2.08 PATCH COAT FOR GALVANIZED SURFACES SERVICE CONDITION

- A. All galvanized surfaces, which are scratched, marred, or otherwise damaged shall be patched with Scott #692 Aquaseal Latex Surface Conditioner White.

2.09 PRIMER OVER BITUMINOUS COATING

- A. Scott System - Two coats, Scott #931 Encapsulon Surface Tolerant Epoxy Mastic Primer, or approved equal, at 6.0 mils DFT each. Allow bituminous coating to bleed through on first coat. Apply second coat. Third coat shall be Rust-Oleum 5200 DTM Acrylic System applied to 2.0 mils dry film thickness.
- B. TNEMEC System – Two coats, TNEMEC Series 27WB, or approved equal, at 4.0 mils DFT each. Allow bituminous coating to bleed through on first coat. Apply second coat. Third coat shall be TNEMEC Series 27WB, 2-3 mils dft.

2.10 MISCELLANEOUS BURIED FERROUS METAL SURFACES

- A. Scott System – Not Available.
- B. TNEMEC System - All buried valves and other miscellaneous buried ferrous metal surfaces if not factory coated including all-thread restraining rods, after receiving SSPC-SP10 surface preparation and cleaning as previously specified, shall receive not less than two coats of polyamide epoxy coal-tar coating, and shall be TNEMEC Series 46H-413, or approved equal. No prime coat shall be applied under epoxy coal-tar.
- C. Coating thickness shall be from 16 to 20 mils dry-film thickness for the two coat system. Coated surfaces shall be dry before backfilling.

PART 3 – EXECUTION

3.01 MANUFACTURER’S RECOMMENDATIONS

- A. Unless otherwise specified herein, the paint and coating manufacturer’s printed recommendations and instructions for thinning, mixing, handling, applying, and protection of his coating materials; for preparation of surfaces for coating; and for all other procedures relative to coating shall be strictly observed. No substitutions or other deviations will be permitted without written permission of the Engineer.

3.02 DELIVERY AND STORAGE

- A. Materials shall be delivered in manufacturer’s original, sealed containers, with labels and tags intact. Coating materials and equipment shall be stored in designated areas. Coating containers shall be opened only when required for use. Coatings shall be mixed only in designated areas and in the presence of the Engineer, unless otherwise directed. Coatings shall be thoroughly stirred or agitated to uniformly smooth consistency and prepared and handled in a manner to prevent deterioration and inclusion of foreign matter. Unless otherwise specified or approved, no

materials shall be reduced, changed, or used except in accordance with the manufacturer's label or tag on container.

3.03 SAFETY REQUIREMENTS

- A. In accordance with the requirements of applicable OSHA Regulations for Construction, the Contractor shall provide and require the use of personal protective equipment for all persons working in or about the project site.
- B. Respirators shall be worn by all persons engaged in, and assisting in, spray painting. In addition, workers engaged in or near the work during sandblasting shall wear eye and face protection devices meeting the requirements of ANSI Z87.1 latest revisions, and approved OSHA Regulations for sand blasting operations and equipment including approved air-purifying, half-mask or mouthpiece respirator with appropriate filter.
- C. Ventilation. Where ventilation is used to control potential exposure to workers as set forth in Section 1910.94 of the OSHA Regulations for Construction, ventilation shall be adequate to reduce the concentration of the air contaminant to the degree that a hazard to the worker does not exist. Methods of ventilation shall meet the requirements set forth in ASNI-Z9.2, latest revision.
- D. Sound Levels. In accordance with Sections 1926.52 and 1926.101 of OSHA Regulations for Construction, whenever the occupational noise exposure exceeds maximum sound levels as set forth in Table D-2 ear protective devices shall be fitted and used, and a continuing, effective hearing conservation program shall be administered.
- E. Cloths and cotton waste that might constitute a fire hazard shall be placed in closed metal containers or destroyed at the end of each work day.

3.04 STORAGE, MIXING AND THINNING

- A. Paint and coating materials shall be protected from exposure to cold weather, and shall be thoroughly stirred, strained, and kept at a uniform consistency during application. Materials of different manufacturers shall not be mixed together. Packaged materials shall be thinned immediately prior to application in accordance with the manufacturer's directions.

3.05 WORKMANSHIP

- A. Skilled craftsmen and experienced supervision shall be used on all work.
- B. All paint and coatings shall be applied to produce an even film of specified uniform thickness. Edges, corners, crevices, and joints shall receive special attention to ensure that they have been thoroughly cleaned and that they receive an adequate thickness of paint. The finished surfaces shall be free from runs, drops, ridges, waves, laps, brush marks, and variations in color, texture, and finish. The hiding shall be so complete that the addition of another coat of paint would not increase the hiding. All coats shall be applied so as to produce a film of uniform thickness. Special attention shall be given to ensure that edges, corners, crevices, welds, and similar areas receive a film thickness equivalent to adjacent areas, and installations shall be protected by the use of drop cloths or other approved precautionary measures.

3.06 PREPARATION FOR PAINTING AND PROTECTIVE COATING

- A. All surfaces to receive paint and protective coatings shall be cleaned as specified herein prior to application of coating materials. The Contractor shall examine all surfaces to be coated, and shall correct all surface defects before application of any coating material. Beginning the work of this Section without reporting unsuitable conditions to the Engineer constitutes acceptance of conditions by the Contractor. Any required removal, repair, or replacement of this work caused by unsuitable conditions shall be done at no additional cost to the County. All marred or abraded spots on shop-primed and factory-finished surfaces shall receive touch-up restoration prior to any other coating application.
- B. Mildew shall be removed and neutralized by scrubbing affected areas thoroughly with a solution made by adding two (2) ounces of tri-sodium phosphate and eight (8) ounces of sodium

hypochlorite to one (1) gallon warm water. Use a scouring powder, if necessary, to remove mildew spores. Rinse with clean water and allow to dry thoroughly before painting.

3.07 ITEMS NOT TO BE COATED

- A. Hardware, anodized aluminum, stainless steel, switch and receptacle plates, escutcheons, hardware accessories, nameplate data tags, machined surfaces and similar items in contact with coated surfaces and not to be coated shall be removed or masked prior to surface preparation and painting operations. Following completion of coating of each piece, removed items shall be reinstalled. Workmen skilled in trades involved shall do such removal and installation.

3.08 SANDBLASTING

- A. All sandblasting shall be done in strict accordance with the referenced specifications of the Steel Structures Painting Council.
- B. When items are to be shop primed or shop primed and finish coated in the shop, surface preparation shall be as specified in this Section. The County or his representative shall have the right to witness, inspect, and reject any sandblasting done in the shop.
- C. When sandblasting is done in the field, care shall be taken to prevent damage to structures and equipment. Pumps, motors, and other equipment shall be shielded, covered, or otherwise protected to prevent the entrance of sand. No sandblasting may begin before the Engineer inspects and approves the protective measures.
- D. After sandblasting, dust and spent sand shall be removed from the surfaces by brushing or vacuum cleaning.

3.09 APPLICATION OF PROTECTIVE COATINGS

- A. Shop Coating. Fabricated metalwork and equipment, which requires coating shall be shop-primed with specified primer. Any such work delivered to the job site with any other shop coat shall either have this coating removed or shall be recoated with “universal-primer”, and the specified coating applied in the field. Manufactured equipment with approved corrosion resistant factory finishes and galvanized finishes shall be exempt from this requirement.
- B. Application of Field Coatings.
 - 1) Except where in conflict with the manufacturer’s printed instructions, or where otherwise specified herein, the Contractor may use brush, roller, air spray, or so-called airless spray application; however, any spray painting must first have a short nap. Brushing or other suitable means shall coat areas inaccessible to spray coating or rolling.
 - 2) The Contractor shall give special attention to the work to ensure that edges, corners, crevices, welds, bolts, and other areas, as determined by the Engineer, receive a film thickness at least equivalent to that of adjacent coated surfaces.
 - 3) Prime coat shall be applied to all clean surfaces within a four hour period of the cleaning, and prior to deterioration or oxidation of the surface, and in accordance with the manufacturer’s recommendations. Drift from sandblasting procedures shall not be allowed to settle on freshly painted surfaces.
 - 4) All coatings shall be applied in dry and dust-free environment. No coating or paint shall be applied when the surrounding air temperature, measured in the shade, is below 40 degrees F. No coating or paint shall be applied to wet or damp surfaces and shall not be applied in rain, fog or mist, or when the relative humidity exceeds 90 percent. No coating or paint shall be applied when it is expected that the relative humidity will exceed 90 percent or that the air temperature will drop below 40 degrees F within 8 hours after the application of the coating or paint. Dew or moisture condensation should be anticipated and if such conditions are prevalent, coating or painting shall be delayed to be certain that the surfaces are dry. The day’s coating or painting shall be completed well in advance of the probable time of day when condensation will occur, in order to permit the film sufficient drying time prior to the formation of moisture.
 - 5) Each coat shall be applied evenly, at the proper consistency, and free of brush marks, sags, runs, and other evidence of poor workmanship. Care shall be exercised to avoid lapping

paint on glass or hardware. Coatings shall be sharply cut to lines. Finished coated surfaces shall be free from defects or blemishes. Protective coverings shall be used to protect floors, fixtures, and equipment. Care shall be exercised to prevent paint from being spattered onto surfaces from which such paint cannot be removed satisfactorily. Surfaces from which paint cannot be removed satisfactorily shall be painted or repainted as required to produce a finish satisfactory to the Engineer. Whenever two (2) coats of a dark colored paint are specified, the first coat shall contain sufficient powdered aluminum to act as an indicator of proper coverage, or the two (2) coatings shall be of a contrasting color.

6) Touch-up of all surfaces shall be performed after installation.

C. Time of Coating.

- 1) Sufficient time shall be allowed to elapse between successive coats to permit satisfactory recoating, but, once commenced, the entire coating operation shall be completed without delay. No additional coating of any structure, equipment, or other items designated to be painted shall be undertaken without specified permission of the Engineer until the previous coating has been completed for the entire structure, piece of equipment, or other items.
- 2) Piping shall not be finish coated until it has been pressure tested and approved.

3.10 TESTING AND INSPECTION

- A. Inspection Devices. The Contractor shall furnish, until final acceptance of coating and painting, inspection devices in good working condition for detection of holidays and measurement of dry-film thickness of coatings and paints. The Contractor shall also furnish U.S. Department of Commerce, National Bureau of Standards certified thickness calibration plates to test accuracy of dry-film thickness gauge and certified instrumentation to test accuracy. Dry-film thickness gauges shall be made available for the Engineer's use at all times until final acceptance of application.
- B. The Contractor shall conduct film thickness measurements and electrical inspection of the coated surfaces with equipment furnished by him and shall recoat and repair as necessary for compliance with the Specifications.
- C. After repaired and recoated ferrous metals areas have cured, final inspection tests will be conducted by the Engineer with equipment provided by the Contractor. Coating thickness specified in mils on ferrous substrates will be measured with a nondestructive magnetic type dry-film thickness gauge such as the Elecometer, manufactured by Gardner Laboratories, Inc. Discontinuities, voids, and pinholes in the coatings will be determined with a nondestructive type electrical holiday detector. Epoxy coatings and other thin film coatings will be checked for discontinuities and voids with a low voltage detector of the wet-sponge type, such as Model M1 as manufactured by Tinker and Rasor. Use a non-sudsing type wetting agent, such as Kodak Photo-Flo, which shall be added to the water prior to wetting the sponge. A high voltage, low current, spark type detector such as Model EP, manufactured by Tinker and Rasor, will be used for electrical inspection of only coal tar enamel. Tape type coatings will be inspected for holidays using a device designed for use in detecting such flaws. All pinholes shall be marked, repaired in accordance with the manufacturer's printed recommendations and retested. No pinholes or other irregularities will be permitted. Film thickness discrepancies shall be measured and verified with a micrometer or other approved measuring instrument with 5 readings taken every 100 square feet of painted surface. Coatings not in compliance with the Specifications will not be acceptable and shall be replaced, and re-inspected at Contractor's expense until the Specifications are met.
- D. On nonferrous surfaces, dry film thickness readings shall be taken at random locations with a Tooke Gauge at the rate of approximately five readings per 100 square feet of surface. Grooves cut into coatings shall be repaired by application of all coats of paint or coating film being tested. The average of all readings for a given area or surface shall be within required dry film thickness range and no individual reading shall be more than 20 percent below the recommended dry film thickness. Any areas that are found to be below standard shall be marked and recoated to obtain proper film thickness.

3.11 CLEAN-UP

A. Upon completion of the work, staging, scaffolding, dropcloths, and containers shall be removed from the site or destroyed in an approved manner. Paint spots, oil, or stains upon adjacent surfaces shall be removed.

B. The Contractor shall clean the site in accordance with Division 1.

TABLE I - COATING SYSTEM SCHEDULE

<u>Item</u>	<u>Service Condition</u>
All exposed ferrous and galvanized metal piping and equipment (interior and exterior)	B
All submerged, intermittently submerged or corrosive atmosphere installed ferrous metals (e.g. in tanks, wetwells).	A
Aluminum and nonferrous metals in corrosive atmosphere and exposed to condensation.	C
All exposed PVC pipe (interior and exterior).	D
Interior of manholes.	E
Guard posts (bollards) and hydrants.	B
Interior and exterior concrete block walls	CBW
All interior concrete floors, troughs and curbs.	ECB

TABLE II - COATING COLOR SCHEDULE

	TNEMEC	SCOTT
<u>Mechanical Equipment</u>		
Interior/exterior equipment not submerged	To match process piping	SP-101
Interior/exterior equipment submerged	Black	
Diesel Fuel Lines	Yellow SC01	SP-106
<u>Above ground piping</u>		
Water Lines	Safety Blue SC06	SP108
Gravity Sewer Lines	Malachite Green PL19	SP-110
Vacuum Sewer Lines	Eggshell White 11WH(WH01)	
Reuse Lines	Pantone Purple (BEHR 522-L)	SP-112
<u>Miscellaneous</u>		
Fire hydrant Assembly	New Lime Yellow	SP-115
Electrical Equipment Conduit	Gray IN05	SP-118
Guard posts (Bollards)	Safety Yellow SC01	SP-106

Note: Under all circumstances, the Sarasota County Operators will decide finish coat shading to match the existing color scheme of the plant.

END OF SECTION

SECTION 11050

EQUIPMENT GENERAL PROVISIONS

PART 1 - GENERAL

1.01 THE REQUIREMENT

- A. The CONTRACTOR shall provide all equipment and appurtenant work, complete and operable, in accordance with the Contract Documents.
- B. The provisions of this Section shall apply to all equipment except where otherwise indicated.
- C. **Equipment Arrangement:** Unless specifically indicated otherwise, the arrangement of equipment shown on the Drawings is based upon information available at the time of design and is not intended to show exact dimensions particular to a specific manufacturer in all cases. Some aspects of the Drawings are diagrammatic and some features of the illustrated equipment arrangement may require revision to meet the actual equipment requirements. Structural supports, foundations, piping and valve connections, and electrical and instrumentation connections indicated may have to be altered to accommodate the equipment provided. No additional payment will be made for such revisions and alterations. Substantiating calculations and drawings shall be submitted prior to beginning the installation of equipment.

1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Equipment shall be in accordance with the following standards, as applicable and as indicated in each equipment specification:
 - 1) American Society for Testing and Materials (ASTM).
 - 2) American National Standards Institute (ANSI).
 - 3) American Society of Mechanical Engineers (ASME).
 - 4) American Water Works Association (AWWA).
 - 5) American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE).
 - 6) American Welding Society (AWS).
 - 7) National Fire Protection Association (NFPA).
 - 8) Federal Specifications (FS).
 - 9) National Electrical Manufacturers Association (NEMA).
 - 10) Manufacturer's published recommendations and specifications.
 - 11) General Industry Safety Orders (OSHA).
- B. The following standards are referenced in this Section:
 - 1) ANSI B16.1 Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800
 - 2) ANSI B16.5 Pipe Flanges and Flanged Fittings, Steel, Nickel Alloy and other Special Alloys
 - 3) ANSI B46.1 Surface Texture
 - 4) ANSI S12.6 Method for the Measurement of the Real-Ear Attenuation of Hearing Protectors
 - 5) ASME B1.20.1 General Purpose Pipe Threads (Inch)
 - 6) ASME B31.1 Power Piping
 - 7) AWWA C206 Field Welding of Steel Water Pipe
 - 8) AWWA C207 Steel Pipe Flanges for Waterworks Service - Sizes 4 In. Through 144 In. (100 mm through 3,600 mm)

- 9) AWWA D100 Welded Steel Tanks for Water Storage
- 10) ASTM A 48 Gray Iron Castings
- 11) ASTM A 108 Steel Bars, Carbon, Cold-Finished, Standard Quality

1.03 CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with Section 01300 - Contractor Submittals.
- B. **Shop Drawings:** Furnish complete drawings and technical information for equipment, piping, valves, and controls. Where indicated or required by the ENGINEER, Shop Drawings shall include clear, concise calculations showing equipment anchorage forces and the capacities of the anchorage elements proposed by the CONTRACTOR.
- C. **Spare Parts List:** The CONTRACTOR shall obtain from the manufacturer and submit at the same time as Shop Drawings a list of suggested spare parts for each piece of equipment. CONTRACTOR shall also furnish the name, address, and telephone number of the nearest distributor for each piece of equipment.
- D. Torsion and Vibration Analyses
 - 1) The CONTRACTOR shall arrange for and submit torsional and lateral vibration analyses for the following equipment types:
 - a. Engine drives except engine generators.
 - b. Pumps, blowers, and compressors with constant speed drives of 500 horsepower and greater.
 - c. Pumps, blowers and compressors with variable speed drives of 100 horsepower and greater.
 - d. Vertical pumps with universal joints and extended shafts.
 - e. Other equipment as indicated.
 - 2) An experienced specialist from the equipment manufacturer shall perform a complete torsional and lateral vibration analysis of each distinct equipment, motor, and variable speed drive. These analyses shall identify the dry and wet lateral critical speeds plus the torsional critical speeds of the system. Appropriate lateral and critical speed maps shall be produced and submitted.
 - 3) No active critical speed shall be allowed within 25 percent of the operating speed range. No fabrication of the equipment shall be started until the analyses have been approved by the ENGINEER.

1.04 QUALITY ASSURANCE

- A. **Costs:** Responsibility shall be the CONTRACTOR's for performing and paying the costs of inspection, startup, testing, adjustment, and instruction services performed by factory representatives. The OWNER will pay for costs of power and water. If available, the OWNER'S operating personnel will provide assistance in the field testing.
- B. **Inspection:** The CONTRACTOR shall inform the local authorities, such as building and plumbing inspectors, fire marshall, OSHA inspectors, and others, to witness all required tests for piping, plumbing, fire protection systems, pressure vessels, safety systems, and related items to obtain all required permits and certificates, and shall pay all inspection fees.
- C. **Quality and Tolerances:** Tolerances and clearances shall be as shown on the Shop Drawings and shall be closely adhered to.
 - 1) Machine work shall in all cases be of high-grade workmanship and finish, with due consideration to the special nature or function of the parts. Members without milled ends and which are to be framed to other steel parts of the structure may have a variation in the detailed length of not greater than 1/16-inch for members 30-feet or less in length, and not greater than 1/8-inch for members over 30-feet in length.

- 2) Castings shall be homogeneous and free from non-metallic inclusions and defects. Surfaces of castings which are not machined shall be cleaned to remove foundry irregularities. Casting defects not exceeding 12.5 percent of the total thickness and where defects will not affect the strength and serviceability of the casting may be repaired by approved welding procedures. The ENGINEER shall be notified of larger defects. No repair welding of such defects shall be carried out without the ENGINEER'S written approval. If the removal of metal for repair reduces the stress resisting cross-section of the casting by more than 25 percent or to such an extent that the computed stress in the remaining metal exceeds the allowable stress by more than 25 percent, then the casting may be rejected. Costs of casting new material shall be the CONTRACTOR'S responsibility.
 - 3) All materials shall meet the physical and mechanical properties in accordance with the reference standards.
- D. **Machine Finish:** The type of finish shall be the most suitable for the application and shall be shown in micro-inches in accordance with ANSI B46.1. The following finishes shall be used:
- 1) Surface roughness not greater than 63 micro-inches shall be required for all surfaces in sliding contact.
 - 2) Surface roughness not greater than 250 micro-inches shall be required for surfaces in contact where a tight joint is not required.
 - 3) Rough finish not greater than 500 micro-inches shall be required for other machined surfaces.
 - 4) Contact surfaces of shafts and stems which pass through stuffing boxes and contact surfaces of bearings shall be finished to not greater than 32 micro-inches.
- E. **Manufacturer's Experience:** Equipment manufacturer shall have a record of at least 5 years of successful, troublefree operation in similar applications and size equal or larger than the equipment in this contract.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. **Noise Level:** When in operation, no single piece of equipment shall exceed the OSHA noise level requirement of 105 dBA for one hour exposure per day.
- B. **High Noise Level Location:** The CONTRACTOR shall provide one personal hearing protection station at each high noise level location. Locations are defined as follows:
- 1) Outdoor Location: Any single equipment item or any group of equipment items that produce noise exceeding OSHA noise level requirements for a 2 hour exposure. Where such equipment is separated by a distance of more than 20-feet, measured between edges of footings, each group of equipment shall be provided with a separate hearing protection station.
 - 2) Indoor Location
 - a. Any single equipment item or any group of equipment items located within a single room not normally occupied, that produces noise exceeding OSHA noise level requirements for a 2 hour exposure.
 - b. Any single equipment item or any group of equipment items located within a single room normally occupied by workers that produces noise exceeding OSHA noise level requirements for an 8 hour exposure.
- C. **Personal Hearing Protection:** The CONTRACTOR shall furnish 3 pairs of high attenuation hearing protectors in the original unopened packaging. The ear protectors shall be capable of meeting the requirements of ANSI S12.6 and shall produce a noise level reduction of 25 dBA at a frequency of 500 Hz. The hearing protectors shall have fluid filled ear cushions and an adjustable, padded headband. The protectors shall be stored in a weatherproof, labeled, steel cabinet, provided at an approved location near the noise producing equipment.

- D. **Drive Trains and Service Factors:** Service factors shall be applied in the selection or design of mechanical power transmission components. All components of drive train assemblies between the prime mover and the driven equipment shall be designed and rated to deliver the maximum peak or starting torque, speed, and horsepower. All of the applicable service factors shall be considered, such as mechanical (type of prime mover), load class, start frequency, ventilation, ambient temperature, and fan factors. Drive train components include couplings, shafts, gears and gear drives, drive chains, sprockets, and V-belt drives. Unless otherwise indicated, the following load classifications shall apply in determining service factors:

Type of Equipment	Service Factor	Load Classification
Pumps centrifugal or rotary reciprocating progressing cavity	1.0 1.8 1.0	Uniform Moderate Shock Uniform
Cranes or Hoists	1.25	Moderate Shock

E. Mechanical Service Factors

	Mechanical Service Factors	
	Electric Motor	Internal Combustion Engine
Uniform	1.25	1.50
Moderate Shock	1.50	1.75
Heavy Shock	2.00	2.25

- F. For thermal rating adjustments such as start frequency, ambient temperature, and hourly duty cycle factor, ventilation factor, and fan factor, refer to gear manufacturer sizing information.
- G. Where load classifications are not indicated, service factors based on AGMA 514.02 shall be used for standard load classifications and for flexible couplings.
- H. **Welding:** Unless otherwise indicated, welding shall conform to the following:
- 1) Latest revision of AWWA D100.
 - 2) Latest revision of AWWA C206.
 - 3) Composite fabricated steel assemblies that are to be erected or installed inside a hydraulic structure, including any fixed or movable structural components of mechanical equipment, shall have continuous seal welds to prevent entrance of air or moisture.
 - 4) Welding shall be by the metal-arc method or gas-shielded arc method as described in the American Welding Society's "Welding Handbook" as supplemented by other pertinent standards of the AWS. Qualification of welders shall be in accordance with the AWS Standards.
 - 5) In assembly and during welding, the component parts shall be adequately clamped, supported, and restrained to minimize distortion and for control of dimensions. Weld reinforcement shall be as specified by the AWS code. Upon completion of welding, weld splatter, flux, slag, and burrs left by attachments shall be removed. Welds shall be repaired to produce a workmanlike appearance, with uniform weld contours and dimensions. Sharp

corners of material that is to be painted or coated shall be ground to a minimum of 1/32-inch on the flat.

- I. **Protective Coating:** Equipment shall be painted or coated in accordance with Section 09905 – Painting and Protective Coating, unless otherwise indicated. Non-ferrous metal and corrosion-resisting steel surfaces shall be coated with grease or lubricating oil. Coated surfaces shall be protected from abrasion or other damage during handling, testing, storing, assembly, and shipping.
- J. **Protection of Equipment:** Equipment shall be boxed, crated, or otherwise protected from damage and moisture during shipment, handling, and storage. Equipment shall be protected from exposure to corrosive fumes and shall be kept thoroughly dry at all times. Pumps, motors, drives, electrical equipment, and other equipment having anti-friction or sleeve bearings shall be stored in weathertight storage facilities prior to installation. For extended storage periods, plastic equipment wrappers should be avoided, to prevent accumulation of condensate in gears and bearings. In addition, motor space heaters shall be energized and shafts shall be rotated. Equipment delivered to the Site with rust or corroded parts shall be rejected. If equipment develops defects during storage, it shall be disassembled, cleaned, and recoated to restore it to original condition.
- K. **Identification of Equipment Items**
 - 1) At the time of shipping, each item of equipment shall have a legible identifying mark corresponding to the equipment number in the Contract Documents for the particular item.
 - 2) After installation, each item of equipment shall be given permanent identification.
 - a. Pumps, compressors, and blowers smaller than 100 horsepower shall receive acrylic plastic nametags, 1/16-inch thick acrylic with matte finish, color selected by the ENGINEER. Letters shall be white, 1/2-inch tall, embossed and fused by heat and pressure into the material. Lettering shall be the equipment number in the Contract Documents.
 - b. Pumps, compressors, and blowers larger than 150 horsepower shall receive stainless steel plate nametags Stainless steel plate, 1/16-inch thick, at least 4-inches by 6-inches, lettering embossed into the plate, at least 1-inch tall.
- L. **Vibration Isolators:** Air compressors, blowers, engines, inline fans shall be provided with restrained spring-type vibration isolators or pads per manufacturer's written recommendations. Vibration isolations shall be provided with seismic restraint.
- M. **Shop Fabrication:** Shop fabrication shall be performed in accordance with the Contract Documents and the Shop Drawings.
- N. **Controls:** Equipment and system controls shall be in accordance with design documents.

2.02 EQUIPMENT SUPPORTS AND FOUNDATIONS

- A. **Equipment Supports:** Unless otherwise indicated, equipment supports, anchors, and restrainers shall be adequately designed for static, dynamic, wind, and seismic loads. The design horizontal seismic force shall be the greater of: that noted in the general structural notes or as required by the governing building code, or 10 percent of gravity. Submitted design calculations for equipment supports shall bear the signature and seal of an engineer registered in the State wherein the project is to be built, unless otherwise indicated.
- B. **Anchors:** Anchor bolts shall be in accordance with Section 05500–Miscellaneous Metalwork.
- C. **Equipment Foundations:** Mechanical equipment, tanks, control cabinets, enclosures, and related equipment shall be mounted on minimum 3.5-inch high concrete bases, unless otherwise indicated. Equipment foundations are indicated on Drawings. The CONTRACTOR through the equipment manufacturer shall verify the size and weight of equipment foundation to insure compatibility with equipment.

2.03 COUPLINGS

- A. Mechanical couplings shall be provided between the driver and the driven equipment. Flexible couplings shall be provided between the driver and the driven equipment to accommodate slight angular misalignment, parallel misalignment, end float, and to cushion shock loads. Unless otherwise indicated or recommended by the equipment manufacturer, coupling type shall be furnished with the respective equipment as follows:

Equipment Type	Coupling Type
Horizontal and end suction pumps	Gear or flexible spring
Vertical nonclog pumps, close coupled	Flexible disc pack
Vertical nonclog pumps with extended shaft	Flexible disc pack or Universal joint with carbon fiber composite shaft and steady bearing
Engine driven pumps	Universal joint type or elastomeric flexible type

- B. Each coupling size shall be determined based on the rated horsepower of the motor, speed of the shaft, and the load classification service factor. The CONTRACTOR shall have the equipment manufacturer select or recommend the size and type of coupling required to suit each specific application.
- C. **Differential Settlement:** Where differential settlement between the driver and the driven equipment may occur, 2 sets of universal type couplings shall be provided.
- D. **Taper-Lock** or equal bushings may be used to provide for easy installation and removal of shafts of various diameters.

2.04 SHAFTING

- A. **General:** Shafting shall be continuous between bearings and shall be sized to transmit the power required. Keyways shall be accurately cut in line. Shafting shall not be turned down at the ends to accommodate bearings or sprockets whose bore is less than the diameter of the shaft. Shafts shall rotate in the end bearings and shall be turned and polished, straight, and true.
- B. **Design Criteria:** All shafts shall be designed to carry the steady state and transient loads suitable for unlimited number of load applications, in accordance with ASME B106.1M - Design of Transmission Shafting. Where shafts are subjected to fatigue stresses, such as frequent start and stop cycles, the mean stress shall be determined by using the modified Goodman Diagram. The maximum torsional stress shall not exceed the endurance limit of the shaft after application of the factor of safety of 2 in the endurance limit and the stress concentration factor of the fillets in the shaft and keyway. Stress concentration factor shall be in accordance with ASME Standard B17.1 - Keys and Keyseats.
- C. **Materials:** Shafting materials shall be appropriate for the type of service and torque transmitted. Environmental elements such as corrosive gases, moisture, and fluids shall be taken into consideration. Materials shall be as indicated unless furnished as part of an equipment assembly.
- 1) Low carbon cold-rolled steel shafting shall conform to ASTM A 108, Grade 1018.
 - 2) Medium carbon cold-rolled shafting shall conform to ASTM A 108, Grade 1045.
 - 3) Other grades of carbon steel alloys shall be suitable for service and load.
 - 4) Corrosion-resistant shafting shall be stainless steel or Monel, whichever is most suitable for the intended service.

- D. **Differential Settlement:** Where differential settlement between the driver and the driven equipment may occur, a shaft of sufficient length with 2 sets of universal type couplings shall be provided.

2.05 GEARS AND GEAR DRIVES

- A. Unless otherwise indicated, gears shall be of the spur, helical, or spiral-bevel type, designed and manufactured in accordance with AGMA Standards, with a service factor suitable for load class, mechanical service and thermal rating adjustment, a minimum L-10 bearing life of 60,000 hours, and a minimum efficiency of 94 percent. Peak torque, starting torque, and shaft overhung load shall be checked when selecting the gear reducer. Worm gears shall not be used unless specifically approved by the ENGINEER.
- B. Gear speed reducers or increasers shall be of the enclosed type, oil- or grease-lubricated and fully sealed, with a breather to allow air to escape but keep dust and dirt out. The casing shall be of cast iron or heavy-duty steel construction with lifting lugs and an inspection cover for each gear train. An oil level sight glass and an oil flow indicator shall be provided, located for easy reading.
- C. Gears and gear drives that are part of an equipment assembly shall be shipped fully assembled for field installation.
- D. Material selections shall be left to the discretion of the manufacturer, provided the above AGMA values are met. Input and output shafts shall be adequately designed for the service and load requirements. Gears shall be computer-matched for minimum tolerance variation. The output shaft shall have 2 positive seals to prevent oil leakage.
- E. Oil level and drain locations shall be easily accessible. Oil coolers or heat exchangers with all required appurtenances shall be provided when necessary.
- F. Where gear drive input or output shafts from one manufacturer connect to couplings or sprockets from a different manufacturer, the CONTRACTOR shall have the gear drive manufacturer furnish a matching key taped to the shaft for shipment.

2.06 DRIVE CHAINS

- A. Power drive chains shall be commercial type roller chains meeting ANSI Standards.
- B. A chain take-up or tightener shall be provided in every chain drive arrangement to provide easy adjustment.
- C. A minimum of one connecting or coupler link shall be provided in each length of roller chain.
- D. Chain and attachments shall be of the manufacturer's best standard material and be suitable for the process fluid.

2.07 SPROCKETS

- A. **General:** Sprockets shall be used in conjunction with chain drives and chain-type material handling equipment.
- B. **Materials:** Unless otherwise indicated, materials shall be as follows:
 - 1) Sprockets with 25 teeth or less, normally used as a driver, shall be made of medium carbon steel in the 0.40 to 0.45 percent carbon range.
 - 2) Type A and B sprockets with 26 teeth or more, normally used as driven sprockets, shall be made of minimum 0.20 percent carbon steel.
 - 3) Large diameter sprockets with Type C hub shall be made of cast iron conforming to ASTM A 48, Class 30.
- C. Sprockets shall be accurately machined to ANSI Standards. Sprockets shall have deep hardness penetration in tooth sections.
- D. Finish bored sprockets shall be furnished complete with keyseat and set screws.
- E. To facilitate installation and disassembly, sprockets shall be of the split type or shall be furnished with **Taper-Lock** bushings as required.

- F. Idler sprockets shall be provided with brass or Babbitt bushings, complete with oil hole and axial or circumferential grooving with stainless steel tubing and grease fitting extended to an accessible location. Steel collars with set screws may be provided in both sides of the hub.

2.08 V-BELT DRIVES

- A. V-belts and sheaves shall be of the best commercial grade and shall conform to ANSI, MPTA, and RMA Standards.
- B. Unless otherwise indicated, sheaves shall be machined from the finest quality gray cast iron.
- C. Sheaves shall be statically balanced. In some applications where vibration is a problem, sheaves shall be dynamically balanced. Sheaves operating at belt speeds exceeding 6,500 fpm may be required to be of special materials and construction.
- D. To facilitate installation and disassembly, sheaves shall be provided complete with **Taper-Lock** or **QD** bushings as required.
- E. Finish bored sheaves shall be complete with keyseat and set screws.
- F. Sliding motor bases shall be provided to adjust the tension of V-belts.

2.09 DRIVE GUARDS

- A. Power transmission trains, prime movers, machines, shaft extensions, and moving machine parts shall be guarded to conform with the OSHA Safety and Health Standards (29CFR1910). The guards shall be constructed of minimum 10 gauge expanded, flattened steel with smooth edges and corners, galvanized after fabrication, and securely fastened. Where required for lubrication or maintenance, guards shall have hinged and latched access doors.

2.10 BEARINGS

- A. **General:** Bearings shall conform to the standards of the Anti-Friction Bearing Manufacturers Association, Inc. (AFBMA).
- B. To assure satisfactory bearing application, fitting practice, mounting, lubrication, sealing, static rating, housing strength, and lubrication shall be considered in bearing selection.
- C. Re-lubricatable type bearings shall be equipped with a hydraulic grease fitting in an accessible location and shall have sufficient grease capacity in the bearing chamber.
- D. Lubricated-for-life bearings shall be factory-lubricated with the manufacturer's recommended grease to insure maximum bearing life and best performance.
- E. **Anti-Friction Type Bearing Life:** Except where otherwise indicated, bearings shall have a minimum L-10 life expectancy of 5 years or 20,000 hours, whichever occurs first. Where so indicated, bearings shall have a minimum rated L-10 life expectancy corresponding to the type of service, as follows:

Type of Service	Design Life, years	L-10 Design Life, hours
	(whichever comes first)	
8-hour shift	10	20,000
16-hour shift	10	40,000
Continuous	10	60,000

- F. Bearing housings shall be of cast iron or steel and bearing mounting arrangement shall be as indicated or as recommended in the published standards of the manufacturer. Split-type housings may be used to facilitate installation, inspection, and disassembly.

- G. **Sleeve Type Bearings:** Sleeve-type bearings shall have a cast iron or ductile iron housing and Babbitt or bronze liner. Bearing housing shall be bolted and doweled to the lower casing half. These housings shall be provided with cast iron caps bolted in place and the bearing end caps shall be bored to receive the bearing shells. Sleeve bearings shall be designed on the basis of the maximum allowable load permitted by the bearing manufacturer. If the sleeve bearing is connected to an equipment shaft with a coupling, the coupling transmitted thrust will be assumed to be the maximum motor or equipment thrust. Lubricant, lubrication system, and cooling system shall be as recommended by the bearing manufacturer.
- H. **Plate Thrust Bearings:** Thrust bearings shall be the **Kingsbury** Type, designed and manufactured to maintain the shaft in the fixed axial position without undue heating or the necessity of adjustment or attention. Bearings shall be oil lubricated to suit the manufacturer's standard method of lubrication for the specific bearing. If bearing cooling is required, manufacturer shall provide necessary piping, filters, and valves.

2.11 PIPING CONNECTIONS

- A. **Pipe Hangers, Supports, and Guides:** Pipe connections to equipment shall be supported, anchored, and guided to avoid stresses and loads on equipment flanges and equipment. Supports and hangers shall be in accordance with Section 15094 - Pipe Supports.
- B. **Flanges and Pipe Threads:** Flanges on equipment and appurtenances shall conform to ANSI B16.1, Class 125, or B16.5, Class 150, unless otherwise indicated. Pipe threads shall be in accordance with ANSI/ASME B1.20.1 and Section 02660 - Piping, General.
- C. **Flexible Connectors:** Flexible connectors shall be installed in all piping connections to engines, blowers, compressors, and other vibrating equipment and in piping systems in accordance with the requirements of Section 02660. Flexible connectors shall be harnessed or otherwise anchored to prevent separation of the pipe where required by the installation.
- D. **Insulating Connections:** Insulating bushings, unions, couplings, or flanges, as appropriate, shall be used in accordance with the requirements of the Section 02660.

2.12 GASKETS AND PACKINGS

- A. Gaskets shall be in accordance with Section 02660.
- B. Packing around valve stems and reciprocating shafts shall be of compressible material, compatible with the fluid being used. Chevron-type "V" packing shall be **Garlock No. 432, John Crane "Everseal,"** or equal.
- C. Packing around rotating shafts (other than valve stems) shall be "O"-rings, stuffing boxes, or mechanical seals, as recommended by the manufacturer and approved by the ENGINEER, in accordance with Section 11100 - Pumps, General.

2.13 NAMEPLATES

- A. Equipment nameplates of stainless steel shall be engraved or stamped and fastened to the equipment in an accessible location with No. 4 or larger oval head stainless steel screws or drive pins. Nameplates shall contain the manufacturer's name, model, serial number, size, characteristics, and appropriate data describing the machine performance ratings.

2.14 TOOLS AND SPARE PARTS

- A. **Tools:** The CONTRACTOR shall furnish one complete set of special wrenches and other special tools necessary for the assembly, adjustment, and dismantling of the equipment. Tools shall be of best quality hardened steel forgings with bright finish. Wrench heads shall have work faces dressed to fit nuts. Tools shall be suitable for

professional work and manufactured by **Snap On, Crescent, Stanley**, or equal. The set of tools shall be neatly mounted in a labeled toolbox of suitable design provided with a hinged cover.

- B. Spare parts shall be furnished as indicated in the individual equipment sections. All spare parts shall be suitably packaged in a metal box and labeled with equipment numbers by means of stainless steel or solid plastic nametags attached to the box.

2.15 EQUIPMENT LUBRICANTS

- A. The CONTRACTOR shall install lubricants for all equipment during storage and prior to initial testing of the equipment. After successful initial testing, final testing, and satisfactory completion startup testing as specified in Section 02900 – Sewage Pump Stations, the CONTRACTOR shall conduct one complete lubricant change on all equipment. In addition, the CONTRACTOR shall be responsible for the proper disposal of all used lubricants. The OWNER will then be responsible for subsequent lubricant changes

PART 3 - EXECUTION

3.01 SERVICES OF MANUFACTURER

- A. **Inspection, Startup, and Field Adjustment:** Where required by individual sections, an authorized, experienced, and competent service representative of the manufacturer shall visit the Site for the number of days indicated in those sections to witness or perform the following and to certify in writing that the equipment and controls have been properly installed, aligned, lubricated, adjusted, and readied for operation.

- 1) Installation of equipment
 - 2) Inspection, checking, and adjusting the equipment and approving its installation
 - 3) Startup and field testing for proper operation, efficiency, and capacity
 - 4) Performing field adjustments during the test period to ensure that the equipment installation and operation comply with requirements

- B. Instruction of the Owner's Personnel

- 1) Where required by the individual equipment sections, an authorized training representative of the manufacturer shall visit the Site for the number of days indicated in those sections to instruct the OWNER's personnel in the operation and maintenance of the equipment, including step-by-step troubleshooting with necessary test equipment. Instruction shall be specific to the models of equipment provided.
 - 2) The representative shall have at least 2 years experience in training. A resume of the representative shall be submitted.
 - 3) Training shall be scheduled 3 weeks in advance of the scheduled session.
 - 4) Proposed training material and a detailed outline of each lesson shall be submitted for review. Review comments from the ENGINEER shall be incorporated into the material.
 - 5) The training materials shall remain with the trainees after the session.
 - 6) The OWNER may videotape the training for later use by the OWNER's personnel.

- C. **Vibration Monitoring:** For the equipment types listed in paragraph 1.3D, the CONTRACTOR shall arrange for at least two Site visits by the manufacturer's specialist during testing of the equipment covered by torsional and vibration analysis submittals to measure the amount of vibration and prepare written recommendations for keeping the vibration within acceptance limits. If vibration readings exceed the specified or the applicable referenced standard vibration limits for the type of equipment, the CONTRACTOR shall make necessary corrections for the equipment to meet the acceptance criteria.

3.02 INSTALLATION

- A. **General:** Equipment shall be installed in accordance with the manufacturers written recommendations.
- B. **Alignment:** Equipment shall be field tested to verify proper alignment.

3.03 PACKAGED EQUIPMENT

- A. When any system is furnished as pre-packaged equipment, the CONTRACTOR shall coordinate all necessary space and structural requirements, clearances, utility connections, signals, and outputs with subcontractors to avoid later change orders.
- B. If the packaged system has any additional features (as safety interlocks, etc.) other than required by the Contract Documents, the CONTRACTOR shall coordinate such features with the ENGINEER and provide all material and labor necessary for a complete installation as required by the manufacturer.

3.04 FIELD ASSEMBLY

- A. Studs, cap screws, bolt and nuts used in field assembly shall be coated with "**Never Seize**" compound or equal.

3.05 WELDING

- A. Welds shall be cleaned of weld-slag, splatter, etc. to provide a smooth surface.

3.06 FIELD TESTS

- A. Where indicated by the individual equipment sections, equipment shall be field tested after installation to demonstrate satisfactory operation without excessive noise, vibration, or no overheating of bearings or motor.
- B. The following field testing shall be conducted:
 - 1) Start equipment, check, and operate the equipment over its entire operating range. Vibration level shall be within the amplitude limits as indicated or as recommended by the reference applicable Standards.
 - 2) Obtain concurrent readings of motor voltage, amperage, capacity, vibration and bearing temperatures.
 - 3) Operate equipment.
- C. The ENGINEER shall witness field-testing. The CONTRACTOR shall notify the ENGINEER of the test schedule three days in advance.
- D. In the event that any equipment fails to meet the test requirements, the equipment shall be modified and resettled until it satisfies the requirement.

END OF SECTION

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SECTION 15006

PIPE SUPPORTS

PART 1 - GENERAL

1.01 REQUIREMENTS

- A. The CONTRACTOR shall provide pipe supports, hangers, guides, and anchors, complete, in accordance with the Contract Documents.
- B. Where pipe support systems are not indicated on the Drawings, the CONTRACTOR shall design and provide the supports in accordance with this Section.

1.02 CONTRACTOR SUBMITTALS

- A. **General:** Submittals shall be in accordance with Section 01300 - Submittals.
- B. **Shop Drawings:** Shop Drawings shall include the following information:
 - 1) Drawings of pipe supports, hangers, anchors, and guides
 - 2) Calculations for special supports and anchors.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. **Code Compliance:** All piping systems and pipe connections to equipment shall be properly anchored and supported to prevent undue deflection, vibration, dislocation due to seismic events and line pressures, and stresses on piping, equipment, and structures. All supports and parts thereof shall conform to the requirements of ANSI/ASME B31.1 - Power Piping, except as supplemented or modified below. Supports for plumbing piping shall be in accordance with the latest edition of the applicable plumbing code or local administration requirements.
- B. **Structural Members:** Wherever possible, pipes shall be supported from structural members. Where it is necessary to frame structural members between existing members, such supplementary members shall be provided by the CONTRACTOR. All supplementary members shall be in accordance with the requirements of the building code and the American Institute of Steel Construction and shall be acceptable to the ENGINEER.
- C. **Pipe Hangers:** Pipe hangers shall be capable of supporting the pipe in all conditions of operation, allowing free expansion and contraction of the piping, and preventing excessive stress on equipment. All hangers shall have a means of vertical adjustment after erection. Hangers shall be designed to prevent becoming disengaged by any movement of the supported pipe. Hangers subject to shock, seismic disturbances, or thrust imposed by the actuation of safety valves, shall include hydraulic shock suppressors. All hanger rods shall be subject to tensile loading only.
- D. **Hangers Subject to Horizontal Movements:** At hanger locations where lateral or axial movement is anticipated, suitable linkage shall be provided to permit such movement. Where horizontal pipe movement is greater than 1/2-inch, or where the hanger rod deflection from the vertical is greater than 4 degrees from the cold to the hot position of the pipe, the hanger rod and structural attachment shall be offset in such a manner that the rod is vertical in the hot position.
- E. **Spring-Type Hangers:** Spring-type pipe hangers shall be provided for piping subject to vibration or vertical expansion and contraction, such as engine exhausts and similar piping. All spring-type hangers shall be sized to the manufacturer's printed recommendations and the loading conditions encountered. Variable spring supports shall be provided with means to limit misalignment, buckling, eccentric loading, or to prevent overstressing of the spring, and with means to indicate at all

times the compression of the spring. Supports shall be capable of accommodating at least 4 times the maximum travel due to thermal expansion.

- F. Thermal Expansion:** Wherever expansion and contraction of piping is expected, a sufficient number of expansion loops or expansion joints shall be provided, together with the necessary rolling or sliding supports, anchors, guides, pivots, and restraints permitting the piping to expand and contract freely in directions away from the anchored points. All components shall be structurally suitable to withstand all loads imposed.
- G. Heat Transmission:** Supports, hangers, anchors, and guides shall be so designed and insulated, that excessive heat will not be transmitted to the structure or to other equipment.
- H. Riser Supports:** Where practical, risers shall be supported on each floor with riser clamps and lugs, independent of the connected horizontal piping.
- I. Freestanding Piping:** Free-standing pipe connections to equipment such as chemical feeders and pumps shall be firmly attached to steel frames fabricated from angles, channels, or I-beams anchored to the structure. Exterior, free-standing overhead piping shall be supported on fabricated pipe stands consisting of pipe columns anchored to concrete footings, with horizontal, welded steel angles and U-bolts or clamps securing the pipes.
- J. Materials of Construction:**
 - 1) General: All pipe support assemblies, including framing, hardware, and anchors, shall be steel construction, galvanized after fabrication, unless otherwise indicated.
 - 2) Submerged Supports: All submerged piping, as well as piping, conduits, and equipment in hydraulic structures within 24-inches of the water level, shall be supported with support assemblies, including framing, hardware, and anchors, constructed of Type 316 stainless steel, unless otherwise indicated.
 - 3) Corrosive: All piping in chemical and corrosive areas (e.g. the headworks structure) shall be supported with support assemblies, including framing, hardware, and anchors, constructed of Type 316 stainless steel, unless otherwise indicated.
- K. Point Loads:** Any meters, valves, heavy equipment, and other point loads on PVC, FRP, and other plastic pipes, shall be supported on both sides, according to manufacturer's recommendations to avoid undue pipe stresses and failures. To avoid point loads, all supports on PVC, FRP, and other plastic piping shall be equipped with extra wide pipe saddles or galvanized steel shields.
- L. Concrete Anchors:** Unless otherwise indicated, concrete anchors for pipe supports shall be according to the following table. Consult the ENGINEER for any anchor applications not on the table. Anchor embedment shall comply with Section 05500.

Pipe Support Application	Type of Concrete Anchor
New Concrete	Use embedded concrete insert anchors on a grid pattern. Use Grinnell (Anvil International), Tolco , or equal.
Existing Concrete	Use non-shrink grouted anchors, metallic type expansion anchors, or epoxy anchors. Exceptions: Metallic type expansion anchors and epoxy anchors are not permitted for pipe supports subject to vibrating loads. Epoxy anchors are not permitted where the concrete temperature is in excess of 100 degrees F or higher than the limiting temperature recommended by the manufacturer. Epoxy anchors are not accepted where anchors are subject to vibration or fire.
Vibratory Loads and High Temperature Conditions	Use non-shrink grouted anchors

M. Noise Reduction: To reduce transmission of noise in piping systems, all copper tubes in buildings and structures shall be wrapped with a 2-inch wide strip of rubber fabric or similar, suitable material at each pipe support, bracket, clip, or hanger.

2.02 SUPPORT SPACING

- A. Supports for piping with the longitudinal axis in approximately a horizontal position shall be spaced to prevent excessive sag, bending, and shear stresses in the piping, with special consideration given where components such as flanges and valves impose concentrated loads. Pipe support spacing shall not exceed the maximum spans in the tables below. For temperatures other than ambient temperatures, or those listed, and for other piping materials or wall thicknesses, the pipe support spacings shall be modified in accordance with the pipe manufacturer's recommendations. Vertical supports shall be provided to prevent the pipe from being overstressed from the combination of all loading effects.
- B. Where support spacing is not indicated on the Drawings, the CONTRACTOR shall use the spacing below.

1) Support Spacing for Schedule 40 and Schedule 80 Steel Pipe:

NOMINAL PIPE DIAMETER (inches)	MAXIMUM SPAN (feet)
1/2	6
3/4 and 1	8
1-1/4 to 2	10
3	12
4	14
6	17
8 and 10	19
12 and 14	23
16 and 18	25
20 and greater	30

2) Support Spacing for Welded Fabricated Steel Pipe:

MAXIMUM SPANS FOR PIPE SUPPORTED IN MINIMUM
120 DEGREE CONTACT SADDLES (FEET)

NOMINAL Pipe Dia. (inches)	WALL THICKNESS (INCHES)									
	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1
24	33	37	41	43	45	47				
26	34	38	41	44	46	48				
28	34	38	41	44	47	49				
30	34	38	42	45	48	49				
32	34	39	42	45	48	50				
34	35	39	43	46	48	50				
36	35	39	43	46	49	51	55			
38	35	39	43	46	49	51	55			
40	35	40	43	47	49	52	56			
42	35	40	44	47	50	52	56			
45	--	40	44	47	50	53	57			
48	--	40	44	47	50	53	58	61		
51	--	40	44	48	51	53	58	62		
54	--	40	44	48	51	54	58	62		

57	--	41	45	48	51	54	59	63		
60	--	41	45	48	52	54	59	63	67	70
63	--	41	45	49	52	55	60	64	67	71
66	--	41	45	49	52	55	60	64	68	71
72	--	41	45	49	52	55	61	65	69	72
78	--	41	46	49	53	56	61	66	69	73
84	--	41	46	50	53	56	62	66	70	74
90	--	41	46	50	53	56	62	67	71	74
96	--	42	46	50	54	57	62	67	71	75

For steel pipe sizes not presented in this table, the support spacing shall be designed so that the stress on the pipe does not exceed 5,000 psi. Maximum deflection of pipe shall be limited to 1/360th of the span and shall be calculated by using the formula:

$$L = (7500tD/(32t+D))^{1/2}$$

where: t = Thickness (inches)
 D = Diameter (inches)
 L = Maximum span (feet)

3) Support Spacing for Ductile-Iron Pipe:

Nominal Pipe Diameter (inches)	Maximum Span (feet)
All Diameters	Two supports per pipe length or 10 feet (one of the 2 supports located at joint)

4) Support Spacing for Copper Tubing:

NOMINAL PIPE DIAMETER (inches)	MAXIMUM SPAN (feet)
1/2 to 1-1/2	6
2 to 4	10
6 and greater	12

5) Support Spacing for Schedule 80 PVC Pipe:

NOMINAL PIPE DIAMETER (inches)	MAXIMUM SPAN (at 100 degrees F) (feet)
1/2	4
3/4	4.5
1	5
1-1/4	5.5
1-1/2	5.75
2	6.25
3	7.5
4	8.25
6	10
8	11
10	12.25
12	13.25

6) Support Spacing for Schedule 80 Polypropylene Pipe:

NOMINAL PIPE DIAMETER	MAXIMUM SPAN
------------------------------	---------------------

(inches)	(at 100 degrees F) (feet)
1/2	3
3/4	3.5
1	3.75
1-1/4	4
1-1/2	4.25
2	4.5
3	5.5
4	6
6	7.25
8	8
10	8.75
12	9.5

7) Support Spacing for Fiberglass Reinforced Plastic (FRP) Pipe:

NOMINAL PIPE DIAMETER (inches)	MAXIMUM SPAN (at 100 degrees F) (feet)
2	8.8
3	10
4	11
6	12.7
8	13.4
10	14
12	15.4
14	16.2
16	17.3
18 and greater	18

2.03 MANUFACTURED SUPPORTS

A. Stock Parts: Where not specifically indicated, designs which are generally accepted as exemplifying good engineering practice and use stock or production parts, shall be utilized wherever possible. Such parts shall be locally available, new, of best commercial quality, designed and rated for the intended purpose.

B. Manufacturers, or Equal:

- 1) **Basic Engineers Inc.**, Pittsburgh, PA;
- 2) **Bergen-Paterson Pipesupport Corp.**, Woburn, MA;
- 3) **Grinnell Corp. (Anvil International)**, Cranston, RI;
- 4) **NPS Products, Inc.**, Westborough, MA;
- 5) **Power Piping Company**, Pittsburgh, PA.
- 6) **Tolco Incorporated**, Corona, CA

2.04 COATING

A. Galvanizing: Unless otherwise indicated, all fabricated pipe supports other than stainless steel or non-ferrous supports shall be blast-cleaned after fabrication and hot-dip galvanized in accordance with ASTM A 123 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

B. Other Coatings: Other than stainless steel or non-ferrous supports, all supports shall receive protective coatings in accordance with the requirements of Section 09905 - Painting and Protective Coatings.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. General:** All pipe supports, hangers, brackets, anchors, guides, and inserts shall be fabricated and installed in accordance with the manufacturer's printed instructions and ANSI/ASME B31.1 - Power Piping. All concrete inserts for pipe hangers and supports shall be coordinated with the formwork.
- B. Appearance:** Pipe supports and hangers shall be positioned to produce an orderly, neat piping system. All hanger rods shall be vertical, without offsets. Hangers shall be adjusted to line up groups of pipes at the proper grade for drainage and venting, as close to ceilings or roofs as possible, without interference with other work.

3.02 FABRICATION

- A. Quality Control:** Pipe hangers and supports shall be fabricated and installed by experienced welders and fitters, using the best welding procedures available. Fabricated supports shall be neat in appearance without sharp corners, burrs, and edges.

END OF SECTION

SECTION 16850

CONTROL SYSTEM PANELS, ENCLOSURES AND INSTRUMENTS

PART 1 - GENERAL

1.1 SCOPE

- A. The Contractor shall furnish, install, test, and place into service all electrical control panels and control system components related to this facility.
- B. Specifically included are the following control panels:
 - 1. All Pump Control Panels

PART 2 - PRODUCTS

2.1 CONTROL PANELS

- A. All control panels shall be stainless steel construction. All cabinets shall be sized to accommodate the equipment required plus 25% spare space.
- B. All exterior cabinets shall be NEMA 4X, stainless steel. All cabinet hardware shall be stainless steel.
- C. Engraved laminated plastic nameplates shall be furnished for each front panel mounted instrument. All instruments and components shall be tagged on rear with embossed plastic tape labels.
- D. Pneumatic piping, where required, shall be 1/4 inch OD plastic tubing with brass compression type fittings. All lines leaving the panel shall be terminated at tagged bulkhead fittings.
- E. Wiring, where required, shall be general-purpose open type, neatly bundled and laced or installed in plastic wiring troughs. Wire shall be No. 16 AWG minimum, with thermoplastic insulation rated for 600V and 75 degrees.
- F. All wires entering and leaving all panels shall be terminated at barrier type terminal strips with surge protection. All terminals shall be identified.
- G. All power, analog, and digital signals shall be protected from surges at the control panel with suitable surge suppression devices. Surge protection shall be as follows:
 - 1. 120V Signals: Phoenix MAINS-PLUGTRAB UAK 2-PE/S
 - 2. Analog Signals: MCR-PLUGTRAB UFBK 2-PE
 - 3. Discrete Signals: MCR-PLUGTRAB UFBK 2/2
- H. All piping and/or wiring installation shall be executed in a workmanlike manner, and shall be grouped, bundled, supported and routed horizontally and vertically, to provide a neat appearance.
- I. The completed panel shall be factory tested prior to shipment. Field installation by the Contractor shall consist only of setting the panel in place and making necessary pneumatic and/or electrical connections.

- J. The manufacturer of the control panels and cabinets shall provide all necessary cooling/heating equipment required to maintain temperature and humidity of equipment located within panels and cabinets. Coordination for electrical/mechanical connection is the responsibility of the Contractor.
- K. All control panels shall be built in UL approved production in accordance with UL Guidelines and Standards. All control panels shall bear a UL label. The panel production facility shall have the following UL certifications: UL 508.
- L. All digital Communication Signals shall be protected by surge protection equipment. Equipment shall be as manufactured by Phoenix Contacts or approved equal
- M. Provide the owner with test equipment from the TVSS equipment manufacturers to test all TVSS devices

2.2 PANEL MOUNTED DEVICES

- A. Indicating lights to be heavy duty, push-to-test type, oil tight, industrial type with integral transformer for 120 VAC applications. Lenses shall be colored as noted on drawings or as required by the equipment manufacturers if not specified on the drawings. Legend plates shall be factory engraved as required. Lights shall be Allen-Bradley or approved equal.
- B. Momentary pushbuttons to be heavy duty, oil tight, industrial type with full guard and momentary contact rated at 10 Amps continuous at 120 Vac. Legend plates shall be factory engraved as required. Pushbutton shall be Allen-Bradley or approved equal.
- C. Selector switches, on/off and H.O.A. to be heavy duty, oil tight, industrial type with contact rated at 120 VAC, 10 amps continuous service. Legend plates shall be factory engraved as required. Switches shall be Allen-Bradley or approved equal.
- D. Current to voltage converters, 4-20mA_{dc} to 1-5V_{dc} shall be as manufactured by RIS, AGM or approved equal.
- E. D.C. power supplies shall be as manufactured by Landau or approved equal and shall be sized for 1.5 times the application requirements.
- F. All relays shall be Potter & Brumfield KRPIIAN, or approved equal. Units shall be hermetically sealed in metal can with octal plug. Contacts to be 120Vac/60Hz at 10 amps. Unit to incorporate lamp in parallel with relay coil. All relays to be DPDT. Provide hold down clamps for all relays.
- G. All circuit breakers shall be of the same AIC as the panel or MCC to which they are connected.
- H. All PLC units shall be provided with battery backup. Lightning protection shall be provided for all radio equipment.
- I. All exterior control panels designed for exterior mounting shall be provided with equipment rated for 60° Celsius.
- J. All UPS equipment shall be of the online type and designed for 20 minute operational time at full load of the control system. .
- K. Laminated schematics shall be provided inside each control panel for maintenance purposes.

- L. All motor starters shall be manufactured by Allen-Bradley or approved equal. All starters shall be NEMA rated (no IEC devices). All motor speed controllers shall have the following capabilities: remote start/stop, status output, running output, and remote speed.
- M. H-O-A selector switches are required for each motor starter contained within a control panel. In addition, manual speed adjustment devices are also required separate from any computer MMI, which may be located on the face of the enclosure. H-O-A selector switches and manual speed switches shall allow the operator to control all motors and valves manually in the event of a PLC failure.
- N. Runtime meters and indicator lights that a motor starter is running are required for all motor starters.

PART 3 - EXECUTION

3.1 CONTRACTOR'S RESPONSIBILITY

- A. The Contractor shall coordinate the work of the service personnel during construction, testing, and acceptance of the work.

3.2 INSTALLATION

- A. All equipment and devices for the work shall be installed in the locations shown on the drawings, in accordance with the manufacturer's recommendations, and in compliance with the requirements of these specifications.
- B. As this is an operating plant the contractor shall be responsible for scheduling down time with plant personnel.

3.3 FINAL INSPECTION

- A. Include all changes and/or alterations in the control panels prior to final inspection and acceptance by the owner.

END OF SECTION

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SECTION 11
EPA STORMWATER MANAGEMENT
GUIDANCE
U.S. ENVIRONMENTAL PROTECTION
AGENCY (EPA)

POLLUTION
PREVENTION
PLAN & PERMIT
GUIDANCE

NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM (NPDES)

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A BRIEF GUIDE TO REQUIREMENTS FOR DEVELOPING AND IMPLEMENTING POLLUTION PREVENTION PLANS FOR CONSTRUCTION ACTIVITIES

Storm water runoff is part of the natural hydrologic cycle. However, human activities, particularly urbanization, can alter natural drainage patterns and add pollutants to the rainwater and snowmelt that run off the earth's surface and enter our Nation's rivers, lakes, streams, and coastal waters. In fact, recent studies have shown that storm water runoff is a major source of pollutants impairing our sport and commercial fisheries, restricting swimming, and affecting the navigability of many of our nation's waters.

Recognizing the importance of this problem, Congress directed the U.S. Environmental Protection Agency (EPA) to develop a federal program under the Clean Water Act to regulate certain high priority storm water sources. The issuance of storm water discharge permits under the National Pollutant Discharge Elimination System (NPDES) is a major part of the Agency's efforts to restore and maintain the nation's water quality.

In October 2000, the EPA authorized the Florida Department of Environmental Protection (DEP) to implement the NPDES stormwater permitting program in the State of Florida (with the exception of Indian country lands). The program regulates point source discharges of stormwater runoff from certain construction sites and was developed by EPA in two phases: Phase I regulates "large" construction activity (disturbing 5 or more acres of total land area) and Phase II regulates "small" construction activity (disturbing between 1 and 5 acres of total land area).

The "operator" (i.e., the entity that owns or operates the project and has authority to ensure compliance) of regulated construction sites must obtain an NPDES stormwater permit and implement appropriate pollution prevention techniques to minimize erosion and sedimentation and properly manage stormwater. DEP adopted under Rule 62-621.300(4), F.A.C., the **Generic Permit for Stormwater Discharge from Large and Small Construction Activities (CGP)** (DEP Document 62-621.300(4)(a)) which is applicable to Phase I large construction and Phase II small construction. It is important to note that the permit required under DEP's NPDES Stormwater permitting program is separate from the Environmental Resource Permit (ERP) required under Part IV, Chapter 373, F.S., a stormwater discharge permit required under Chapter 62-25, F.A.C. or any local government's stormwater discharge permit for construction activity.

DEP's permitting program regulates construction activity that meets the following criteria:

- Contributes stormwater discharges to surface waters of the State or into a municipal separate storm sewer system (MS4).
- Disturbs one or more acres of land. Less than one acre also is included if the activity is part of a larger common plan of development or sale that will meet or exceed the one acre threshold. Disturbance includes clearing, grading and excavating.

The purpose of this document is to describe the steps that must be completed in order for a construction site to comply with the pollution prevention plan requirements contained in the CGP. A detailed manual on how to develop and implement your pollution prevention plan is available from the US EPA. The manual, *Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites*, dated May 2007, provides specific information and a listing of other references that you may find useful.

You may request a copy of this manual from Public Works Mobility, Road Program Management, 1001 Sarasota Center Boulevard, Sarasota FL 34240, telephone 941-861-0876, or download a '.pdf' copy from <http://cfpub.epa.gov/npdes>, choose "Construction SWPPP Guide", then choose "Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites, dated May 2007".

It is important to note that permit requirements will vary from state to state and permit to permit; therefore, you should read your permit carefully. The requirements for Stormwater Pollution Prevention Plans are listed in Florida's NPDES Stormwater Generic Permit for Stormwater Discharge from Large and Small Construction Activities.

Additional information on the NPDES Stormwater Program for Construction Activity, including instructions on how to obtain permit coverage, is available on-line at <http://www.dep.state.fl.us/water/stormwater/npdes/construction1.htm>.

State of Florida
Department of Environmental Protection
Generic Permit
For
Stormwater Discharge from Large and Small Construction Activities

February 2009

This permit is issued under the provisions of Section 403.0885, Florida Statutes, and applicable rules of the Florida Administrative Code pursuant to the Department's federally-approved National Pollutant Discharge Elimination System (NPDES) stormwater regulatory program. Stormwater discharge associated with large construction activity, as defined at 40 CFR Part 122.26(b)(14)(x) and herein, is regulated pursuant to Section 402(p)(2) of the federal Clean Water Act (CWA). Stormwater discharge associated with small construction activity, as defined at 40 CFR 122.26(b)(15) and herein, is regulated pursuant to Section 402(p)(6) of the CWA. This permit constitutes authorization to discharge stormwater associated with large and small construction activities to surface waters of the State, including through a Municipal Separate Storm Sewer System (MS4). Until this permit is terminated, modified, or revoked, permittees that have properly obtained coverage under this permit are authorized to discharge to surface waters of the State, including through an MS4, in accordance with the terms and conditions of this permit.

Part I. General Provisions

A. Applicability and Coverage

1. Federal law prohibits the point source discharge of pollutants, including the discharge of stormwater associated with large or small construction activities pursuant to 40 CFR Part 122 and as defined in Part II of this permit, to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit. The State of Florida has authority to administer the NPDES stormwater program pursuant to Section 403.0885, F.S. Operators that have stormwater discharge associated with large or small construction activities to surface waters of the State, including through a Municipal Separate Storm Sewer System (MS4), must obtain coverage either under a generic permit issued pursuant to Chapter 62-621, F.A.C., or an individual permit issued pursuant to Chapter 62-620, F.A.C.

2. Coverage under this generic permit is available for stormwater discharges from large and small construction activities to surface waters of the State as defined in Section 403.031, F.S., including stormwater discharges associated with construction activity to surface waters of the State through an MS4.

3. This generic permit does not constitute authorization under Part IV of Chapter 373, F.S., for the construction, alteration, operation, maintenance, abandonment, or removal of any stormwater management system, dam, impoundment, reservoir, or appurtenant work or works, including dredging or filling in, on or over wetlands and other surface waters, as determined by the methodology authorized in Subsection 373.421(1), F.S.

4. This generic permit authorizes the discharge of stormwater associated with construction activity under the State's federally-approved NPDES stormwater program only and does not supersede the requirement to obtain a stormwater discharge authorization pursuant to an environmental resource permit (ERP) under Part IV, Chapter 373, F.S.; an environmental resource permit from a Department-approved delegated local government; or any other required federal, state, or local government permit.

B. Eligibility

1. This permit authorizes the discharge of stormwater associated with large and small construction activity, as defined in Part II of this permit, occurring after the effective date of this permit.

2. This permit authorizes stormwater discharge associated with construction activity that is mixed with stormwater discharges associated with industrial activity other than construction, where:

- a. the industrial source other than construction is located on the same site as the construction activity;
- b. stormwater discharges associated with industrial activity from the areas of the site where construction activities are occurring are in compliance with the terms of this permit; and
- c. stormwater discharges associated with industrial activity from the areas of the site where industrial activity other than construction are occurring are in compliance with the terms of a different generic permit (e.g., Multi-Sector Generic Permit for Stormwater Discharge Associated with Industrial Activity) or individual permit authorizing such discharges.

3. Limitations on Coverage. The following stormwater discharges from construction sites are not authorized by this permit:

- a. stormwater discharges that originate from the site after construction activities have been completed and the site has undergone final stabilization;

b. discharges that are mixed with sources of non-stormwater, other than discharges identified in Part IV.A.3. of this permit;

c. stormwater discharge associated with construction activity that is covered under an existing generic or individual permit. Such discharges may be authorized under this permit after the existing individual permit or generic permit term of coverage expires, provided the existing permit did not establish numeric limitations for such discharges; or

d. stormwater discharge associated with construction activity that the Department has determined to be or may reasonably be expected to be causing or contributing to a violation of a surface water quality standard.

C. Obtaining Authorization

1. In order for stormwater discharge associated with construction activity to be authorized under this generic permit, an operator must:

a. Meet the eligibility requirements in Part I.B. of this permit;

b. Develop and implement a stormwater pollution prevention plan (SWPPP) in accordance with the requirements of Part V of this permit; and

c. Submit a completed Notice of Intent (NOI) in accordance with the requirements of Part III of this permit, including submittal of the appropriate processing fee as established in paragraph 62-4.050(4)(d), F.A.C.

2. The Department may deny coverage under this permit or require submittal of a revised NOI based on the Department's determination that the NOI is incomplete, the permit fee has not been paid, or the submittal otherwise is not in accordance with the requirements of this generic permit.

Part II. Definitions

For the purposes of this generic permit, the following definitions shall apply, unless otherwise indicated:

1. "Best Management Practices" or "BMPs" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

2. "Construction Activity" means the act or process of developing or improving land which involves the disturbance of soils and includes clearing, grading, and excavation.

3. "Commencement of Construction" means the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.

4. "Department" or "DEP" means the Florida Department of Environmental Protection.

5. "Final Stabilization" means that all soil disturbing activities at the site have been completed, and that a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of at least 70% for all unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (e.g., geotextiles) have been employed.

6. "Large Construction Activity" means construction activity that results in the disturbance of five (5) or more acres of total land area. Large construction activity also includes the disturbance of less than five acres of total land area that is part of a larger common plan of development or sale that will ultimately disturb five acres or more.

7. "Municipal Separate Storm Sewer System" or "MS4" means a large, medium, or small MS4 as defined in Chapter 62-624, F.A.C.

8. "NOI" means notice of intent to be covered by this permit (see Part III of this permit).

9. "NOT" means notice of termination (see Part VIII of this permit).

10. "NPDES" means the Department's federally-approved National Pollutant Discharge Elimination System program.

11. "Operator" means the person, firm, contractor, public organization or other legal entity that owns or operates the construction activity and that has authority to control those activities at the project necessary to ensure compliance with the terms and conditions of this permit.

12. "Qualified Inspector" means a person that:

- a. has successfully completed and met all requirements necessary to be fully certified through the DEP Stormwater Erosion and Sedimentation Control Inspector Training Program;
- b. has successfully completed an equivalent formal training program; or
- c. is qualified by other training or practical experience in the field of stormwater pollution prevention and erosion and sedimentation control.

13. "Small Construction Activity" means construction activity that results in the disturbance of equal to or greater than one (1) acre and less than five (5) acres of total land area. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one acre and less than five acres.

14. "Stormwater" means the flow of water which results from, and which occurs immediately following, a rainfall event.

15. "Stormwater discharge associated with construction activity" means the discharge of stormwater from large or small construction activities, including areas where soil disturbing activities, construction materials handling or storage, equipment storage or maintenance are located.

16. "Surface Waters of the State" means those surface waters that are defined in section 403.031, F.S.

17. "Water Management District" or "WMD" means the Northwest Florida Water Management District, the Suwannee River Water Management District, the St. Johns River Water Management District, the Southwest Florida Water Management District or the South Florida Water Management District.

Part III. Notice of Intent Requirements

A. Deadlines for Notification.

1. Operators seeking coverage under this generic permit to authorize stormwater discharge associated with construction activity for new large or small construction activities, for which commencement of construction begins after the effective date of this permit, shall file an NOI for coverage under this permit at least two (2) days before commencement of construction.

2. For construction activities where the operator changes, the new operator shall file an NOI for coverage under this permit at least two (2) days before assuming control of the project and the previous operator shall file an NOT to terminate permit coverage in accordance with Part VIII of this permit.

B. Contents of Notice of Intent.

1. In order to obtain coverage under this permit, the operator of the construction activity having an associated stormwater discharge shall submit a completed Notice of Intent to Use Generic Permit for Stormwater Discharge from Large and Small Construction Activities, DEP Form 62-621.300(4)(b), including the applicable permit processing fee as specified in paragraph 62-4.050(4)(d), F.A.C. By completing, signing, and submitting an NOI, the operator is certifying that they meet all eligibility requirements of this permit and are informing the Department of their intent to be covered by, and comply with, the terms and conditions of this generic permit. The Notice of Intent shall be signed in accordance with Part VII.C. of this permit by the operator.

C. Where to Submit.

1. NOIs shall be submitted either electronically or by paper copy.
 - a. The Department encourages the electronic submission of NOIs through the NPDES Stormwater Program's electronic permitting application available at <http://www.dep.state.fl.us/water/stormwater/npdes/>.
 - b. If the operator chooses to submit the NOI by paper copy, the NOI shall be submitted to the following address:

NPDES Stormwater Notices Center, MS# 2510
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

2. A copy of the NOI or letter from DEP confirming coverage under this generic permit shall be posted at the construction site in a prominent place for public viewing (such as alongside a building permit).

D. Additional Notification.

1. Projects that discharge stormwater associated with construction activity to a municipal separate stormwater system (MS4) shall submit a copy of the NOI to the operator of the MS4.

E. Period of Coverage.

1. Coverage under this generic permit is effective two (2) days after the date of submittal of a complete NOI to the Department.
2. Coverage under this generic permit is limited to a term not to exceed five years from the effective date of coverage.

F. Permit Coverage Renewal.

1. If the project will continue to have stormwater discharge associated with construction activity beyond the initial five year term of coverage, the operator shall submit a new NOI at least two (2) days before expiration of the current term of coverage under this permit.

Part IV. Special Conditions, Management Practices and Other Non-numeric Limitations

A. Prohibition of Non-Stormwater Discharges.

1. Except as provided in paragraphs I.B.2. and IV.A.3., all discharges covered by this permit shall be composed entirely of stormwater associated with construction activity.

2. Except as specified in IV.A.3. below, discharges of material other than stormwater associated with construction activity must be in compliance with a Department permit (other than this permit) issued for the discharge, or be exempt therefrom.

3. The following non-stormwater discharges are authorized by this permit provided the non-stormwater component of the discharge is in compliance with paragraph V.D.5.: discharges from fire fighting activities; fire hydrant flushings; waters used to spray off loose solids from vehicles (wastewaters from a more thorough cleaning, including the use of detergents or other cleaners is not authorized by this part) or control dust in accordance with Part V.D.2.c.(2); potable water sources including waterline flushings; irrigation drainage; routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; springs; and foundation or footing drains where flows are not contaminated with process materials such as solvents.

4. Discharges resulting from ground water dewatering activities at construction sites are not covered by this permit. Applicants for these discharges must obtain coverage under the Department's Generic Permit for the Discharge of Produced Ground Water from any Non-contaminated Site Activity pursuant to subsection 62-621.300(2), F.A.C.

B. Releases in Excess of Reportable Quantities.

1. The discharge of hazardous substances or oil in the stormwater discharge(s) from a facility or activity shall be prevented or minimized in accordance with the applicable stormwater pollution prevention plan for the facility or activity. This permit does not relieve the operator of the reporting requirements of 40 CFR part 117 and 40 CFR part 302. Where a release containing a hazardous substance in an amount equal to or in excess of a reporting quantity established under either 40 CFR 117 or 40 CFR 302, occurs during a 24 hour period:

a. The operator is required to notify the State Warning Point (800-320-0519 or 850-413-9911) as soon as he or she has knowledge of the discharge;

b. The operator shall submit, within 14 calendar days of knowledge of the release, a written description of: the release (including the type and estimate of the amount of material released), the date that such release occurred, the circumstances leading to the release, and remedial steps to be taken, to the Florida Department of Environmental Protection, NPDES Stormwater Section, Mail Station 2500, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and

c. The stormwater pollution prevention plan required under Part V of this permit must be modified within 14 calendar days of knowledge of the release to: provide a description of the release, the circumstances leading to the release, and the date of the release. In addition, the plan must be reviewed to identify measures to prevent the recurrence of such releases and to respond to such releases, and the plan must be modified where appropriate.

2. This permit does not authorize the discharge of hazardous substances or oil resulting from an on-site spill.

Part V. Stormwater Pollution Prevention Plan

A. A stormwater pollution prevention plan shall be developed and implemented for each construction site covered by this permit. Stormwater pollution prevention plans shall be prepared in accordance with good engineering practices. Equivalent erosion and sediment control plans prepared as an

environmental resource permit requirement under Part IV, Chapter 373, F.S., may serve as the pollution prevention plan provided all of the elements of this section are included in such an alternative plan. The plan shall identify potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharge associated with construction activity. In addition, the plan shall describe and ensure the implementation of best management practices which will be used to reduce the pollutants in stormwater discharge associated with construction activity and to assure compliance with the terms and conditions of this permit. Facilities must implement the provisions of the stormwater pollution prevention plan required under this part as a condition of this permit. Failure to develop and implement a stormwater pollution prevention plan in accordance with the requirements of this part shall be deemed a violation of this permit and the permittee shall be subject to enforcement action.

B. Deadlines for Plan Preparation and Compliance.

1. The pollution prevention plan shall:

- a. Be completed (including certification by the operator in accordance with Part VII.C.) prior to the submittal of an NOI to be covered under this permit and updated as appropriate;
- b. The plan shall provide for compliance with the terms and schedule of the plan beginning with the initiation of construction activities.

C. Keeping Plans Current.

1. The permittee shall amend the plan whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to surface waters of the State or an MS4, including the addition of or change in location of stormwater discharge points, and which has not otherwise been addressed in the plan. The permittee also shall amend the plan if it proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified under Part V.D.1. of this permit, or in otherwise achieving the general objectives of controlling pollutants in stormwater discharge associated with construction activity. In addition, the plan shall be amended to identify any new contractor and/or subcontractor that will implement a measure of the stormwater pollution prevention plan (see Part V.D.6.). Amendments to the plan shall be prepared, signed, dated and kept as attachments to the original plan.

D. Contents of Plan.

1. Site Description. Each plan shall provide a description of pollutant sources and other information as indicated:

- a. A description of the nature of the construction activity;
- b. A description of the intended sequence of major activities which disturb soils for major portions of the site (e.g., grubbing, excavation, grading);
- c. Estimates of the total area of the site and the total area of the site that is expected to be disturbed by excavation, grading, or other construction activities;
- d. Existing data describing the soil or the quality of any discharge from the site and an estimate of the size of the drainage area for each discharge point;
- e. A site map indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of soil disturbance, an outline of areas which may not be disturbed, the location of major structural and nonstructural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters, wetlands and locations where stormwater is discharged to a surface water or MS4; and

f. The latitude and longitude of each discharge point and the name of the receiving water(s) for each discharge point.

2. Controls. Each plan shall include a description of appropriate controls, BMPs and measures that will be implemented at the construction site. The plan shall clearly describe for each major activity identified in Part V.D.1.b. appropriate control measures and the timing during the construction process that the measures will be implemented. For example, perimeter controls for one portion of the site will be installed after the clearing and grubbing necessary for installation of the measure, but before the clearing and grubbing for the remaining portions of the site. Perimeter controls shall be actively maintained until final stabilization of those portions of the site upward of the perimeter control. Temporary perimeter controls shall be removed after final stabilization. All controls shall be consistent with the performance standards for erosion and sediment control and stormwater treatment as set forth in Rule 62-40.432, F.A.C., the applicable environmental resource permitting requirements of the DEP or appropriate WMD relating to performance standards for erosion and sediment control and stormwater treatment and the guidelines contained in the State of Florida Erosion and Sediment Control Designer and Reviewer Manual, FDOT, FDEP (2007), incorporated by reference in Rule 62-621.300(4)(a), F.A.C., and available on the Department's website at <http://www.dep.state.fl.us/water/stormwater/npdes>.

a. Erosion and Sediment Controls.

(1) Stabilization Practices. Each plan shall provide a description of interim and permanent stabilization practices, including site-specific scheduling of the implementation of the practices. Site plans should ensure that existing vegetation is preserved where attainable and that disturbed portions of the site are stabilized. Stabilization practices may include: temporary seeding, permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation and other appropriate measures. A record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site and when stabilization measures are initiated shall be included in the plan. Stabilization measures shall be initiated as soon as practicable, but in no case more than 7 days, in portions of the site where construction activities have temporarily or permanently ceased.

(2) Structural Practices. Each plan shall include a description of structural practices to divert flows from exposed soils, store flows, retain sediment on-site or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include silt fences, earth dikes, diversions, swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, coagulating agents and temporary or permanent sediment basins. Structural BMPs shall be placed on upland soils unless a State of Florida wetland resource management permit or environmental resource permit issued pursuant to Chapter 373, F.S., and applicable regulations of the DEP or WMD authorize otherwise.

(3) Sediment Basins.

(a) For drainage basins with 10 or more disturbed acres at one time, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. The 3,600 cubic feet of storage area per acre drained does not apply to flows from offsite areas and flows from onsite areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. For drainage basins with 10 or more disturbed acres at one time and where a temporary sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent controls is not attainable, a combination of smaller sediment basins and/or sediment traps and other BMPs should be used. At a minimum, silt fences or equivalent sediment controls are required for all sideslope and downslope boundaries of the construction area.

(b) For drainage basins of less than 10 acres, sediment basins and/or sediment traps are recommended but not required. At a minimum, silt fences or equivalent sediment controls are required for all sideslope and downslope boundaries of the construction area.

(c) Areas that will be used for permanent stormwater infiltration treatment (e.g., stormwater retention ponds) should not be used for temporary sediment basins unless appropriate measures are taken to assure removal of accumulated fine sediments, which may cause premature clogging and loss of infiltration capacity, and to avoid excessive compaction of soils by construction machinery or equipment.

b. Permanent Stormwater Management Controls.

Each plan shall include a description of stormwater management controls or BMPs (e.g., stormwater detention or retention systems, vegetated swales, velocity dissipation devices at discharge points) that will be installed during the construction process to control pollutants in stormwater discharges that will occur during construction and after construction operations have been completed. This generic permit only addresses the installation of stormwater management controls and not the ultimate operation and maintenance of such controls after the construction activities have been completed and the site has undergone final stabilization. Under this generic permit, permittees are only responsible for the installation and maintenance of stormwater management BMPs prior to final stabilization of the site, and are not responsible for maintenance after stormwater discharges associated with construction activity have been eliminated from the site. However, all stormwater management systems and BMPs shall be operated and maintained in perpetuity after final stabilization in accordance with requirements set forth in the State of Florida environmental resource permit issued under Part IV, Chapter 373, F.S.

c. Controls for Other Potential Pollutants.

(1) Waste Disposal. The plan shall assure that waste, such as discarded building materials, chemicals, litter and sanitary waste are properly controlled in accordance with all applicable state, local and federal regulations. This permit does not authorize the discharge of solid materials, including building materials, to surface waters of the State or an MS4.

(2) The plan shall assure that off-site vehicle tracking of sediments and the generation of dust is minimized.

(3) The plan shall be consistent with applicable State and local waste disposal, sanitary sewer or septic system regulations.

(4) The plan shall address the proper application rates and methods for the use of fertilizers, herbicides and pesticides at the construction site and set forth how these procedures will be implemented and enforced. Nutrients shall be applied only at rates necessary to establish and maintain vegetation.

(5) The plan shall ensure that the application, generation and migration of toxic substances are limited and that toxic materials are properly stored and disposed.

3. Maintenance. The plan shall include a description of procedures that will be followed to ensure the timely maintenance of vegetation, erosion and sediment controls, stormwater management practices and other protective measures and BMPs so they will remain in good and effective operating condition.

4. Inspections. At least once every seven calendar days and within 24 hours of the end of a storm that is 0.50 inches or greater, a qualified inspector (provided by the operator) shall inspect all points of discharge into surface waters of the State or an MS4; disturbed areas of the construction site that have not been finally stabilized; areas used for storage of materials that are exposed to precipitation; structural controls; and locations where vehicles enter or exit the site as follows:

a. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the stormwater system. The stormwater management system and erosion and sediment control measures identified in the plan

shall be observed to ensure that they are operating correctly. Discharge locations or points shall be inspected to ascertain whether erosion and sediment control and stormwater treatment measures are effective in preventing or minimizing the discharge of pollutants, including retaining sediment onsite pursuant to Rule 62-40.432, F.A.C. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

b. Based on the results of the inspection, all maintenance operations needed to assure proper operation of all controls, BMPs, practices or measures identified in the stormwater pollution prevention plan shall be done in a timely manner, but in no case later than 7 calendar days following the inspection. If needed, pollution prevention controls, BMPs and measures identified in the plan shall be revised as appropriate, but in no case later than 7 calendar days following the inspection. Such modifications shall provide for timely implementation of any changes to the plan within 7 calendar days following the inspection.

c. A report summarizing the scope of the inspection; name(s) and qualifications of personnel making the inspection; the date(s) of the inspection; rainfall data; major observations relating to the implementation of the stormwater pollution prevention plan; and actions taken in accordance with paragraph V.D.4.b. of this permit, shall be made and retained, in accordance with Part VI of this permit, as part of the stormwater pollution prevention plan. Such reports shall identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with the stormwater pollution prevention plan and this permit. The report shall be signed in accordance with Part VII.C. of this permit.

5. Non-Stormwater Discharges. Except for flows from fire fighting activities, sources of non-stormwater listed in Part IV.A.3. of this permit that are combined with stormwater discharges associated with construction activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention and treatment measures for the non-stormwater component(s) of the discharge.

6. Contractor/Subcontractor Certification.

a. The stormwater pollution prevention plan must clearly identify, for each measure identified in the plan, the contractor(s) and/or subcontractor(s) that will implement the measure. All contractors and subcontractors identified in the plan must sign a copy of the certification statement in Part V.D.6.b. of this permit. All certifications must be included in the stormwater pollution prevention plan.

b. Certification Statement for Contractors/Subcontractors. All contractors and subcontractors identified in a stormwater pollution prevention plan in accordance with Part V.D.6.a. of this permit shall sign a copy of the following certification statement before conducting any activities at the site:

"I certify under penalty of law that I understand, and shall comply with, the terms and conditions of the State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities and this Stormwater Pollution Prevention Plan prepared thereunder."

The certification must include the name and title of the person providing the signature in accordance with Part VII.C. of this permit; the name, address and telephone number of the contracting firm; and the date the certification is made.

Part VI. Retention of Records

A. The permittee shall retain copies of stormwater pollution prevention plans and all reports required by this permit, and records of all data used to complete the Notice of Intent to be covered by this permit, for a period of at least three years from the date that the site is finally stabilized.

B. The permittee shall retain a copy of the stormwater pollution prevention plan and all reports, records and documentation required by this permit at the construction site, or an appropriate alternative location as specified in the NOI, from the date of project initiation to the date of final stabilization.

Part VII. Standard Permit Conditions

A. Any permit noncompliance constitutes a violation of Section 403.161, F. S. and is grounds for enforcement action; for permit coverage termination, or revocation; or for denial of permit coverage renewal.

B. All of the general conditions listed in Rule 62-621.250, F.A.C., are adopted herein by reference.

C. Signatory Requirements.

1. All Notices of Intent, Notices of Termination, stormwater pollution prevention plans, reports, certifications or information either submitted to the Department or the operator of a municipal separate storm sewer system, or that this permit requires be maintained by the permittee, shall be signed as set forth in Rule 62-620.305, F.A.C.

2. Inspection reports prepared pursuant to Part V.D.4.c. of this permit shall be signed by the qualified inspector that prepared them as well as by a responsible authority for the operator as specified in Part VII.C.1. above.

3. Any person signing documents under this permit, except contractor/subcontractor certifications under Part V.D.6., shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Part VIII. Termination of Coverage

A. Notice of Termination.

1. Where a site has been finally stabilized (see Part II for the definition of final stabilization) and all stormwater discharges authorized by this permit are eliminated, the permittee shall submit a completed Notice of Termination (DEP Form 62-621.300(6)), signed in accordance with Part VII.C. of this permit, within 14 days of final stabilization of the site to terminate coverage under this permit.

2. Elimination of stormwater discharges associated with construction activity means that all disturbed soils at the site have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time, or that all stormwater discharges associated with construction activity from the site that are authorized by this generic permit have otherwise been eliminated.

3. For construction activities where the operator changes, the existing operator shall file an NOT in accordance with this Part within 14 days of relinquishing control of the project to a new operator.

B. Where to Submit.

1. A permittee shall submit a Notice of Termination either electronically or by paper copy.

a. The Department encourages the electronic submission of NOTs through the NPDES Stormwater Program's electronic permitting application available at

<http://www.dep.state.fl.us/water/stormwater/npdes/>.

b. If the operator chooses to submit the NOT by paper copy, the NOT shall be submitted to the following address:

NPDES Stormwater Notices Center, MS# 2510
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

2. Projects that discharged stormwater associated with construction activity to a municipal separate storm sewer system (MS4) shall submit a copy of the NOT to the operator of the MS4.



NOTICE OF INTENT TO USE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES (RULE 62-621.300(4), F.A.C.)

This Notice of Intent (NOI) form is to be completed and submitted to the Department before use of the Generic Permit for Stormwater Discharge From Large and Small Construction Activities provided in subsection 62-621.300(4), F.A.C. The type of project or activity that qualifies for use of the generic permit, the conditions of the permit and additional requirements to request coverage are specified in the generic permit document [DEP Document 62-621.300(4)(a)]. **The appropriate generic permit fee, as specified in paragraph 62-4.050(4)(d), F.A.C., shall be submitted with this NOI in order to obtain permit coverage. Permit coverage will not be granted without submittal of the appropriate generic permit fee.** You should familiarize yourself with the generic permit document and the attached instructions before completing this NOI form. **Please print or type information in the appropriate areas below.**

I. IDENTIFICATION NUMBER:

Project ID: _____

II. APPLICANT INFORMATION:

A. Operator Name:		B. Operator Status:	
C. Address:			
D. City:	E. State:	F. Zip Code:	
G. Responsible Authority:			
H. Responsible Authority's Phone No.:			
I. Responsible Authority's Fax No.:			
J. Responsible Authority's E-mail Address:			

III. PROJECT/SITE LOCATION INFORMATION:

A. Project Name:			
B. Project Address/Location:			
C. City:	D. State:	E. Zip Code:	
F. County:	G. Latitude: ° ' "	Longitude: ° ' "	
H. Is the site located on Indian Country Lands? ☐ Yes ☐ No		I. Water Management District:	

J. Project Contact:
K. Project Contact's Phone No.:
L. Project Contact's Fax No.:
M. Project Contact's E-mail Address:

IV. PROJECT/SITE ACTIVITY INFORMATION:

A. Indicate whether the project is Large or Small Construction (check only one):	☐ Large Construction (Project will disturb five or more acres of land.)		
	☐ Small Construction (Project will disturb one or more acres but less than five acres of land.)		
B. Approximate total area of land disturbance from commencement through completion of construction: _____ acres			
C. SWPPP Location:	☐ Address in Part II above ☐ Address in Part III above ☐ Other address (specify below)		
D. SWPPP Address:			
E. City:		F. State:	G. Zip Code:
H. Construction Period:	Start Date:	Completion Date:	

V. DISCHARGE INFORMATION:

A. MS4 Operator Name (if applicable):
B. Receiving Water Name:

VI. CERTIFICATION¹:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Responsible Authority Name and Official Title (Type or Print):

Responsible Authority Signature: _____

Date Signed: _____

¹ Signatory requirements are contained in Rule 62-620.305, F.A.C.

INSTRUCTIONS – DEP FORM 62-621.300(4)(b)
NOTICE OF INTENT (NOI) TO USE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE
AND SMALL CONSTRUCTION ACTIVITIES

Who Must File an NOI?:

Federal law at 40 CFR Part 122 prohibits the point source discharge of pollutants, including the discharge of stormwater associated with large construction activities as defined at 40 CFR 122.26(b)(14)(x) or small construction activities as defined at 40 CFR 122.26(b)(15), to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit. Under the State of Florida's authority to administer the NPDES stormwater program at 403.0885, F.S., operators that have stormwater discharge associated with large or small construction activities to surface waters of the State, including through a Municipal Separate Storm Sewer System (MS4), must obtain coverage either under a generic permit issued pursuant to Chapter 62-621, F.A.C., or an individual permit issued pursuant to Chapter 62-620, F.A.C.

Where to File NOI:

The Department encourages the electronic submission of NOIs using the Department's Interactive Notice of Intent (iNOI) available at <http://www.dep.state.fl.us/water/stormwater/npdes/>. As an alternative, NOIs may be submitted by paper copy to the following address:

NPDES Stormwater Notices Center, MS #2510
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Permit Fee:

Permit fees for large and small construction activities to be covered under the generic permit are specified in paragraph 62-4.050(4)(d), F.A.C. The appropriate generic permit fee (either for large or small construction activities) must be submitted along with the completed NOI in order to obtain coverage under the generic permit. **Generic permit coverage will not be granted without payment of the appropriate permit fee.**

If the NOI is submitted electronically, the permit fee shall be paid on-line by credit card. If the NOI is submitted using a paper copy, the permit fee shall be paid by either check or money order made payable to: "Florida Department of Environmental Protection".

Part I – Identification Number:

Enter the project's DEP identification number (generic permit coverage number) if known. If an ID number has not yet been assigned to this project (i.e., if this is a new project), leave this item blank.

Part II – Applicant Information:

Item A.: Provide the legal name of the person, firm, contractor, public organization or other legal entity that owns or operates the construction activity described in this NOI. The operator is the legal entity that has authority to control those activities at the project necessary to ensure compliance with the terms and conditions of the generic permit.

Item B.: Enter the appropriate one letter code from the list below to indicate the legal status of the operator:

F = Federal; S = State; P = Private; M = Public (other than federal or state); O = Other

Items C. – F.: Provide the complete mailing address of the operator, including city, state and zip code.

Items G. – J.: Provide the name, telephone and fax number (including area code) and E-mail address of the person authorized to submit this NOI on behalf of the operator (e.g., Jane Smith, President of Smith Construction Company on behalf of the operator, Smith Construction Company; John Doe, Public Works Director on behalf of the operator, City of Townsville; etc.). This should be the same person as indicated in the certification in Part VI.

Part III – Project/Site Location Information:

Items A. – E.: Enter the official or legal name and complete street address, including city, state and zip code of the project. Do not provide a P.O. Box number as the street address. If it lacks a street address, describe the project site location (e.g., intersection of State Road 1 and Smith Street).

Item F.: Enter the county in which the project is located.

Item G.: Enter the latitude and longitude, **in degrees-minutes-seconds format**, of the approximate center of the project.

Item H.: Indicate whether the project is located on Indian Country Lands.

Item I.: Enter the appropriate five or six letter code from the list below to indicate the Water Management District the project is located within:

NFWWMD = Northwest Florida Water Management District
SRWMD = Suwannee River Water Management District
SFWMD = South Florida Water Management District
SWFWMD = Southwest Florida Water Management District
SJRWMD = St. John's River Water Management District

Items J. – M.: Give the name, telephone and fax number (including area code) and E-mail address of the project contact person. The project contact is the person who is thoroughly familiar with the project, the facts reported in this NOI and who can be contacted by the Department if necessary.

Part IV – Project/Site Activity Information:

Item A.: Check the appropriate box to indicate whether the project involves large construction activity or small construction activity. **Check one box only.**

“Large Construction Activity” means construction activity that results in the disturbance of five (5) or more acres of total land area. Large construction activity also includes the disturbance of less than five acres of total land area that is part of a larger common plan of development or that will ultimately disturb five acres or more.

“Small Construction Activity” means construction activity that results in the disturbance of equal to or greater than one (1) acre and less than five (5) acres of total land area. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one acre and less than five acres.

Item B.: Provide the approximate total area of land disturbance, in acres, that the project will involve from commencement of construction through completion.

Items C. - G.: Indicate the location where the Stormwater Pollution Prevention Plan (SWPPP) can be viewed. Provide the address where the SWPPP can be viewed if other than as provided in Parts II or III of the NOI. **Note that to be eligible for coverage under the generic permit, the SWPPP must have been prepared prior to filing this NOI.**

Item H.: Enter the estimated construction start and completion dates in the MM/DD/YY format.

Part V – Discharge Information:

To be covered under a CGP, the facility must have the potential to discharge stormwater associated with construction activity to a MS4, a surface water body or both. NOIs submitted without discharge information cannot be processed.

Item A.: If stormwater from the project discharges to a municipal separate storm sewer system (MS4), enter the name of the operator of the MS4 (e.g., City of Tallahassee MS4, Orange County MS4, FDOT District 5 MS4, etc.). If stormwater from the project does not discharge to an MS4 but to surface waters of the State, leave this item blank or indicate “N/A” and skip to Item B. of this part. **Please note that if the project discharges stormwater to an MS4, you must provide the MS4 operator with a copy of the completed NOI.**

Item B.: If the project discharges stormwater to surface waters of the State, and not to an MS4, enter the name of the receiving water body to which the stormwater is discharged. Please provide the first named water body to which the stormwater from the project is discharged (e.g., Cypress Creek, Tampa Bay, unnamed ditch to St. Johns River, Tate’s Hell Swamp, etc.).

In certain cases, stormwater from the project will discharge to both an MS4 and surface waters of the State. In this case, complete both Item A. and Item B.

Part VI – Certification:

Type or print the name and official title of the Responsible Authority signing the certification. Please note that this must be the same person indicated in Item II.G. as the Responsible Authority. Sign and date the certification.

Section 403.161, F.S., provides severe penalties for submitting false information on this application (NOI) or any reports or records required by a permit. There are both civil and criminal penalties, in addition to the revocation of permit coverage for submitting false information.

Rule 62-620.305, F.A.C., requires that the NOI and any reports required by the permit be signed as follows:

- A. For a corporation, by a responsible corporate officer as described in Rule 62-620.305, F.A.C.;
- B. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- C. For a municipality, state, federal or other public facility, by a principal executive officer or elected official.

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SECTION 12

FLORIDA STATUTE 556

**UNDERGROUND
FACILITY
DAMAGE
PREVENTION
AND SAFETY
ACT**

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CHAPTER 556

UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY

- 556.101 Short title; legislative intent.
- 556.102 Definitions.
- 556.103 Creation of the corporation; establishment of the board of directors; authority of the board; annual report.
- 556.104 Free-access notification system.
- 556.105 Procedures.
- 556.106 Liability of the member operator, excavator, and system.
- 556.107 Violations.
- 556.108 Exemptions.
- 556.109 Emergency excavations or demolitions attempted; exception.
- 556.110 Costs assessed among member operators.
- 556.111 Applicability to existing law.
- 556.112 Design services.
- 556.113 Sunshine State One-Call of Florida, Inc.; public records exemption.
- 556.114 Low-impact marking practices.
- 556.115 Alternative dispute resolution.
- 556.116 High-priority subsurface installations; special procedures.

556.101 Short title; legislative intent.-

(1) This chapter may be cited as the “Underground Facility Damage Prevention and Safety Act.”

(2) It is the intent of the Legislature to provide access for excavating contractors and the public to provide notification to the system of their intent to engage in excavation or demolition. This notification system shall provide the member operators an opportunity to identify and locate their underground facilities. Under this notification system, Sunshine State One-Call of Florida, Inc., is not required or permitted to locate or mark underground facilities.

(3) It is the purpose of this chapter to:

(a) Aid the public by preventing injury to persons or property and the interruption of services resulting from damage to an underground facility caused by excavation or demolition operations.

(b) Create a not-for-profit corporation comprised of operators of underground facilities in this state to administer this chapter.

(c) Fund the cost of administration through contributions from the member operators for services provided to the member operators and from charges made to others for services requested and provided, such as record searches, education or training, and damage prevention activities.

(d) Reserve to the state the power to regulate any subject matter specifically addressed in this chapter. Municipalities, counties, districts, or other local governments may not adopt or enforce ordinances or rules that conflict with this chapter or that prescribe any of the following:

1.Require operators of underground facilities to obtain permits from local governments in order to identify underground facilities.

2.Require premarking or marking.

3.Specify the types of paint or other marking devices that are used to identify underground facilities.

4.Require removal of marks.

(e) Permit any local law enforcement officer, local government code inspector, or

code enforcement officer to enforce this chapter without the need to incorporate the provisions of this chapter into any local code or ordinance.

(f) Foster the awareness of federal laws and regulations that promote safety with respect to underground facilities, including, but not limited to, the Federal Pipeline Safety Act of 1968, as amended, the Pipeline Safety Improvement Act of 2002, OSHA Standard 1926.651, and the National Electric Safety Code, ANSI C-2, by requiring and facilitating the advance notice of activities by those who engage in excavation or demolition operations.

(4) It is not the purpose of this chapter to amend or void any permit issued by a state agency for placement or maintenance of facilities in its right-of-way.

History. — s. 1, ch. 93-240; s. 1, ch. 97-306; s. 1, ch. 2002-234; s. 1, ch. 2006-138; s. 1, ch. 2010-100.

556.102 Definitions.— As used in this act:

(1) “Business days” means Monday through Friday, excluding the following holidays: New Year’s Day, Birthday of Dr. Martin Luther King, Jr., Memorial Day, Independence Day, Labor Day, Thanksgiving Day and the following Friday, Christmas Eve, and Christmas Day. Any such holiday that falls on a Saturday shall be observed on the preceding Friday. Any such holiday that falls on a Sunday shall be observed on the following Monday.

(2) “Business hours” means the hours of a day during which the system is open for business.

(3) “Damage” means any impact upon or contact with, including, without limitation, penetrating, striking, scraping, displacing, or denting, however slight, the protective coating, housing, or other protective devices of any underground facility, or the removal or weakening of any lateral or vertical support from any underground facility, or the severance, partial or complete, of any underground facility.

(4) “Demolish” or “demolition” means any operation by which a structure or mass of material is wrecked, razed, rended, moved, or removed by means of any tool, equipment, or discharge of explosives, or any disturbance of the earth in any manner on public or private lands which could damage any underground facility.

(5) “Design services” means services that may be provided by a member operator to a design engineer, architect, surveyor, or planner, if the presence of underground facilities is known to a member operator, upon payment of a fee to the member operator, which services may be based on:

(a) Information obtained solely from a review of utility records.

(b) Information to augment utility records, such as topographic surveying of above-ground utility features.

(c) Information obtained through the use of designating technologies to obtain horizontal underground facility locations.

(d) Information obtained from physically exposing underground facilities.

(6) “Excavate” or “excavation” means any manmade cut, cavity, trench, or depression in the earth’s surface, formed by removal of earth, intended to change the grade or level of land, or intended to penetrate or disturb the surface of the earth, including land beneath the waters of the state, as defined in s. 373.019(20), and the term includes pipe bursting and directional drilling or boring from one point to another point beneath the surface of the earth, or other trenchless technologies.

(7) “Excavator” or “excavating contractor” means any person performing excavation or demolition operations.

(8) “Member operator” means any person who furnishes or transports materials or services by means of an underground facility.

(9) “Person” means any individual, firm, joint venture, partnership, corporation, association, municipality, or other political subdivision, governmental unit, department, or agency, and includes any trustee, receiver, assignee, or personal representative of a person.

(10)“Positive response” means the communications among member operators, excavators, and the system concerning the status of locating an underground facility.

(11) “Premark” means to delineate the general scope of the excavation on the

surface of the ground using white paint, white stakes, or other similar white markings.

(12) "Tolerance zone" means 24 inches from the outer edge of either side of the exterior surface of a marked underground facility.

(13) "Underground facility" means any public or private personal property which is buried, placed below ground, or submerged on any member operator's right-of-way, easement, or permitted use which is being used or will be used in connection with the storage or conveyance of water; sewage; electronic, telephonic, or telegraphic communication; electric energy; oil; petroleum products; natural gas; optical signals; or other substances, and includes, but is not limited to, pipelines, pipes, sewers, conduits, cables, valves, and lines. For purposes of this act, a liquefied petroleum gas line regulated under chapter 527 is not an underground facility unless such line is subject to the requirements of Title 49 C.F.R. adopted by the Department of Agriculture and Consumer Services, provided there is no encroachment on any member operator's right-of-way, easement, or permitted use. Petroleum storage systems subject to regulation pursuant to chapter 376 are not considered underground facilities for the purposes of this act unless the storage system is located on a member operator's right-of-way or easement. Storm drainage systems are not considered underground facilities.

(14) "System" means a free-access notification system established by the corporation as provided in this act.

History. — s. 2, ch. 93-240; s. 2, ch. 94-132; s. 5, ch. 95-317; s. 2, ch. 97-306; s. 2, ch. 2002-234; s. 67, ch. 2006-1; s. 2, ch. 2006-138.

556.103 Creation of the corporation; establishment of the board of directors; authority of the board; annual report. —

(1) The "Sunshine State One-Call of Florida, Inc.," is created as a not-for-profit corporation. Each operator of an underground facility in this state shall be a member of the corporation and shall use and participate in the system. The corporation shall administer the provisions of this chapter. The corporation shall exercise its powers through a board of directors established pursuant to this section.

(2) The membership of the corporation shall elect a board of directors to administer the system.

(3) The corporation, through the board of directors, shall have the authority to assess the member operators to fund the system.

(4) The board of directors shall file with the Governor, not later than 60 days before the convening of each regular session of the Legislature, an annual progress report on the operation of the system, which must include a summary of the reports to the system from the clerks of court.

(5) The board of directors shall submit to the President of the Senate, the Speaker of the House of Representatives, and the Governor, not later than 60 days before the convening of each regular session of the Legislature, an annual progress report on the participation by municipalities and counties in the one-call notification system created by this chapter. The report must include a summary of the reports to the system from the clerks of court.

History. — s. 3, ch. 93-240; s. 3, ch. 97-306; s. 3, ch. 2006-138; s. 2, ch. 2010-100.

556.104 Free-access notification system.— The corporation shall maintain a free-access notification system. Any person who furnishes or transports materials or services by means of an underground facility in this state shall participate as a member operator of the system. The purpose of the system is to receive notification of planned excavation or demolition activities and to notify member operators of the planned excavation or demolition activities. The system shall provide a single toll-free telephone number within this state which excavators can use to notify member operators of planned excavation or demolition activities, and the system may also provide additional modes of access at no cost to the user.

556.105 Procedures. —

(1)

(a) Not less than 2 full business days before beginning any excavation or demolition that is not beneath the waters of the state, and not less than 10 full business days before beginning any excavation or demolition that is beneath the waters of the state, an excavator shall provide the following information through the system:

1. The name of the individual who provided notification and the name, address, including the street address, city, state, zip code, and telephone number of her or his employer.

2. The name and telephone number of the representative for the excavator, and a valid electronic address to facilitate a positive response by the system should be provided, if available.

3. The county, the city or closest city, and the street address or the closest street, road, or intersection to the location where the excavation or demolition is to be performed, and the construction limits of the excavation or demolition.

4. The commencement date and anticipated duration of the excavation or demolition.

5. Whether machinery will be used for the excavation or demolition.

6. The person or entity for whom the work is to be done.

7. The type of work to be done.

8. The approximate depth of the excavation.

(b) The excavator shall provide the information by notifying the system through its free-access notification system during business hours, as determined by the corporation, or by such other method as authorized by the corporation. Any notification received by the system at any time other than during business hours shall be considered to be received at the beginning of the next business day.

(c) Information provided by an excavator is valid for 30 calendar days after the date such information is provided to the system. In computing the period for which information furnished is valid, the date the notice is provided is not counted, but the last day of the period shall be counted unless it is a Saturday, Sunday, or a legal holiday, in which event, the period runs until the end of the next day that is not a Saturday, Sunday, or a legal holiday.

(d) Member operators shall use the information provided to the system by other member operators only for the purposes stated in this chapter and not for sales or marketing purposes.

(2) Each notification by means of the system shall be recorded to document compliance with this chapter. Such record may be made by means of electronic, mechanical, or any other method of all incoming and outgoing wire and oral communications concerning location requests in compliance with chapter 934. The records shall be kept for 5 years and, upon written request, shall be available to the excavator making the request, the member operator intended to receive the request, and their agents. However, custody of the records may not be transferred from the system except under subpoena.

(3) The system shall provide the person who provided notification with the names of the member operators who shall be advised of the notification and a notification number that specifies the date and time of the notification.

(4) The notification number provided to the excavator under this section shall be provided to any law enforcement officer, government code inspector, or code enforcement officer upon request.

(5) All member operators within the defined area of a proposed excavation or demolition shall be promptly notified through the system, except that member operators with state-owned underground facilities located within the right-of-way of a state highway need not be notified of excavation or demolition activities and are under no obligation to mark or locate the facilities.

(a) If a member operator determines that a proposed excavation or demolition is in

proximity to or in conflict with an underground facility of the member operator, except a facility beneath the waters of the state, which is governed by paragraph (b), the member operator shall identify the horizontal route by marking to within 24 inches from the outer edge of either side of the underground facility by the use of stakes, paint, flags, or other suitable means within 2 full business days after the time the notification is received under subsection (1). If the member operator is unable to respond within such time, the member operator shall communicate with the person making the request and negotiate a new schedule and time that is agreeable to, and should not unreasonably delay, the excavator.

(b) If a member operator determines that a proposed excavation is in proximity to or in conflict with an underground facility of the member operator beneath the waters of the state, the member operator shall identify the estimated horizontal route of the underground facility, within 10 business days, using marking buoys or other suitable devices, unless directed otherwise by an agency having jurisdiction over the waters of the state under which the member operator's underground facility is located.

(c) When excavation is to take place within a tolerance zone, an excavator shall use increased caution to protect underground facilities. The protection requires hand digging, pot holing, soft digging, vacuum excavation methods, or other similar procedures to identify underground facilities. Any use of mechanized equipment within the tolerance zone must be supervised by the excavator.

(6)

(a) An excavator shall avoid excavation in the area described in the notice given under subsection (1) until each member operator underground facility has been marked and located or until the excavator has been notified that no member operator has underground facilities in the area described in the notice, or for the time allowed for markings set forth in paragraphs (5)(a) and (b), whichever occurs first. If a member operator has not located and marked its underground facilities within the time allowed for marking set forth in paragraphs (5)(a) and (b), the excavator may proceed with the excavation, if the excavator does so with reasonable care and if detection equipment or other acceptable means to locate underground facilities are used.

(b) An excavator may not demolish in the area described in the notice given under subsection (1) until all member operator underground facilities have been marked and located or removed.

(7)

(a) A member operator that states that it does not have accurate information concerning the exact location of its underground facilities is exempt from the requirements of paragraphs (5)(a) and (b), but shall provide the best available information to the excavator in order to comply with the requirements of this section. An excavator is not liable for any damage to an underground facility under the exemption in this subsection if the excavation or demolition is performed with reasonable care and detection equipment or other acceptable means to locate underground facilities are used.

(b) A member operator may not exercise the exemption provided by this subsection if the member operator has underground facilities that have not been taken out of service and that are locatable using available designating technologies to locate underground facilities.

(8)

(a) If extraordinary circumstances exist, a member operator shall notify the system of the member operator's inability to comply with this section. For the purposes of this section, the term "extraordinary circumstances" means circumstances other than normal operating conditions that exist and make it impractical for a member operator to comply with this chapter. After the system has received notification of a member operator's inability to comply, the system shall make that information known to excavators who subsequently notify the system of an intent to excavate. The member operator is relieved of responsibility for compliance under the law during the period that the extraordinary circumstances exist and shall promptly

notify the system when the extraordinary circumstances cease to exist.

(b) During the period when extraordinary circumstances exist, the system shall remain available during business hours to provide information to governmental agencies, member operators affected by the extraordinary circumstances, and member operators who can provide relief to the affected parties, unless the system itself has been adversely affected by extraordinary circumstances.

(9)

(a) After receiving notification from the system, a member operator shall provide a positive response to the system within 2 full business days, or 10 such days for an underwater excavation or demolition, indicating the status of operations to protect the facility.

(b) The system shall establish and maintain a process to facilitate a positive-response communication between member operators and excavators. The system is exempt from any requirement to initiate a positive response to an excavator when an excavator does not provide a valid electronic address to facilitate a positive response by the system.

(c) An excavator shall verify the system's positive responses before beginning excavation. If an excavator knows that an existing underground facility of a member operator is in the area, the excavator must contact the member operator if the facility is not marked and a positive response has not been received by the system.

(10) A member operator shall use the "Uniform Color Code for Utilities" of the American Public Works Association when marking the horizontal route of any underground facility of the operator.

(11) Before or during excavation or demolition, if the marking of the horizontal route of any facility is removed or is no longer visible, or, in the case of an underwater facility, is inadequately documented, the excavator shall stop excavation or demolition activities in the vicinity of the facility and shall notify the system to have the route remarked or adequately documented by a member operator or in a manner approved by the member operator.

(12) If any contact with or damage to any pipe, cable, or its protective covering, or any other underground facility occurs, the excavator causing the contact or damage shall immediately notify the member operator. Upon receiving notice, the member operator shall send personnel to the location as soon as possible to effect temporary or permanent repair of the contact or damage. Until such time as the contact or damage has been repaired, the excavator shall cease excavation or demolition activities that may cause further damage to such underground facility.

(13) Any costs or expenses associated with compliance by an excavator with the requirements in this section applicable to excavators shall not be charged to any member operator. Any costs or expenses associated with compliance by a member operator with the requirements in this section applicable to member operators shall not be charged to any excavator. No person shall charge the costs or expenses prohibited by this subsection after the effective date of this act. This subsection shall not excuse a member operator or excavator from liability for any damage or injury for which it would be responsible under applicable law.

History. — s. 5, ch. 93-240; s. 1, ch. 96-172; s. 1176, ch. 97-103; s. 5, ch. 97-306; s. 4, ch. 2002-234; s. 5, ch. 2006-138; s. 1, ch. 2008-230; s. 115, ch. 2010-5; s. 3, ch. 2010-100.

556.106 Liability of the member operator, excavator, and system. —

(1) There is no liability on the part of, and no cause of action of any nature shall arise against, the board members of the corporation in their capacity as administrators of the system.

(2)

(a) If a person violates s. 556.105(1) or (6), and subsequently, whether by himself or herself or through the person's employees, contractors, subcontractors, or agents, performs an excavation or demolition that damages an underground facility of a member operator, it is rebuttably presumed that the person was negligent. The

person, if found liable, is liable for the total sum of the losses to all member operators involved as those costs are normally computed. Any damage for loss of revenue and loss of use may not exceed \$500,000 per affected underground facility, except that revenues lost by a governmental member operator whose revenues are used to support payments on principal and interest on bonds may not be limited.

(b) If any excavator fails to discharge a duty imposed by this chapter, the excavator, if found liable, is liable for the total sum of the losses to all parties involved as those costs are normally computed. Any damage for loss of revenue and loss of use may not exceed \$500,000 per affected underground facility, except that revenues lost by a governmental member operator whose revenues are used to support payments on principal and interest on bonds may not be limited.

(c) Obtaining information as to the location of an underground facility from the member operator as required by this chapter does not excuse any excavator from performing an excavation or demolition in a careful and prudent manner, based on accepted engineering and construction practices, and it does not excuse the excavator from liability for any damage or injury resulting from any excavation or demolition.

(3) If, after receiving proper notice, a member operator fails to discharge a duty imposed by this act and an underground facility of a member operator is damaged by an excavator who has complied with this act, as a proximate result of the member operator's failure to discharge such duty, the excavator is not liable for such damage and the member operator, if found liable, is liable to such person for the total cost of any loss or injury to any person or damage to equipment resulting from the member operator's failure to comply with this act. Any damage for loss of revenue and loss of use shall not exceed \$500,000 per affected underground facility, except that revenues lost by a governmental member operator, which revenues are used to support payments on principal and interest on bonds, shall not be limited.

(4) If an owner of an underground facility fails to become a member of the corporation in order to use and participate in the system, as required by this act, and that failure is a cause of damage to that underground facility caused by an excavator who has complied with this act and has exercised reasonable care in the performance of the excavation that has caused damage to the underground facility, the owner has no right of recovery against the excavator for the damage to that underground facility.

(5) If, after receiving proper notification, the system fails to discharge its duties, resulting in damage to an underground facility, the system, if found liable, shall be liable to all parties, as defined in this act. Any damage for loss of revenue and loss of use shall not exceed \$500,000 per affected underground facility, except that revenues lost by a governmental member operator, which revenues are used to support payments on principal and interest on bonds, shall not be limited.

(6) The system does not have a duty to mark or locate underground facilities and may not do so, and a right of recovery does not exist against the system for failing to mark or locate underground facilities. The system is not liable for the failure of a member operator to comply with the requirements of this chapter.

(7) An excavator or a member operator who performs any excavation with hand tools under s. 556.108(4)(c) or (5) is liable for any damage to any operator's underground facilities damaged during such excavation.

(8) Any liability of the state, its agencies, or its subdivisions which arises out of this chapter is subject to the provisions of s. 768.28.

History. — s. 6, ch. 93-240; s. 810, ch. 97-103; s. 1, ch. 97-231; s. 6, ch. 97-306; s. 5, ch. 2002-234; s. 6, ch. 2006-138; s. 4, ch. 2010-100.

556.107 Violations. —

(1) NONCRIMINAL INFRACTIONS.—

(a) Violations of the following provisions are noncriminal infractions:

1. Section 556.105(1), relating to providing required information.
2. Section 556.105(6), relating to the avoidance of excavation.

3. Section 556.105(11), relating to the need to stop excavation or demolition because marks are no longer visible, or, in the case of underwater facilities, are inadequately documented.
 4. Section 556.105(12), relating to the need to cease excavation or demolition activities because of contact or damage to an underground facility.
 5. Section 556.105(5)(a) and (b), relating to identification of underground facilities, if a member operator does not mark an underground facility, but not if a member operator marks an underground facility incorrectly.
 6. Section 556.109(2), relating to falsely notifying the system of an emergency situation or condition.
 7. Section 556.114(1), (2), (3), and (4), relating to a failure to follow low-impact marking practices, as defined therein.
- (b) Any excavator or member operator who commits a noncriminal infraction under paragraph (a) may be issued a citation by any local or state law enforcement officer, government code inspector, or code enforcement officer, and the issuer of a citation may require an excavator to cease work on any excavation or not start a proposed excavation until there has been compliance with the provisions of this chapter. Citations shall be hand delivered to any employee of the excavator or member operator who is involved in the noncriminal infraction. The citation shall be issued in the name of the excavator or member operator, whichever is applicable.
- (c) Any excavator or member operator who commits a noncriminal infraction under paragraph (a) may be required to pay a civil penalty for each infraction, which is \$500 plus court costs. If a citation is issued by a local law enforcement officer, a local government code inspector, or a code enforcement officer, 80 percent of the civil penalty collected by the clerk of the court shall be distributed to the local governmental entity whose employee issued the citation and 20 percent of the penalty shall be retained by the clerk to cover administrative costs, in addition to other court costs. If a citation is issued by a state law enforcement officer, the civil penalty collected by the clerk shall be retained by the clerk for deposit into the fine and forfeiture fund established pursuant to s. 142.01. Any person who fails to properly respond to a citation issued pursuant to paragraph (b) shall, in addition to the citation, be charged with the offense of failing to respond to the citation and, upon conviction, commits a misdemeanor of the second degree, punishable as provided in s. 775.082 or s. 775.083. A written warning to this effect must be provided at the time any citation is issued pursuant to paragraph (b).
- (d) Any person cited for an infraction under paragraph (a) may post a bond, which shall be equal in amount to the applicable civil penalty plus court costs.
- (e) A person charged with a noncriminal infraction under paragraph (a) may pay the civil penalty plus court costs, by mail or in person, within 30 days after the date of receiving the citation.

If the person cited pays the civil penalty, she or he is deemed to have admitted to committing the infraction and to have waived the right to a hearing on the issue of commission of the infraction. The admission may be used as evidence in any other proceeding under this chapter.

(f) Any person may elect to appear before the county court and if so electing is deemed to have waived the limitations on the civil penalty specified in paragraph (c). The court, after a hearing, shall make a determination as to whether an infraction has been committed. If the commission of an infraction has been proven, the court may impose a civil penalty not to exceed \$5,000 plus court costs. In determining the amount of the civil penalty, the court may consider previous noncriminal infractions committed.

(g) At a court hearing under this chapter, the commission of a charged infraction must be proven by a preponderance of the evidence.

(h) If a person is found by a judge or hearing official to have committed an infraction, the person may appeal that finding to the circuit court.

(i) Sunshine State One-Call of Florida, Inc., may, at its own cost, retain an attorney to assist in the presentation of relevant facts and law in the county court proceeding

pertaining to the citation issued under this section. The corporation may also appear in any case appealed to the circuit court if a county court judge finds that an infraction of the chapter was committed. An appellant in the circuit court proceeding shall timely notify the corporation of any appeal under this section.

(2) **REPORT OF INFRACTIONS.**—By March 31 of each year, each clerk of court shall submit a report to Sunshine State One-Call of Florida, Inc., listing each violation notice written under paragraph (1)(a) which has been filed in that county during the preceding calendar year. The report must state the name and address of the member or excavator who committed each infraction and indicate whether or not the civil penalty for the infraction was paid.

(3) **MISDEMEANORS.**—Any person who knowingly and willfully removes or otherwise destroys the valid stakes or other valid physical markings described in s. 556.105(5)(a) and (b) used to mark the horizontal route of an underground facility commits a misdemeanor of the second degree, punishable as provided in s. 775.082 or s. 775.083. For purposes of this subsection, stakes or other nonpermanent physical markings are considered valid for 30 calendar days after information is provided to the system under s. 556.105(1)(a).

History. — s. 7, ch. 93-240; s. 2, ch. 96-172; s. 1177, ch. 97-103; s. 6, ch. 2002-234; s. 7, ch. 2006-138; s. 5, ch. 2010-100.

556.108 Exemptions. — The notification requirements provided in s. 556.105(1) do not apply to:

(1) Any excavation or demolition performed by the owner of a single-family residential property, not including property that is subdivided or is to be subdivided into more than one single-family residential property; or for such owner by a member operator or an agent of a member operator when such excavation or demolition is made entirely on such land, and only up to a depth of 10 inches; provided due care is used and there is no encroachment on any member operator's right-of-way, easement, or permitted use.

(2) Any excavation or demolition associated with normal agricultural or railroad activities, provided such activities are not performed on any operator's marked right-of-way, easement, or permitted use.

(3) Any excavation or demolition that occurs as the result of normal industrial activities, provided such activities are confined to the immediate secured property of the facility and the activities are not performed on any operator's marked right-of-way, easement, or permitted use. For the purposes of this act, the industrial activities are limited to the following list of Standard Industrial Classifications: Industry Group Numbers 141, 206, 242, 243, and 491, and Major Group Numbers 13, 26, 28, and 29, as published by the United States Office of Management and Budget in 1987.

(4) Any excavation of 18 inches or less for:

(a) Surveying public or private property by surveyors or mappers as defined in chapter 472 and services performed by a pest control licensee under chapter 482, excluding marked rights-of-way, marked easements, or permitted uses where marked, if mechanized equipment is not used in the process of such surveying or pest control services and the surveying or pest control services are performed in accordance with the practice rules established under s. 472.027 or s. 482.051, respectively;

(b) Maintenance activities performed by a state agency and its employees when such activities are within the right-of-way of a public road; however, if a member operator has permanently marked facilities on such right-of-way, mechanized equipment may not be used without first providing notification; or

(c) Locating, repairing, connecting, adjusting, or routine maintenance of a private or public underground utility facility by an excavator, if the excavator is performing such work for the current owner or future owner of the underground facility and if mechanized equipment is not used.

(5)

(a) Any excavation with hand tools by a member operator or an agent of a member operator for:

1. Locating, repairing, connecting, or protecting, or routine maintenance of, the member operator's underground facilities; or
2. The extension of a member operator's underground facilities onto the property of a person to be served by such facilities.

(b) The exemption provided in this subsection is limited to excavations to a depth of 30 inches if the right-of-way has permanently marked facilities of a company other than the member operator or its agents performing the excavation.

History. — s. 8, ch. 93-240; s. 3, ch. 94-132; s. 3, ch. 96-172; s. 2, ch. 97-231; s. 39, ch. 2000-164; s. 8, ch. 2006-138.

556.109 Emergency excavations or demolitions attempted; exception. —

(1) This act does not apply to making an excavation or demolition during an emergency if the system or the member operator was notified at the earliest opportunity and all reasonable precautions had been taken to protect any underground facility. For the purposes of this act, "emergency" means any condition constituting a clear and present danger to life or property; a situation caused by the escape of any substance transported by means of an underground facility; any interruption of vital public service or communication caused by any break or defect in a member operator's underground facility; or, in the case of the State Highway System or streets or roads maintained by a political subdivision or underground facilities owned, operated, or maintained by a political subdivision, if the use of such highways, streets, roads, or underground facilities is, in the sole judgment of the Department of Highway Safety and Motor Vehicles, the Department of Transportation, or such political subdivision, impaired by an unforeseen occurrence that necessitates repair beginning immediately after such occurrence.

(2) An excavator shall not notify the system that there is an emergency unless the excavator reasonably believes that the intended excavation or demolition is due to a situation or condition as defined in subsection (1).

History. — s. 9, ch. 93-240; s. 4, ch. 96-172; s. 6, ch. 2010-100.

556.110 Costs assessed among member operators. — Member operators shall proportionately share in the cost of operating the system through monthly assessments made upon each member operator.

History. — s. 10, ch. 93-240; s. 7, ch. 97-306; s. 7, ch. 2010-100.

556.111 Applicability to existing law. — Nothing in this act shall be construed to:

(1) Constitute the establishment or enlargement of any rights to the use of real property or create an interest therein for the placement, construction, repair, maintenance, relocation, or excavation or demolition of any underground facility;

(2) Waive any right of a party having an interest in real property to charge any fee for the use regarding such property; or

(3) Preempt a governmental member operator from reasonable regulation of its right-of-way. This subsection does not exempt a municipality, county, district, or other local governmental member operator from the provisions of this chapter that apply to the member operator.

History. — s. 11, ch. 93-240; s. 9, ch. 2006-138.

556.112 Design services. —

(1) Each member operator shall provide to the system annually, and shall thereafter keep current, the contact names and telephone numbers of individuals who may be contacted by design engineers, architects, surveyors, and planners for the purpose of responding to requests for design services.

(2) Each member operator shall provide to the system annually, and shall thereafter keep current, a list of fees applicable to each type of design service that each

member operator chooses to offer to design engineers, architects, surveyors, and planners.

(3) Each member operator, within 20 business days after receipt of the fee provided for in subsection (2), shall either respond to a request for design services, if the member operator chooses to provide the services requested, or shall notify the party requesting services that the services will not be provided.

(4) This section shall not apply to any state agency, municipality, or county, or contractors, consultants, agents, or persons or firms acting under their authority, in the planning, preparing, or performance of work in their right-of-way. This section shall not limit or expand any existing law governing the process a state agency, municipality, or county uses to request design services from member operators or the responsibility for providing or paying for such services.

History. — s. 7, ch. 2002-234; s. 108, ch. 2005-2.

556.113 Sunshine State One-Call of Florida, Inc.; public records exemption.

(1) As used in this section, the term “proprietary confidential business information” means information provided by:

(a) A member operator which is a map, plan, facility location diagram, internal damage investigation report or analysis, dispatch methodology, or trade secret as defined in s. 688.002, or which describes the exact location of a utility underground facility or the protection, repair, or restoration thereof, and:

1. Is intended to be and is treated by the member operator as confidential;
2. The disclosure of which would likely be used by a competitor to harm the business interests of the member operator or could be used for the purpose of inflicting damage on underground facilities; and
3. Is not otherwise readily ascertainable or publicly available by proper means by other persons from another source in the same configuration as provided to Sunshine State One-Call of Florida, Inc.

(b) An excavator in an internal damage investigation report or analysis relating to damage to underground utility facilities, and:

1. Is intended to be and is treated by the excavator as confidential;
2. The disclosure of which would be reasonably likely to be used by a competitor to harm the business interests of the excavator or could be used for the purpose of inflicting damage on underground facilities; and
3. Is not otherwise readily ascertainable or publicly available by proper means by other persons from another source in the same configuration as provided to Sunshine State One-Call of Florida, Inc.

(2) Proprietary confidential business information held by Sunshine State One-Call of Florida, Inc., for the purpose of describing the extent and root cause of damage to an underground facility or using the member ticket management software system is exempt from s. 119.07(1) and s. 24(a), Art. I of the State Constitution.

(3) This section is subject to the Open Government Sunset Review Act in accordance with s. 119.15 and shall stand repealed on October 2, 2012, unless reviewed and saved from repeal through reenactment by the Legislature.

History. — s. 1, ch. 2007-101.

556.114 Low-impact marking practices. —

(1) An excavator providing notice under s. 556.105(1)(a) shall identify in its notice only the area that will be excavated during the period that the information in such notice is considered valid under s. 556.105(1)(c).

(2) When an excavator has not completed an excavation noticed under s. 556.105(1)(a) within the period that the information in the notice is considered valid under s. 556.105(1)(c), the excavator must provide a subsequent notice to the system under s. 556.105(1)(a) to continue with the excavation, and such subsequent notice shall identify only the remaining area to be excavated.

(3) When an excavation site cannot be described in information provided under s.

556.105(1)(a) with sufficient particularity to enable the member operator to ascertain the excavation site, and if the excavator and member operator have not mutually agreed otherwise, the excavator shall premark the proposed area of the excavation before a member operator is required to identify the horizontal route of its underground facilities in the proximity of any excavation. However, premarking is not required when the premarking could reasonably interfere with traffic or pedestrian control.

(4) A member operator shall identify the horizontal route of its underground facilities as set forth in s. 556.105(5)(a) and (b), and excavators shall premark an excavation site as set forth in subsection (3) using flags or stakes or temporary, nonpermanent paint or other industry-accepted low-impact marking practices.

(5) Any horizontal route-identification marker must be in a color identified in the Uniform Color Code for Utilities.

(6) Sunshine State One-Call of Florida, Inc., shall establish an educational program for the purpose of informing excavators and member operators about low-impact marking practices.

History. — s. 8, ch. 2010-100.

556.115 Alternative dispute resolution. —

(1) Sunshine State One-Call of Florida, Inc., shall create a voluntary alternative dispute resolution program. The program shall be available to all member operators, excavators, and other stakeholders, such as locators, utility service users, and governmental or quasi-governmental entities, for purposes of resolving disputes arising from excavation activities, including, but not limited to, loss of services, down time, delays, loss of use of facilities during restoration or replacement, and similar economic disruptions, exclusive of penalties imposed under other provisions of this act.

(2) The alternative dispute resolution program created by Sunshine State One-Call of Florida, Inc., shall include mediation, arbitration, or other appropriate processes, including the use of the services of the Division of Administrative Hearings.

(3) The costs of using the program shall be borne by the voluntary users, and the voluntary users shall choose the form of alternative dispute resolution to be used. If arbitration is used, the users shall decide whether the arbitration will be binding.

(4) Unless binding arbitration is the chosen method of alternative dispute resolution, the users or any one of such users may end the process at any time and exercise the right to proceed in a court of competent jurisdiction or before the Division of Administrative Hearings.

(5) This section does not change the basis for civil liability for damages.

History. — s. 9, ch. 2010-100.

556.116 High-priority subsurface installations; special procedures. —

(1) As used in this section, the term:

(a) “Division” means the Division of Administrative Hearings.

(b) “High-priority subsurface installation” means an underground gas transmission or gas distribution pipeline, an underground pipeline used to transport gasoline, jet fuel, or any other refined petroleum product or hazardous or highly volatile liquid, such as anhydrous ammonia or carbon dioxide, if the pipeline is deemed to be critical by the operator of the pipeline and is identified as a high-priority subsurface installation to an excavator who has provided a notice of intent to excavate pursuant to s. 556.105(1), or would have been identified as a high-priority subsurface installation except for the excavator’s failure to give proper notice of intent to excavate.

(c) “Incident” means an event that involves damage to a high-priority subsurface installation that has been identified as such by the operator according to the notification procedures set forth in subsection (2) and that:

1. Results in death or serious bodily injury requiring inpatient hospitalization.
2. Results in property damage, including service-restoration costs, in an amount in

excess of \$50,000 or interruption of service to 2,500 or more customers.

(2) When an excavator proposes to excavate or demolish within 15 feet of the horizontal route of an underground facility that has been identified as a high-priority subsurface installation by the operator of the facility, the operator shall, in addition to identifying the horizontal route of its facility as set forth in s. 556.105(5)(a) and (b), and within the time period set forth in s. 556.105(9)(a) for a positive response, notify the excavator that the facility is a high-priority subsurface installation. If the member operator provides such timely notice of the existence of a high-priority subsurface installation, an excavator shall notify the operator of the planned excavation start date and time before beginning excavation. If the member operator does not provide timely notice, the excavator may proceed, after waiting the prescribed time period set forth in s. 556.105(9)(a), to excavate without notifying the member operator of the excavation start date and time. The exemptions stated in s. 556.108 apply to the notification requirements in this subsection.

(3)

(a) An alleged commission of an infraction listed in s. 556.107(1) which results in an incident must be reported to the system by a member operator or an excavator within 24 hours after learning of the alleged occurrence of an incident.

(b) Upon receipt of an allegation that an incident has occurred, the system shall transmit an incident report to the division and contract with the division so that the division may conduct a hearing to determine whether an incident has occurred, and, if so, whether a violation of s. 556.107(1)(a) was a proximate cause of the incident. The contract for services to be performed by the division must include provisions for the system to reimburse the division for any costs incurred by the division for court reporters, transcript preparation, travel, facility rental, and other customary hearing costs, in the manner set forth in s. 120.65(11).

(c) The division has jurisdiction in a proceeding under this section to determine the facts and law concerning an alleged incident. The division may impose a fine against a violator in an amount not to exceed \$50,000 if the person violated a provision of s. 556.107(1)(a) and that violation was a proximate cause of the incident. However, if a state agency or political subdivision caused the incident, the state agency or political subdivision may not be fined in an amount in excess of \$10,000.

(d) A fine imposed by the division is in addition to any amount payable as a result of a citation relating to the incident under s. 556.107(1)(a).

(e) A fine against an excavator or a member operator imposed under this subsection shall be paid to the system, which shall use the collected fines to satisfy the costs incurred by the system for any proceedings under this section. To the extent there are any funds remaining, the system may use the funds exclusively for damage-prevention education.

(f) This section does not change the basis for civil liability. The findings and results of a hearing under this section may not be used as evidence of liability in any civil action.

(4)

(a) The division shall issue and serve on all original parties an initial order that assigns the case to a specific administrative law judge and requests information regarding scheduling the final hearing within 5 business days after the division receives a petition or request for hearing. The original parties in the proceeding include all excavators and member operators identified by the system as being involved in the alleged incident. The final hearing must be conducted within 60 days after the date the petition or the request for a hearing is filed with the division.

(b) Unless the parties otherwise agree, venue for the hearing shall be in the county in which the underground facility is located.

(c) An intervenor in the proceeding must file a petition to intervene no later than 15 days before the final hearing. A person who has a substantial interest in the proceeding may intervene.

(5) The following procedures apply:

(a) Motions shall be limited to the following:

1. A motion in opposition to the petition.

2. A motion requesting discovery beyond the informal exchange of documents and witness lists described in paragraph (c). Upon a showing of necessity, additional discovery may be permitted in the discretion of the administrative law judge, but only if the discovery can be completed no later than 5 days before the final hearing.

3. A motion for continuance of the final hearing date.

(b) All parties shall attend a prehearing conference for the purpose of identifying the legal and factual issues to be considered at the final hearing, the names and addresses of witnesses who may be called to testify at the final hearing, documentary evidence that will be offered at the final hearing, the range of penalties that may be imposed, and any other matter that would expedite resolution of the proceeding. The prehearing conference may be held by telephone conference call.

(c) Not later than 5 days before the final hearing, the parties shall furnish to each other copies of documentary evidence and lists of witnesses who may testify at the final hearing.

(d) All parties shall have an opportunity to respond, to present evidence and argument on all issues involved, to conduct cross-examination and submit rebuttal evidence, and to be represented by counsel or other qualified representative.

(e) The record shall consist only of:

1. All notices, pleadings, motions, and intermediate rulings.
2. Evidence received during the final hearing.
3. A statement of matters officially recognized.
4. Proffers of proof and objections and rulings thereon.
5. Matters placed on the record after an ex parte communication.
6. The written final order of the administrative law judge presiding at the final hearing.
7. The official transcript of the final hearing.

(f) The division shall accurately and completely preserve all testimony in the proceeding and, upon request by any party, shall make a full or partial transcript available at no more than actual cost.

(g) The administrative law judge shall issue a final order within 30 days after the final hearing or the filing of the transcript thereof, whichever is later. The final order of the administrative law judge must include:

1. Findings of fact based exclusively on the evidence of record and matters officially recognized.
2. Conclusions of law. In determining whether a party has committed an infraction of s. 556.107(1)(a), and whether the infraction was a proximate cause of an incident, the commission of an infraction must be proven by a preponderance of the evidence.
3. Imposition of a fine, if applicable.
4. Any other information required by law or rule to be contained in a final order.

The final order of the administrative law judge constitutes final agency action subject to judicial review pursuant to s. 120.68.

History. — s. 10, ch. 2010-100.

SECTION 13

FDEP PERMIT & FDOT UTILITY PERMIT

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Rick Scott
Governor

January 24, 2011

Mr. Gregory S. Rouse
Sarasota County Capital Management Services
1001 Sarasota Center Blvd.
Sarasota, FL 34240

RE: **Sarasota County and Englewood Water District Water System Interconnect**

Dear Mr. Rouse:

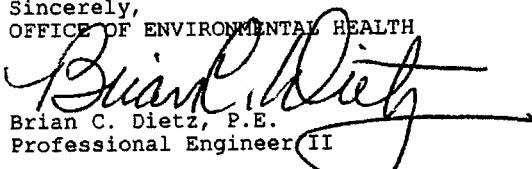
Our office received the notice of intent to use a general permit for construction of the referenced water distribution system on January 14, 2011. The notice was subsequently reviewed under PATS#: 0124808-831 and WD#1591-10-017 on January 24, 2011, and has been determined to be completed as required in Chapter 62.555, F.A.C. The notice of intent to use a general permit is valid for a period of five years. The expiration date is January 14, 2016.

The following is a list of sample locations requested for the bacteriological test:

1. End of line connection

Upon completion of the project, please provide us with copies of satisfactory bacteriological test results, as-built drawings, pressure test, letter of release to place system into service (Form #62-555.900(9)). We may then issue a clearance letter releasing the facilities for public use.

If there are any questions, please contact Brian Dietz at (941) 861-6133.

Sincerely,
OFFICE OF ENVIRONMENTAL HEALTH

Brian C. Dietz, P.E.
Professional Engineer II

BCD:kb

cc: County
Jarl D. Linder, P.E.
Jonathan H. Cole, P.E.

Permittee: Mr. Gregory Rouse, P.E.
Sarasota County Environmental Services
1001 Sarasota Center Blvd.
Sarasota, FL 34240

Site: 0128133-111
WC: 0531-11-002
Date of Issue: January 14, 2011
Expiration Date: January 14, 2016
Project: Sarasota County and Englewood
Water District Water System
Interconnect

GENERAL CONDITIONS

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727 or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, or its agent, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by this department.
3. As provided is in Subsections 403.08(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution or contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.
6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
 - a. Having access to and copying any records that must be kept under the conditions of the permittee;
 - b. Inspecting the facility, equipment, practices, or operations regulated or require under this permit; and
 - c. Sampling or monitoring any substances or parameters at any locations reasonably necessary to assure compliance with this permit or department rules.
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
 - a. a description of and cause of non-compliance; and
 - b. the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

Permittee: Mr. Gregory Rouse, P.E.
Sarasota County Environmental Services
1001 Sarasota Center Blvd.
Sarasota, FL 34240

Site: 0128133-111
WC: 0531-11-002
Date of Issue: January 14, 2011
Expiration Date: January 14, 2016
Project: Sarasota County and Englewood
Water District Water System
Interconnect

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, and may be used by the department as evidence in any enforcement case arising; under the Florida Statutes or department rules, except where such use is prescribed by Section 403.73 and 403.111, Florida Statutes.
10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
13. This permit also constitutes:
 - *Determination of Best Available Control Technology (BACT)
 - *Determination of Prevention of Significant Deterioration (PSD)
 - *Certification of Compliance with State Water Quality Standards
 - *Compliance with New Source Performance Standards
14. The permittee shall comply with the following monitoring and record keeping requirements:
 - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.
 - b. The permittee shall retain at the facility or other location designated by this permit, records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample measurement, report or application unless otherwise specified by department rule.
 - c. Records of monitoring information shall include:
 - *the date, exact place, and time of sampling or measurements;
 - *the person responsible for performing the sampling or measurements;
 - *the date(s) analyses were performed;
 - *the person responsible for performing the analyses;
 - *the analytical techniques or methods used; and
 - *the results of such analyses.
15. When requested by the department, the permittee shall within a reasonable time furnished any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

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PERMIT VOID UNLESS DOT OPERATIONS

CENTER IS NOTIFIED 48 HRS IN
ADVANCE OF STARTING WORK

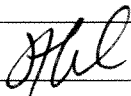
PHONE

VERIFICATION NO

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

UTILITY PERMIT

ALL CONTRACTORS AND
SUBCONTRACTORS SHALL
BE RESPONSIBLE FOR
COMPLIANCE WITH
PERMITTED MOT
PLAN.FORM 710-010-85
UTILITIES
OGC - 10/07

PERMIT NO.: <u>2010-H-194-133</u>		SECTION NO.: <u>17050</u>		STATE ROAD 776		COUNTY Sarasota	
FDOT construction is proposed or underway.				☐ Yes		☒ No	
Is this work related to an approved Utility Work Schedule?				☐ Yes		☒ No	
PERMITTEE:		Sarasota County Utilities					
ADDRESS:		1001 Sarasota Center Blvd.				TELEPHONE NUMBER: (941) 861 - 5000	
CITY/STATE/ZIP:		Sarasota, FL 34240					
The above PERMITTEE requests permission from the State of Florida Department of Transportation, hereinafter called the FDOT, to construct, operate and maintain the following: 175' new 14" HDPE water main by directional drill beneath SR 776 at Sta. 905+88 near Roosevelt Drive, Venice, Florida, Sarasota County. Mile Post #6.591							
FROM: SR 776 - 6.591				TO: N/A			
Submitted for the PERMITTEE by:		Contact Information		Signature		Date	
Name and Company (Typed or Printed Legibly)		Address/Telephone/E-Mail (if applicable)					
Jonathan H. Cole, P.E. - Giffels-Webster Engineers, Inc.		900 Pine St., Ste. #225, Englewood, FL 34223				9-9-10	

- The Permittee declares that prior to filing this application, the location of all existing utilities that it owns or has an interest in, both aerial and underground, are accurately shown on the plans and a letter of notification was mailed on Sept. 3, 2010 to the following utilities known to be involved or potentially impacted in the area of the proposed installation: FPL, Verizon, Comcast and TECO Gas.
- The local Maintenance or Resident Engineer, hereafter referred to as the FDOT Engineer, shall be notified a minimum of forty eight (48) hours in advance prior to starting work and again immediately upon completion of work. The FDOT's Engineer is Lance Grace, located at 1840 61st Street, Sarasota, FL 34243, Telephone Number 941-359-7300. The Permittee's employee responsible for MOT is _____, Telephone Number _____. (This name may be provided at the time of the forty eight (48) hour advance-notice prior to starting work).
- All work, materials, and equipment shall be subject to inspection and approval by the FDOT Engineer.
- All plans and installations shall conform to the requirements of the FDOT's UAM in effect as of the date this permit is approved by FDOT, and shall be made a part of this permit. This provision shall not limit the authority of the FDOT under Paragraph 8 of this Permit.
- This Permittee shall commence actual construction in good faith within 60 days after issuance of permit, and shall be completed within 120 days after the permitted work has begun. If the beginning date is more than sixty (60) days from the date of permit approval, the Permittee must review the permit with the FDOT Engineer to make sure no changes have occurred to the Transportation Facility that would affect the permitted construction.
- The construction and maintenance of such utility shall not interfere with the property and rights of a prior Permittee.
- It is expressly stipulated that this permit is a license for permissive use only and that the placing of utilities upon public property pursuant to this permit shall not operate to create or vest any property right in said holder, except as provided in executed subordination and Railroad Utility Agreements.
- Pursuant to Section 337.403(1), Florida Statutes, any utility placed upon, under, over, or along any public road or publicly owned rail corridor that is found by FDOT to be unreasonably interfering in any way with the convenient, safe, or continuous use, or maintenance, improvement, extension, or expansion, of such public road or publicly owned rail corridor shall, upon thirty (30) days written notice to the utility or its agent by FDOT, be removed or relocated by such utility at its own expense except as provided in paragraphs (a) and (b), and except for reimbursement rights set forth in previously executed subordination and Railroad Utility Agreements, and shall apply to all successors and assigns for the permitted facility.
- It is agreed that in the event the relocation of said utilities are scheduled to be done simultaneously with the FDOT's construction work, the Permittee will coordinate with the FDOT before proceeding and shall cooperate with the FDOT's contractor to arrange the sequence of work so as not to delay the work of the FDOT's contractor, defend any legal claims of the FDOT's contractor due to delays caused by the Permittee's failure to comply with the approved schedule, and shall comply with all provisions of the law and the FDOT's current UAM. The Permittee shall not be responsible for delay beyond its control.
- In the case of non-compliance with the FDOT's requirements in effect as of the date this permit is approved, this permit is void and the facility will have to be brought into compliance or removed from the R/W at no cost to the FDOT, except for reimbursement rights set forth in previously executed subordination and Railroad Utility Agreements. This provision shall not limit the authority of the FDOT under Paragraph 8 of this Permit.
- It is understood and agreed that the rights and privileges herein set out are granted only to the extent of the State's right, title and interest in the land to be entered upon and used by the Permittee, and the Permittee will, at all times, and to the extent permitted by law, assume all risk of and indemnify, defend, and save harmless the State of Florida and the FDOT from and against any and all loss, damage, cost or expense arising in any manner on account of the exercise or attempted exercises by said Permittee of the aforesaid rights and privileges.
- During construction, all safety regulations of the FDOT shall be observed and the Permittee must take measures, including placing and the display of safety devices that may be necessary in order to safely conduct the public through the project area in accordance with the Federal MUTCD, as amended for highways, the requirements of the Standard Application Package for railways, including flagging services and Railroad Protective Insurance or acceptable alternative, when applicable, and the FDOT's Design Standards, Indexes 600-670, and Standard Specifications for Road and Bridge Construction, Section 102, as amended by the UAM. When a Utility deems it necessary to conduct Traffic Control activities and methods significantly different from those addressed in the above references, the Utility must submit an alternative plan signed and sealed by a licensed Florida professional engineer qualified to develop TCP in accordance with the provisions of Chapter 8 of the UAM.
- Should the Permittee be desirous of keeping its utilities in place and out of service, the Permittee, by execution of this permit acknowledges its present and continuing ownership of its utilities located between _____ and _____ within the FDOT's R/W as set forth above. Whenever the Permittee removes its facilities, it shall be at the Permittee's sole cost and expense. The Permittee, at its sole expense, shall promptly remove said out of service utilities whenever the FDOT determines said removal is in the public interest.
- In the event contaminated soil is encountered by the Utility or anyone within the permitted construction limits, the Utility shall immediately cease work and notify the FDOT. The FDOT shall coordinate with the appropriate agencies and notify the Permittee of any suspension or revocation of the permit until contamination assessment and remediation, as appropriate under Rule Chapters 62-770 and 62-730 Florida Administrative Code, has progressed to a state that all environmental regulatory agencies having jurisdiction have approved the site of the contamination for resumption of work.

God All Portions of Disturbed
Flight-Of-Way.

UTILITY PERMIT

15. For any excavation, construction, maintenance, or support activities performed by or on behalf of the FDOT, within its RW, the Permittee may be required by the FDOT or its agents to perform the following activities with respect to a Permittee's facilities: physically expose or direct exposure of underground facilities, provide any necessary support to facilities and/or cover, de-energize or alter aerial facilities as deemed necessary for protection and safety.
16. Pursuant to Section 337.401(2), Florida Statutes, the permit shall require the permit holder to be responsible for damage resulting from the issuance of the permit. The FDOT may initiate injunctive proceedings as provided in s.120.69 to enforce provisions of this subsection or any rule or order issued or entered into pursuant thereto.
17. Pursuant to Section 337.402, Florida Statutes, when any public road or publicly owned rail corridor is damaged or impaired in any way because of the installation, inspection, or repair of a utility located on such road or publicly owned rail corridor, the owner of the utility shall, at his or her own expense, restore the road or publicly owned rail corridor to its original condition before such damage. If the owner fails to make such restoration, the authority is authorized to do so and charge the cost thereof against the owner under the provisions of s.337.404.
18. The Permittee shall comply with all provisions of Chapter 556, Florida Statutes, Underground Facilities Damage Prevention and Safety Act.
19. Special FDOT instructions: _____

It is understood and agreed that commencement by the Permittee is acknowledgment and acceptance of the binding nature of all the above listed permit conditions and special instructions.

20. Receipt of this permit acknowledges responsibility to comply with Section 119.07(3), Florida Statutes, and UAM Chapter 4.5.2, regarding Exempt Documents and Security System Plans Requests.
21. By the below signature, the Permittee hereby represents that no change to the FDOT's standard Utility Permit form, as incorporated by reference into Rule 14-46.001, for this Utility Permit has been made which has not been previously called to the attention of the FDOT (and signified by checking the appropriate box below) by a separate attached written document showing all changes and the written and dated approval of the FDOT Engineer. Are there attachments reflecting change/s to the standard form? ☒ NO ☐ YES If Yes, _____ pages are attached.

PERMITTEE	John Saraniero, P.E. - Sarasota County Utility Project Manager	SIGNATURE	<i>John Saraniero</i>	DATE:	9/16/10
	Name & Title of Authorized Permittee or Agent (Typed or Printed Legibly)				
APPROVED BY:	<i>Albert Oserstein</i>			ISSUE DATE:	12-20-10
	District Maintenance Engineer or Designee				

UTILITY PERMIT FINAL INSPECTION CERTIFICATION

DATE:	
DATE WORK STARTED:	
DATE WORK COMPLETED:	
INSPECTED BY:	
(Permittee or Agent)	
CHANGE APPROVED BY:	DATE:
District Maintenance Engineer or Designee	

I the undersigned Permittee do hereby CERTIFY that the utility construction approved by the above numbered permit was inspected and installed in accordance with the approved plans made a part of this permit and in accordance with the FDOT's current UAM. All plan changes have been approved by the FDOT's Engineer and are attached to this permit. I also certify that the work area has been left in as good or better condition than when the work was begun.

PERMITTEE:	SIGNATURE:	DATE:
Name & Title of Authorized Permittee or Agent (Typed or Printed Legibly)		

CC: District Permit Office
Permittee

FLORIDA DEPARTMENT OF TRANSPORTATION
Stormwater Pollution Control Reminder

- *Stormwater Management*
Contact your local municipality and/or the Southwest Florida Management District.
Bartow (863) 534-1448
Venice (Sarasota) (941) 278-7396
Fort Myers (Sarasota) (941) 278-7396
- Fort Myers is also part of South Florida Water Management District (800) 432-2045.
- *Used Oil recycling*
Contact the Florida Department of Environmental Protection at (813) 744-6100 or your local automotive parts store.
- *Hazardous Waste Disposal*
Contact the Florida Department of Environmental Protection at (813) 744-6100.
- *Spill Reporting*
State Warning Point (800) 320-0519
Federal Response Center (800) 424-8802
- *Pesticides & Fertilizers*
Contact your Local County Agricultural Extension Service.
Charlotte (941) 764-4340
Collier (239) 353-4244
Desoto (863) 993-4846
Glades (863) 946-0244
Hardee (863) 773-2164
Hendry (863) 674-4094
Highlands (863) 402-6540
Lee (239) 461-7500
Manatee (941) 722-4524
Okeechobee (863) 763-6469
Polk (863) 519-8677
Sarasota (941) 316-1000

LET'S WORK TOGETHER TO KEEP OUR ENVIRONMENT CLEAN...

AND INVEST IN FLORIDA'S FUTURE



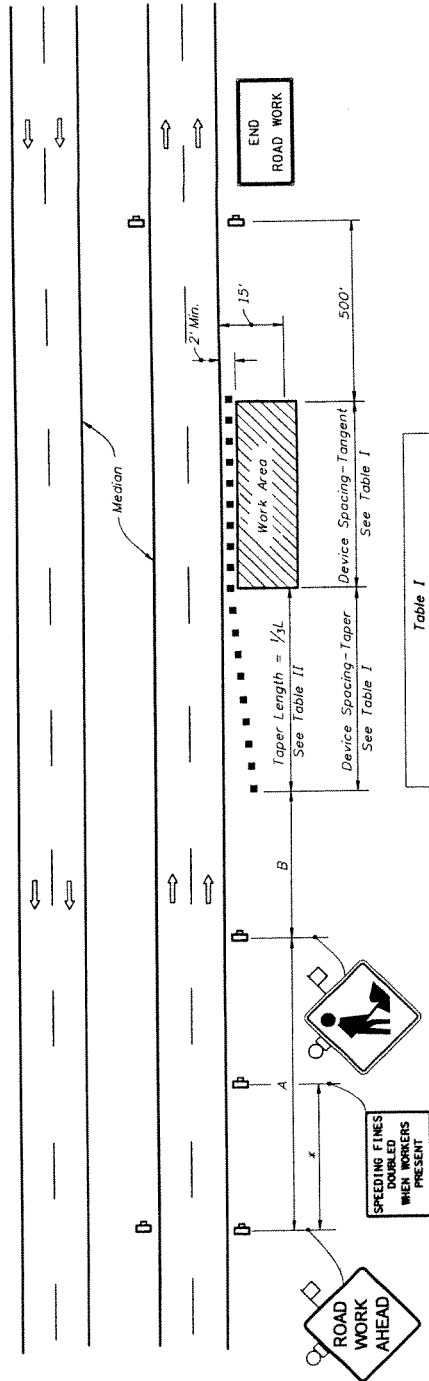


Table II
Taper Length - Shoulder

Speed (mph)	$\frac{1}{2}L$ (ft.)	Notes
	8' Shldr.	10' Shldr.
25	28	35
30	40	50
35	55	68
40	72	90
45	120	150
50	133	167
55	147	183
60	160	200
65	173	217
70	187	233

8' minimum shoulder width.

$\frac{1}{2}L$ = Length of shoulder taper in feet

W = Width of total shoulder in feet

S = Posted speed limit (mph)

DURATION NOTES

- Signs and channelizing devices may be omitted if all of the following conditions are met:
 - Work operations are 60 minutes or less.
 - Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

Table I
Device Spacing

Speed (mph)	Max. Distance Between Devices (ft.)
	Cones or Type I or Type II Tubular Markers/Barricades or Vertical Panels or Drums
25	25
30 to 45	25
50 to 70	25
	Taper
25	50
30 to 45	50
50 to 70	50
	Tangent
25	50
30 to 45	50
50 to 70	100

GENERAL NOTES

- If the work operation encroaches on the through traffic lanes or when four or more work vehicles enter the through traffic lanes in a one hour period (excluding establishing and terminating the work area), a flagger shall be provided and a FLAGGER sign shall be substituted for the WORKERS sign. The flagger shall be positioned at the point of vehicle entry or departure from the work area.
- This TCZ plan also applies to work performed in the median more than 2' but less than 15' from the edge of travelway.
- When work is being performed on a multilane undivided roadway the signs normally mounted in the median (as shown) shall be omitted.
- WORKERS signs to be removed or fully covered when no work is being performed.
- SHOULDER WORK sign may be used as an alternate to the WORKER symbol sign.
- When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
- For general TCZ requirements and additional information, refer to Index No. 600.

SYMBOLS

- Work Area
- Sign With 18"x18" (Min.)
- Orange Flag And Type B Light
- Channelizing Device (See Index No. 600)
- Work Zone Sign
- Lane Identification + Direction of Traffic

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCRDACH THE AREA CLOSER THAN 15' BUT NOT CLOSER THAN 2' TO THE EDGE OF TRAVEL WAY.

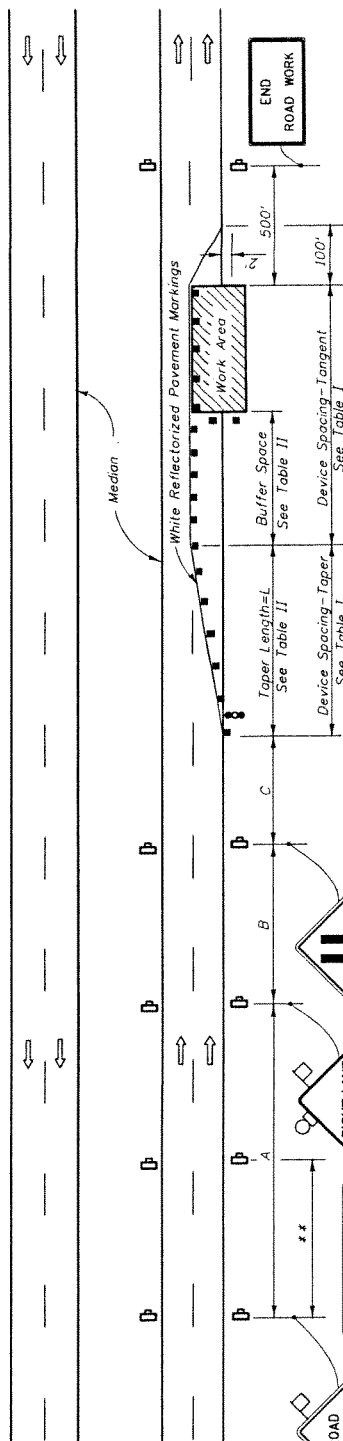


2010 FDOT Design Standards

MULTILANE, WORK ON SHOULDER

Sheet No.
07/01/07
1 of 1

612



Speed (mph)	Max. Distance Between Devices (ft.)	Cones or Tubular Markers	Type I or Type II Baricades or Vertical Panels or Drums	Taper	Tangent
25	25	50	25	50	100
30 to 45	25	50	30	50	100
50 to 70	25	50	50	50	100

GENERAL NOTES

- Work operations shall be confined to one traffic lane, leaving the adjacent lane open to traffic.
- On undivided highways the median signs as shown are to be omitted.
- When work is performed in the median lane on divided highways, the channelizing device plan is inverted and left lane closed and lane end signs substituted for the right lane closed and lane end signs. The same applies to undivided highways with the following exceptions:
 - Work shall be confined within one median lane.
 - Additional baricades, cones, or drums shall be placed along the centerline abutting the work area and across the trailing end of the work area.

Speed	Spacing (ft.)	A	B	C
40 mph or less	200	200	200	200
45 mph	350	350	350	350
50 mph	500	500	500	500
≥55 mph or greater	2640	1640	1000	1000

* The ROAD WORK 1 MILE sign may be used as an alternate to the ROAD WORK AHEAD sign and the RIGHT LANE CLOSED 1/2 MILE sign may be used as an alternate to the RIGHT LANE CLOSED AHEAD sign.

** 500' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

SYMBOLS

Work Area

Sign With 18"x 18" (Min.)

Orange Flag And Type B Light

Channelizing Device (See Index No. 600)

Work Zone Sign

Advance Warning Arrow Panel

Lane Identification + Direction of Traffic

DURATION NOTES

- Temporary white edgeline may be omitted for work operations less than 3 days.
- Signs, arrow panel and buffer space may be omitted if all of the following conditions are met:
 - Work operations are 60 minutes or less.
 - Speed limit is 45 mph or less.
 - No sight obstructions to vehicles approaching the work area for a distance equal to the buffer space and the taper length combined.
 - Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
 - Volume and complexity of the roadway has been considered.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCRDACH ON THE LANE ADJACENT TO EITHER SHOULDER AND THE AREA 2' OUTSIDE THE EDGE OF TRAVEL WAY.

Speed (mph)	Buffer Space (ft.)	Taper Length (12' Lateral Transition) (ft.)	Notes (Merge)
25	155	125	
30	200	180	
35	250	245	
40	305	320	
45	360	540	
50	425	600	
55	495	660	
60	570	720	
65	645	780	
70	730	840	

When Buffer Space cannot be attained due to geometric constraints, the greatest attainable length shall be used, but not less than 200 ft.

For lateral transitions other than 12' use the L shown in the notes column.

Where:

L = Length of taper in feet

W = Width of lateral transition in feet

S = Posted speed limit (mph)

2010 FDOT Design Standards



MULTILANE, WORK WITHIN THE TRAVEL WAY
MEDIAN OR OUTSIDE LANE

Sheet No.
07/01/09

Index No.
1 of 2

613

PERMIT VOID UNLESS DOT SARASOTA
OPERATIONS OFFICE NOTIFIED 48 HOURS IN
ADVANCE OF STARTING WORK.
PHONE: (941) 359-7300

IF A LANE CLOSURE IS WITHIN THE PROJECT
LIMITS, THE PERMITTEE MUST NOTIFY THE
DEPARTMENT 7 DAYS PRIOR TO A LANE
CLOSURE TO ALLOW THE DEPARTMENT TO
INFORM THE MOTORING PUBLIC. FAILURE
TO CALL MAY RESULT IN A DELAY TO
BEGIN WORK.

IF NO CLOSURES ARE REQUIRED THE SARASOTA
OPERATIONS OFFICE MUST BE NOTIFIED 48
HOURS IN ADVANCE OF STARTING WORK.
FAILURE TO CALL MAY RESULT IN A DELAY TO
BEGIN WORK.

LANE CLOSURES AND OTHER WORK MAY BE
RESTRICTED BY THE FDOT DUE TO HEAVY
TRAFFIC AND POTENTIAL BACKUPS CAUSED BY
THIS CONSTRUCTION. NIGHT WORK MAY BE
REQUIRED.

APPLICANT IS RESPONSIBLE FOR NOTIFYING
OWNERS OF ALL EXISTING AERIAL AND BURIED
UTILITIES OF PROPOSED DRIVEWAY AND
RESOLVING ANY CONFLICTS BEFORE
CONSTRUCTION BEGINS.

IN ACCORDANCE WITH FLORIDA STATUS 335.18
PERMITTEE SHALL BE REQUIRED TO BEAR THE
COST OF FUTURE ACCESS MODIFICATIONS,
TRAFFIC CONTROL DEVICES OR OTHER
IMPROVEMENTS, WHEN DETERMINED BY THE
FLORIDA DEPARTMENT OF TRANSPORTATION
TO BE IN CONJUNCTION WITH ACCEPTED
ENGINEERING PRACTICES.

ALL CONSTRUCTION AND/OR MAINTENANCE ON
THE DEPARTMENT'S RIGHT-OF-WAY SHALL
CONFORM TO THE FEDERAL MANUAL ON
UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
THE DEPARTMENT'S ROADWAY AND TRAFFIC
DESIGN STANDARDS AND BRIDGE
CONSTRUCTION.

PERMITTEE/CONTRACTOR MUST WAIT 30 DAYS
TO ALLOW ASPHALT FRICTION COURSE TO
CURE BEFORE PLACING THERMOPLASTIC
STRIPING.

OUR REVIEW COMMENTS ARE NOT INCLUDED
TO BE INCLUSIVE OF ALL ERRORS AND
OMISSIONS. OUR COMMENTS ARE ALSO NOT
INTENDED TO AFFECT THE SCOPE OF WORK OR
TO BE CONTRARY TO FHWA POLICY, FDOT
DESIGN CRITERIA OR SOUND ENGINEERING
PRACTICE. THE CONSULTANT/ENGINEER IS
SOLELY RESPONSIBLE FOR THE TECHNICAL
ACCURACY, ENGINEERING JUDGEMENT, AND
QUALITY OF HIS WORK.

ALL CONTRACTORS AND SUBCONTRACTORS
SHALL BE RESPONSIBLE FOR COMPLIANCE WITH
PERMITTED M.O.T. PLAN.

SOD ALL PORTIONS OF DISTURBED RIGHT-OF-WAY.

NOTE: ALL ABOVE GROUND APPURTENANCES
TO BE LOCATED AT RIGHT-OF-WAY LINE.

DENSITY REPORTS ARE TO BE SUBMITTED PRIOR
TO PLACEMENT OF PAVEMENT.

"PRIOR TO EXCAVATING CONTACT THE CLERK OF
THE CIRCUIT COURT FOR POSSIBLE GASOLINE
CONFLICT."

THE APPLICANT SHALL NOT, DURING AND AFTER
COMPLETION OF PERMITTED CONSTRUCTION,
INTRODUCE ANY FORM OR METHOD OF SITE
DRAINAGE DISCHARGE INTO THE DRAINAGE
FACILITIES ON THE DEPARTMENT OF
TRANSPORTATION RIGHT-OF-WAY OR EASEMENT.
ANY DISCHARGE SHALL BE IN VIOLATION OF THIS
PERMIT.

"PERMITTEE IS CAUTIONED THAT UTILITIES MAY BE
LOCATED WITHIN THE CONSTRUCTION AREA."

IT IS THE RESPONSIBILITY OF THE PERMITTEE TO
DETERMINE AND COMPLY WITH ALL COUNTY AND
MUNICIPAL ORDINANCES THAT ARE RELATIVE TO
THE CONSTRUCTION OR OTHER ACTIVITY
DESCRIBED ON THIS PERMIT AND ARE MORE
STRINGENT THAN DEPARTMENT OF
TRANSPORTATION REQUIREMENTS.

N.P.D.E.S. REQUIRES THAT STORM WATER CONTROL
MEASURES BE IMPLEMENTED ON ANY PROJECT ON
PUBLIC TRANSPORTATION FACILITY RIGHTS-OF-
WAY INCLUDING, BUT NOT LIMITED TO MEASURES
DESCRIBED IN F.D.O.T. STANDARD DESIGN INDEX
DRAWING NUMBERS 102, 103 AND 104.

"IF CONSTRUCTION, RECONSTRUCTION, REPAIR OR
MAINTENANCE ACTIVITY NECESSITATES THE
CLOSING OF ONE OR MORE TRAVEL LANES OF ANY
ROAD ON THE STATE PRIMARY, COUNTY ROAD OR
CITY STREET SYSTEM, FOR A PERIOD OF TIME
EXCEEDING TWO HOURS, THE PARTY PERFORMING
SUCH WORK WILL BE RESPONSIBLE TO GIVE
NOTICE TO THE APPROPRIATE LOCAL LAW
ENFORCEMENT AGENCY WHICH HAS JURISDICTION
WHERE SUCH ROAD IS LOCATED PRIOR TO
COMMENCING WORK ON THIS PROJECT"
335.15 F.S.91, 336.048 F.S.91



SECTION 14

BEST MANAGEMENT PRACTICES

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Best Management Practices

Best Management Practices are included in the plans where applicable.

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