

**31<sup>ST</sup> AVENUE ROADWAY & POTABLE WATER  
IMPROVEMENTS**

---

**CITY OF GULFPORT**



**CONTRACT DOCUMENTS & TECHNICAL  
SPECIFICATIONS**

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**AUGUST, 2016**

## TABLE OF CONTENTS

<i>Section</i>	<i>Description</i>	<i>Page</i>
<b>00100</b>	<b>INSTRUCTIONS TO BIDDERS.....</b>	<b>00100-1</b>
00100.01	Qualifications of Bidders	00100-1
00100.02	Bidder's Responsibility	00100-1
00100.03	Site Conditions	00100-2
00100.04	Omissions and Discrepancies	00100-2
00100.05	Bid Items and Estimated Quantities	00100-2
00100.06	Approved Materials and Equipment	00100-3
00100.07	Sample of Materials	00100-3
00100.08	Proposal Form	00100-3
00100.09	Withdrawal of Proposals	00100-4
00100.10	Bid Security	00100-4
00100.11	Opening of Proposals	00100-4
00100.12	Method of Award	00100-4
00100.13	Execution of Contract	00100-5
00100.14	Time of Completion	00100-5
00100.15	Liquidated Damages	00100-5
00100.16	Extensions of Time	00100-5
00100.17	Certificate of Insurance	00100-6
00100.18	Detailed Breakdown Sheet and Schedule of Prices	00100-6
00100.19	Existing Materials and Equipment	00100-6
00100.20	Qualifications of Bidders	00100-6
00100.21	Standards	00100-6
<b>00140</b>	<b>SUMMARY OF INFORMATION TO BIDDERS</b>	<b>00140-1</b>
00140.01	Obtaining Plans and Specifications	00140-1
00140.02	Owner	00140-1
00140.03	Contract	00140-1
00140.04	Bid Security	00140-1
00140.05	Time of Completion	00140-1
00140.06	Insurance Required	00140-1
00140.07	Scope of Work	00140-2
<b>00300</b>	<b>BID FORMS</b>	
00310	Proposal Form	00310-1
00320	Bid Schedule	00320-1
00330	Florida Trench Safety Act Acknowledgement	00330-1
00340	Public Entity Crimes	00340-1

## TABLE OF CONTENTS

<i>Section</i>	<i>Description</i>	<i>Page</i>
<b>00400 BID SECURITY</b>		
00410	Certified Check, Cash or Bid Bond	00410-1
<b>00500 CONTRACT FORMS</b>		
00520	Contractor's Affidavit	00520-1
00530	Contractor's Release	00530-1
00540	Statement of Surety Company	00540-1
<b>00600 BONDS AND CERTIFICATES</b>		
00610	Performance- Payment Bond	00610-1
00620	Certificate of Insurance	00620-1
<b>00700 CONTRACT &amp; GENERAL CONDITIONS FOR CONSTRUCTION SERVICES</b>		
Article 1	Contract Documents	00700-2
Article 2	Scope of Work	00700-2
Article 3	Commencement Date	00700-2
Article 4	Substantial Completion Date	00700-3
Article 5	Contract Amount	00700-3
Article 6	Liquidated Damages	00700-3
Article 7	Payments	00700-4
Article 8	Termination of Suspension of the Contract	00700-6
Article 9	Execution of the Project	00700-8
Article 10	Subcontractors	00700-17
Article 11	Construction By Owner or Separate Contractors	00700-18
Article 12	Changes In the Work	00700-19
Article 13	Claims and Disputes	00700-22
Article 14	Project Closeout	00700-25
Article 15	Protection of Persons and Property	00700-26
Article 16	Indemnification, Insurance and Bonds	00700-28
Article 17	Commencement of Statutory Period	00700-32
Article 18	Miscellaneous Provisions	00700-32
Appendix 1	Definitions	00700-34
<b>00800 SUPPLEMENTARY CONDITIONS</b>		
00800.01	Supplementary Conditions Prevail	00800-1
00800.02	Materials and Equipment	00800-1
00800.03	Notifications	00800-1
<b>00850</b>	<b>PERMITS</b>	<b>00850-1</b>

## TABLE OF CONTENTS

<i>Section</i>	<i>Description</i>	<i>Page</i>
<b>01000</b>	<b>GENERAL</b>	01000-1 through 01000-4

## TECHNICAL SPECIFICATIONS

## **SECTION 00100**

### **INSTRUCTIONS TO BIDDERS**

#### **00100.01 QUALIFICATIONS OF BIDDERS**

Bidders shall have successfully completed two (2) contracts for similar work in an amount not less than one hundred percent (100%) of the amount of the proposal contract during the past three years.

Bidders shall have received Contract Documents from the Engineer. The Owner may make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the owner any additional information and financial data for this purpose as the Owner may require. The data shall include a detailed and up-to-date list of equipment the bidder proposes to use, indicating which portions he already possesses and a detailed description of the method and program of the work he proposes to follow.

If such an investigation fails to satisfy the Engineer or Owner that the bidder is properly qualified to complete the work described in the drawings and specifications or to meet the financial obligations of such a contract, the bid may be rejected. In the event the bidder fails, refuses, or neglects to submit the requested additional information with ten (10) days of the date of any request for submission, the bidder's proposal guarantee shall be forfeited to the use of the Owner, not as a penalty, but as liquidated damages.

#### **00100.02 BIDDER'S RESPONSIBILITY**

Each bidder shall familiarize himself with all the attached forms, Instructions, General Provisions, Specification, Drawings, etc., as he will be held responsible to fully comply therewith. Each bidder must visit the site of the proposed work and thoroughly acquaint himself with conditions affecting the work, all utilities in existence to which connections are to be made, all other requirements of the contract, and obtain all information necessary for completion of the work on or before the date specified. Each bidder shall also make himself familiar with all Federal, State, Local and Municipal laws, ordinances, rules and regulations which in any manner affect the work, those engaged or employed in the work, or the materials or equipment used in or upon the work. If the bidder or Contractor shall discover any provision in the plan, specification, or other contract documents which is contrary to, or inconsistent with, any such law, ordinance, rule, or regulation, he shall immediately report it to the Engineer in writing. The Contractor shall not at any time after the execution of his contract set up any claims whatever based upon insufficient data or incorrectly assuming conditions, nor shall he claim any misunderstanding in regard to the nature, conditions or character of the work to be done under the contract, and he shall assume all risks resulting from any changes in the conditions which may occur during the progress of this work.

### **00100.03 SITE CONDITIONS**

Any information on site or soil conditions made available to the prospective bidders through data collected by test borings and presented on the Engineer's drawings or available in preliminary reports prepared by the Engineer or obtained verbally from a representative of the Owner or the Engineer does not guarantee that such site or soil conditions will be as described, and are made available only upon waiver of all responsibility of the Owner and Engineer. It is the Contractor's sole risk and responsibility to verify such information in order that he may complete the project as specified and shown on the contract documents. Under no condition will a variation in the information obtained by the Engineer on site or soil conditions, including underground soil conditions at the job site, be accepted as a basis in any claim for extra compensation.

### **00100.04 OMISSIONS AND DISCREPANCIES**

Should a bidder find discrepancies in, or omissions from the drawings or other Contract Documents, or should he be in doubt as to their meaning, he should at once notify the Engineer. All notice of omissions or discrepancies or request for clarification must be forwarded to the Engineer in writing not less than six (6) days before the advertised date of the opening of bids.

Such clarification and corrections as are necessary will be issued in the form of an Addendum to the Contract Documents and will be forwarded to all prospective bidders. Any addendum so prepared and forwarded shall be a part of the Contract Documents. Neither the Engineer nor the Owner will be responsible for any other explanation or clarification of the Contract Documents.

### **00100.05 BID ITEMS AND ESTIMATED QUANTITIES**

The Owner may increase, decrease or omit the quantity of the work to be done under any item in the best interests of the project and the unit price as submitted in the proposal shall be the unit price which the Contractor will receive for any work specified to be done under that item.

All work herein specified or implied in anyway in the drawings or specifications shall be done regardless of whether or not the work is specifically defined in any bid item.

The Contractor agrees that the estimated quantities shown in the Bid Schedule are only for the purpose of comparing bids and that he/she is satisfied with, and will at no time dispute, the said estimates as means of comparing the aforesaid bids, that he/she will make no claim for loss of profits or anticipated profits because of any difference between the said estimated quantities and the quantities of various classes of work actually furnished or performed, that the Owner shall not be held responsible if any of the said estimated quantities should vary by any amount from those actually measured during performance of the work.

## **00100.06 APPROVED MATERIALS AND EQUIPMENT**

Whenever a material, article or piece of equipment is identified on the plans or in the specifications by reference to manufacturers or vendors names, trade names, catalog numbers, etc., it is intended to establish a standard of quality and it will be presumed, unless specifically excepted by the bidder, that the base bid includes the materials or articles so named, and that the Contractor's proposal, if accepted, will constitute a contractual obligation to furnish the standard named materials or articles and no other. To assist the Engineer in making an adequate evaluation, the bidder shall submit with his proposal, at the time bids are received, detailed information and data on the items he proposes to furnish as equally acceptable to the named terms. The data furnished shall include as applicable and needed for evaluation, manufacturer's name, model identification, descriptive brochures, specifications, performance data, guaranteed efficiencies, and list of installations in similar service. Such alternate material, article or piece of equipment shall not be purchased or installed by the Contractor without the Engineer's written approval. Any revisions to the Drawings as a result of alternate equipment shall be at the expense of the Contractor.

## **00100.07 SAMPLE OF MATERIALS**

Before any contract is awarded, the bidder may be required to furnish a complete statement of the origin, composition and manufacture of any or all materials to be used in the work, together with samples, which samples may be subjected to the tests provided for in these specifications to determine their quality and conformity to the plans and specifications.

## **00100.08 PROPOSAL FORM**

All bids must be submitted (in triplicate) on photocopies of the proposal form bound within these specifications. No proposal will be considered which is submitted otherwise than on the prepared proposal form and in the designated manner. The blank spaces in the proposal shall be filled in correctly where indicated for each and every item for which a description is given, and the bidder must state the prices for which he proposes to do each part of the work contemplated, and the total amount for all parts included in any or all of the combinations of the work. In case of discrepancy, the written words or "Unit Price", where stated, shall be considered as being the bid price. The bidder shall sign his proposal correctly. If the proposal is made by an individual, in addition to his signature, his post office address must be shown; if made by a firm or partnership, the post office address of each member of the firm or partnership; if made by a corporation, the person signing the proposal must be President or Vice-President of the corporation. No proposal will be considered which is not based upon the complete plans and specifications, or which contains any qualifying letter or written memorandum not permitted in these specifications, or which is not properly made out and signed in writing by the bidder. The proposal shall be submitted in a sealed envelope bearing the name of the Contractor and describing the project for which the proposal is being submitted. Proposals will be accepted by registered mail, and then only if the proposal is enclosed in another sealed envelope contained within the mailing envelope and is delivered to the Owner prior to the time established for opening bids.

## **00100.09 WITHDRAWAL OF PROPOSALS**

Bidders will be given permission to withdraw any proposal after it has been received by the Owner, provided the bidder, or his agent duly authorized to act for him, personally appears before the Owner with a written request prior to the time set for the opening of bids. At the time set for the opening of proposals the withdrawn proposal will be returned unopened to the bidder.

## **00100.10 BID SECURITY**

Each proposal must be accompanied by the bidder's bid bond or certified check made payable to Owner in the amount specified in the proposal form, which sum will serve as bid security and will be forfeited to the Owner as liquidated damages in the event an award is made and the contract and bonds are not promptly and properly executed as required in the specifications. All certified checks, except those accompanying the two lowest bids, will be returned by certified mail to the unsuccessful bidders within seven (7) days after the date of the bid opening. (If the signing of the contract is to be deferred for a period exceeding two (2) weeks, and the second low bidder desires to substitute a bid bond for his certified check and the bid bond fully guarantees his bid, he shall be permitted to do so). The certified checks accompanying the two low bids will be returned within three (3) days after the Owner and the successful bidder have executed the contract. In the event no contract award is made within the time limit specified, each certified check or bid bond will be returned upon the demand of the bidder.

## **00100.11 OPENING OF PROPOSALS**

All proposals will be publicly opened and read, on the date, at the place and commencing at the time stated in the advertisement. Bidders or their authorized agents should be present. The Owner reserves the right to reject any or all bids or parts thereof. Proposals may be rejected if they show any omissions, alterations of form, additions or deductions not called for, conditional or uninvited alternate bids, or irregularities of any kind. Proposals in which the prices are unbalanced may be rejected. The Owner reserves the right to accept the bid, which will best serve his interests.

## **00100.12 METHOD OF AWARD**

Bids will be compared on the basis of the total costs of estimated quantities established in the proposal form, constructed at the unit or lump sum prices bid for the various items listed. The contract will be awarded to that responsible bidder whose proposal totals the lowest number of dollars for a complete installation.

The successful bidder will be officially notified in writing by the Owner of the acceptance of his proposal and award of contract. This notification will be made within the time limit set up in the contract documents.

### **00100.13 EXECUTION OF CONTRACT**

The bidder to whom the contract is awarded must, within ten (10) calendar days following Notice of Award, present himself to the place designated in the official Notice of Acceptance, for signing of the contract, and to substitute for the bid security, a surety performance and payment bond in the amount of one hundred per centum (100%) of the contract price of the work, conditioned that the Contractor will faithfully perform all work of this contract and promptly pay for all materials furnished and labor supplied or performed in the execution of all work. All bonds and insurance shall be issued by companies authorized to transact business in the State of Florida.

If the lowest responsible bidder to whom the contract is awarded fails to give bonds or execute the contract within the time specified, the amount of the proposal guarantee shall be forfeited to the Owner, not as a penalty but as liquidated damages.

### **00100.14 TIME OF COMPLETION**

The successful Contractor shall commence work under his contract on a date to be specified in a written order from the Owner or his authorized representative, which order will also establish the completion date in accordance with the total number of consecutive calendar days established as a working period in the proposal. The Contractor shall have at least two (2) weeks notice of this commencement date and shall fully complete the work described in these plans and specifications on, or prior to, the completion date.

If the Contractor fails to commence work with seven (7) days of the announcement of the official starting date, this shall be just cause for the annulment of the contract.

### **00100.15 LIQUIDATED DAMAGES**

Should the Contractor fail to complete his work on or before the expiration of the date set for completion or as provided in the Contract Documents covering extension of time, then the Owner may retain as liquidated damages the amount established in the proposal form, which amount is agreed upon as the costs which the Owner will sustain per diem by the failure of the Contractor to complete the work at the time stipulated and the sum is not to be construed as in any sense a penalty.

### **00100.16 EXTENSIONS OF TIME**

If the Contractor shall be delayed at any time in the progress of the work by any cause beyond the Contractor's control and without his fault or negligence, including but not restricted to any act or neglect of the Owner, or of his employees, or by any other contractor employed by the Owner, or by changes ordered in the work, acts of God or of the public enemy, fires, floods, epidemics, quarantines, strikes, lockouts, riots, civil commotions or freight embargoes or by delay authorized by the Owner, or by any cause which the Owner shall decide to justify the delay, then the time of completion shall be extended for such reasonable time as the Owner shall decide.

No such extensions of time shall be deemed a waiver by the Owner of its right to terminate the contract for abandonment or delay by the Contractor as herein provided or relieve the Contractor from full responsibility for performance of his obligations hereunder.

**00100.17 CERTIFICATE OF INSURANCE**

The successful bidder shall submit certificates or other documentary evidence to the Owner for approval, covering Workmen's Compensation Insurance, Public Liability, Property Damage Insurance, and Special Hazard Insurance, in the amounts specified on the "Summary of Information to Bidders."

**00100.18 DETAILED BREAKDOWN SHEET AND SCHEDULE OF PRICES**

The successful bidder shall submit, in a mutually acceptable form, a detailed breakdown sheet and schedule of prices of the proposed construction work. Until the Owner approves the breakdown, the Owner will not be obligated to make any payments to the bidder.

**00100.19 EXISTING MATERIALS AND EQUIPMENT**

All existing materials and equipment not specified for the complete construction of the project, or shown on the plans to be retained or reused, shall remain the property of the Owner and shall be placed on the project site as the Owner may direct.

**00100.20 QUALIFICATIONS OF BIDDERS**

In addition to qualifications previously set forth in these specifications, no bid will be considered unless the bidder, whether resident or non-resident of Florida, is properly qualified to submit a proposal for this construction in accordance with all applicable laws of the Municipality, County, and the State of Florida.

**00100.21 STANDARDS**

This project shall be completed in accordance with these specifications unless noted or otherwise directed by the Owner or his authorized representative. The decision of the Owner in interpreting these specifications shall be final.

**END OF SECTION**

## **SECTION 00140**

### **SUMMARY OF INFORMATION TO BIDDERS**

#### **00140.01 – OBTAINING PLANS AND SPECIFICATIONS**

Specifications, Proposal Forms, Drawings, and other contract documents may be examined at the City of Gulfport, 2401 53<sup>rd</sup> Street South, Gulfport, Florida 33707 or at the office of Advanced Engineering & Design, Inc., 3931 68<sup>th</sup> Avenue North, Pinellas Park, Florida 33781. A complete set of bidding documents may be obtained at the office of Advanced Engineering & Design, Inc. upon furnishing a \$75.00 payment (non-refundable).

#### **00140.02 - OWNER**

The Owner for this project is the City of Gulfport, 2401 53<sup>rd</sup> Street South, Gulfport, Florida 33707.

#### **00140.03 - CONTRACT**

The contract is entitled **31<sup>st</sup> Avenue Roadway & Potable Water Improvements.**

#### **00140.04 - BID SECURITY**

Each Bidder must deposit with his bid a bid bond in the amount of ten percent (10%) of the bid total, made payable to the City of Gulfport. All bids may be held for a period of 60 days after receipt.

#### **00140.05 – TIME OF COMPLETION**

The time of completion for this contract is 120 calendar days from date established in Start to Work Order.

#### **00140.06 - INSURANCE REQUIRED**

The insurance requirements for this contract include but are not limited to the following:

Bodily Injury	= \$250,000 each person, \$500,000 each accident
Property Damage	= \$100,000 each occurrence
Automobile Liability	
Bodily Injury	= \$100,000 each person, \$300,000 each occurrence
Property Damage	= \$100,000 each accident

Worker's Compensation = As required by law, Employer's liability \$100,000 each employee, each accident, and \$100,000 each employee/  
\$500,000 policy limit for disease.

Completed  
Operations Coverage = \$1,000,000 each occurrence

**00140.07 – SCOPE OF WORK**

The work to be performed under these contracts shall consist of the furnishing of all labor, materials, and equipment necessary to satisfactorily complete the 31<sup>st</sup> Avenue Roadway & Potable Water Improvements including written logs and testing in accordance with these plans and specifications. All workmanship and materials shall be fully guaranteed for a period of one year after date of acceptance by the Owner. All Testing shall be paid by the Contractor. All Professional Surveying shall be paid by the Contractor.

**END OF SECTION**

**SECTION 00310**

**PROPOSAL**

To: City of Gulfport

The following proposal is submitted in accordance with your advertisement inviting proposals to be received until **2:00 p.m. on September 20, 2016** for the construction of the Gulfport 31<sup>st</sup> Avenue Roadway & Potable Water Improvements.

Having carefully examined the contract documents together with all addenda or bulletins, all as prepared by Advanced Engineering & Design, Inc., 3931 68<sup>th</sup> Avenue North, Pinellas Park, Florida, 33781 and being familiar with the various conditions of the work, the undersigned herein agrees to furnish all materials required and to perform all labor necessary to satisfactorily construct the Gulfport 31<sup>st</sup> Avenue Roadway & Potable Water Improvements in accordance with the plans and specifications for the unit prices stated herein.

Accompanying this proposal is Certified or Cashier's Check or Bid Bond in the amount of ten percent (10%) of the bid total drawn upon the \_\_\_\_\_BANK and made payable to the City of Gulfport to serve as bid security. **Contractor shall submit all proposal documents in triplicate.**

It is understood that this proposal shall be effective until 60 days after the bid opening and that the sum of \$200.00 per day may be retained by the Owner in the event the contract is not complete within 120 calendar days after the date established in the Start to Work Order.

The undersigned hereby certifies that this proposal is genuine and not sham or collusive, or made in the interest or in behalf of any person, firm, or corporation not herein named and that the undersigned has not directly or indirectly induced or solicited any other bidder to submit a sham bid, or any other person, firm or corporation to refrain from bidding, and that the undersigned has not in any manner sought by collusion to secure for himself an advantage over any other bidder.

The undersigned Bidder agrees to accept the unit prices as full compensation for work performed.

ACKNOWLEDGEMENT is hereby made of receipt of the following ADDENDA issued during the bidding period, if any:

Addendum#1 \_\_\_\_\_ Dated: \_\_\_\_\_  
Addendum#2 \_\_\_\_\_ Dated: \_\_\_\_\_  
Addendum#3 \_\_\_\_\_ Dated: \_\_\_\_\_

ATTEST:

\_\_\_\_\_  
Corporate Secretary

AFFIX CORPORATE SEAL,  
if a corporation

\_\_\_\_\_  
Bidder's Business Name

By: \_\_\_\_\_  
Officer (or Principal)

Title: \_\_\_\_\_

\_\_\_\_\_  
Business Address

\_\_\_\_\_  
Business City/ State/ Zip Code

\_\_\_\_\_  
Business Telephone Number

**END OF SECTION**

**Section 00320**

**Bid Schedule**

*No changes shall be made to the Pay Item Quantities contained herein. Any corrections to bidders' entries shall be made in ink and shall be initialed by the bidder*

ITEM NUMBER	APPROXIMATE QUANTITIES	ITEM & UNIT PRICES BID (PRICES TO BE WRITTEN IN WORDS)	UNIT PRICE	AMOUNT
BASE BID				
A-G-1	1 Lump Sum	Mobilization		
		Lump Sum	\$	\$
A-G-2	1 Lump Sum	Maintenance of Traffic		
		Lump Sum	\$	\$
A-G-3	1 Lump Sum	Erosion & Sediment Control		
		Lump Sum	\$	\$
A-W-1	3 Each	Chlorine Injection Point		
		Per Each	\$	\$
A-W-2	10 Each	Sampling Point		
		Per Each	\$	\$
A-W-3	9 Each	Temporary Blow Off		
		Per Each	\$	\$
A-W-4	5 Each	Water Service (1")		
		Per Each	\$	\$
A-W-5	3 Each	Water Service (1-1/2")		
		Per Each	\$	\$
A-W-6	6 Each	Connect to Existing 1-1/2" WM		
		Per Each	\$	\$
A-W-7	1 Each	Connect to Existing 8" WM		
		Per Each	\$	\$

**Section 00320**

**Bid Schedule**

*No changes shall be made to the Pay Item Quantities contained herein. Any corrections to bidders' entries shall be made in ink and shall be initialed by the bidder*

ITEM NUMBER	APPROXIMATE QUANTITIES	ITEM & UNIT PRICES BID (PRICES TO BE WRITTEN IN WORDS)	UNIT PRICE	AMOUNT
A-W-8	6 Each	Cut & Cap Pipe (6")		
		Per Each	\$	\$
A-W-9	3 Each	Fire Hydrant Assembly		
		Per Each	\$	\$
A-W-10	700 Linear Feet	8" PVC		
		Per Linear Foot	\$	\$
A-W-11	210 Linear Feet	8" HDPE (Directional Drill)		
		Per Linear Foot	\$	\$
A-W-12	2 Each	8" Gate Valve		
		Per Each	\$	\$
A-W-13	6 Each	8" x 6" Tee		
		Per Each	\$	\$
A-W-14	1 Each	8" x 6" Reducer		
		Per Each	\$	\$
A-W-15	16 Each	8" 45-Degree Bends		
		Per Each	\$	\$
A-W-16	6 Each	6" Plug		
		Per Each	\$	\$
A-W-17	35 Linear Feet	6" PVC		
		Per Linear Foot	\$	\$

**Section 00320**

**Bid Schedule**

*No changes shall be made to the Pay Item Quantities contained herein. Any corrections to bidders' entries shall be made in ink and shall be initialed by the bidder*

ITEM NUMBER	APPROXIMATE QUANTITIES	ITEM & UNIT PRICES BID (PRICES TO BE WRITTEN IN WORDS)	UNIT PRICE	AMOUNT
A-W-18	1 Each	6" x 6" Tapping Valve & Sleeve (& Thrust Block)		
		Per Each	\$	\$
A-W-19	235 Linear Feet	2" PVC (w/ Fittings)		
		Per Linear Foot	\$	\$
A-W-20	1 Each	2" Directional Drill Connection		
		Per Each	\$	\$
A-W-21	8 Each	2" Gate Valve		
		Per Each	\$	\$
A-W-22	225 Linear Feet	1-1/2" Pipe Removal		
		Per Linear Foot	\$	\$
A-W-23	85 Linear Feet	6" Pipe Removal		
		Per Linear Foot	\$	\$
A-W-24	20 Linear Feet	8" Pipe Removal		
		Per Linear Foot	\$	\$
A-RW-1	3,875 Square Yards	Full Depth Reclamation		
		Per Square Yard	\$	\$
A-RW-2	11,625 Gallons	Asphalt Emulsion for Full Depth Reclamation		
		Per Gallon	\$	\$
A-RW-3	70 Tons	Cement for Full Depth Reclamation		
		Per Ton	\$	\$

**Section 00320**

**Bid Schedule**

*No changes shall be made to the Pay Item Quantities contained herein. Any corrections to bidders' entries shall be made in ink and shall be initialed by the bidder*

ITEM NUMBER	APPROXIMATE QUANTITIES	ITEM & UNIT PRICES BID (PRICES TO BE WRITTEN IN WORDS)	UNIT PRICE	AMOUNT
A-RW-4	550 Linear Feet	Miami Curb Reconstruction		
		Per Linear Foot	\$	\$
A-RW-5	220 Linear Feet	Valley Curb Construction		
		Per Linear Foot	\$	\$
A-RW-6	450 Tons	Asphalt Wearing Surface (2")		
		Per Ton	\$	\$
A-R-1	25 Square Yards	Asphalt Roadway Restoration		
		Per Square Yard	\$	\$
A-R-2	325 Square Yards	Brick Roadway Restoration		
		Per Square Yard	\$	\$
A-R-3	310 Square Yards	Alley Regrading (City to Supply Millings)		
		Per Square Yard	\$	\$
A-R-4	50 Linear Feet	Remove & Reset Granite Curbing		
		Per Linear Foot	\$	\$
A-R-5	7,000 Square Feet	Sodding		
		Per Square Foot	\$	\$
A-R-6	270 Square Feet	Concrete Driveway Restoration		
		Per Square Foot	\$	\$
A-M-1	250 Cubic Yards	Unsuitable Material Removal & Replacement		
		Per Cubic Yard	\$	\$
<b>TOTAL (BASE BID)</b>		_____	\$	_____

**SECTION 00330**

**FLORIDA TRENCH SAFETY ACT ACKNOWLEDGEMENT**

**PROJECT:** City of Gulfport, 31<sup>st</sup> Avenue Roadway & Potable Water Improvements

**BIDDER'S NAME:** \_\_\_\_\_

Bidder acknowledges that included in the various items of the proposal in the Total Bid Price are costs for complying with the Florida Trench Safety Act (90-96, Laws of Florida) effective October 1, 1990. The bidder further identifies the costs to be summarized below:

	Trench Safety Measure (Description)	Units of Measure (LF, SY)	Unit (Quantity)	Unit Cost	Extended Cost
A.	_____	_____	_____	_____	_____
B.	_____	_____	_____	_____	_____
C.	_____	_____	_____	_____	_____
D.	_____	_____	_____	_____	_____

\*TOTAL: \_\_\_\_\_

\* This total amount is incidental to the contract bid price and is provided only as bidder acknowledgement of the Florida Trench Safety Act.

Failure to complete the above may result in the bid being declared non-responsive.

\_\_\_\_\_  
Bidding Contractor Signature

**SECTION 00340**

**PUBLIC ENTITY CRIMES STATEMENT**

SWORN STATEMENT UNDER SECTION 287.133(3)(a),  
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES.

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

1. This sworn statement is submitted to \_\_\_\_\_  
(Print name of the public entity)  
by \_\_\_\_\_  
(Print individual's name and title)  
for \_\_\_\_\_  
(Print name of entity submitting sworn statement)

whose business address is \_\_\_\_\_  
\_\_\_\_\_

and (if applicable its Federal Employer Identification Number (FEIN) is \_\_\_\_\_

(if the entity has no FEIN, include the Social Security Number of the individual signing  
this sworn statement: \_\_\_\_\_).

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

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

4. I understand that an "affiliate" as defined in Paragraph 287.133.(1)(a), Florida Statutes, means:

1. A predecessor or successor of a person convicted of a public entity crime: or
2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes

those officers, directors, executives' partners, shareholders employees, members and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

5. I understand that a "person" as defined in paragraph 287.133(1)(e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract in which bids or applies to id on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members and agents who are active in management of an entity.
6. Based on information and belief, the statement that I have marked below is true in relation to the entity submitting the sworn statement. (Please indicate which statement applies.)

\_\_\_\_ Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

\_\_\_\_ The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

\_\_\_\_ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholder, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer and the State of Florida, Division of Administrative Hearings and the Final Order entered by the hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list (attach a copy of the final order).

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALANDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017 FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

\_\_\_\_\_  
(Signature)

Sworn to and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Personally known \_\_\_\_\_

\_\_\_\_\_

OR Produced Identification \_\_\_\_\_

Notary Public – State of Florida

\_\_\_\_\_  
(Type of identification)

My Commission Expires \_\_\_\_\_

\_\_\_\_\_  
(Printed, typed or stamped  
commissioned name of notary public)

**SECTION 00410**

**CERTIFIED CHECK, CASH OR BID BOND**

*(Attach certified check, cash or bid bond here)*

**SECTION 00520**

**CONTRACTOR'S AFFIDAVIT**

STATE OF FLORIDA  
COUNTY OF \_\_\_\_\_

Before me, the undersigned, a Notary Public, duly commissioned, qualified and acting in and for said County and State personally appeared \_\_\_\_\_  
(Individual, Partner, or duly authorized representative of Corporate Contractor) who being duly sworn according to law deposes and says that all labor, material and outstanding claims and indebtedness of whatever nature and the City of Gulfport (Owner) with \_\_\_\_\_ (Contractor) have been paid in full.

\_\_\_\_\_  
**(Individual, Partner, or duly authorized representative of Corporate Contractor)**

Sworn to and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public

SEAL

Commission expires: \_\_\_\_\_

**END OF SECTION**

**SECTION 00530**

**CONTRACTOR'S RELEASE**

KNOW ALL MEN BY THESE PRESENTS that \_\_\_\_\_,  
A Contractor in the County of \_\_\_\_\_ and State of \_\_\_\_\_, do hereby  
acknowledge that \_\_\_\_\_ (Contractor) this day has had and  
received of and from the \_\_\_\_\_, the sum of One Dollar and other valuable  
consideration in full satisfaction and payment of all sums of money owing, payable and belonging  
to \_\_\_\_\_ (Contractor) by any means whatsoever, for  
on account of a certain agreement between the said \_\_\_\_\_ and  
\_\_\_\_\_ (Contractor) dated \_\_\_\_\_.

NOW THEREFORE, the said \_\_\_\_\_ (Contractor) (for myself,  
my heirs, executors and administrators) (for itself, its successor and assigns) do by these presents  
remise, release, quitclaim and forever discharge the said \_\_\_\_\_, its  
successors and assigns, of and from all claims and demands arising from or in connection with the  
said agreement dated \_\_\_\_\_, and of and from all, and all manner of  
action and actions, cause and causes of action and actions, suits, debts, dues, sums and sums of  
money, accounts, reckonings, bonds, bills, specialties, covenants, contracts, agreements,  
promises, variances, damages, judgments, extents, executions, claims and demand, whatsoever in  
law or equity, or otherwise which against the said \_\_\_\_\_, its successors or  
assigns, the Contractor, its heirs, successors assigns ever had, now have, or which (I, my heirs,  
executors, or administrators) (it, its successors and assigns) hereafter can, shall or may have, for,  
upon or by reason of any matter cause or thing whatsoever, from the beginning of the world to the  
date of these presents.

IN WITNESS WHEREOF, \_\_\_\_\_ (Contractor) has  
caused these presents to be duly executed the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Signed, Sealed and Delivered in the presence of:

\_\_\_\_\_  
(Individual Contractor) (SEAL)

ATTEST; \_\_\_\_\_ (SEAL)  
(Partnership Contractor)

\_\_\_\_\_  
(Secretary) By \_\_\_\_\_ (SEAL)  
(Partner)

\_\_\_\_\_  
(Corporation)

AFFIX CORPORATE SEAL,  
If a corporation By \_\_\_\_\_  
(President or Vice President)

**SECTION 00540**

**STATEMENT OF SURETY COMPANY**

In accordance with the provisions of the contract dated \_\_\_\_\_ between the City of Gulfport, Owner of \_\_\_\_\_ and \_\_\_\_\_ (Contractor) of \_\_\_\_\_, the \_\_\_\_\_ (Surety) surety on the bond of \_\_\_\_\_ (Contractor or after receipt of an affidavit from Contractor, which examination or affidavit satisfies this company that all claims for labor and materials have been satisfactorily settled, hereby approves of final payment of the said \_\_\_\_\_ (Contractor), Contractor, and by these presents witnessed that payment to the Contractor of the final estimates shall not relieve the Surety Company of any of its obligations to the \_\_\_\_\_ by the said Surety Company's Bond.

IN WITNESSETH WHEREOF, the said Surety Company has hereunto set its hand and seal this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

ATTEST;

\_\_\_\_\_

SEAL

By \_\_\_\_\_  
(President, Vice President)

*Note: This statement, if executed by any person other than the President or Vice President of the Company, must be accompanied by a certificate of even date showing authority conferred upon the person so signing to execute such instruments on behalf of the Company represented.*

**END OF SECTION**

**SECTION 00610**

**PERFORMANCE – PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS: That we, \_\_\_\_\_  
(Contractor-Principal), a \_\_\_\_\_ (Corporation-  
Partnership-Sole Proprietor, Etc.), hereinafter called "Principal"  
and \_\_\_\_\_ (Surety) of \_\_\_\_\_,  
State of Florida, hereinafter called the "Surety," are held and firmly bound unto the City of Gulfport,  
hereinafter called "Owner" in the penal sum of \_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_,) in lawful money of the United States for the payment of which sum will  
and truly be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly  
and severally firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION is such that Whereas, the Principal entered into a  
certain contract with the Owner, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_, a copy of  
which is attached hereto and made a part hereof for the construction of:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOW, THEREFORE, if the Principal shall, truly and faithfully perform its duties, all the  
undertakings, covenants, terms, conditions and agreements of said contract during the original term  
thereof, and any extensions thereof which may be granted by the Owner, with or without notice to  
the Surety, and if he shall satisfy all claims and demands incurred under such contract, and shall  
fully indemnify and save harmless the Owner from all costs and damages which it may suffer by  
reason of failure to do so, and shall reimburse and repay the owner all outlay and expense which the  
Owner may incur in making good any default, and shall promptly make payment to all persons,  
firms, subcontractors, and corporations furnishing materials for or performing labor in the  
prosecution of the work provided for in such contract, and any authorized extension or modification  
thereof, including all amounts due for materials, lubricants, oil, gasoline, repairs on machinery,  
equipment and tools, consumed or used in connection with the construction of such work, and all  
insurance premiums on said work, and for all labor, performed in such work whether by  
subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and  
effect.

PROVIDED, FURTHER, that the said Surety, for the value received hereby stipulates and agrees  
that no change, extension of time, alterations or additions to the terms of the contract or to the work  
to be performed there under or the specifications accompanying the same shall in anyway affect its  
obligation on this bond, and it does hereby waive notice of any such change, extension of time,  
alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, the said Principal and Surety have duly executed this instrument under seal in \_\_\_\_\_ counterparts, each one of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

ATTEST:

\_\_\_\_\_  
(Principal)

\_\_\_\_\_  
(Principal) Secretary

By \_\_\_\_\_

SEAL

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(City/State/Zip Code)

\_\_\_\_\_  
(Witness as to Principal)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(City/State/Zip Code)

\_\_\_\_\_  
(Surety)

ATTEST:

\_\_\_\_\_  
(Surety)

By \_\_\_\_\_  
(Attorney-in-fact)

SEAL

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Witness as to Surety)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(City/State/Zip Code)

*Note: Date of Bond must not be prior to date of Contract:*

**SECTION 00620**  
**CERTIFICATE OF INSURANCE**

*(Attach insurance certificates here)*

# CITY OF GULFPORT



## CONTRACT AND GENERAL CONDITIONS FOR CONSTRUCTION SERVICES

This **AGREEMENT** made on the \_\_\_\_ day of \_\_\_\_\_, 2016, **BETWEEN** the owner, **CITY OF GULFPORT**, 2401 53<sup>rd</sup> Street South, Gulfport, FL **33707** and the Contractor,

**PROJECT:** 31<sup>st</sup> AVENUE ROADWAY & POTABLE WATER IMPROVEMENTS  
BID# 2016-04

**CONTRACTOR:**

**ENGINEER:** ADVANCED ENGINEERING AND DESIGN, INC.  
3931 68<sup>TH</sup> AVENUE NORTH  
PINELLAS PARK, FLORIDA 33781

**The OWNER and CONTRACTOR agree as follows:**

## **ARTICLE 1 - CONTRACT DOCUMENTS**

### 1. Enumeration of Contract Documents

Contract Documents comprise this Agreement, the plans, drawings, specifications, project manual, addenda, and other materials contained in City of Gulfport 31<sup>st</sup> Avenue Roadway & Potable Water Improvements (Bid #2016-04). Documents comprising 31<sup>st</sup> Avenue Roadway & Potable Water Improvements (Bid #2016-04) are incorporated into this Agreement by reference and are part of the Agreement as if attached or repeated herein. This Agreement represents the entire Agreement between the parties hereto and supercedes any prior negotiations, representations, agreements, or understandings, either written or oral.

### 2. Intent of Contract Documents

Execution of the Contract by the contractor is a representation that the Contractor has become familiar with the Contract Documents and field conditions under which the Work is to be performed within the requirements of Work specified by the Contract Documents.

The headings of the sections of this Agreement and capitalization's are for the purpose of convenience only and shall not be deemed to expand or limit the provisions contained in such sections.

### 3. Definitions

Definitions are provided in Appendix 1 of this Agreement

## **ARTICLE 2 - SCOPE OF WORK**

The contractor shall execute the entire Work described in the Contract Documents. Moreover, deductive alternates related to the 31<sup>st</sup> Avenue Roadway & Potable Water Improvements (Bid #2016-04) are not accepted by the City.

## **ARTICLE 3 - COMMENCEMENT DATE**

The Commencement Date shall be established by the Owner and communicated to the Contractor in a Notice to Proceed (NTP) sent by registered mail to the Contractor's place of business not later than 30 days following execution of the Contract, or receipt of proper permits from regulatory agencies having jurisdiction over the project, whichever is later.

The Contractor will not commence Work on the project until receiving a Notice to Proceed from the Owner.

#### **ARTICLE 4 - SUBSTANTIAL COMPLETION DATE**

The Contractor shall commence work within 15 days from the date of Notice to Proceed. The contractor shall achieve Substantial completion of Work not later than 120 consecutive calendar days after the date specified by the Notice to Proceed, subject to adjustments of the Contract Time as provided in the Contract Documents. The Contractor shall achieve Final Completion of the Work not later than 15 days after reaching Substantial Completion.

Time limits herein stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

#### **ARTICLE 5 - CONTRACT AMOUNT**

The Owner shall pay the Contractor the sum of \_\_\_\_\_ subject to additions and deductions as provided in the Contract Documents for all Work described in Articles 2 and 12.

#### **ARTICLE 6 - LIQUIDATED DAMAGES**

The Contractor and Owner mutually agree that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will ensure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and Owner, that the time for the completion of the Work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing.

If the said Contractor shall neglect, fail or refuse to complete the work within the time specified, or any proper extension thereof granted in accordance with this Agreement, then the Contractor does hereby agree, as a part of consideration for the award of this contract, to pay the Owner the amount of \$200 for each calendar day beyond the Substantial Completion Date not as a penalty but as liquidated damages for such breach of Contract. Furthermore, the contractor agrees to pay the Owner the amount of \$200 for each calendar day the Work remains incomplete after the date established for Final Completion.

The said amount is fixed and agreed upon by and between the Contractor and Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain. Also, failure to meet requirements for substantial or final completion shall subject the Contractor to reinspection fees as set forth in Section 9-C-16.

Both Liquidated Damages and Reinspection Fees shall be implemented using a Deductive Change Order or Construction Change Directive.

## ARTICLE 7 - PAYMENTS

### 1. Progress Payments

Based upon Applications for Payment submitted to the Engineer by the Contractor and Certificates for Payments issued by the Engineer, the Owner shall make progress payments on account of the Contract Amount to the Contractor as provided below and elsewhere in the Contract Documents.

The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.

Provided an Application for Payment is received by the Engineer not later than the 15<sup>th</sup> day of the month, the Owner shall make payment to the Contractor not later than the last day of the month. If a valid Application for Payment is received by the Engineer after the Application date fixed above, payment shall be made 15 days after the Engineer received the Application for Payment.

Each Application for Payment shall be based upon the Schedule of Values submitted by the Contractor in accordance with the Contract Documents.

Applications for Payment shall indicate the percentage of completion of each portion of the Work as of the end of the period covered by the Application of Payment.

Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

Take that portion of the Contract Amount properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Amount allocated to that portion of the Work in the Schedule of Values, less retainage of 10%.

Subtract the aggregate of previous payments made by the Owner.

The progress payment shall be further modified under the following circumstances:

Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to 90% of the Contract Amount less such amounts as the Engineer and owner shall be determined for incomplete Work and unsettled claims.

### 2. Final Payment

Final payment, comprising the entire unpaid balance of the Contract Amount, shall be made by the Owner to the Contractor when the Contract has been fully performed and accepted by the Owner. Furthermore, payment shall be made within 15 days of the Owner receiving a final Certificate of Payment from the Engineer.

3. Certifying a Schedule of Values

If the Bid Proposal does not contain a Schedule of Prices, within 10 days after award of the Contract, the Contractor shall submit to the Engineer a Schedule of Values allocating the values of various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Engineer or Owner may require. The Schedule of Values shall be reviewed by the Engineer and approved by the Owner, and shall be used as the basis for reviewing the Contractor's Applications for Payment.

The Schedule of Values shall include a cost breakdown indexed per the Sections of the Specifications, which shall clearly set forth labor as distinct from materials and from equipment.

4. Contractor Applications for Payment

By the 15<sup>th</sup> of each month the Contractor shall submit to the City's Representative an itemized Application for Payment in accordance with the Schedule of Prices. Such application shall be supported by data substantiating the Contractor's right to payment as the Owner or Engineer may require. Payment shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation into work. If approved in writing by the Owner, payment may similarly be made for materials and equipment suitably stored off the site.

Applications for Payment not include:

- Payments on account of changes in the Work which have not been approved by the Owner in a Change Order; and
- Payment of amounts the contractor does not intend to pay to a Subcontractor or Supplier because of a dispute or other reason.

The Contractor warrants that the title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that all work, equipment and materials included in the Application for Payment are to the best of the Contractor's knowledge, information and belief, free from liens, claims, security interests or encumbrances.

5. Certification of Payment Requests

Within seven (7) days after receipt of a Contractor's Application for Payment, the Engineer, in consultation with the Owner, will issue a Certificate for Payment for an amount the Engineer and Owner determines is due, or notify the Contractor in writing of the reasons for withholding certification. A Certificate of Payment shall not constitute acceptance of Work not in accordance with the Contract Documents.

6. Criteria for Withholding a Certificate for Payment

The Engineer or Owner may withhold a Certificate for Payment in whole or in part if in the City's opinion, the Contractor representations to the City are not supported. If the Contractor and the City cannot agree on a revised amount, the City will promptly issue a Certificate of Payment for the amount to which the City are able to certify payment. Certification may be withheld for these reasons:

- Defective Work not corrected;
- Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Amount;
- Damages owed to the Owner or others;
- Evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or estimated Liquidated Damages; or
- Persistent failure to carry out the Work in accordance with the Contract Documents.

When reasons for withholding certification are corrected, the Engineer and Owner will certify amounts previously withheld.

**ARTICLE 8 - TERMINATION OR SUSPENSION OF THE CONTRACT**

1. Termination by the Contractor

The Contractor may terminate the Contract if the work is stopped for a period of 60 days or longer for the following reasons:

- Issuance or a Stop Work Order by a court or regulatory agency having jurisdiction over the project; or
- An act of Government making materials or labor unavailable.

If any one of the reasons stated above exists, the Contractor shall be compensated as provided in this Agreement only for Work executed in accordance with the Contract Documents.

2. Termination by The Owner For Cause

The Owner may terminate the Contract due to the Contractor's inability to perform for these reasons:

- Refusal or failure to supply properly skilled workers or materials;
- Disregarding the laws, ordinances, or regulations of public authorities having jurisdiction over the Work; or
- Substantially breaching provisions of the Contract Documents.

If such conditions exist, the Owner may, without prejudice of any other rights or remedies of the Owner, after having given the Contractor and the Contractor's surety seven days written notice, terminate the Agreement and, subject to any prior rights or the surety:

- Take possession of the site and materials, equipment, tools, and machinery thereon owned by the Contractor;
- Accept assignment of Subcontracts; and
- Finish the Work by whatever means are available to the Owner

Should the Work be terminated according to this section the Contractor shall not be entitled to receive further payment until the Work is finished.

If the unpaid balance of the Contract Amount exceeds the costs of finishing the work, such excess shall be used to pay the Contractor amounts due for materials and equipment stored on site and Work completed in accordance with the Contract Documents which has been Certified by the Engineer and accepted by the Owner. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the Owner, which obligation for payment shall survive the termination of the Agreement.

The costs of finishing the Work include, without limitation, all reasonable attorney's fees, additional title costs, insurance, additional interest because of delay in completing the Work, and all other direct, indirect, and consequential costs incurred by the Owner by reason of the termination of the Contractor as stated herein. The Owner shall be entitled to hold all amounts due the Contractor at the date of termination until all of the Owner's costs have been established, and to apply such amounts to such costs.

Should the Owner's termination of the Contractor for Cause be challenged, and should such challenge prevail, then the Owner's termination of the Contractor shall be deemed to have been a termination for Convenience.

### 3. Termination by the Owner for Convenience

The Owner may, without cause, order the Contractor in writing to suspend, delay or terminate the Work in whole or in part for such period of time the Owner may determine. The Owner shall adjust the Contract Amount for increases in the cost of performance under the Contract caused by suspension, delay, or interruption.

No change in Contract Amount shall be made where the suspension, delay, or interruption for which the Contractor is responsible or attributable.

In the event of termination for convenience by the Owner, the Contractor shall only be entitled to and paid compensation earned through the date of termination and Termination Expenses. Termination Expenses are those directly attributable to termination (such as demobilization costs). Contractor shall not be entitled to direct, indirect, or consequential damages, or other damages for loss from and including, but not limited to economic loss,

loss of anticipated profits, idle equipment expenses, interest or carrying costs, overhead expenses, loss of efficiency, or loss of productivity.

## **ARTICLE 9 - EXECUTION OF THE PROJECT**

### **A. OBLIGATIONS OF THE ENGINEER**

#### 1. Engineer as Owner's Representative

The Engineer will provide project management services as described in the Contract Documents, and will serve as the Owner's representative during construction, and until final payment is certified. The Engineer will consult with and advise the owner. The Engineer will have the authority to act on behalf of the Owner only to the extent as provided in the Contract documents.

The Engineer specifically assumes no duty or responsibility which may be construed as being for the benefit of and thereby enforceable by other parties providing labor, materials or services in connection with the Work such as, though not limited to, Contractor, Subcontractors, Sub-subcontractors, their agents, employees, or any of their bonding companies, it being understood that the Engineer's obligations are to the Owner, and in performing such obligations the Engineer may consequently alter the burdens and expense of such other parties. If the Contractor claims additional cost or time on account of the Engineer performing such obligations, the Contractor shall give notice as provided in Article 13. The Owner and Contractor shall communicate through the Engineer, communications by and with the Engineer and Engineer's consultants shall be through the Engineer. Communications by and with subcontractors and suppliers shall be through the Contractor. Communication by and with other Contractors working on the site which are not parties to this Agreement shall be through the Owner.

#### 2. Monitoring Progress, Quality and Compliance with Contract Requirements

The Engineer will perform site inspections as critical stages of construction to become generally familiar with progress and quality of completed Work to determine if in general the Work is performed in accordance with the Contract Documents. The Engineer will have authority to reject work that does not comply with the Contract Documents. Wherever considered necessary, the Engineer may require additional inspection or testing of the Work whether the Work is fabricated, installed or completed.

The Engineer will not have control over or change of and will not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility. The Engineer will not be responsible for the Contractor's failure to carry out the Work, since these are solely the Contractor's responsibility. The Engineer will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The Engineer will not have control over or change of and will not be responsible for acts or omissions of the Contractor,

Subcontractors, or their agents or employees, or of any other persons performing portions of the Work.

Actions of the Engineer undertaken while providing administration of the Contract shall not be construed as either supervision or coordination, since these are solely the Contractor's responsibility.

3. Review and Approval of Contractor's Submittals

The Engineer will review and approve the Contractor's Submittals, such as shop drawings and product samples, for the limited purpose of checking for compliance with the Contract Documents. The Engineer's review does not relieve the Contractor of his obligations under the Contract to comply with the plans and specifications.

The Engineer's approval of a submittal which contains a deviation which has not been specifically called to the Engineer's attention excludes approval of that deviation and shall not serve as a waiver of the rights of the Engineer or Owner unless the Engineer makes specific written acceptance of said deviation on the Engineer's letterhead or the Owner makes specific written acceptance of said deviation on the Owner's letterhead.

4. Interpret Plans

The Engineer will provide interpretations of the Plans and Specifications for compliance with the Contract Documents. The Engineer's response to interpretation requests shall be made with reasonable promptness, or a maximum of 15 days from the date of written request.

Interpretations of the Engineer will be consistent with the intent of the Contract Documents and will be documented in writing or in the form of plans and drawings.

The Engineer may, as the Engineer judges desirable, issue additional drawings or information indicating in greater detail the construction or design of the various parts of the Work; such drawings or information may be affected by field order or other notice to the contractor, and provided such drawings or information may be affected by field order or other notice to the Contractor, and provided such drawings or information are reasonable consistent with the previously existing Contract Documents, the Work shall be executed in accordance with such additional drawings or information without additional cost or extension of the Contract Time. If the Contractor claims additional cost or time on account of such additional drawings or information, the Contractor shall give the notice provided in Article 13.

5. Approving Non-Substantial Deviations

The Engineer will have the authority to order minor changes in the Work not involving adjustments of Contract Amount or Contract Time, and which is not inconsistent with the intent of the contract Documents. Such changes shall be implemented by issuing a

Construction Change Directive that shall be immediately binding on the Contractor upon receipt.

6. Certifying Applications for Payment

Based on the Engineer's observations and evaluations of the Contractor's Applications for Payment, the Engineer will review amounts due the Contractor and will, upon approval by the Owner, issue Certificates for Payments.

7. Preparing Change Orders

The Engineer will prepare Change Orders for approval by the Owner.

8. Substantial Completion and Acceptant Reviews

The Engineer will conduct inspections, and if the Owner and Engineer find Work Substantially Complete, establish the date or dates of Substantial completion and the date of Final Completion. The Engineer will receive and forward to the Owner for the Owner's review, project records, written documents required by the Contract and assembled by the Contractor. The Engineer will issue a final Certificate for Payment upon compliance with requirements of the Contract Documents and acceptance by the Owner.

**B. OBLIGATIONS OF THE OWNER**

1. Project Manager

The Owner will designate a Project manager, through which the City will communicate with the Engineer and Contractor.

2. Information Provided by Owner

The Owner shall furnish surveys describing physical characteristics of the site, and utility locations.

Information or services under the Owner's control shall be promptly supplied to the Contractor in order to promote orderly progress of the Work. Such information and services will be provided to the Contractor free, unless otherwise provided in the Contract Documents.

The Owner will furnish the contractor, free of charge, a maximum of ten sets of Construction Documents.

3. Permits

Unless otherwise provided in the Contract Documents, the Owner shall secure and pay for any and all Permits necessary to construct the facilities described by the Contract Documents.

4. Owner's Right to Stop Work

If the Contractor fails to correct Work that is not in accordance with requirements of the Contract Documents or persistently fails to carry out Work in accordance with the Contract Documents, the Owner may order the Contractor to stop work or any portion thereof until the cause of such order has been eliminated. Such an order must be in writing.

5. Owner's Right to Carry Out Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents, after giving seven (7) days written notice, the Owner may without prejudice to other remedies, correct such deficiencies. In such a case, a Change Order shall be issued deducting from the Contract Amount the cost of correcting such deficiencies, including additional design and administrative costs as may be necessary by default, neglect, or failure.

6. Interpretation of Contract Documents and Performance

In all matters concerning performance under this Agreement and requirements of the Contract Documents, the Owner's interpretation will prevail.

7. Approving Substantial Deviations

The Owner will approve in writing all changes in the Work involving:

- Adjustments to the Contract Amount;
- Contract Time; or
- Work that is inconsistent with the intent of the Contract Documents.

A Change Order signed by the Contractor, Engineer, and the Owner shall effect such changes.

**C. OBLIGATIONS OF THE CONTRACTOR**

1. Superintendent

The Contractor shall employ a competent Superintendent and necessary assistants who shall be in attendance at the Project Site during performance of the Work. The

Superintendent shall represent the Contractor, and communications given to the Superintendent shall be as binding as if given to the Contractor.

2. Review of Contract Documents

The Contractor shall carefully review Contract Documents and information provided by the Owner, and shall at once report to the Engineer any errors, omissions, or inconsistencies discovered.

If the Contractor performs any construction activities with knowledge of an error, omission or inconsistencies in the Contract Documents without such notice to the Engineer, the Contractor shall assume responsibility for such performance.

3. Review of Field conditions

The contractor shall take field measurements and verify field conditions and carefully compare such with the Contract Documents before commencing the Work. Errors, omissions or inconsistencies discovered shall be reported to the Engineer at once.

4. Supervision and Construction Procedures

The Contractor shall perform the Work in accordance with the Contract Documents and Submittals approved by the Engineer.

The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures; and for coordinating all portions of the Work, unless otherwise specified in the Contract Documents.

The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors, Suppliers, and their agents and employees, and other persons performing portions for the Work under a contract with the Contractor or his Subcontractors.

The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Engineer, or the Owner's Project Manager, in administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

5. Inspection of Work

The Contractor shall be responsible for inspection of portions of the Work already performed under this Contract to determine if such portions are in proper condition to receive subsequent Work.

6. Labor and Materials

Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, water, electric, other utilities, transportation, taxes and other facilities and services necessary for proper execution and completion of the Work. It is the Contractor's responsibility to provide these resources whether temporary or permanent, and whether or not incorporated or to be incorporated in the Work.

The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

7. Warranty

The Contractor warrants to the Owner that materials, equipment, and skilled labor will be provided in accordance with the Contract Documents, and that the Work will be free from defects for a period of one year from final acceptance. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective.

8. Construction Schedule

Prior to issuance of a Notice to Proceed, the Contractor shall prepare and submit to the Engineer a Construction Schedule for the Work. The Schedule shall not exceed the time limits established in the Contract Documents. The construction schedule shall document major construction activities and tasks, identifying the estimated beginning and ending dates for each identifiable component of the Work. The Construction Schedule shall also identify time critical activities or events that would most greatly affect the Construction Schedule. The Construction Schedule will be prepared in sufficient detail as may be acceptable to the Engineer. The Construction Schedule shall be revised at appropriate intervals as required by conditions of the Work.

9. Human Rights Ordinance

“The City of Gulfport and associated parties shall observe and be in compliance with all applicable laws, ordinances, and rules and regulations of the State of Florida and the City of Gulfport during the conduct of official business with and/or in representation of the City of Gulfport. The City of Gulfport acknowledges it is the intent of the City Council, in enacting Chapter 26 of the City of Gulfport Code of Ordinances, to protect and safeguard the right and opportunity of all persons to be free from all forms of discrimination, including discrimination based on age, race, color, religion, national origin, ancestry, disability, marital status, gender, gender identity or expression, sexual orientation, or physical characteristic.”

10. 119.0701 Florida Statutes

In addition to other contract requirements provided by law, each public agency contract for services must include a provision that requires the contractor to comply with public records laws, specifically to: (a) Keep and maintain public records that ordinarily and necessarily would be required by the public agency in order to perform the service. (d) Meet all requirements for retaining public records and transfer, at no cost, to the public agency all public records in possession of the contractor.

9. Project Records

The Contractor shall maintain the following project records at the project site:

- Construction Schedule;
- Plans and Drawings;
- Specifications;
- Addenda;
- Change Orders;
- Construction Change Directives;
- Shop Drawings;
- Product Data;
- Samples;
- Required Submittals; and
- Superintendent's Log.

Records shall be maintained in good order, and marked to reflect current changes and selections made during the construction process.

Records shall be available to the Engineer and Owner and, with the exception of the Superintendent's Log, shall be delivered to the Engineer for submittal to the Owner upon completion of the Work.

Additionally, the Superintendent's Log shall be delivered to the Engineer for submittal to the Owner upon completion of the Work.

Additionally, the Superintendent's Log shall at a minimum document the dates and times of critical inspections; instructions received from the Engineer; and weather conditions including dates, times and amount of rainfall received.

10. Approval of Shop Drawings and Other Submittals

The Contractor shall review, approve and submit to the Engineer, Shop Drawings, Product Data, Samples, and other Submittals required by the Contract Documents for approval by the Engineer prior to their implementation. The Contractor shall perform no portion of the Work requiring submittal and review of these or similar data until approved

by the Engineer. Such Work shall be accomplished in accordance with approved Submittals.

The Contractor shall not submit any shop drawing or other submittal that is merely a tracing or other copy of any of the Contract Documents. Each submittal item must be prepared by the Contractor, or for the Contractor by a Subcontractor or Supplier of the Contractor. The Engineer shall have the authority to reject any submittal items that violate this provision, and no extension of Contract Time shall be given on account of such rejection. Engineer's review and action on any such Submittals shall not serve as a basis for or give rise to any claim in favor of Contractor or any third party against the Owner or Engineer.

By submitting the materials described above to the Engineer for approval, the Contractor represents that he has determined and verified materials, field measurements, and field construction criteria related to the Submittals and has checked and verified their compliance with requirements of the Contract Documents. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or other Submittals. The Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents unless the Engineer makes specific written acceptance of said deviations on the Engineer's letterhead.

11. Use of the Project Site

The Contractor shall confine operations to the Site as designated by the Owner, and shall confine operations and activities to those permitted by law, ordinances, permits, and the Contract Documents; and should not unreasonably encumber the site with materials or equipment. The Contractor is specifically prohibited from the storage of materials, equipment, or supplies not related to the Work on the Project Site.

The Owner will be responsible for resolving disputes between the Contractor and other Contractors with which the Owner has a separate Agreement concerning use of the Project Site.

12. Cleanup of Project Site

The Contractor shall keep the premises and surrounding area reasonably free of rubbish, waste materials, or debris caused by operations of the Contract. At completion of the Work, the contractor shall remove from and about the Project Site, waste materials, rubbish, tools, construction equipment, machinery, and surplus materials to the Owner's satisfaction. Should the Contractor fail to clean up as provided in the Contract Documents, the Owner may do so and the cost charged to the Contractor through a deductive Change Order or Construction Change Directive.

13. Observations and Inspections

The Contractor shall provide owner and Engineer access to the Work, wherever located and in whatever stage of construction for the purpose of providing inspections and

observations necessary to assess compliance with applicable codes and to identify the quality and quantity of Work performed.

If a portion of the Work is covered contrary to the Engineer's request or to the requirements expressed in the Contract Documents, it must be uncovered to allow the requested inspection or observation and replaced at the Contractor's expense without change in Contract Time.

If a portion of the Work has been covered for which the Owner or Engineer as not specifically requested prior to observation, the Engineer may request to see such Work and the Contractor shall uncover it. If such Work has been completed in accordance with the Contract Documents, the cost for uncovering and replacement shall be born by the Owner and implemented through a Change Order recommended by the Engineer and approved by the Owner. If such Work was inspected and found not to be in conformance with the Contract Documents, the Contractor shall pay the cost of uncovering and replacement without a change in Contract Time.

14. Correcting Rejected Work

The Contractor shall promptly correct Work rejected by the Engineer for failing to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed, or completed. The Contractor shall bear the costs of correcting such Work, including those for additional testing and inspections and compensation for any additional design or necessary administrative costs.

If, within one year after the date of Final Acceptance, or before the expiration of warranties provided by the Contractor, Subcontractor, or Suppliers, whichever is greater, or by the terms of a special warranty required by the Contract Documents; any of the Work is found to not be in accordance with the Documents, the contractor shall correct it promptly after receipt of a written notice from the Owner. This obligation shall survive acceptance of the Work under the contract and Termination of the Contract, if the Owner has exercised such Termination.

If the Contractor fails to correct nonconforming Work, within a reasonable time, the Owner may complete the work in accordance with the provisions in Article 9-B-5 of this Agreement.

Acceptance of Non Conforming Work

The Owner may at his option accept Work that is not in accordance with the requirements of the Contract Documents instead of requiring its removal and correction. In such cases the Contract Amount will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

15. Tests & Inspections

Tests, inspections and approvals of portions of the Work required by law, ordinance, rules, regulations, or other orders of public authorities having jurisdiction shall be made at the appropriate time. Unless otherwise provided, the Contractor will make arrangements for such tests, inspections and approvals, and shall be responsible for paying testing, inspection and reinspection fees.

Other tests, inspections, and approvals required by the Contract Documents shall also be made at the appropriate times. The Contractor shall make arrangements for such tests, inspections and approvals within the independent testing laboratories or entities designated by the Owner. The Owner shall bear the costs related to these tests, inspections and approvals.

For all tests and inspections conducted under this section, the Contractor shall give the Engineer timely notice of when and where tests and inspections are to be made so that observations may be made.

If tests or inspections reveal failure of portions of the Work to comply with the Contract Documents, or approval is not secured from a public authority having jurisdiction over the project for a portion of the Work covered by the Contract Documents, the Contractor shall bear all costs made necessary by such failure.

Certificates of testing, inspection or approval shall be secured by the Contractor and promptly delivered to the Engineer.

**ARTICLE 10 – SUBCONTRACTORS**

1. Reporting of Proposed Subcontractors

As soon as practical after the issuance of a Notice to Proceed, or as otherwise provided in the Contract Documents, the Contractor will furnish in writing to the Engineer the names of persons or entities, including Subcontractors, material suppliers, equipment, suppliers, and fabricators proposed for Principal Portions of the Work. After conferring with the Owner, the Engineer will promptly inform the Contractor in writing whether or not there are reasonable objections to any of the proposed persons or entities unto which the Contractor proposes to enter into an Agreement.

2. Rejection of Subcontractors

Neither the Contractor nor the Owner shall be required to Contract with anyone to whom either party has made a reasonable objection; exception instances where the Contract Documents require use of a material, equipment, or other produce for which there is no acceptable alternate supplier or installer.

3. Removal of Subcontractors

The contractor shall not change a Subcontractor, person or entity previously selected if the Owner makes reasonable objection to such change.

4. Subcontractors Bound by Contract Documents

By appropriate Agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all obligations and responsibilities which the Contractor, under this Agreement, assumes toward the Owner.

Each Subcontract shall preserve and protect the right of the Owner under the Contract Documents with respect to the Work to be performed by the Subcontractor so the Subcontracting thereof will not prejudice such rights and shall allow the Subcontractor, to the extent provided in the Contract Documents, the benefit of all rights, remedies and redress against the Contractor that the Contractor has against the Owner.

In all Contracts between the Contractor and Subcontractor, suppliers, or fabricators, the Owner will be named as third party beneficiary.

The Contractor assigns each Subcontract for a portion of the Work to the Owner under these conditions:

- Assignment is effective only after termination of the Contract by the Owner for cause pursuant to Article 8-2 of this Agreement.
- Assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

## **ARTICLE 11 - CONSTRUCTION BY OWNER OR SEPARATE CONTRACTORS**

1. Owner's Right to Perform Construction

The Owner reserves the right to perform construction or operations related to the Project outside the scope of this Agreement with Owner's own forces and to award separate Contracts in connection with other portions of the Project not covered under the scope of this Agreement.

2. Owner to Provide Coordination

The Owner shall provide for coordination of activities of the Owner's own forces and for the Contractors under a separate Agreement to provide construction services on the Project Site. If part of the Contractor's Work depends upon prior Work performed by the Owner or other separate Contractors, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Engineer apparent discrepancies or defects in

other such construction that would render it unsuitable for the proper execution and results of the Contractor's Work. Failure of the Contractor to so report shall constitute an acknowledgment that the Owner's previously completed construction is fit and proper to receive the Contractor's Work.

## **ARTICLE 12 - CHANGES IN THE WORK**

### **1. Contract Held Valid**

Changes in the Work may be accomplished after execution of the Contract without invalidating the Contract where they are documented by a Construction Change Directive executed in accordance with this Agreement.

### **2. Construction Change Directive**

A Construction Change Directive prepared and signed by the Engineer will direct all changes in the Work. A Construction Change Directive signed by the Contractor indicates agreement of the Contractor with the actions specified in the Directive, including the inclusion or absence of an adjustment in Contract Amount or Contract Time or the method for determining them. Construction Change Directives shall be issued using AIA Form G714.

### **3. Construction Change Order**

In addition to a Construction Change Directive, a Construction Change Order will be required wherever the issuance of a Construction Change Directive would involve a change in:

- Contract Amount;
- Contract Time; or
- The intent of the Contract Documents.

In such instances, the Engineer, Contractor and Owner must sign a Construction Change Order. Construction Change Orders shall be issued using AIA Form G701.

Change Orders may not have typed text altered or additions placed thereon after the signing process has begun. Change Orders with alterations to typed text or additions placed thereon shall not be considered by such, and the original Change Order shall govern. Should alterations or additions to a Change Order be desired, said Change Order shall be re-typed and re-signed, and said Change Order shall be identified as "Revised".

### **4. Changes in Contract Amount**

Only Construction Change Order shall grant changes in Contract Amount. Claims for disputes concerning Contract Amount shall be determined in accordance with Article 13 of this Agreement.

5. Cost of Work

The term “Cost of Work” or “Direct Cost”, for the purpose of Change Orders, means the costs necessarily incurred and paid by the contractor in the proper performance of the Change Order Work. Except as may be agreed to in writing by the Owner, such costs shall be in amounts no higher than those prevailing in the area of the project and may include the following categories:

- Labor (payroll, taxes, fringe benefits, worker’s compensation, health and retirement benefits, sick leave).
- Owned equipment (at lowest applicable equipment manual rate).
- Rented equipment (at actual rental rate).
- Materials
- Supplies
- Subcontractor’s costs.
- Bonds and insurance.

The Contractor shall require all Subcontractors and suppliers to comply with all requirements of, and provide itemizations of all claims in accordance with this Article.

The term “cost of the Work” or “Direct Cost” shall not include any of the following:

- Payroll costs and other compensation of the Contractor’s officers, executives, principals (of partnership or sole proprietorships), general managers, Engineers, Engineers, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by the Contractor whether at the site or in it’s principal or branch office for general administration of the Change Order Work and not specifically included in the agreed upon schedule of job classifications, all of which are to be considered administrative costs covered by the contractor’s allowance for overhead and profit.
- Extraordinary fringe benefits not specifically identified, above.
- Expenses of Contractor’s principal and branch offices other than the Contractor’s office at the job site.
- Any part of the Contractor’s capital expenses, including interest on the Contractor’s capital used for the Change Order Work and charges against the Contractor for delinquent payments.
- Costs due to the negligence of the Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including, but not limited to, the correction for defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

For all changes, the Contractor shall submit an itemized cost breakdown, together with supporting data in such detail and form as prescribed by the Engineer. When a credit is due, the amount of the credit to be allowed by the Contractor to the Owner for any such

change which results in a net decrease in direct cost will be the amount of the actual net decrease in direct cost as determined by the Engineer plus the actual reduction in overhead and profit. When both additions and credits are involved in any change, the combined overhead and profit shall be calculated on the basis of the net change, whether an increase or decrease. In any event, the minimum detail shall be an itemization of all man hours required by discipline/trade with the unit cost per man hour and total labor price, labor burden equipment hours and rate for each piece of equipment, material by units of measure and price per unit, other costs specifically itemized, plus the overhead and profit allowance.

The allowance for combined overhead and profit included in the total cost to the Owner shall be based upon the following schedule:

- For the Contractor, for Work performed by the Contractor's own forces, fifteen percent (15%) of the cost.
- For the Contractor, for Work performed by the contractor's Subcontractor, seven and one-half percent (7½%) of the amount due to the Subcontractor.
- For each Subcontractor or Sub-subcontractor involved, for Work performed by that Subcontractor's or Sub-subcontractor's own forces, fifteen percent (15%) of the cost.
- For each Subcontractor, for Work performed by the Subcontractor's Sub-subcontractor, seven and one-half percent (7½%) of the amount due the Subcontractor.

6. Changes in Contract Time

Only Construction change Order shall grant changes in Contract Time. Claims for disputes concerning Contract Time shall be determined in accordance with Article 13 of this Agreement.

7. Changes in Contract Time Due to Weather Conditions

The Contractor shall consider climatic conditions in preparing the construction schedule and shall anticipate therein periods where work may not be practical due to adverse weather conditions.

Weather conditions shall not comprise grounds for extension of Contract Time unless the Contractor is able to demonstrate that the number of rain days during the entire Contract Time exceeded 120% of that for the same period in the prior year. In making such an assertion, the Contractor shall use rain data recorded in the Superintendent's Log, which must include the date, duration and volume of rain recorded at the Project Site for each day, as compared to that recorded for the area closest to the Project Site, as reported by the National Weather Service. The Owner shall determine the criteria for establishing "rain days".

8. Contractor's Obligation to Comply with Construction Change Directives

Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work. The Contractor shall promptly comply with the Construction Change Directive whether or not a Construction Change Order has been executed.

9. Effective Date of Change Orders

Construction Change Orders shall become effective immediately upon execution by the Contractor, Engineer, and Owner.

**ARTICLE 13 - CLAIMS AND DISPUTES**

1. Time Limits on Claims

Contractor Claims must be made by written notice within 14 days after the occurrence of the event giving rise to such Claim or within 14 days after the Contractor would have reasonably first recognized the condition giving rise to the Claim, whichever is later. Claims for additional time and additional compensation must be made in accordance with the conditions of this Article.

Such written notice of Contractor Claims shall be complete. Written notice which is incomplete and only partially identifies a claim with wording such as "(time or cost) impact to be determined at a later date" or "we reserve the right to claim additional (time or cost) at a later date" will not be considered.

2. Continuing Performance on the Contract

Pending resolution of a Claim, unless otherwise agreed to in writing, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

3. Claims for Concealed or Unknown Conditions

If conditions are encountered at the Site which are subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents, or comprise unknown physical conditions of an unusual nature which differ materially from those ordinarily found to exist and are generally recognized as inherent in construction activities of the character provided for in the Contract Documents; then the Contractor shall inform the Project Engineer of the materially different field conditions in writing within 14 days after first observance of the conditions, or within 14 days after the Contractor would have reasonably first recognized the materially different field conditions.

The Engineer will promptly investigate and report to the Owner if field conditions were found to be materially different than those which have been reasonably found given the criteria indicated above. If field conditions are found to be materially different, the Owner shall prepare a Construction Change Order providing an equitable adjustment in Contract Amount and/or Contract Time.

If the Owner determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the contract are justified, the Owner shall so notify the Contractor in writing stating the reasons.

4. Claims for Additional Time

The Contractor will make claims for an increase in Contract Time by presenting a "Request for Delay" (RFD) form to the Engineer within 14 days of the occurrence giving rise to the claim. All claims for an increase in the Contract Time are waived if not so presented. Owner or Engineer will supply RFD forms to the Contractor.

The sole and exclusive manner of increasing the Contract Time due to some occurrence giving rise to the representation of an RFD form is by Construction Change Order. Timely presentation of an RFD form is the prerequisite for obtaining a Construction Change Order. The Construction Change Order shall address any and all Claims based on said occurrence. With respect thereto, Contractor agrees that its exclusive remedy for delays in the performance of the Contract caused by events beyond its control, including delays claimed to be caused by the Owner or the Engineer or attributable to the Owner or the Engineer, and including Claims based on breach of Contract or negligence, shall be an extension of the Contract Time. Contractor hereby waives any and all Claims based on said occurrence that are not addressed by the Construction Change Order.

Nothing contained herein will prevent the parties from increasing the Contract Time by mutual agreement.

5. Claims for Additional Compensation

Owners liability to Contractor for any Claims other than Claims for extension of Contract Time, as described above, arising out of or related to the subject matter of this Contract, whether in Contract or Tort, including but not limited to, claims for payment by Owner of the costs, damages, or losses because of changed condition under which the Work is to be performed or for additional Work, shall be governed by the following provisions:

- All Claims must be submitted as a Request for Construction Change Order in the manner provided herein;
- Contractor must submit a Notice of Claim to the owner and to the Engineer within fourteen days (14) of when the Contractor was, or should have been aware of the occurrence of the event giving rise to the Claim; and
- Within fourteen days (14) of submitting its Notice of Claim, Contractor shall submit to the Engineer and Owner its Request for Construction Change Order

using AIA Form G701, which shall include a written statement of details of the Claim, including a description of the Work affected.

Contractor agrees that the Owner shall not be liable for any Claim the Contractor fails to submit as a Request for Construction Change Order or as a timely presented RFD form as provided in this Agreement.

After receipt of a Request for Construction Change Order, Owner, in consultation with the Engineer, shall deliver to the Contractor within thirty (30) days after receipt of request its written determination of the Claim.

Contractor's exclusive remedy for delays in performance of construction caused by delays claimed to be caused by or attributable to the Owner or the Engineer including claims based on breach of contract or negligence, shall be a Claim or a RFD form submitted in compliance with this Article.

Contractor expressly agrees that the conditions established by this Article constitutes its sole and exclusive remedies for delays and changes in such Work and eliminates any other remedies for Claim for increase in the Contract Amount, delays, changes in the Work, damages, losses, or additional compensation.

6. Resolution of Disputes by the Owner

If a Claim has not been resolved after consideration under other terms of this Article, the Engineer shall notify the Contractor in writing that the Owner shall make a determination within seven (7) days, which determination shall be final and binding on the Parties, but subject to litigation in a court having competent jurisdiction. Upon expiration of such time period, the Owner shall render to the parties a written decision relative to the Claim, including any change in Contract Amount and/or Time.

If there is surety and there appears to be a possibility of the Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the dispute.

7. Injury or Damage to Person or Property

In any party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, of any of the other party's employees or agents, or for others whose acts such party is legally liable; written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable amount of time not exceeding 21 days after first observance. The notice shall provide sufficient detail to enable the other party to investigate the matter. If a Claim for additional cost or time related to the Claim is asserted, it shall be filed as a Claim pursuant to the conditions of the Article.

## ARTICLE 14 - PROJECT CLOSEOUT

### 1. Substantial Completion of a Designated Portion

The Owner may release a Designated Portion of the Work under this Contract upon the issuance of a Certificate of Substantial Completion for the Designated Portion. Subsequent to said release, the Owner may make payment to the Contractor up to the prorated amount of the Contract Amount that is allocable to the value of the Designated Portion of the Work under the Contract. Payment under this provision may be made in full with no retainage, or a lesser retainage, at the sole discretion of the Owner.

Further, the parties agree that in the event the Owner releases a Designated Portion of the Work, whether or not retainage is released for the Designated Portion of the Work, the Contractor agrees that all insurance required by the Contract Documents will remain in full force and effect until final acceptance of the entire Work by the Owner.

### 2. Substantial Completion

When the Contractor considers that the Work or a portion thereof, which the Owner agrees to accept separately, is Substantially Complete, the Contractor shall prepare and submit to the Engineer a comprehensive list of items to be completed and corrected. The Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on the list does not relieve the Contractor of the responsibility to complete all Work in accordance with the Contract Documents.

Upon receipt of the Contractor's list, the Engineer will make an inspection, and with the approval of the Owner, determine whether the Work, or designated portion thereof, is Substantially Complete. If the Engineer's inspection discloses any item, whether or not included on the Contractor's list, which is not in accordance with the requirements of the Contract Documents, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Engineer.

The Contractor may request additional inspections by the Engineer as may be reasonable to determine when Substantial Completion has been achieved. When the Work or designated portion thereof, is Substantially Complete, the Engineer will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion and shall establish responsibilities of the Owner and Contractor for:

- Security;
- Maintenance;
- Water, sewer, electric and other utilities;
- Damages to the Work; and
- Insurance Responsibilities

The Certificate shall also establish the time within which the Contractor shall finish all items on the list of incomplete Work or corrections otherwise necessary to meet the requirements of the Contract Documents.

Warranties required by the Contract Documents shall commence on the date of Substantial Completion, or designated portion thereof, unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to each.

Upon Substantial Completion of the Work, or designated portion thereof, and upon application by the Contractor, certification by the Engineer, and approval by the Owner, the Owner shall make payment, reflecting adjustment in retainage, if any, for such Work or portion thereof as provided in the Contract Documents.

### 3. Final Acceptance and Payment

Upon receipt of written notice that the Work is ready for Final Inspection and upon receipt of a Final Application for Payment, the Engineer shall promptly inspect the Work. When the Engineer and Owner find the Work acceptable under the Contract Documents and the Contract fully performed, the Engineer shall issue a Certificate for Final Payment.

Neither final payment or any remaining retainage shall become due until the Contractor submits to the Engineer all information required in the Contract Documents, including, but not limited to, warranties, as-built plans, and operation and maintenance manuals.

Furthermore, final payment, nor any remaining retainage, shall become due until the Contractor executes and presents to the Owner a "Certificate of Claims Paid" and "Release of all Claims" form in such a form as may be acceptable to the owner. Acceptance of final payment by the Contractor shall comprise a release of all claims under the Contract, and receipt of which acknowledges full and complete payment for all Work done, materials and equipment furnished, and damages or claims arising under this Agreement.

## **ARTICLE 15 - PROTECTION OF PERSONS AND PROPERTY**

### 1. Compliance with Federal, State, and Local Laws, Ordinances, and Regulations

Contractor agrees to comply with all applicable Federal, State, and local laws, regulations, and ordinances, including, but not limited to, the following:

- Title VI of the 1964 Civil Rights Act.
- Title VII of the 1964 Civil Rights Act, as amended by the Equal Employment Opportunity that prohibits discrimination in employment.
- Age Discrimination Act of 1973

- Contract Work Hours and Safety Standards Act.
- Section 504 of the Rehabilitation Act prohibiting discrimination in the employment of the handicapped.
- Fair Labor Standards Act.
- Chapter 112, Florida Statutes, prohibiting conflicts of interest in the procurement of contracts with a governmental agency.
- Trench Excavation System & Shoring standards adopted by the Department of Labor and Employment Security and related trenching regulations.
- Construction Work Hours and Safety Act (Construction Safety Act)

## 2. Safety of Employees and Property

The Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

- Employees on the Project Site and other persons who may be affected thereby;
- The Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or sub-subcontractors; and
- Other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

When use or storage of explosives or other hazardous materials or equipment or unusual methods is necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

The Contractor shall promptly remedy the damage and loss (other than damage or loss insured under requirements of the Contract Documents) to property referred in this Section caused in whole or in part by the Contractor, Subcontractor, Sub-subcontractor, or anyone directly or indirectly employed by any of them or by anyone for whose acts they may be liable and for which the Contractor is responsible, except damage or loss attributable to acts or omissions of the Owner or Engineer or anyone directly or indirectly employed by either of them, or by anyone for whose acts wither of them may be liable and not attributable to the fault or negligence of the Contractor.

The Contractor shall designate a responsible member of the Contractor's organization at the Site whose duty shall be the prevention of accidents. This person shall be the Contractor's Superintendent unless otherwise designated by the Contractor in writing to the Owner and Engineer.

The Contractor shall not load or permit any part of the construction or Site to be loaded so as to endanger its safety.

3. Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in this Agreement.

**ARTICLE 16 - INDEMNIFICATION, INSURANCE AND BONDS**

1. Indemnification

To the fullest extent permitted by law, for Ten and 00/100 Dollars (\$10.00), acknowledged to be included and paid for the Contract Amount, and other good and valuable consideration, the Contractor shall indemnify and hold harmless from and pay on behalf of the Owner and their agents and employees all claims, damages, losses, and expenses, including, but not limited to, attorney's fees arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss, or expense;

- is attributable to bodily injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting there from; and
- is caused in whole or in part by any negligent act or omission of Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts he may be liable, regardless of whether or not it is caused in part by a party indemnification hereunder.

Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Section. Nothing contained herein shall be construed as a waiver of any immunity from or limitation of liability the owner may have under this doctrine of sovereign immunity or Section 768.28, Florida Statutes. The obligations of the Contract under this Article shall not extend to the liability of Engineer, his agents, or employees arising out of:

- the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs, or specifications; and
- the giving of or the failure to give directions or instructions by the Engineer, his agents, or employees providing such, giving or failure to give is the primary cause of the injury or damage.

2. Waiver of Subrogation

The Owner and Contractor waive all rights against each other for damages caused by perils coverage by insurance provided under this Agreement to the extent covered by such insurance, except such rights as they may have to the proceeds of such insurance held by the Owner and the Contractor as trustees. The Contractor shall require similar waivers from all subcontractors and their subcontractors and suppliers.

The Owner and the Contractor waive all rights against each other for loss or damage to equipment used in connection with the Project and covered by any property insurance. The Contractor shall require similar from all subcontractors and their subcontractors and suppliers.

The Owner waives subrogation against the Contractor on all property and consequential loss policies carried by the Owner on adjacent properties and under property and consequential loss policies purchased for the Project after its completion.

If the insurance policies referred to in this Section require an endorsement to provide for continued coverage where there is a waiver of subrogation, the owner of such policies will cause them to be so endorsed; failure to obtain endorsement nullifies the waiver of subrogation.

3. Contractor's Insurance

The Contractor shall not commence any Work in connection with this Agreement until he has obtained all of the following types of insurance and such insurance has been approved by the Owner, has named the Owner as an additional insured, except for Worker's Compensation Coverage, nor shall the Contractor allow any Subcontractor to commence Work on his subcontract until all similar insurance required of the Subcontractor has been so obtained.

Such insurer shall have a currently valid Certificate of Authority issued by the State of Florida, Department of Insurance authorizing it to write insurance policies in the State of Florida and be doing business in the State of Florida. Insurers shall have at least a Policy Holders Rating of A-, and Financial Rating of at least IV as identified in the latest issue of "Bests Key Rating Guide" unless otherwise accepted by the Owner in writing.

The Contractor's insurance, and the insurance of any other party bound to the Contractor, shall be considered primary. The Owner's insurance, if any, shall be considered excess, as may be applicable to claims which arise out of indemnification's insurance, certificates of insurance and any additional insurance provisions of this Agreement.

4. Loss Deductible

The Owner shall be exempt from, and in no way liable for, any sums of money that may represent a deductible in any insurance policy. The payment of deductibles shall be the sole responsibility of the Contractor.

5. Subcontractor's Insurance

The Contractor shall require each of his Subcontractors to procure and maintain, during the life of the subcontract, insurance of the types specified in this Article or insure the activities of his Subcontractors in his policy as required in this Article.

6. Certificate of Insurance

The Owner shall be furnished proof of insurance coverage as follows:

- The name of the insured Contractor, the specific job by name and job number, the name of the insurer, the number of the policy, its effective date, and its termination date;
- Statement that the insurer will mail notice to the Owner and a copy to the Engineer at least thirty (30) days prior to any material changes in provisions, cancellation, renewal, or non-renewal of the policy;
- Certification of Insurance shall be in the form as approved by the Owner and such Certificate shall clearly state all the coverage's required in this Article;
- If requested by the Owner, the Contractor shall furnish complete copies of his and his Subcontractor's insurance policies, forms and endorsements; and
- Receipt of certificates or other documentation of insurance or policies or copies of policies by the Contractor or by any of its representatives that indicate less coverage than required by the Contract Documents does not constitute a waiver of the Contractor's obligations to fulfill the requirements of this Article.

7. Worker's Compensation Insurance

The Contractor shall take out and maintain, during the life of this Agreement, Workers' Compensation and Employer's Liability Insurance for all his employees connected with the Work of this Project, and in case any Work is sublet, the Contractor shall require the Subcontractor similarly to provide Workers' compensation Insurance for all of the latter's employees, unless such employees are covered by the protection afforded by the Contractor. Such insurance shall comply with the Florida Workers' compensation Law. In case any class of contract at the Project Site is not protected under the Workers' Compensation statute, the Contractor shall provide adequate insurance, satisfactory to Owner for the protection of employees not otherwise protected.

8. Liability Insurance

The Contractor shall take out and maintain, during the life of this Agreement, Commercial General Liability and Commercial Automobile Liability Insurance as shall protect Owner from claims for damages for bodily injury and personal injury, including accidental death, as well as claims for property damages which may arise from operating under this Agreement, whether such operations are by himself or by anyone directly or

indirectly employed by him, and the amount of such insurance shall be minimum limits as follows:

Commercial General Liability:

- Minimum Coverage is \$1,000,000 including a separate project aggregate limit of \$1,000,000 for the Contract.
- Coverage shall include premises, operations, products, completed operations, independent contractors, contractual liability covering this Agreement, contracts and leases, broad form property damage coverage's, personal injury and bodily injury.
- The contractor is required to continue to purchase products and completed operations coverage for Work performed under this Agreement for minimum of three (3) years following Substantial Completion.
- If Umbrella or Excess liability coverage is used to satisfy the requirements of this Section, it shall not be more restrictive than the underlying insurance policy coverage's.

Commercial Automobile Liability:

- Minimum Coverage is \$500,000.
- Coverage shall include bodily injury and property damage arising out of ownership, maintenance or use of any auto, including owned, nonowned and hired automobiles and employee nonownership use.

9. Payment and Performance Bond

Contractor shall provide Owner with a Payment and a Performance Bond in the amount of the Contract Price within ten (10) days of the execution of this Agreement. Failure to provide the bond(s) shall result in this Agreement becoming null and void. No action on the part of the Owner shall be deemed to waive this requirement except a written amendment to this Agreement. Said bonds shall be in substantially the same form as in Section 255.05, Florida Statutes. Additionally, bonds must meet the following specifications:

- The surety company shall have a currently valid Certificate of Authority issued by the State of Florida, Department of Insurance, authorizing it to write surety bonds in the State of Florida and be doing business in the State of Florida;
- The surety company shall have a currently valid Certificate of Authority issued by the United States Department of Treasury under Sections 9304 and 9308, Title 31, of the United States Code;
- The surety company shall be in full compliance with the provisions of the Florida Insurance Code;
- The surety company shall have at least twice the minimum surplus and capital required by the Florida Insurance Code at the time the invitation to bid is issued; and

- The surety company shall have at least a Policy Holding's Rating of "A-" and Financial Rating of at least IV in the latest issue of "Bests Key Rating Guide".

Additionally, the subcontractor shall provide a payment and performance bond meeting the requirements specified above to the general contractor for the value of work included in that subcontractor's scope or services.

Alternative forms of security as described in Section 255.05, Florida Statutes, are acceptable where approved by the Owner in writing.

## **ARTICLE 17 - COMMENCEMENT OF STATUTORY LIMITATION PERIOD**

### 1. The Commencement of Statutory Limitation Periods Between the Owner, Contractor and assignees are as follows:

- **Before Substantial Completion.** As to acts or failures to act occurring prior to the relevant date of Substantial Completion, any applicable statute of limitations shall commence to turn and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of issuance of the final Certificate for Payment; and
- **After Final Certificate for Payment.** As to acts or failures to act occurring after the relevant date of issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the act or failure to act by the Contractor pursuant to any warranty provided under the Contract Documents, the date of any correction of the Work or failure to correct the Work by the Contractor or date of actual commission of any other act or failure to perform any duty or obligation by the Contractor or Owner, whichever occurs last.

### 2. Concerning Latent Defects and Fraud

As to latent defects and fraud, the applicable statute of limitations shall commence upon the date of discovery or the date discovery of the defect should reasonable have occurred.

## **ARTICLE 18 - MISCELLANEOUS PROVISIONS**

### 1. Governing Law

This Agreement shall be governed by the laws of the State of Florida.

### 2. Successors and Assigns

The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in the Contract Documents. Neither party to the Contract shall

assign the Contract as whole without the written consent of the other. If either party attempts to make such an assignment without such written consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

3. Written Notice

Written notice shall be deemed to have been duly served if delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice.

4. Limitation of Liability

The Owner shall be liable only to the extent of its interest in the Project; and no elected official, officer, agent, or employee of the Owner shall ever be personally or individually liable with respect to this Contract or the Work. Each Subcontract shall include foregoing limitation, which shall be effective if the Owner ever succeeds to the Contractor's rights or obligations under a Subcontract.

The Engineer shall be liable only to the extent of its interest in the Project; and no officer, director, partner, agent, or employee of the Engineer (or any partner of a partner or any agent or employee of a partner) shall ever be personally or individually liable with respect to this Contract or the Work. Each Subcontract shall include the foregoing limitation. Nothing contained in this agreement shall be construed as a waiver of the owner's rights to sovereign immunity or any other defense under F.S. 768.28.

5. Attorney Fees and Costs

In the event of any action brought by either party against the other to enforce any of the obligations hereunder or arising out of any dispute concerning the terms and conditions hereby created, the losing party shall pay the prevailing party such reasonable amounts for fees, costs, and expenses, including attorney fees, as may be set by the Court.

6. Validity, Severability and Reformation

The validity, interpretation, construction, and effect of this agreement shall be in accordance with and be governed by the laws of the State of Florida. Any provision or part of this Agreement held to be void or unenforceable under any law shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon the parties. The parties agree that this Agreement shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision which comes as close as possible to expressing the intention of the stricken provision.

## **APPENDIX 1 - DEFINITIONS**

**Allowance** - An amount included in the contract amount to be used exclusively for equipment, materials or some other purpose specified in the Contract Documents and whose use is under the control of the Owner.

**Application for Payment** - A formal written request for payment submitted by the Contractor to the Engineer for payment for work performed pursuant to this Agreement.

**Bid** - A formal solicitation issued by the City of Gulfport, identifying the scope, terms, conditions, and specifications of goods and services procured from private contractors.

**Bid Documents** - The documents either provided or incorporated by reference defining and documenting the scope of services, conditions under which services are to be provided, conditions under which a contractor will be selected and the work will be performed, and the technical specifications for the equipment, goods, or services being procured.

**Certificate for Payment** - An application for payment which has been signed by the Engineer, who certifies that the pay request is proper and all representations made by the Contractor are correct.

**Certificate of Substantial Completion** - A form signed by the Engineer certifying that the work, or a designated portion of the work, has been completed to such an extent that it may be occupied by the Owner for its intended purpose.

**Change Order** - A form documenting the Contractor and Owner's agreement to modify the work where the modification involves a change in Contract Amount, Contract Time, or the intent of the Contract Documents.

**Claim** - A demand or assertion by one of the parties to the Agreement for an adjustment or interpretation of contract terms, payment of money, extension of time, or other relief with respect to the terms of the Contract. Claims may also include other disputes between the Owner and Contractor concerning the manner in which work is being performed.

**Construction Change Directive** - An order signed by the Engineer instructing the Contractor to change the Work.

**Construction Schedule** - An action plan summarizing how the Contractor proposes to complete the entire work in the Contract Documents within the established Contract Time. The Construction Schedule should identify key tasks and activities necessary to complete the project within the Contract Time.

**Contract/Agreement** - The Agreement between the Owner and the Contractor as defined by the Contract Documents.

**Contractor** - The person or entity identified in the Contract Documents as being responsible for performing the work under the Contract.

**Contract Amount** - The stipulated sum to which the Owner agrees to pay the Contractor for performing the work described in the Contract Documents, as modified by Change Order.

**Contract Documents** - Individual documents which collectively comprise the Contract between the Owner and Contractor, including 1) The Agreement between the Owner and Contractor, 2) Bid Documents including the invitation to bid, instructions to bidders and Contractor bid package, 3) Drawings, Specifications, Plans prepared by the Engineer which describe the work to be performed, 4) Addenda issued prior to execution of the Contract, 5) Other documents listed in the Agreement, and 6) Modifications issued after execution of the Contract, including: 1) Written amendments to the Contract signed by both parties, 2) Construction Change Orders, and Construction Change Directives.

**Contract Time** - The period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the work. Contract Time is the time between the Date of Commencement identified in the Notice to Proceed issued by the Owner and the date established in the Agreement for Substantial Completion.

**Date of Commencement** - The date specified in the Notice to Proceed issued by the Owner specifying when the Contractor may begin work on the Project.

**Day** - As referenced in this Agreement “Day” includes all calendar days including weekends, holidays, and days of inclement weather.

**Drawings & Plans** - Graphic and pictorial portions of the Contract Documents, showing the design, location and dimensions of the work generally including plans, elevations, sections, details, schedules and diagrams.

**Engineer** - The design professional retained by the Owner responsible for designing the facilities to be constructed and/or the design professional responsible for providing contract administration during construction services and to assess whether construction services are provided in accordance with the Contract Documents.

**Final Acceptance** - The Owner’s final acceptance of the work performed by the Contractor as recognized by making final and complete payment for all work intended by the Contract Documents.

**Non-Substantial Deviation** - A change in the work or deviation from the plans, specifications, or other Contract Documents which does not change the Contract Amount, Contract Time, or the intent of the Contract Documents.

**Notice of Claim** - A memorandum or letter presented to the Engineer detailing a Claim for additional compensation. The memorandum or letter must be labeled “Notice of Claim” and

specifically identify the conditions giving rise to the Claim and the amount of additional compensation being requested.

**Notice to Proceed** - A letter issued by the Owner officially communicating the date when the Contractor may begin work on the Project or a designated portion of the Project.

**Owner** – The City of Gulfport, or the City of Gulfport’s authorized representatives.

**Substantial Completion of a Designated Portion** - Declaration by the Owner that a designated portion of the work has been completed.

**Principal Portion of the Work** - Work or equipment provided by a Subcontractor with which the Contractor has a direct Contract; and Sub-Subcontractors or other material or equipment providers as designated by the Engineer or Project Manager.

**Project** - All physical improvements planned for a defined site. Work performed under the Contract Documents may comprise the whole work, or part of the work planned for the Project Site.

**Product Data** - Illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the work.

**Project Manual** - A volume or volumes usually assembled to describe with work that may include bidding requirements, sample forms, the Contract, and specifications.

**Project Manager** - The City’s authorized agent for communication with the Engineer and Contractor and making decisions on the City’s behalf as provided in the Contract Documents.

**Project Site** - The physical location identified in the Contract Documents where work is to be accomplished.

**Samples** -Physical examples that illustrate the materials, equipment, workmanship, or application methods by which the work will be judged.

**Schedule of Values** - The amount of money and percentage of the Contract Amount attributable to various components or portions of the work, where prepared in such a form and supported by such data to substantiate its accuracy.

**Shop Drawings** - Drawings, diagrams, schedules and other data specially prepared for the work by the Contractor or Subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the work in general detail than is provided in the plans or specifications.

**Specifications** - That portion of the Contract Documents comprising written standards and requirements for materials, equipment, construction systems, and workmanship for the work, and performance of related systems.

**Subcontractor** - A person or entity that has a direct Contract with the Contractor to perform a portion of the work.

**Substantial Completion** - The stage of construction where the work or designated portion thereof is sufficiently complete so that the Owner can occupy or use the work for its intended purpose.

**Substantial Deviation** - A change in the work that deviates from the intent of the Contract Documents, Contract Amount, or Contract Time.

**Superintendent** - The Contractor's authorized representative on the Project Site.

**Supplier** - A person or entity who provides equipment, material, or other resources required by the Contractor or Subcontractors to perform the Work.

**Work** - The construction and services required by the Contract Documents, whether completed or partially completed, including all labor, materials, equipment and services provided or to be provided by the Contractor in fulfillment of obligations under the Contract. The work may constitute the whole Project or part of the Project.

**IN WITNESS WHEREOF the parties have executed the Agreement on the day and date first above written.**

OWNER: The City of Gulfport

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James E. O'Reilly, City Manager

ATTEST:

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Lesley DeMuth, City Clerk

Reviewed for Legal Form and Content by:

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Andrew Salzman, City Attorney

CONTRACTOR:

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WITNESS:

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**SECTION 00800**  
**SUPPLEMENTARY CONDITIONS**

**00800.01 SUPPLEMENTARY CONDITIONS PREVAIL**

The provisions of this section amplify, amend, change and/or to all other provisions of the Contract Documents. In the event of a conflict between the Supplementary Conditions, the plans, and any other Sections of the Contract Documents, the Supplementary Conditions shall apply.

**00800.02 MATERIALS AND EQUIPMENT**

A. All materials, equipment and supplies furnished and permanently incorporated into the project shall be of first quality in every respect and shall be constructed and finished to high standards of workmanship. Material shall be suitable for the service intended, shall reflect modern design and engineering and shall be fabricated in a first class workman like manner. All material, equipment and supplies shall be new and shall not have been in service at any time previous to installation except as required in tests incident to this installation.

B. Record Drawings:

The contractor shall provide six sets of certified record drawings, signed and sealed by a surveyor registered in the State of Florida. The record drawings shall show final grades, locations and elevations of utilities. All grades, locations, and elevations shall be determined by the surveyor. All valves, fittings and other appurtenances shall have a minimum of two swing ties.

C. The several unit or lump sum prices shall include the cost for all transportation, labor, equipment, verifying location of existing utilities (horizontal and vertical) trenching, backfilling, backfill material, tamping, testing, densities, dewatering, trench stabilization, record drawings, clean up, restoration, fittings, miscellaneous parts, and all appurtenances within to make complete and ready for operation the work as shown on the drawings and specified herein.

**00800.03 NOTIFICATIONS**

A. By the use of approved door hangers, the Contractor shall notify all businesses and residents within a 100-foot radius of the construction activities. As a minimum, the door hanger shall include dates of construction activities, the name and telephone number for questions or comments and a general description of work to be performed.

**END OF SECTION**

**SECTION 00850**

**PERMITS**



# Florida Department of Environmental Protection

Southwest District Office  
13051 North Telecom Parkway  
Temple Terrace, Florida 33637-0926

Rick Scott  
Governor

Carlos Lopez-Cantera  
Lt. Governor

Jonathan P. Steverson  
Secretary

## Notification of Acceptance of Use of a General Permit

**PERMITTEE:**

City of Gulfport  
Mr. Clay Lott, Utilities Supervisor  
2401 53<sup>rd</sup> Street South  
Gulfport, FL 33707  
[clott@mygulfport.us](mailto:clott@mygulfport.us)

**Permit Number:** 0153020-023-DSGP/02

**Issue Date:** April 20, 2016

**Expiration Date:** April 19, 2021

**County:** Pinellas

**Project Name:** 31<sup>st</sup> Avenue Roadway and  
Potable Water Improvements

**Water Supplier:** City of Gulfport

**PWS ID:** 652-0705

Dear Mr. Lott:

On March 29, 2016, the Florida Department of Environmental Protection received a "Notice of Intent to Use the General Permit for Construction of Water Main Extensions for PWSs" [DEP Form No. 62-555.900(7)], under the provisions of Rule 62-4.530 and Chapter 62-555, Florida Administrative Code (F.A.C.). The proposed project includes the construction of a new 8-inch diameter water main along 31<sup>st</sup> Avenue.

Based upon the submitted Notice and accompanying documentation, this correspondence is being sent to advise that the Department does not object to the use of such general permit at this time. Please be advised that the permittee is required to abide by Rule 62-555.405, F.A.C., all applicable rules in Chapters 62-4, 62-550, 62-555, F.A.C., and the General Conditions for All General Drinking Water Permits (found in 62-4.540, F.A.C.).

The permittee shall comply with all sampling requirements specific to this project. These requirements are attached for review and implementation.

Pursuant to Rule 62-555.345, F.A.C., the permittee shall submit a certification of construction completion [DEP Form No. 62-555.900(9)] to the Department and obtain approval, or clearance, from the Department before placing any water main extension constructed under this general permit into operation for any purpose other than disinfection or testing for leaks.

Within 30 days after the sale or legal transfer of ownership of the permitted project that has not been cleared for service in total by the Department, both the permittee and the proposed permittee shall sign and submit an application for transfer of the permit using Form 62-555.900(8), F.A.C., with the appropriate fee. The permitted construction is not authorized past the 30-day period unless the permit has been transferred.

Permittee:  
Clay Lott – Utilities Supervisor  
Page 2

DEP File No.:  
0153020-023-DSGP/02

This permit will expire five years from the date of issuance. If the project has been started and not completed by that time, a new permit must be obtained before the expiration date in order to continue work on the project, per Rule 62-4.030, F.A.C.

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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*for* Pamala Vazquez  
Program Administrator  
Permitting & Waste Cleanup Program  
Southwest District

Enclosures: Clearance Requirements/Utilities Separation Requirements

cc:

William Reidy, P.E., Advanced Engineering & Design, Inc., [reidy@aed-fl.com](mailto:reidy@aed-fl.com)  
Justin Keller, P.E., Advanced Engineering & Design, Inc., [keller@aed-fl.com](mailto:keller@aed-fl.com)

**A Civil Penalty May Be Incurred**  
**if this project is placed into operation before obtaining a clearance from this office.**

Requirements for clearance upon completion of projects are as follows:

**1) Clearance Form**

Submission of a fully completed Department of Environmental Protection (DEP) Form 62-555.900(9) *Certification of Construction Completion and Request for Clearance to Place Permitted PWS Components into Operation.*

**2) Record Drawings, if deviations were made**

Submission of the portion of record drawings showing deviations from the DEP construction permit, including preliminary design report or drawings and specifications, if there are any deviations from said permit (Note that it is necessary to submit a copy of only the portion of record drawings showing deviations and not a complete set of record drawings.).

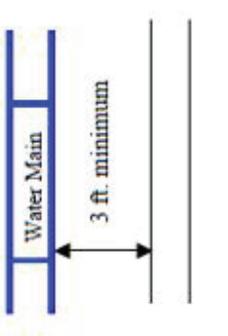
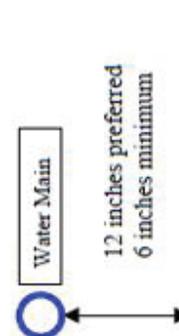
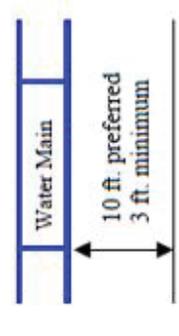
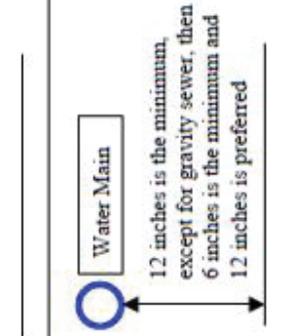
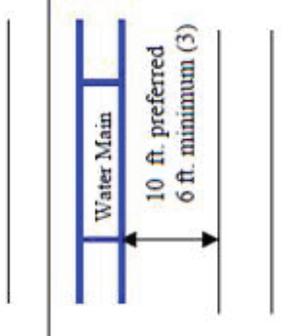
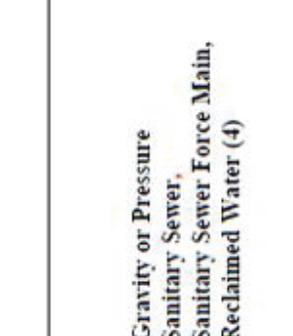
**3) Bacteriological Results**

Copies of satisfactory bacteriological analysis (a.k.a. Main Clearance), taken within sixty (60) days of completion of construction, from locations within the distribution system or water main extension to be cleared, in accordance with Rules 62-555.315(6), 62-555.340, and 62-555.330, F.A.C. and American Water Works Association (AWWA) Standard C 651-92, as follows:

- Connection to an existing system
- The end point of the proposed addition
- Any water lines branching off a main extension
- Every 1,200 feet on straight runs of pipe

Each location shall be sampled on two consecutive days, at least 6 hours apart, with sample points and chlorine residual readings clearly indicated on the report. A sketch or description of all bacteriological sampling locations must also be provided.

**LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314**

Other Pipe	Horizontal Separation	Crossings (1)	Joint Spacing @ Crossings (Full Joint Centered)
<p>Storm Sewer, Stormwater Force Main, Reclaimed Water (2)</p>	 <p>Water Main 3 ft. minimum</p>	 <p>Water Main 12 inches is the minimum, except for storm sewer, then 6 inches is the minimum and 12 inches is preferred</p>	 <p>Alternate 3 ft. minimum</p>
<p>Vacuum Sanitary Sewer</p>	 <p>Water Main 10 ft. preferred 3 ft. minimum</p>	 <p>Water Main 12 inches preferred 6 inches minimum</p>	 <p>Alternate 3 ft. minimum</p>
<p>Gravity or Pressure Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (4)</p>	 <p>Water Main 10 ft. preferred 6 ft. minimum (3)</p>	 <p>Water Main 12 inches is the minimum, except for gravity sewer, then 6 inches is the minimum and 12 inches is preferred</p>	 <p>Alternate 6 ft. minimum</p>
<p>On-Site Sewage Treatment &amp; Disposal System</p>	<p>10 ft. minimum</p>	<p>---</p>	<p>---</p>

(1) Water main should cross above other pipe. When water main must be below other pipe, the minimum separation is 12 inches.

(2) Reclaimed water regulated under Part III of Chapter 62-610, F.A.C.

(3) 3 ft. for gravity sanitary sewer where the bottom of the water main is laid at least 6 inches above the top of the gravity sanitary sewer.

(4) Reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.

Disclaimer – This document is provided for your convenience only. Please refer to F.A.C. Rule 62-555.314 for additional construction requirements.

**SECTION 00900**

**ADDENDA**

*(Insert Addenda here)*

## **SECTION 01000**

### **GENERAL REQUIREMENTS**

#### **01000.01 TRAFFIC CONTROL**

The Contractor shall maintain traffic within the limits of the project for the duration of the construction period, in accordance with the requirements of the FDOT Section 102 of the “Standard Specifications”, as amended herein.

The local streets shall be kept open to two-way traffic for the duration of the construction period, except that one lane of traffic will be permitted provided that flagmen are used. The Contractor will not be permitted to isolate access to residences or places of business. Traffic on County roads and State highways shall be controlled in accordance with the current standards of the appropriate agency.

The Contractor shall furnish, erect and maintain all necessary traffic control and safety devices, in accordance with the Florida Department of Transportation “ROADWAY AND TRAFFIC DESIGN STANDARDS”, applicable edition, and State of Florida “MANUAL OF TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION MAINTENANCE AND UTILITY OPERATIONS”, applicable edition, and shall take all necessary precautions for the protection of the work and the safety of the public for the duration of the construction period.

#### **01000.02 MATERIALS, EQUIPMENT AND LABOR**

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation and any other facilities necessary for the proper execution and completion of the work.

Unless otherwise specified, all materials shall be new. The Contractor, if required, shall furnish satisfactory evidence as to the kind of and quality of materials. Before any contract is awarded the bidder may be required to furnish a complete statement of the origin, composition and manufacture of any or all materials or equipment to be used in the work, together with samples, which samples may be subject to tests provided for in these specifications to determine their quality and fitness for the work. All materials and all workmanship shall be of good quality and meet specification requirements. Failure of the Owner or Engineer to request material, samples or conduct tests on the same does not relieve the Contractor of responsibility to furnish the material as specified. The Contractor shall furnish such equipment as is considered necessary for the prosecution of the work in an acceptable manner at a satisfactory rate of progress so as to insure completion by the date set forth in the Contract. The equipment used on any portion of the work shall be used in such a manner so as not to endanger the lives of the operators or others, nor cause damage to adjacent real property, roadways, structures, or any other property whatsoever.

**01000.03            PROGRESS PHOTOGRAPHS**

The Contractor shall furnish photographs, 5” x 7”, on standard weight paper with negatives, as directed by the Owner, showing the job, before, during and upon completion of the construction. Smaller size (not less than 3” x 4”) photographs shall be furnished to show unusual conditions encountered during construction.

**01000.04            STANDARDS**

Wherever in these Contract documents reference is made to any of the following, or other, specifications, codes, standards, and requirements, by abbreviation or name, it shall be understood that the specifications, codes, standards, and requirements in effect on the date of advertisement for bids shall govern.

ASTM	American Society for Testing Materials
ASME	American Society for Mechanical Engineers
ASA	American Standards Association
AWWA	American Water Works Association
NEMA	National Electric and Manufacturers Association
AIEE	American Institute of Electrical Engineers
AASHTO	American Association of State Highway and Transportation Officials
NBFU	National Board Fire Underwriters
NEC	National Electric Code
ACI	American Concrete Institute
AGA	American Gas Association
AISC	American Institute Steel Construction
AWPA	American Wood Preservers Association
Fed. Spec	Federal Specifications U.S. Government
SBC	Southern Building Code
FDOT	Florida Department of Transportation

“Standard Specifications” – FDOT Standard Specifications for Road and Bridge Construction, latest edition, including all supplemental specifications, indices and other directives in effect.

**01000.05            STORAGE OF MATERIALS AND RIGHTS-OF-WAY**

The Owner shall provide the land upon which the work is to be done, with right of access thereto unless otherwise specified elsewhere in the Contract Documents. The Contractor shall anticipate requirements of space and land for the erection of temporary construction facilities, office, and storage of materials. Should the Owner decide that the site of work is insufficient for such temporary facilities, the Contractor will be required to arrange for such additional space and land as may be necessary at his expense.

The Contractor shall make his own arrangements for delivery and handling of equipment and materials as he may require for the prosecution of his work.

In underground utility work all materials required in the work may be stored on the sides of the roadway or parking area of the street in which the utilities are to be constructed, as approved by the Owner and/or municipality having jurisdiction, but all such materials, tools and machinery shall be neatly and compactly piled in such a manner as to cause the least inconvenience to the property owners and the traffic. Materials shall be stored outside of the "Clear Zone" of roadways. All fire hydrants must at all times be kept free and unobstructed and water and gas shut-off boxes must be kept uncovered.

The materials shall be stored so as to insure the preservation of the quality and fitness for the work. When considered necessary, they shall be placed on wooden platforms or other hard clean surfaces and shall be placed under cover as directed. Stored materials shall be located so as to facilitate prompt inspection. Materials, tools, and machinery shall not be piled or placed against shade trees unless ample protection is provided for the trees. Lawns, grass plots, or other private or public property shall not be used for storage purposes without the written permission of the Owner.

#### **01000.06 UTILITIES**

The Contractor shall have the complete responsibility of coordinating his work with the owners of the various utilities now existing or to be constructed within the limits of this project so that a minimum delay in the construction shall occur therefrom.

#### **01000.07 SAFETY AND HEALTH REGULATIONS**

The Contractor shall comply with the Department of Labor Safety and Health regulations for construction promulgated under the Occupational and Health Act of 1970 (PL 596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL 91-54). The Contractor shall comply with the State of Florida Trench Safety Act.

#### **01000.08 USE OF CHEMICALS**

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

#### **01000.09 BY-PASSING OF SEWAGE**

The Contractor shall schedule his work so as to either minimize or completely eliminate any by-pass of raw sewage during construction.

#### **01000.10 DEWATERING AND SEWAGE PUMPS**

In general, all pumps utilized by the Contractor during the construction shall be electric motor driven. Internal combustion engine driven pumps may be used for a particular application only upon approval of the Owner.

**01000.11            LINES, GRADES AND CONSTRUCTION SURVEYING**

The Contractor shall employ a competent surveyor satisfactory to the Owner to lay out the work from the bench marks, grades, dimensions, points and lines noted on the working drawings, established at the site, or supplied by the Engineer.

All work of every description shall be laid out and checked by the Contractor who will be held solely responsible for its correctness, and all expenses in connection with this work shall be paid for by the Contractor. In the event batter boards are used the maximum allowable interval for construction batter boards on sewers and pipe lines will be forty (40) feet for grades under 1.00 percent (1%) and fifty (50) feet for grades of 1.00 percent (1%) and over.

The work may be checked by the Owner and in event of discrepancy, his decision shall be final.

No special compensation will be made to the Contractor to defray costs of any of the work or delays occasioned by making surveys and measurements, tests or inspections, but such costs shall be considered as having been included in the price stipulated for the several items of the work to be done under this contract.

**01000.12            TESTS**

Tests of material, where required by the specifications, shall be paid for the Contractor. The selection of bureaus, laboratories, and/or agencies for the inspection and testing of supplies, materials or equipment shall be subject to the approval of the Engineer. Satisfactory documentary evidence that the materials have passed the required inspections and tests must be furnished to the Owner.

**01000.13            WATER AND POWER**

The cost of all water for construction and testing purposes, as well as the expense of having the water conveyed to and about the work, must be borne by the Contractor and the cost of this work shall be considered as having been included in the unit or lump sum prices stipulated for the several items of work to be done under this contract.

Unless otherwise specifically permitted by the Engineer, all water used for construction purposes shall be obtained from the public water supply main.

The Contractor shall make his own arrangements for electric light and power, as may be required for his work.

**01000.14            MONUMENTS AND LANDMARKS**

Monuments or landmarks shall not be molested or removed by the Contractor or any of his employees without written consent of the Owner. Any monument or landmark so removed will be replaced by the Owner at the expense of the Contractor.

#### **01000.15            DETOURS**

The Contractor must so schedule his work that in no case are two adjoining parallel streets closed for utility construction at any one time. If, in the opinion of the Owner, a traffic hazard or an unreasonable long detour is caused by the Contractor's plan of work, he shall immediately revise his working schedule and reopen whatever streets are required for maintenance of traffic. The Contractor will, in no case, be permitted to start work in any new location without permission of the Owner. If the Contractor shall disregard the instructions of the Owner concerning traffic control, it will be considered sufficient cause to invoke that section of the specifications entitled "The Owner's Right to Terminate Contract." The Contractor will be responsible for placing and maintaining "Detour" signs when required, or when directed by the Owner.

#### **01000.16            EXISTING UTILITIES**

The Contractor will be required, at his own expense, to do everything necessary to locate, protect, support, sustain and avoid conflicts with existing water, gas and service pipes, storm and sanitary sewers, existing structures, electric light and power lines, telephone poles, conduits, roads and other fixtures on the site of the work. In case any of the said water, gas, and service pipes, storm and sanitary sewers, existing structures, electric light and power lines, telephone poles, conduits, roads and other fixtures be damaged, they shall be repaired, but the cost thereof shall be considered as having been included in the prices stipulated for the various items of work to be done under this contract.

#### **01000.17            SANITARY MEASURES**

Sanitary conveniences for the use of all persons employed on the work shall be provided and maintained by the Contractor in sufficient number, in such manner and in such cases as shall be approved by the Owner. All persons connected with this work shall be obliged to use them, and any employees found violating these provisions shall be discharged and not again employed without written consent. All necessary precautions, including the care of employees, and prevention of any pollution of the existing water supply shall at all times be satisfactory to the governing authorities. The Contractor shall promptly and fully comply with all orders and regulations in regard to these matters.

#### **01000.18            CLEANING UP**

As the work progresses, the Contractor shall remove from the site and dispose of debris and waste material. Particular attention shall be given to minimizing any fire hazard from combustibles as may be used in connection with the work.

On or before the date of the final estimate for the work, the Contractor shall tear down and remove all temporary structures built by him and shall repair and replace all parts of existing embankments, fences, sidewalks, shrubbery or structures which were removed or damaged by the Contractor's operations or by employees of the Contractor. The Contractor shall thoroughly clean out all sewers, drains, pipes, manholes and miscellaneous structures and shall remove all rubbish and leave ground, thoroughfares, and rights-of-way in a neat and satisfactory condition.

**01000.19            FAILURE TO CLEAN UP**

Upon failure of the Contractor to keep the sites of his operations clean, to the satisfaction of the Owner may upon twenty-four (24) hours' notice to the Contractor, remove any rubbish, materials, earth, etc., which the Owner may deem necessary, charging the cost thereof to the Contractor and may deduct the amount from any money that may be due him.

**01000.20            RESTORATION OF SURFACE**

The Contractor shall replace all surface material, and shall restore paving (unless otherwise stipulated), curbing, sidewalks, gutters, shrubbery, fences, sod, and other surfaces disturbed to a condition equal to that before the work began, furnishing all labor and materials incidental thereto. In restoring paved surfaces, new pavement is required except that granite paving blocks, sound brick, or asphalt paving blocks may be used.

**01000.21            PROJECT RECORD DRAWINGS**

The Contractor shall maintain continuous "record" data for the project, including accurate records of location, length, and elevation of all pipelines and piping installed and all architectural, mechanical, or structural features of the Contract. A set of drawings will be provided to the Contractor to be kept at the job site for this purpose. Promptly after the completion of any portion of the job, the Contractor shall deliver to the Owner the drawings with accurate notations recorded thereon as necessary to revise the drawings for record purposes. The Contractor will be held responsible for the accuracy of such data and shall bear any costs incurred in finding utilities as a result of furnishing incorrect data.

**END OF SECTION**

**TECHNICAL SPECIFICATIONS  
FOR THE  
CITY OF GULFPORT, FLORIDA**

**31<sup>ST</sup> AVENUE ROADWAY & POTABLE WATER  
IMPROVEMENTS**

**ADVANCED ENGINEERING & DESIGN INC.**

3931 68<sup>th</sup> Ave. North  
Pinellas Park, Florida 33781

## SECTION 00010 - TABLE OF CONTENTS

<i>Section</i>	<i>Description</i>	<i>Page</i>
<b>TECHNICAL SPECIFICATIONS</b>		
01010	Summary of Work .....	01010-1
01025	Measurement and Payment .....	01025-1
01045	Cutting and Patching .....	01045-1
01100	Mobilization.....	01100-1
01300	Submittals.....	01300-1
01330	Construction Staking .....	01330-1
01385	Audio/Video Construction Records.....	01385-1
01400	Temporary Facilities .....	01400-1
01410	Testing Laboratory Services.....	01410-1
01500	Traffic Control.....	01500-1
01670	Substitution & Product Options.....	01670-1
01720	Project Record Documents .....	01720-1
02060	Water.....	02060-1
02061	Horizontal Directional Drilling.....	02061-1
02110	Site Clearing and Grubbing .....	02110-1
02120	Geotechnical Report.....	02120-1
02140	Dewatering .....	02140-1
02190	Erosion and Sediment Control.....	02190-1
02223	Structure Excavation and Backfill .....	02223-1
02226	Trenching, Backfilling, and Compacting .....	02226-1
02229	Earthwork .....	02229-1
02230	Base Course.....	02230-1
02510	Bituminous Paving.....	02510-1
02511	Full Depth Reclamation .....	02511-1
02523	Concrete Driveways, Curbs and Gutters .....	02523-1
02940	Sodding .....	02940-1

**Section 01010**  
**Summary of Work**

The work to be performed under this Contract includes:

1. Furnishing all labor, material, superintendence, fuel, water, tools, appliances, equipment, supplies, services and other means of construction necessary to perform and complete the Work.
2. Sole responsibility for adequacy of equipment.
3. Maintaining the Work area and site in a clean and acceptable manner.
4. Maintaining existing facilities in service at all times except where specifically provided for otherwise herein.
5. Protection of finished and unfinished Work.
6. Repair and restoration of Work damaged during construction.
7. Furnishing, as necessary, proper equipment and machinery, of a sufficient capacity, to facilitate the Work and to handle all emergencies normally encountered in Work of this character.

**End of Section**

**Section 01025  
Measurement & Payment**

**Part 1 General**

**1.01 Scope of Payment**

Payment to the CONTRACTOR will be made for actual quantities and work completed and accepted in accordance with the Contract.

The CONTRACTOR shall accept in compensation provided herein full payment for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete all work included in the Contract; also for all loss or damage arising from the nature of the work, inclement weather, action of the elements or from any unforeseen difficulties which may be encountered during the execution of the work or except as provided herein. The CITY will make no allowances for items not included in the proposal.

**1.02 Procedure for Measurement**

- A. For lump sum items, payment shall be based on the lump sum prices set forth in the Bid Proposal and based on the amount of completed work.
- B. For field measured unit-price items, payment shall be based on the actual amount of work accepted and the actual amount of materials in place, as will be determined by measurements.

**1.03 Estimated Quantities**

All estimated field measure quantities stipulated in the Bid Proposal or other Contract Documents are approximate and are to be used only (a) as a basis for estimating the probable cost of the WORK and (b) for purpose of comparing the bids submitted for the WORK. The actual amounts of WORK done under field measured unit price items may differ from the estimated quantities. The basis of payment for WORK will be the actual amount of WORK performed and field measured.

Should the quantities of unit price items listed in the original Bid Proposal increase or decrease, the prices for these items must be at the unit price quoted by the CONTRACTOR on his original Bid Proposal.

**1.04 Incidental Work**

All work shown on the plans and referenced in the specifications as being part of the contract for which no separate pay item is provided is considered incidental to the contract. Incidental items are to be incorporated into the pay items provided. Claims for separate payment of incidental items will not be considered.

**1.05 Items Included but Not Specified**

The unit or lump sum prices designated in the Bid Proposal shall include all profit, taxes, labor, overhead, material, equipment, tools, survey staking, record drawing preparation, utility notification and coordination, protection of existing utilities, tree protection measures, temporary support of existing utilities, resetting of utility appurtenances and markers, irrigation protection, rock excavation, shoring (proprietary & non-proprietary), sheeting and slope protection

(proprietary & non-proprietary), night work when needed, design of sheeting/shoring/slope stabilization, backfill, dewatering, extra backfill material as required, excavation materials, protection and preservation of existing structures, salvaging of items as shown on the drawings, coordination with City staff and residents (including door hangers), mailbox protection and resetting of mailboxes, resetting of roadway signage, field survey, securing a Building Permit and other work incidental thereto and specified in these specifications and on the drawings.

If unsuitable material is found in any location it shall be removed, transported offsite, properly disposed of and replaced (if needed) at no additional cost to the City (unless material is located within the allowable compensation limits).

**1.06 Description of Pay Items**

The following describes the measurement of and payment for the work to be done under the respective items listed in the Bid Proposal.

Each field measure unit or lump sum item stated in the Bid Proposal shall constitute full compensation for each items of work completed.

**Mobilization (ITEM A-G-1)**

The work specified under this Section consists of preparatory work and operation in mobilizing to begin work on the project, including but limited to those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site(s), and for the establishment of temporary offices, buildings, safety equipment, project sign and first aid supplies, sanitary and other facilities as required by these specifications, special provisions, and state and local laws and regulations. Mobilization costs shall also include the costs of preconstruction videotaping, coordination with residents throughout the project's duration, coordination with City representatives throughout the project's duration, project signs, insurance, bonds, permits (including NPDES and dewatering) and other Contract materials. The contract unit price will be on a lump sum unit price. Partial payments will be allowed as outlined below.

PERCENT OF ORIGINAL CONTRACT AMOUNT EARNED	ALLOWABLE PERCENT OF THE LUMP SUM PRICE FOR MOBILIZATION (*)
5	25
10	50
25	75
100	100

**Maintenance of Traffic (ITEM A-G-2)**

This Section consists of the maintaining of traffic (vehicular and pedestrian) within limits of the project for the duration of the construction period, in accordance with the requirements of FDOT Section 102 of the "Standard Specifications", as amended herein.

The Contractor will not be permitted to close access to residences or places of business. Provisions shall be made to provide access to large trucks for pick-up and delivery of materials during the construction period. The Contractor shall furnish, erect, and maintain all necessary traffic control and safety devices, in accordance with the Florida Department of Transportation "ROADWAY AND TRAFFIC DESIGN STANDARDS", applicable edition, and State of Florida's "MANUAL OF TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET AND HIGHWAY

CONSTRUCTION MAINTENANCE AND UTILITY OPERATIONS", applicable edition, and shall take all necessary precautions for the protection of the work and the safety of the public for duration of the construction period.

A Maintenance of Traffic (MOT) plan shall be submitted to the City (or right-of-way owner), by the Contractor, and approved prior to implementation. This plan shall include all necessary signage and dimensions.

The work specified under this Section shall include the furnishing, erection, and maintenance of all temporary traffic barricades of whatever type required, and for such duration as may be required, and shall include all materials and construction necessary for temporary connections and driveway maintenance. The Contractor will also be responsible for coordinating with adjacent property owners regarding changes and/or alterations to the MOT plan. The Contract unit price for this item will be a lump sum unit price. Partial payments for maintenance of traffic will be limited to the overall percent of the work completed by the Contractor.

**Erosion & Sediment Control (ITEM A-G-3)**

Price shall include payment for all installation, maintenance, removal, and all other incidentals necessary to provide erosion and sediment control as notated on the plans (or as needed to successfully control sediment throughout the project limits) and as required by any local, state or Federal code, statute or ordinance. Daily debris removal from right of ways, easements and vehicle use areas shall be included in this pay item. Payment for this item shall be on a lump sum basis and shall include washdown areas and all necessary equipment, labor and materials to complete this pay item. The Contractor shall receive compensation for this item as stipulated in the below table.

PERCENT OF ORIGINAL CONTRACT AMOUNT EARNED	ALLOWABLE PERCENT OF THE LUMP SUM PRICE FOR EROSION AND SEDIMENT CONTROL
5	25
10	50
25	75
100	100

**Water Main (ITEM A-W-1 through ITEM A-W-24)**

- A. Payment for water main construction shall be made at the contract unit price per linear foot for each size of water main, which will be full compensation for all labor, materials, appurtenances, and equipment necessary to install the items as shown on the Plans. This item shall include all survey staking, utility coordination, excavation, disposal of excess material, dewatering, sheeting, trench stabilization, protection of existing storm piping and other utilities during the water main installation, protection of the existing roadway, backfill, compaction, polyethylene encasement, identification tape, thrust blocks, pipe restraint (proposed and existing piping), connections to existing water mains, plugging and capping of existing water mains, protection of trees and surface restoration (sod) required to provide a complete installation.
- B. Payment for valves, tapping valves and sleeves, installing fire hydrant assemblies and backflow preventers and other individual fittings for water mains shall be made at the contract unit price per item for the size and type of item installed. The City will supply the valves, hydrants, 2" HDPE (for directional drilling) and tapping sleeve & valve. This price

shall be full compensation for all labor, materials, equipment, and incidentals required to install the items as shown on the Plans. This item includes all survey staking, utility coordination, excavation, disposal of excess material, dewatering, sheeting, trench stabilization, protection of the existing roadway, backfill, compaction, polyethylene encasement, identification tape, thrust blocks, pipe restraint (existing and proposed), connections to existing water mains, plugging and capping of existing water mains, protection of trees and surface restoration (sod, asphalt, sidewalk, curb, etc.) required to provide a complete installation.

- C. Payment for new service lines shall be made at the contract unit price per each service line installed. Payment shall be full compensation for all labor, equipment, materials, dewatering, disposal of excess material, fittings, taps, curb stops, corporation stops, HDPE and all other incidentals required to provide a complete installation in accordance with the Plans.

**Full Depth Reclamation (ITEM A-RW-1)**

**Asphalt Emulsion for Full Depth Reclamation (ITEM A-RW-2)**

**Cement for Full Depth Reclamation (ITEM A-RW-3)**

Payment for full depth reclamation shall be made on a per square yard restored basis and shall include all necessary equipment, materials and labor required to complete this item. Work activities to be covered under this pay item shall include, but not be limited to, the following: saw cutting existing asphalt pavement in a clean and neat manner, pre-construction roadway elevation measurements, pre-construction roadway cores to determine mix design, pre-construction laboratory testing to determine mix design, mix design preparation, furnishing and installing foamed asphalt, asphalt emulsion and cement, pulverizing, mixing, furnishing water at the site for construction operations, grading, compacting, control strip(s) (as needed), testing, additional base material, removal of unsuitable material, priming of base, tack coat application, testing and all incidental items required to complete this pay item.

**Miami Curb Reconstruction (ITEM A-RW-4)**

**Valley Curb Construction (ITEM A-RW-5)**

Payment for curb reconstruction will be paid for at the Contract Unit Price per linear foot of curb restored, as measured along the inside face of curb, and shall include as necessary equipment, labor, and materials required to complete this pay item. Payment for curb shall include, but not limited to, the following: pre-construction elevation measurements, layout of new curbing, dewatering, removal of existing curbing, salvaging of granite curbing, roadway excavation (as needed) to provide positive fall, preparation of base, compaction, forming, placement of reinforcement, pouring of concrete, concrete gore area construction for valley curbing, testing, and all other incidental items required to successfully complete this pay item.

**Asphalt Wearing Surface (ITEM A-RW-6)**

Payment for asphalt wearing surface will be paid for at the Contract Unit Price per ton of asphalt wearing surface installed including all necessary equipment, labor, and materials required to complete this pay item. Payment for asphalt wearing surface shall include, but not limited to, the following: pre-construction elevation measurements, furnishing and installing asphalt, placing asphalt in two (2) 1-inch lifts, striping restoration (temporary painted and permanent thermoplastic), grading, compaction, testing and all other incidental items required to successfully complete this pay item.

**Asphalt Roadway Restoration (ITEM A-R-1)**  
**Brick Roadway Restoration (ITEM A-R-2)**

Payment for the restoration of existing roadways shall be made on a per square yard restored basis and shall include all necessary equipment, materials and labor required to complete this item. Work activities to be covered under this pay item shall include, but not be limited to, the following: saw cutting existing asphalt pavement in a clean and neat manner, removing and properly storing existing bricks, furnishing fill, subgrade and base material, placement of flowable fill (if desired by the Contractor to minimize material testing requirements; at no additional cost to the City), use of sheeting/shoring/trench box to minimize excavation limits, dewatering, placement of fill, subgrade and base material per the plans and specifications, compaction of fill, subgrade, and base in accordance with the specifications, stabilization of subgrade, grading as needed to restore preconstruction stormwater flow patterns and match existing pavement elevations, application of prime and tack coats, furnish and place asphalt, resetting of existing bricks (match existing pattern), replacement of damaged bricks, compaction, testing and all incidental items required to complete this pay item. Roadway restoration shall be in compliance with all plan and specification requirements.

**Alley Regrading (City to Supply Millings) (ITEM A-R-3)**

Payment for the regrading of existing alleys shall be made on a per square yard of alley regraded basis and shall include all necessary equipment, materials and labor required to complete this item. Work activities to be covered under this pay item shall include, but not be limited to, the following: pre-construction elevation acquisition, removal of existing alley base, subgrade and wearing surface, disposal of removed material, placement of clean fill, furnishing and installing base material at the plan-specified depth, delivery of City-provided millings to the project site, grading of newly installed base, heating and compacting millings, prime and tack coat application, compaction, testing and all incidental items required to complete this pay item.

**Remove & Reset Granite Curbing (ITEM A-R-4)**

Payment for granite curb removal and resetting will be paid for at the Contract Unit Price per linear foot of curb reset and shall include as necessary equipment, labor, and materials required to complete this pay item. Payment for curb shall include, but not limited to, the following: pre-construction elevation measurements, removal of existing curbing, temporary storage of curbing, protection of curbing, foundation preparation, layout of new curbing, dewatering, preparation of base, compaction, testing, and all other incidental items required to successfully complete this pay item.

**Sodding (ITEM A-R-5)**

Payment for sod restoration (match existing) will include furnishing all equipment, labor and materials to replace sod damaged or removed during construction activities, including rolling sod, erosion protection, pinning/staking anchoring on slopes and other areas until sod is established and watering until final acceptance by the City. Sod installation shall be accordance with the specifications. The Contractor shall only receive compensation for sod placed within the project area. Payment will be per square foot of sod replaced and shall include all other incidental items required to successfully complete this pay item, including watering.

**Concrete Driveway Restoration (ITEM A-R-6)**

Payment for concrete driveways of the thickness specified will be paid for at the Contract Unit Price per square foot, based on field measurements. The price paid shall be payment in full for the removal and disposal of existing driveways, dewatering, grading, formwork, reinforcement, curing the concrete, providing protection against rain and cold weather, removing forms,

compaction, furnishing and placement of all driveway materials, transportation, equipment, labor, jointing, reinforcement, finishing, material testing and all other incidentals necessary to complete this item.

### **Unsuitable Material Removal & Replacement (ITEM A-M-1)**

Payment for the work involved under this Pay Item shall be paid for on a per cubic yard price, which payment will be full compensation for all labor, materials, fittings, appurtenances, and equipment necessary to install the work elements which include the following: all testing to determine quality of material proposed to be removed, coordination with City officials, removal and disposal of unsuitable material, replacement of unsuitable material with suitable material (FDOT No. 57 stone or other approved material), compaction of suitable material, compaction testing (if applicable) and grading, as necessary, to restore all surficial drainage features.

This pay item shall only be used when unsuitable material is found within the limits depicted on the plan detail. Unsuitable material found in all other locations shall be removed, disposed of and replaced with suitable material at the Contractor's expense. Written authorization shall be provided by the City prior to utilization of this pay item.

**End of Section**

## **Section 01045 Cutting And Patching**

### **Part 1 - General**

#### **1.01 Description Of Work**

- A. This Section establishes general requirements pertaining to cutting (including excavating), fitting, and patching of the Work required to:
- B. Make the several parts fit properly.
- C. Remove and replace Work not conforming to requirements of the Contract Documents.
- D. Rework existing items to provide for new construction.

#### **1.02 Quality Assurance**

- A. Perform all cutting and patching in strict accordance with pertinent requirements of these Specifications and, in the event no such requirements are determined, in conformance with the City's written direction.
- B. Codes and standards for work of this section shall be the same as for the pertinent sections of this specification.

#### **1.03 Submittals**

- A. Request for City's Consent:
  - 1. Prior to cutting which affects structural safety, submit written request to the City for permission to proceed with cutting.
  - 2. Should conditions of the Work, or schedule, indicate a required change of materials or methods for cutting and patching, so notify the City and secure his written permission prior to proceeding.
- B. Notice to the City: Submit written notice to the City designating time the Work will be uncovered, to provide for the City's observation.

### **Part 2 - Products**

#### **2.01 Materials**

- A. Materials used in the replacement of existing work and the construction of work in conjunction with cutting and patching shall be new unless prior approval from the City has been obtained to re-use existing materials.

## **2.01 Fabrication**

- B. The materials and methods used in the fabrication of items required under this section shall comply with the individual sections of this specification that have to do with new construction.

## **Part 3 - Execution**

### **3.01 Conditions**

- A. Examination:
  - 1. Examine existing conditions, including elements subject to movement or damage during cutting, excavating, backfilling, and patching.
  - 2. After uncovering the Work, inspect conditions affecting installation of the new Work.
- B. Discrepancies:
  - 1. If uncovered conditions are not as anticipated, immediately notify the City and secure needed directions.
  - 2. Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.

### **3.02 Preparation Prior To Cutting**

- A. Provide all required protection including, but not necessarily limited to, shoring, bracing, and support to maintain structural integrity of the Work.

### **3.03 Performance**

- A. Perform all required excavating and backfilling as required under pertinent Sections of these Specifications. Perform cutting and demolition by methods, which will prevent damage to other portions of the Work and will provide proper surfaces to receive installation of repair and new work. Perform fitting and adjustment of products to provide finished installation complying with the specified tolerances and finishes.

**End Of Section**

**Section 01100  
Mobilization**

**Part 1 General**

**1.01 Description**

- A. Scope - The work specified in this Section consists of the preparatory work and operations in mobilizing for beginning work on the project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site, and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, sanitary and other facilities, as required by these Specifications, the special provisions, and State and local laws and regulations. The costs of bonds and any required insurance, and any other preconstruction expense necessary for the start of the work, excluding the cost of the construction materials, shall also be included in this Section.
- B. Please see the Mobilization pay item description in Section 01025 to view additional mobilization requirements.
- C. When No Separate Item is shown in the Proposal - When the proposal does not include a separate item for Mobilization, all work and incidental costs specified as being covered in this Section shall be included for payment under the several scheduled items of the overall contract, and no separate payment will be made therefor.

**End of Section**

**Section 01300**  
**Submittals**

**1.01 Construction Schedule**

- A. At or before the pre-construction conference, CONTRACTOR shall submit to the City for review a preliminary schedule of the proposed construction operations. The City will review the schedule and provide comments. Within 10 (ten) days of receipt of the City's comments, the CONTRACTOR shall provide a construction progress schedule. The construction schedule shall indicate the sequence of the Work, the time of starting and completion of each part, and the installation date for each major item of equipment, and the time for making connections to existing piping, structures, or facilities.
- B. The City may require CONTRACTOR to add to his equipment, or construction forces, as well as increase the working hours, if operations fall behind schedule at any time during the construction period.
- C. CONTRACTOR shall meet weekly with the City's representative to provide an updated work schedule for the following week's activities.

**1.02 Progress Reports**

- A. A progress report shall be furnished to City with each application for progress payment. If the Work falls behind schedule, CONTRACTOR shall submit additional progress reports at such intervals as City may request.
- B. Each progress report shall include sufficient narrative to describe current and anticipated delaying factors, their effect on the construction schedule, and proposed corrective actions. Any Work reported complete, but which is not readily apparent to the City, must be substantiated with satisfactory evidence.
- C. Each progress report shall also include three prints of the accepted graphic schedule marked to indicate actual progress.

**1.03 Schedule Of Values**

- A. After review of the tentative schedule at the preconstruction conference, and before submission of the first application for payment, CONTRACTOR shall prepare and submit to City a schedule of values covering each lump sum item. The schedule of values, showing the value of each kind of work, shall be acceptable to City before any application for payment is prepared.
- B. The sum of the items listed in the schedule of values shall equal the contract price. Such items as Bond premium, temporary construction facilities, may be listed separately in the schedule of values, provided the amounts can be substantiated. Overhead and profit shall not be listed as separate items.
- C. An unbalanced schedule of values providing for overpayment of CONTRACTOR on items of Work which would be performed first will not be accepted. The schedule of values shall be revised and resubmitted until acceptable to the City. Final acceptance by the City shall indicate only consent to the schedule of values

as a basis for preparation of applications for progress payments and shall not constitute an agreement as to the value of each indicated item.

#### **1.04 Schedule Of Payment**

- A. At or before the pre-construction conference, CONTRACTOR shall furnish to the City a schedule of estimated monthly payments. The schedule shall be revised and resubmitted each time an application for payment varies more than 10 percent from the estimated payment schedule.

#### **1.05 Survey Data**

- A. All field books, notes, and other data developed by CONTRACTOR in performing surveys required as part of the Work shall be available to the City for examination throughout the construction period. All such data shall be submitted to the City with the other documentation required for final acceptance of the Work.

#### **1.06 Shop Drawings And Engineering Data**

- A. Engineering data covering all equipment and fabricated materials, which will become a permanent part of the Work under this contract shall be submitted to the Engineer, for review. This data shall include drawings and descriptive information in sufficient detail to show the kind, size, arrangement, and operation of component materials and devices; the external connections, anchorages, and supports required; performance characteristics; and dimensions needed for installation and correlation with other materials and equipment.
- B. All submittals regardless of origin shall be stamped with the approval of CONTRACTOR and identified with the name and number of this contract, CONTRACTOR's name, and references to applicable specification paragraphs and Contract Drawings. Each submittal shall indicate the intended use of the item in the Work. When catalog pages are submitted, applicable items shall be clearly identified. The current revision, issue number, and date shall be indicated on all drawings and other descriptive data.
- C. CONTRACTOR's stamp of approval is a representation to the City that CONTRACTOR accepts full responsibility for determining and verifying all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, and that he has reviewed or coordinated each submittal with the requirements of the Work and the Contract Documents.
- D. All deviations from the Contract Documents shall be identified on each submittal and shall be tabulated in CONTRACTOR's letter of transmittal. Such submittals shall, as pertinent to the deviation, indicate essential details of all changes proposed by CONTRACTOR (including modifications to other facilities that may be a result of the deviation).
- E. CONTRACTOR shall accept full responsibility for the completeness of each submission, and, in the case of a resubmission, shall verify that all exceptions previously noted by Engineer have been taken into account. In the event that more than one resubmission is required because of failure of CONTRACTOR to account for exceptions previously noted, CONTRACTOR shall reimburse City for the charges of City for review of the additional resubmissions.

- F. Resubmittals shall be made within seven (7) days of the date of the letter returning the material to be modified or corrected, unless within seven (7) days the CONTRACTOR submits an acceptable request for an extension of the stipulated time period, listing the reasons the resubmittal cannot be completed within that time.
- G. Any need for more than one resubmission, or any other delay in obtaining Engineer's review of submittals, will not entitle CONTRACTOR to extension of the Contract Time unless delay of the Work is directly caused by a change in the work authorized by a Change Order or by failure of Engineer to return any submittal within 21 days after its receipt at the Engineer's office.
- H. CONTRACTOR's letter of resubmittal shall list the date of his original submittal letter, the date of the Engineer's letter returning the submittal, and the dates of submission and return of any previous resubmittals. In addition, the CONTRACTOR shall reimburse the City in the amount of \$200.00 for review of the second resubmittal and each of any subsequent resubmittals.
- I. Engineer's review of drawings and data submitted by CONTRACTOR will cover only general conformity to the drawings and specifications, external connections, and dimensions that affect the layout. The Engineer's review does not indicate a thorough review of all dimensions, quantities, and details of the material, equipment, device or item shown. The Engineer's review of submittals shall not relieve CONTRACTOR from responsibility for errors, omissions, or deviations, or responsibility for compliance with the Contract Documents.
- J. Four copies (minimum) of each drawing and necessary data shall be submitted to the Engineer. The Engineer will not accept submittals from anyone but CONTRACTOR. Submittals shall be consecutively numbered in direct sequence of submittal and without division by subcontracts or trades. Resubmittals shall bear the number of the first submittal followed by a letter (A, B, etc.), to indicate the sequence of the resubmittal.
- K. When the drawings and data are returned marked NOT ACCEPTABLE or RETURNED FOR CORRECTION, the corrections shall be made as noted thereon and as instructed by Engineer and five corrected copies (or one corrected reproducible copy) resubmitted.
- L. When corrected copies are resubmitted, CONTRACTOR shall in writing direct specific attention to all revisions and shall list separately any revisions made other than those called for by Engineer on previous submissions.
- M. When the drawings and data are returned marked EXCEPTIONS NOTED, NO EXCEPTIONS NOTED, or RECORD COPY, no additional copies need be furnished. The Engineer shall return two (2) copies for its records.

## **1.07 Layout Data**

- A. CONTRACTOR shall keep neat and legible notes of measurements and calculations made by him in connection with the layout of the Work. Copies of such data shall be furnished to the Resident Project Representative for use in checking CONTRACTOR's layout as provided under Lines and Grades. All such data considered of value to City will be transmitted to City with other records upon completion of the Work.

**End of Section**

**Section 01330  
Construction Staking**

**Part 1 General**

**1.01 General Requirements**

- A. Responsibility for Staking. The CONTRACTOR shall provide a licensed land surveyor to set stakes and markers showing the locations on the surface of various parts of the Work as outlined herein. All stakes shall be provided at the expense of the CONTRACTOR. It shall also be the responsibility of the CONTRACTOR to transfer surface line and grade for other than normal surface open cut operations which the CONTRACTOR may conduct, and also for any operations where ordinary surface line and grade is not feasible.
- B. The CONTRACTOR shall utilize lasers, or surveying instruments run by qualified competent personnel to control the construction installation Work. If the method being used by the CONTRACTOR fails to give proper alignment and grade control to the Work, the City shall be empowered to order the CONTRACTOR to use such other method(s) as will provide adequate control at the CONTRACTOR's expense.
- C. The City may require the CONTRACTOR, at the CONTRACTOR's expense, to provide such masts, scaffolds, batter-boards, straight-edges, templates, or other devices as may be necessary to facilitate laying out, inspecting and constructing the Work.

**1.02 Relocation and Re-Establishment**

- A. Survey Control Points. The CONTRACTOR shall bear all expense involved in establishing, maintaining and/or resetting all survey control points, land survey points or monuments during his construction operation. Such Work shall be done under the direct supervision of a licensed land surveyor.

**End of Section**

**Section 01385**  
**Audio/Video Construction Records**

**Part 1 - General**

**1.1 Description**

- A. GENERAL - Audio/Video Tape of all work areas in the Contract will be prepared by the CONTRACTOR. Any area omitted from complete coverage, or areas where the videotape is not definitive as to pre-construction conditions, will not be cause for additional compensation by the CONTRACTOR for repairs to damage of private or public property.
- B. CONTRACTOR TO PREPARE AUDIO/VIDEO TAPE - Prior to commencing work, the CONTRACTOR shall have a continuous color audio/video tape recording taken along the entire length of the Project including all affected project areas. Streets, easements, rights-of way, lots or construction sites within the Project must be recorded to serve as a record of a pre-construction conditions. Two copies of tape recordings and video log will be submitted to the Town. The Town shall designate those areas, if any, to be omitted from or added to the audio-visual coverage. All tapes and written records shall become property of the Town.
- C. SCHEDULING OF AUDIO/VIDEO TAPE - No construction shall begin prior to review and approval of the tapes covering the Project construction area(s) by the Town. The Town shall have the authority to reject all or any portion of a video tape not conforming to specifications and order that it be redone at no additional charge. The CONTRACTOR shall reschedule unacceptable coverage within seven days after being notified. Tape recordings shall not be made more than 30 days prior to construction in any area.
- D. PROFESSIONAL VIDEOGRAPHERS - The CONTRACTOR shall engage the services of a professional videographer known to be skilled and regularly engaged in the business of preconstruction color audio-video tape documentation. The videographer through the CONTRACTOR shall furnish to the Town a list of all equipment to be used for the audio-video taping, i.e., manufacturer's name, model number, specifications and other pertinent information.
- E. REFERENCES - Additional information to be furnished by the videographer is the names and addresses of two references that the videographer has performed color audio-video taping for on projects of a similar nature within the last 12 months. Town's approval of the selected videographer is required prior to taking first audio-video tape.
- F. EQUIPMENT - All equipment, accessories, materials and labor to perform this service shall be finished by the CONTRACTOR. The total audio-video system shall reproduce bright, sharp, clear pictures with accurate colors and shall be free from distortion, tearing, rolls or any other form of imperfection. The audio portion of the recording shall reproduce the commentary of the camera operator with proper volume, clarity and be free from distortion and interruptions. In some

instances, audio-video tape coverage may be required in areas not accessible by conventional wheeled vehicles. Such coverage shall be obtained by walking.

- G. RECORDED INFORMATION, AUDIO - Each tape shall begin with the current date, project name and be followed by the general location, i.e., viewing side and direction of progress. Accompanying the video recording of each video tape shall be a corresponding and simultaneously recorded audio recording. This audio recording, exclusively containing the commentary of the camera operator or aide, shall assist in viewer orientation and in any needed identification, differentiation, clarification, or objective description of the features being shown in the video portion of the recording. The audio recording shall also be free from any conversations.
- H. RECORDED INFORMATION - VIDEO - All video recordings must continuously display transparent digital information to include the date and time of recording. The date information shall contain the month, day and year. The time information shall contain the hour, minutes and seconds. Additional information shall be displayed periodically. Such information shall include, but not be limited to, project name, contract number, direction of travel and the viewing side. This transparent information shall appear on the extreme upper left hand third of the screen. Camera pan, tilt, zoom-in and zoom-out rates shall be sufficiently controlled such that recorded objects will be clearly viewed during video tape playback. In addition, all other camera and recording system controls, such as lens focus and aperture, video level, pedestal, chrome, white balance, and electrical focus shall be properly controlled or adjusted to maximize picture quality. The construction documentation shall be recorded in SP mode.
- I. VIEWER ORIENTATION - The audio and video portions of the recording shall maintain viewer orientation. To this end, overall establishing views of all visible house and business addresses shall be utilized. In areas where the proposed construction location will not be readily apparent to the video tape viewer, highly visible yellow flags shall be placed, by the CONTRACTOR, in such a fashion as to clearly indicate the proposed center line of construction. When conventional wheeled vehicles are used as conveyances for the recording system, the vertical distance between the camera lens and the ground shall not exceed 10 feet. The camera shall be firmly mounted such that transport of the camera during the recording process will not cause an unsteady picture.
- J. LIGHTING - All taping shall be done during time of good visibility. No taping shall be done during precipitation, mist or fog. The recording shall only be done when sufficient sunlight is present to properly illuminate the subjects of recording and to produce bright, sharp video recordings of those subjects.
- K. SPEED OF TRAVEL - The average rate of travel during a particular segment of coverage shall be directly proportional to the number, size and value of the surface features within that construction areas zone of influence. The rate of speed in the general direction of travel of the vehicle used during taping shall not exceed 44 feet per minute.
- L. VIDEO LOG/INDEX - All video tapes shall be permanently labeled and shall be properly identified by video tape number and project title. Each video tape shall have a log of that video tape's contents. The log shall describe the various segments of coverage contained on the video tape in terms of the names of the streets or location of easements, coverage beginning and end, directions of

coverage, video unit counter numbers, engineering survey or coordinate values (if reasonably available) and the date.

- M. AREA OF COVERAGE - Tape coverage shall include all surface features located within the zone of influence of construction supported by appropriate audio coverage. Such coverage shall include, but not be limited to, existing driveways, sidewalks, curbs, pavements, drainage system features, mailboxes, landscaping, culverts, fences, signs, CONTRACTOR staging areas, adjacent structures, etc. within the area covered by the project. Of particular concern shall be the existence of any faults, fractures, or defects. Taped coverage shall be limited to one side of the site, street, easement or right-of-way at any one time.
- N. COSTS OF VIDEO SERVICES - The cost to complete the requirements under this section shall be included in the contract items provided in the proposal sheet. There is no separate pay item for this work.

**Part 2 - Products (Not Used)**

**Part 3 - Execution (Not Used)**

**End of Section**

**Section 01400  
Temporary Facilities**

**Part 1 - General**

**1.01 Sanitary Facilities**

- A. CONTRACTOR shall furnish temporary separate male and female sanitary facilities at the site, as provided herein, for the needs of all construction workers and others performing work or furnishing services on the Project.
- B. Sanitary facilities shall be of reasonable capacity, properly maintained throughout the construction period, and obscured from public view to the greatest practical extent. If toilets of the chemically treated type are used, at least one toilet will be furnished for each 20 men. CONTRACTOR shall enforce the use of such sanitary facilities by all personnel at the site.

**1.02 Maintenance Of Traffic**

- A. CONTRACTOR shall conduct his work to interfere as little as possible with public travel, whether vehicular or pedestrian. Whenever it is necessary to cross, obstruct, or close roads, driveways and walks, whether public or private, CONTRACTOR shall provide and maintain suitable and safe bridges, detours, or other temporary expedients for the accommodation of public and private travel, and shall give reasonable notice to City's private drives before interfering with them. Driveway access to commercial properties will be maintained at all times. Such maintenance of traffic will not be required when CONTRACTOR has obtained permission from the owner and tenant of private property, or from the authority having jurisdiction over public property involved, to obstruct traffic at the designated point.
- B. Traffic control shall be in accordance with FDOT Roadway and Traffic Design Standards for Traffic Control Through Work Zones. See Section 01500 for Traffic Control requirements.
- C. In making open cut street crossings, CONTRACTOR shall not block more than one-half of the street at a time. Whenever possible, CONTRACTOR shall widen the shoulder on the opposite side to facilitate traffic flow. Temporary surfacing shall be provided as necessary on shoulders.

**1.03 Barricades And Lights**

- A. All streets, roads, highways, and other public thoroughfares, which are closed to traffic, shall be protected by effective barricades on which shall be placed acceptable warning signs. Barricades shall be located at the nearest intersecting public highway or street on each side of the blocked section.
- B. All open trenches and other excavations shall have suitable barricades, signs, and lights to provide adequate protection to the public. Obstructions such as material piles and equipment shall be provided with similar warning signs and lights. CONTRACTOR shall be responsible for public safety within the construction area.
- C. All barricades and obstructions shall be illuminated with warning lights from sunset to sunrise. Material storage and conduct of the Work on or alongside public streets and highways shall cause the minimum obstruction and inconvenience to the traveling

public. All barricades, signs, lights and other protective devices shall be installed and maintained in conformity with applicable statutory requirements and, where within railroad and highway rights-of-way, as required by the authority having jurisdiction thereof.

- D. Open trenches and other excavations shall not be left open over weekends and holidays, or greater than one calendar day, except during adverse weather conditions.

#### **1.04 Protection Of Public And Private Property**

- A. CONTRACTOR shall protect, shore, brace, support, and maintain all underground pipes, conduits, drains, and other underground construction uncovered or otherwise affected by his construction operations. All pavement, surfacing, driveways, curbs, walks, buildings, utility poles, guy wires, fences, and other surface structures affected by construction operations, together with all sod and shrubs in yards and parkings, shall be restored to their original condition, whether within or outside the easement. All replacements shall be made with new materials.
- B. CONTRACTOR shall provide assurances to maintain regular residential services such as postal delivery, solid waste pickup, etc. Mailboxes may be temporarily relocated with approval from the Postmaster and the resident. Mailboxes shall be restored to the original location in original or better condition, including replacement in kind as necessary.

#### **1.05 Parking**

- A. CONTRACTOR shall provide and maintain suitable parking areas for the use of all construction workers and others performing work or furnishing services in connection with the Project, as required to avoid any need for parking personal vehicles where they may interfere with public traffic, City's operations, or construction activities.

#### **1.06 Dust Control**

- A. CONTRACTOR shall take reasonable measures to prevent unnecessary dust. Earth surfaces subject to dusting shall be kept moist with water or by application of a chemical dust suppressant. Dusty materials in piles or in transit shall be covered when practicable to prevent blowing.
- B. Buildings or operating facilities, which may be affected adversely by dust, shall be adequately protected from dust. Existing or new machinery, motors, instrument panels, or similar equipment shall be protected by suitable dust screens. Proper ventilation shall be included with dust screens.

#### **1.07 Sweeping**

- A. The CONTRACTOR shall sweep loose material from the pavement at the end of each workday.

#### **1.08 Pollution Control**

- A. CONTRACTOR shall prevent the pollution of drains and watercourses by sanitary wastes, sediment, debris and other substances resulting from construction activities. No sanitary wastes will be permitted to enter any drain or watercourse other than

sanitary sewers. No sediment, debris or other substance will be permitted to enter sanitary sewers and reasonable measures will be taken to prevent such materials from entering any drain or watercourse.

**End of Section**

**Section 01410**  
**Testing Laboratory Services**

**Part 1 General**

**1.01 Description**

Provide such other testing and inspecting as are specified to be furnished by the CONTRACTOR in this Section and/or elsewhere in the Contract Documents.

A. Related Work

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Section 01000 of these Specifications.
2. Requirements for testing may be described in various Sections of these Specifications.
3. Where no testing requirements are described, but the City decides that testing is required, the City may require such testing to be performed under current pertinent standards for testing. Payment for such testing will be made as described in this Section.

**1.02 Quality Assurance**

- A. The testing laboratory will be qualified to the City's approval in accordance with ASTM E239.
- B. Testing, when required, will be in accordance with all pertinent codes and regulation, and with selected standards of the American Society for Testing and Materials.

**1.03 Product Handling**

- A. Promptly process and distribute required copies of the test reports and related instructions to insure necessary retesting and replacement of materials with the least possible delay in progress of the Work.

**Part 2 Products**

**2.01 Payment For Testing**

- A. Initial Services - The CONTRACTOR will pay for the testing services as required by the Specifications.
- B. Retesting - When initial tests indicate non-compliance with the Contract Documents, subsequent retesting occasioned by the non-compliance shall be performed by the same testing agency, and costs thereof will be borne by the CONTRACTOR.
- C. Additional Testing Requested by City - Payment for such testing will be made by City. However, the cost of retesting the additional tests requested by City that are found to be in non-compliance with the specifications shall be borne by the CONTRACTOR.

## **2.02 Code Compliance Testing**

- A. Inspections and tests required by codes or ordinances, or by a plan approval authority, and which are made by a legally constituted authority, shall be the responsibility of and shall be paid for by the CONTRACTOR, unless otherwise provided in the Contract Documents.

## **2.03 CONTRACTOR's Convenience Testing**

- A. Inspecting and testing performed exclusively for the CONTRACTOR's convenience shall be the sole responsibility of the CONTRACTOR.

## **Part 3 Execution**

### **3.01 Cooperation With Testing Laboratory**

- A. Representatives of the testing laboratory shall have access to the Work at all times and at all locations where the Work is in progress. Provide facilities for such access to enable the laboratory to perform its functions properly.

### **3.02 Taking Specimens**

- A. All specimens and samples for testing, unless otherwise provided in the Contract Documents, shall be taken by the testing personnel. All sampling equipment and personnel will be provided by the testing laboratory. All deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory.

### **3.03 Schedules For Testing**

- A. Established Schedule:
  1. By advance discussion with the testing laboratory approved by the City, determine the time required for the laboratory to perform its tests and to issue each of its findings.
  2. Provide all required testing time within the construction schedule.
  3. CONTRACTOR shall be responsible for coordinating with and providing testing laboratory sufficient notice prior to testing. Charges due to untimely cancellation of any tests shall be the responsibility of the CONTRACTOR.
- B. Revising Schedule - When changes of construction schedule are necessary during construction, coordinate all such changes within the testing laboratory as required.
- C. Adhere to schedule - When the testing laboratory is ready to test according to the established schedule, but is prevented from testing or taking specimens due to incompleteness of the Work, all extra charges for testing attributable to the delay may be back-charged to the CONTRACTOR and shall not be borne by the City.

### **3.04 Results**

- A. The testing laboratory shall provide the City with three copies of the test results within 5 working days of this test.
- B. Test results shall be signed and sealed by a licensed Professional Engineer.

**End of Section**

**Section 01500  
Traffic Control**

**Part 1 General**

**1.01 Traffic Maintenance and Control**

- A. Road Closing - No street, road or section thereof shall be closed to through traffic unless otherwise provided for on the Plans, Specifications, or authorized by the agency with jurisdiction over the roads. Prior to closing a street, road, or section thereof, the CONTRACTOR shall provide the City with a copy of a detour Plan approved by the agency having jurisdiction over the roads.
- B. In the event that roads or streets are to be closed, the CONTRACTOR shall notify the local fire department, police department, local road authority, ambulance and emergency services, the City, public transit authority and public school system daily as to what streets will be partly blocked or closed, the length of time the streets will be blocked or closed and when the streets will be reopened to traffic. The CONTRACTOR shall designate one responsible employee to carry out the requirements of this condition.
- C. Maintenance of Traffic - The CONTRACTOR shall provide access for local traffic to property along the Project by means of temporary roads, drives, culverts or other means approved by the City. The CONTRACTOR shall grade, add surfacing materials, and dust palliatives to such temporary roads and drives as necessary for the proper maintenance of traffic.
- D. Where the shoulder is used to maintain traffic, the shoulder shall be graded, surfaced, treated for dust, constructed, or reconstructed, as specified herein or as shown on the Plans. If the construction work is suspended due to weather conditions or for any other reason, sufficient labor, materials and equipment shall be ready for immediate use at all times for the proper maintenance of traffic. Surfacing materials and dust palliatives shall be applied at such times and locations and in such amounts as directed by the City.
- E. Where shoulders are low, high, soft or rough, adequate provisions shall be taken to inform and protect the traveling public by means such as construction warning signs, barricades, lighted devices, etc. Such shoulder hazards shall be eliminated as soon as practicable.
- F. The CONTRACTOR shall furnish, erect and maintain all signs, barricades, lights, traffic regulators, in accordance with the requirements of the current "Manual of Uniform Traffic Control Devices," (14.15.010, F.A.C.), and all flagmen and watchmen as are necessary to maintain and safeguard traffic along the entire Project. Failure to comply with these requirements may be cause to issue a stop Work order, which shall remain in effect until all necessary devices are in place and operational. The issuance of a stop Work order shall not be reason for granting additional compensation or an extension to the Contract time.
- G. Existing Signs - No stop sign, traffic control or warning device shall be taken down until the agency having jurisdiction over the roads has been notified and arrangements for its immediate reinstallation have been made. The CONTRACTOR shall provide temporary signs, traffic control devices, warning devices, or watchmen continuously from the time the item is removed until it is reinstalled. All signs that have been removed shall be replaced with signs meeting requirements of the agency having jurisdiction over the roads.

## **1.02 Postal and Newspaper Deliveries**

- A. Postal Service - Several or all residents of this Project area may receive their mail at roadside mailboxes. Since the postal service will not deliver mail to a resident without a mailbox or a mailbox that is not in its proper position, the CONTRACTOR shall relocate, replace and repair all mailboxes and posts in a condition and height acceptable to the post office within 24 hours of their removal. If required, the CONTRACTOR shall furnish new posts for the mailboxes if the existing posts are broken or rotted to the extent that they cannot be reused. Any mailbox damaged by the CONTRACTOR while carrying out his operations or by anyone else while the box is down due to the CONTRACTOR's operation, shall be replaced by the CONTRACTOR with a new mailbox meeting the postal officials' specifications and the resident's name and address neatly lettered with paint or other acceptable means to the satisfaction of the resident and postal authorities. The cost shall be incidental to the Project.

### **Part 2 Products (Not Used)**

### **Part 3 Execution (Not Used)**

**End of Section**

**Section 01670**  
**Substitutions and Product Options**

**Part 1 - General**

**1.01 Description**

A. General:

1. This section covers furnishing of all labor, materials, tools, equipment, and performing all work and services for furnishing, submission, processing and handling of requests for substitution and product options. See items as indicated on drawings and as specified. Any substitution or option shall be in accord with provisions of Contract Documents, and completely coordinated with work of other trades.
2. Although such work is not specifically indicated, furnish all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
3. See appropriate sections for specific items specified. See General Conditions for additional information.

B. Procedure:

1. For equipment and materials, which are listed in the proposal, observe procedures outlined in Information for Bidders.
2. For products, equipment, and materials, which are named in drawings or specifications for which a request for substitution is made, observe procedures outlined in these specifications.

C. Costs: Cost incurred by CONTRACTOR in providing information, catalogs, and samples - including but not limited to labor, materials, freight postage, and transportation - are sole cost of CONTRACTOR with no cost assessed to the City.

D. Even if such work is not specifically indicated, furnish all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, and complete installation.

**1.02 Requests For Substitution - General**

A. Base all bids on materials, equipment and procedures specified.

B. Certain types of equipment and kinds of material are described in specifications by means of trade names and catalog numbers and/or manufacturer's names. Where this occurs, it was not intended to exclude from consideration such types of equipment and kinds of material bearing other trade names, catalog numbers and/or manufacturer's names, capable of accomplishing purpose of types of equipment or kinds of material specifically indicated.

- C. Other types of equipment and kinds of material may be acceptable to City.
- D. Types of equipment, kinds of material and methods of construction, if not specifically indicated must be approved in writing by City and be agreed upon by City.
- E. Conditional bids will not be accepted.

### **1.03 Submission Of Requests For Substitution**

- A. Within no more than 30 days after award of the Contract, the City will consider requests for substitutions of products, materials, systems or other items. Requests must be received by City within 30 calendar days after the date of Contract award. All requests for substitution shall be completed as specified below.
- B. Substitute items must comply with color and pattern of base specified items unless specifically approved otherwise.
- C. Submit three (3) copies of request for substitution. Include in request:
  - 1. Name of product located by Drawing No. or Specification No., followed by a detail or line number for the particular item(s) for which request for substitution is initiated.
  - 2. Complete data substantiating compliance of proposed substitution with Contract Documents.
  - 3. For products:
    - a. Product identification by schedule or tag no., including manufacturer's name.
    - b. Manufacturer's literature, marked to indicate specific model, type, size, and options to be considered:
      - (1) Product Description
      - (2) Performance and test data
      - (3) Reference standards
      - (4) Difference in power demand
      - (5) Dimensional differences for specified unit
    - c. Submit samples, full size if so required. City reserves right to impound sample until physical units are installed on project for comparison purposes. All costs of furnishing and return of samples shall be paid by requester. City is not responsible for loss of or damage to samples.
    - d. Name and address of similar projects on which product was used, date of installation, and field performance data on installation.
  - 4. For construction methods:

- a. Detailed description of proposed method.
    - b. Drawings illustrating methods.
  5. Itemized comparison of proposed substitution with product or method specified.
  6. Data relating to changes in construction schedule.
  7. Accurate cost data on proposed substitution in comparison with product or method specified.
  8. Include with any request a specific statement defining changes in contract time or amount.
- D. In making request for substitution, or in using an approved substitute item, Supplier/Manufacturer represents:
1. He has personally investigated proposed product or method, and has determined that it is equal or superior in all respects to that specified, and that it will perform function for which it is intended.
  2. Will provide same or better warranty for substitute item as for product or method specified.
  3. Will coordinate installation of accepted substitution into work, to include but not be limited to the following:
    - a. Building and structure modifications as necessary;
    - b. Additional ancillary equipment to accommodate change;
    - c. Piping, valving, mechanical, electrical, or instrumentation changes, and,
    - d. All other changes required for work to be complete in all respects to permit incorporation of substitution into project.
  4. Waives all claims for additional costs related to substitution, which subsequently become apparent.
- E. Written acceptance or rejection of items presented for alternative consideration will be given within two weeks after request is received.
- F. In the event the acceptance of an alternate results in a change in contract price or time, or is a deviation from the Contract Documents, a change order will be issued to reflect such change. In the event the acceptance of an alternate does not result in a change in Contract price or time, a field order shall be issued.
- G. Alternates may be rejected for the following reasons:
1. Acceptance will require substantial revision of Contract Documents or building spaces.
  2. If they are, in the City's opinion, not equal to base product specified or will not adequately perform function for which intended.

3. If request is not initiated by the CONTRACTOR in accordance with this specification section.

#### **1.04 Substitution Due To Unavailability**

- A. Unavailability of specified item due to strikes, lockouts, bankruptcy, discontinuance of production, proven shortage, or similar occurrences are reasons for substitution after Contract award.
- B. Notify City in writing, as soon as condition of unavailability becomes apparent; include substantiating data. Submit request for substitution sufficiently in advance to avoid delays.
- C. Submit data as required in paragraph 1.03 above.

#### **Part 2 - Products (Not Used)**

#### **Part 3 - Execution (Not Used)**

**End Of Section**

**Section 01720**  
**Project Record Documents**

**Part 1 - General**

**1.01 Requirements Included**

- A. CONTRACTOR shall maintain at the site for the City one record copy of:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. City's field orders or written instructions.
  - 6. Approved shop drawings, working drawings and samples.
  - 7. Field test records.
  - 8. Construction photographs.
  - 9. Detailed Progress Schedule.
  
- B. The City shall provide to the CONTRACTOR a CD with electronic files in AutoCAD format (Release 2004 or later) of each contract plan sheet, and associated reference files, for use by the CONTRACTOR in developing Record Drawings.

**1.02 Maintenance Of Documents And Samples**

- A. Store documents and samples in CONTRACTOR's field office apart from documents used for construction.
  - 1. Provide files and racks for storage of documents.
  - 2. Provide locked cabinet or secure storage space for storage of samples.
  
- B. File documents and samples in accordance with CSI format.
  
- C. Maintain documents in a clean, dry, legible, condition and in good order. Do not use record documents for construction purposes.
  
- D. Make documents and samples available at all times for inspection by the City.
  
- E. As a prerequisite for monthly progress payments, the CONTRACTOR is to exhibit the currently updated record documents for review by the City.

**1.03 Marking Devices**

- A. Provide permanent ink, felt tip marking pens for recording information in the color code designated by the City.

**1.04 Recording**

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

- B. Record information concurrently with construction progress.
  - 1. Do not conceal any work until required information is recorded.
- C. Drawings. Legibly mark to record actual construction, including but not limited to:
  - 1. Elevations of various structure elements in relation to grade.
  - 2. All underground piping with elevations and dimensions. Changes to piping location. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements. Actual installed pipe material, class, etc.
  - 3. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
  - 4. Field changes of dimension and detail.
  - 5. Changes made by Field Order or by Change Order.
  - 6. Details not on original contract drawings.
  - 7. Equipment and piping relocations.
  - 8. Intersection details: At least three ties to every valve and fitting, blowoff, fire hydrant, manhole and air release valve.
  - 9. Services based on distance from main line pipe, and property lines.
  - 10. Backflow preventer assemblies locations, with ties to physical features.
- D. Specifications and Addenda. Legibly mark each Section to record:
  - 1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.
  - 2. Changes made by field order or by change order.
- E. Provide certified site survey with line elevations and stationing at 100 foot increments and at locations where the pipe deviated from the normal alignment by a registered land surveyor.

#### **1.05 Submittal**

- A. At Final Completion Date, deliver paper Record Documents to the City.
- B. Provide certified Record Drawings in electronic format (AutoCAD Release 2004 or later version) and one (1) signed and sealed hardcopy by a Florida Registered Land Surveyor.
- C. Accompany submittal with transmittal letter containing:
  - 1. Date.
  - 2. Project title and number.
  - 3. CONTRACTOR's name and address.
  - 4. Title and number of each Record Document.
  - 5. Signature of CONTRACTOR or his authorized representative.

**Part 2 - Products (Not Used)**

**Part 3 - Execution (Not Used)**

**End Of Section**

**SECTION 02060  
WATER**

1. GENERAL

A. Scope

This section of the specifications covers the material and installation requirements for piping, valves, fittings, connections, sterilization, and testing of water mains. Excavation, trenching, and backfill for the installation of underground piping systems shall be specified in section on Earthwork.

B. Submittals: Shop drawings shall be submitted for all valves, valve boxes, pipeline restraints, and double check valve assemblies (backflow prevention devices). Three copies of all required test reports shall be submitted to the City. These shall include:

1. Certified records of tests on ductile iron pipe made by the manufacturer or a commercial testing laboratory for each shipment of pipe. Tests shall be in accord with the procedure outlined in ANSI Standard A21.51 (AWWA C-151).
2. Reports on pressure and leakage tests.
3. Reports of bacteriological tests.

2. MATERIALS

A. All materials will be inspected by the City prior to installation. All materials shall be new, manufactured either in the year that construction begins or the previous year. AWWA or ASTM Specifications shall be latest issue.

B. Ductile Iron Pipe

Ductile iron pipe for water main installed underground shall be manufactured in accordance with AWWA C-151 (ANSI Std. A 21.51). Pipe shall be designed for thickness in accordance with AWWA C-150 (ANSI Std. A 21.50), subject to the following design criteria: 150 psi water pressure plus 100 psi surge pressure, Type 2 laying condition, 2 to 1 safety factor, trench width diameter plus 2 feet, and depth of cover as shown on the drawings. The depth of cover for water mains not shown in profile shall be a minimum of 3 feet 6 inches, unless otherwise shown on the drawings. Where ductile iron pipe is threaded for flanges, the thickness shall be increased to provide for pressures cited above.

The depth of cover for the pipe listed in the preceding paragraph is specified as a minimum required depth. The pipe manufacturer shall determine additional wall thickness required where amount of cover exceeds the minimum requirements.

Pipe shall have cement lining and bituminous seal coat in accordance with AWWA C-104 (ANSI Std. A 21.4). Pipe shall also be bituminous coated on the outside. Lining shall be standard thickness.

Joints: Joints for ductile iron pipe shall be mechanical or push-on type designed in accordance with AWWA C-111. Gasket lubricant shall be labeled with the trade name, pipe manufacturer's name, and shall be stenciled on the container "For use with potable water system."

C. Polyvinyl Chloride (PVC) Pipe:

Water main pipe (4" and larger) shall meet the requirements of AWWA C-900, polyvinyl chloride (PVC) for water distribution. All pipe shall be class 150, DR 18. Two-inch water main shall meet the requirements of ASTM D2241 (Class 200).

Pipe shall be manufactured from clean, virgin, unplasticized polyvinyl chloride resin, cell classification 12454-A or 12454-B as defined in ASTM D-1784. All pipe shall bear the National Sanitation Foundation seal for potable water pipe.

Connection for PVC water pipe 2" in diameter and larger shall be rubber compression ring type. The bell shall consist of an integral wall section with a solid cross-section elastomeric ring which meets the requirements of ASTM D-1869. The bell section shall be designed to be at least as strong as the pipe wall.

All PVC water main pipe shall be blue in color, or shall bear acceptable, indelible blue markings 120° apart and running continuously the full length of each section of pipe.

All PVC pipe shall be lain with a blue continuous detectable marker tape 12" above and centered on the pipe.

D. Fittings

Fittings for ductile iron and PVC pipe shall be manufactured of ductile iron in accordance with ANSI/AWWA C-151/A21.51. Ductile iron pipe and fittings for water mains shall have an asphaltic outside coating and a cement lining inside in accordance with ANSI/AWWA C104/A21.4.

All fittings shall be restrained joint. All fittings shall be rated for not less than 150 psi working pressure plus 100 psi surge pressure.

All ductile iron pipe and fittings shall be polyethylene encased (minimum 8 mil) in accordance with ANSI/AWWA A21.5/C105 and ASTM A 674.

Above-ground ductile iron pipe, such as on bridges or separate pipe supports, shall have a factory-applied exterior coating of a universal phenolic primer and two field coats of an alkyd enamel (2 mils DFT per coat), blue in color, as approved by the City. Primer shall be compatible with field finish. Acceptable coating manufacturers are Tnemec Co., Inc., Porter Paint Co., and Kop-Coat, Inc.

E. Restraining

Restrained Joints: Restrained joints shall be provided for all buried piping systems at the location required to resist system thrust. Pipe joints and fittings shall be restrained as specified below.

1. Manufactured restrained joints (ductile iron pipe): Manufactured restrained joints shall be Flex-Ring, Lok-Ring or Lok-Fast manufactured by the American Cast Iron Pipe Company, Lok-Tyte or Tr-Flex Type manufactured by the United States Pipe Company or an equal approved by the City. Joints shall be manufacturer's standard specifically modified push-on type joints with joint restraint provided by ductile iron retainer rings joined together by corrosion resistant, high strength steel tee head bolts and nuts or with

joint restraint provided by a welded-on retainer ring and a split flexible ring assembled behind the retainer ring. Manufactured restrained joints shall be capable of deflection during assembly. Deflection shall not exceed 80 percent of the manufacturer's recommendations.

Tee head bolts and nuts for restrained joints shall be manufactured of CORTEN, high strength, low alloy, corrosion resistant steel as manufactured by NSS Industries, Plymouth, Michigan, or an equal approved by the City.

Joints shall be fully extended (i.e., all slack taken up) during installation.

2. Restrained joints for field-cut ductile iron pipe: When prior approval is obtained from the City, fittings and push-on ductile iron pipe may be restrained using a follower gland that includes a restraining mechanism. When actuated during installation, the restraining device shall impart multiple wedging action against the pipe wall that increases resistance as internal pressure in the pipeline increases.

The joint shall maintain flexibility after installation. Glands shall be manufactured of ductile iron conforming to ASTM A536 and restraining devices shall be of heat treated ductile iron with a minimum hardness of 370 BHN. The gland shall have standard dimension and bolting patterns for mechanical joints conforming to ANSI/AWWA C111 and C153, latest revisions.

Tee head bolts and nuts shall be manufactured of corrosion resistant, high strength, low alloy CORTEN steel in accordance with ASTM A242.

The restraining wedges shall have twists-off nuts to insure proper torquing. The mechanical joint restraint device shall have a minimum working pressure rating of 250 psi with a minimum safety factor of 2 to 1 and shall be MEGALUG as manufactured by EBBA Iron, Inc. No other retainer gland type device will be acceptable. After installation prior to backfilling, all parts of the joint restraint system shall be coated, to a least a 16 mil dry thickness, with coal tar epoxy equal to Kop-Coat Bitumastic No. 300-M.

3. PVC pipe bell and spigot joints shall be restrained with the EBBA Iron Series 1500 or 6500 Restrainer or an equal approved by the City. The restraining device and Tee head bolts shall be manufactured of high strength ductile iron meeting ASTM A536, Grade 65-42-10. Clamping bolts and nuts shall be manufactured of corrosion resistant high strength, low alloy CORTEN steel meeting the requirements of ASTM A242.

Cast iron mechanical joint fittings used with PVC pipe shall be restrained with the EBBA Iron Series 2000 PV Restrainer or an equal approved by the City. The restraining device and Tee head bolts shall be manufactured of high strength ductile iron meeting ASTM A536, Grade 65-42-10.

Clamping bolts and nuts shall be manufactured of corrosion resistant high strength, low alloy CORTEN steel meeting the requirements of ASTM A242.

4. When prior approval is obtained from the City, ductile iron and PVC pipe, fittings, and valves may be restrained using tie bolt joint restraint. Joint restraint materials for this method of restraint shall be the Super-Star SST Series Joint Restraint System as manufactured by Star National Products, a Division of Star Industries, Inc., Columbus, Ohio, or an equal approved by the City.

All bolts, nuts, washers, tie rods and other fasteners for the joint restraint system shall be manufactured of CORTEN high strength, low alloy, corrosion resistant steel in conformance with ASTM A242. Tie bolts shall be manufactured of heat treated CORTEN steel. Tie rods and all fasteners for the system shall be galvanized in conformance with the requirements of ASTM A123. Tie rods shall have a minimum diameter of 3/4-inch. The number of tie rods required per joint shall be as recommended by the manufacturer.

Prior to backfilling after installation, all parts of the joint restraint system shall be coated with coal tar epoxy equal to Kop-Coat Bitumastic No. 300-M, for a minimum dry film thickness of 16 mils.

#### F. Gate Valves

Gate valves shall be designed for a working pressure of not less than 150 psi., resilient seat wedge valve, and when fully open, have a clean waterway equal to the nominal diameter of the pipe. The valve shall open by turning to the left or counterclockwise 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. Prior to shipment from the factory, each valve shall be tested by applying to it a hydraulic pressure equal to twice the specified working pressure.

All gate valves 2" and larger shall be resilient seat valves and meet or exceed all the requirements of AWWA Standard C-509. The resilient seating arrangement shall provide zero leakage at the design working pressure when installed with line flow in either direction. All ferrous surfaces inside and outside shall have a fusion bonded epoxy coating. All valves shall have a 2-inch square operating nut.

Valves smaller than two inches (2") be all brass, ball valve curb stop type and shall conform to AWWA standards and ASTM B62 Index - 115-85-5-5-5.

#### G. Cast Iron Valve Boxes

Cast iron valve boxes shall be provided for all valves that are below finished grade elevations. Valve boxes shall consist of cast iron base and adjustable cast iron top section with cover that shall be marked "WATER".

### 3. INSTALLATION

- A. Pipe and fittings for the water main shall be strung out along the route of construction with the bells pointing in the direction of construction. 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.
- B. 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 deflections in excess of those recommended, the Contractor shall either provide special bends as approved by the City or a sufficient number of shorter lengths of pipe to provide angular deflections within the required limit.

- C. 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 joints occur leaving the entire barrel of the pipe bearing on the pipe bed. Backfilling and earth cover shall conform to the requirements specified in the section on Earthwork.
- D. 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 City may stop the 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. The method shall, however, be in accord with the manufacturer's instructions and recommendations. Damaged or unsound pipe or fittings will be rejected. Before jointing the pipe all lumps, blisters, excess coating material, or oil shall be removed from the bell and spigot ends of pipes. At any point in the system shown on the drawings or as ordered by the City, the Contractor shall construct concrete encasements under and around the pipe. This encasement shall be in accordance with the sanitary sewer standard detail sheet and shall be of 3,000 psi P.C. concrete.
- E. Thrust blocks shall be installed on all fittings as shown in details of typical thrust block placements on the drawings. Where thrust blocking is not practical or where the Contractor elects to provide restraining apparatus in lieu of thrust blocks, restraining apparatus detail for any type of pipe shall be submitted for approval of the City. Concrete dead men shall be installed at plugged ends of the water mains. All thrust blocks shall have a separate lifting handle. Concrete shall not be poured around water main fittings and used as thrust blocking.
- F. 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. Unsuitable subgrade materials shall be replaced or stabilized as described in Section 02020, "Earthwork".
- G. Installation of water mains shall be in strict conformance with the latest AWWA Specifications.
- H. Where water mains are stubbed out with a reducer and valve in lieu of thrust blocks, the stubouts shall be restrained with the valve back to the tee.
- I. For the protection of exposed reinforcing in anchor blocks, the Contractor shall furnish and apply two coats of protective material such as Koppers Bitumastic No. 505, or equal, as approved by the City.
- J. Removal of A.C. pipe shall conform to all requirements of the County Public Health Department and any related State regulations for public health and safety.

#### 4. IDENTIFICATION TAPE

Electronically traceable identification tape shall be installed 18 inches above installed pipe on a tamped backfill surface, continuously over all mains, valves and fittings. The tape shall be a minimum of three inches wide, have a minimum tensile strength of 50 pounds and have the words "Water Main" printed on it.

#### 5. JOINTS

All joints shall be watertight, and any leaks or defects discovered shall be immediately repaired to the satisfaction of the City. Any pipe which has been disturbed after being laid shall be taken up, the joints cleaned, and the pipe properly relaid and reconnected to the water system. 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.

## 6. SETTING VALVES AND VALVE BOXES

Before installing any valve, care shall be taken to see that all foreign material is removed from the interior of the body and the valve opened and closed to see that all parts are in proper working condition. Valves shall be set plumb with valve boxes placed directly over the operators. After being correctly positioned, fill shall be carefully tamped around the valve box for a distance of four feet on all sides of the box. In unpaved areas, a concrete pad (24" x 24" minimum) shall be poured around the top of the box as shown in the standard details. Finished grades are to be approved by the City.

## 7. FIELD TESTING OF WATER SYSTEM

A. The Contractor shall furnish and install suitable temporary testing plugs or caps for the pipe, all necessary pressure pumps, hose, pipe connections, meters, gauges, and other similar equipment, and all labor required -- all without additional compensation for conducting pressure and leakage tests of the new water lines. Tests shall be made between valves and as far as practical in sections as approved by the City. Potable water from an existing water distribution system shall be used. The test pressure for the water lines shall be 150 psi, and this pressure shall be maintained for a period of not less than two (2) hours for uncovered pipes, and for not less than twenty-four (24) hours for pipes which have been backfilled before tests are made. The amount of water forced into the line during this time shall be determined and this amount shall be taken as a basis to compute the leakage for twenty-four (24) hours. Pressure shall not vary more than two pounds from the above during the test periods. Allowable leakage shall be computed on the basis of AWWA Standard C600 or the applicable formula for other than 18-foot lengths.

B. Allowable leakage shall be determined by the formula:

$$L = \frac{ND}{7400} P$$

L= Allowable leakage in gallons per hour.

N= Number of joints being tested.

D= Diameter of pipe in inches.

P= Average test pressure during the test.

C. All leaks evident at the surface shall be uncovered and repaired, regardless of the total leakage as indicated by the test, and all pipes, valves, and fittings and other materials found defective under the test shall be removed and replaced at the Contractor's expense. Tests shall be repeated until leakage has been reduced below the allowable amount.

D. Pressure tests on double check systems shall be 150 psi to be held for a minimum of two hours. It shall be a requirement that all testing be directed by City personnel. All double check valve assemblies are to be installed in accordance with the standard details. Testing of the double check valve operations will be conducted by the City.

## 8. FIRE HYDRANT ASSEMBLIES

In the event a FHA is to be relocated as part of the work, the City reserves the right to require the replacement of any devices that exceed five (5) years of age.

## 9. STERILIZATION TESTS

### A. General

Sterilization of all equipment, pipelines, 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 sterilization and tests.

Sterilization tests shall be conducted in accordance with current Florida Department of Environmental Protection Standard Specifications prevalent at the time of testing.

### B. Sterilizing Agent

The sterilizing agent shall be liquid chlorine or sodium hypochlorite solution conforming to Federal Specification O-S-602b Sodium Hypochlorite, Grade D. Dry hypochlorite similar to "HTH" may also be used as the sterilizing agent, upon approval of the City.

### C. Sterilization Methods

#### Flushing the System

All new piping shall be thoroughly flushed and washed prior to the time of sterilization. Clean water shall be flushed through the system for at least one-half hour or until no traces of cuttings, lead, oil, dirt, or other foreign matter is visible. Water shall be disposed of under the direction of the City.

#### Piping and Other Closed Units

The piping shall be sterilized by introducing the sterilizing 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 eighteen (18) hours and not longer than twenty-four (24) hours before the system is flushed.

### D. Residual Chlorine Tests

After sterilizing agents have been permitted to remain for the specified contact periods, the pipelines and valves shall be thoroughly flushed with water until the residual chlorine test are not less than 0.2 ppm or greater than 3.0 ppm in each instance. The determination of the amount of residual chlorine in the system shall be made at such points and in accordance with required tests by means of a standard chlorine test kit.

### E. Bacterial Tests

After the water system or any other units or portions of the project have been sterilized and thoroughly flushed, samples of water shall be taken by the Pinellas County HRS from several points in suitable sterilized containers. If repeated tests of such samples show the presence of coliform organisms, the sterilization shall be repeated or continued until tests indicate absence of pollution. Two consecutive samples shall be satisfactorily completed, and written notice is given before the system is placed in operation. Twenty-four hours notice will be given to the City before the system is placed in operation. Twenty-four hours notice will be given to the City

before the samples are required. No samples shall be taken Thursday through Sunday or as otherwise mandated by the County Health Department.

F. Approval of Sterilization

The complete sterilization program and methods followed, especially if materially different from those specified, shall be in accord with directives of the State of Florida Department of Health and Rehabilitative Services, Division of Health, and all methods employed shall meet with their approval.

**END OF SECTION**

**HYDROSTATIC LEAKAGE TEST FORM**

**CITY OF GULFPORT, FLORIDA**

ENGINEER: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

SECTION	DATE			NUMBER	TEST			ACCEPTED
<u>TESTED</u>	OF	DIAMETER	LENGTH	OF <u>JOINTS</u>	PRESSURE	LEAKAGE	GPH	YES
	<u>TEST</u>	<u>(INCHES)</u>	<u>(FEET)</u>		<u>(AVERAGE)</u>	<u>ALLOWANCE</u>	<u>ACTUAL</u>	<u>OR NO</u>

**TEST WITNESSED BY:**

FOR ENGINEER

FOR CONTRACTOR

\_\_\_\_\_

\_\_\_\_\_

Name

Name

\_\_\_\_\_

\_\_\_\_\_

Title

Title

**SECTION 02061  
HORIZONTAL DIRECTIONAL DRILLING**

1. GENERAL

A. Scope

The Work in this section includes construction of high-density polyethylene (HDPE), polyvinyl chloride (PVC) restrained joint (RJ) pressure main using the horizontal directional drilling (HDD) method. The Contractor may install short transition reaches, as required and approved, by open cut procedures, in accordance with the applicable Technical Specifications.

The contractor performing the HDD work shall have a minimum of years experience with similar directional drilling construction. The contractor's operations shall be in conformance with the Directional Crossing Contractor's Association (DCCA) published guidelines (latest edition) and pipe manufacturer's guidelines and recommendations.

B. Submittals: Shop drawings for the following components shall be submitted:

1. Calculations of pipe tensile stresses and equipment loads expected during installation of the longest reaches proposed. Calculations shall include pipe outside diameter, reamer outside diameter, drilling head description, and washover pipe description if applicable.
2. HDPE pipe stress regression testing certification from pipe manufacturer.
3. Proposed Project Plan, clearly indicating where each installation method (HDD and open cut trench) will be employed, as well as the location of boring pits and equipment setups.
4. Drill rig make, model, condition, and capacity.
5. Heat fusion equipment operator's certifications and certificates of training and fusion proficiency for joining HDPE pipe.
6. Layout location with approximate space requirements, of proposed equipment and materials including the following: trucks, rig unit, power unit, drill pipe, and water pump; slurry tanks, pumps, and pits; bentonite storage; and entry and exit pits.

2. EQUIPMENT AND MATERIALS

- A. The equipment used in the HDD operation shall be fluid-assisted with mechanical cutting head. The equipment shall have the built-in capacity, stability, and necessary safety features required to fully comply with these Specifications. Equipment shall be set up and used according to the manufacturer's recommendation.
- B. HDPE pipe and related fittings shall be made with prime virgin resins exhibiting a minimum cell classification as defined in ASTM D3350 and meeting the PE 3408 code

designation, with pressure classifications and corresponding dimension ratios equal to the following:

<b>Diameter</b>	<b>Pressure Class</b>	<b>Dimension Ratio</b>
Less than 4-inches	200 psig	9
4-inch through 12-inches	150 psig	11

HDPE pipe of 2-inch nominal diameter shall be joined by means of zero leak-rate butt (thermal heat) fusion weld, all meeting the requirements of ANSI/AWWA C901. Flanged joints shall not be used underground for horizontal directional drilling applications.

HDPE pipe of 4-inches and larger shall be joined by means of zero leak-rate butt (thermal heat) fusion weld, all meeting the requirements of ANSI/AWWA C906, with outside diameter the dimension of ductile iron pipe. Flanged joints shall not be used underground for horizontal directional drilling applications.

All joints shall provide axial pull-out resistance. All HDPE pipe and fittings shall be jointed in strict accordance with the manufacturer's recommendations.

During extrusion production, all HDPE pipe shall have been continuously marked with durable printing indicating at a minimum:

- Nominal size (inches)
- Dimension ratio (DR)
- Pressure rating (psi)
- Trade name
- Material classification (PE 3408)
- Plant, extruder, and operator codes
- Resin supplier code
- Date produced

HDPE pipe shall be black in color with permanent colored stripes extruded into the pipe length or shall be one solid color, Safety Blue. HDPE pipe used for potable water mains shall bear the NSF seal of approval.

HDPE pipe sections shall be joined by heat fusion. The heat fusion unit shall be equipped with facing and clamping devices and with automated heating plates with provisions for the sliding/ bonding operation. The heat fusion equipment used in all joining procedures shall be capable of meeting all conditions recommended by the pipe manufacturer, including, but not limited to, temperature, alignment, and interfacial fusion pressure. The tensile strength of the heat-fused joint shall be equal to or greater than the tensile strength of the HDPE pipe.

- C. On each day "butt fusions" are to be made, the first fusion of the day shall be a trial fusion. The trial fusion shall be allowed to cool completely, then fusion test straps shall be cut out. The test strap shall be 12 inches or 30 times the wall thickness in length (minimum) and 1 inch or 1.5 times the wall thickness in width (minimum). The test strap shall be bent until the ends of the strap touch. If the fusion fails at the joint, a new trial

fusion shall be made, cooled completely, and tested. Butt fusion of the pipe to be installed shall not commence until a trial fusion has passed the bent strap test.

D. The Contractor shall utilize either a walkover system or a wireline steering tool system, as specified, to track and steer the boring tool to avoid existing utilities in its path and maintain the alignment of the pilot hole.

1. Walkover system- shall consist of a transmitter or sonde that is placed in a housing located behind the drill bit and an electronic receiver held by the locator.
2. Wireline steering tool system- shall provide wireline locating runs in conjunction with a steering tool placed in a non-magnetic bottom hole assembly wired to a surface computer that gives magnetic readouts.

E. A log shall be kept by the driller showing the number of drill rods inserted in the boring. The number of drill rods inserted shall be converted to a horizontal distance between the drill rig and the drill bit. This horizontal distance shall be continuously coordinated with the horizontal

distance readout shown by electronic means on the drill rig (and wireline computer if used) as each rod is added to or removed from the shaft. If the drill bit becomes "lost", meaning its location cannot be determined and its elevation or distance to the drill is unknown, the entire drilling assembly shall be removed from the shaft and the boring restarted.

F. The installation shall utilize a mixture of bentonite clay, water, and if required, a small amount of polymer. The mixture shall be emitted through small diameter jets to work its way through the soil, stabilize the tunnel wall, and lubricate the pipe being installed. The make-up water shall have a pH of greater than 6 (8 to 9 is desirable) to allow the bentonite clay to yield to its fullest potential. A viscosity of 38 to 40 seconds per quart is optimal and shall be targeted as required to provide a drilling fluid that will both establish the integrity of the pilot hole and suspend cuttings so that they can be removed from the bit path. The Contractor shall employ measures to collect and store drilling fluid as necessary to prevent migration or spilling of drilling fluids onto adjacent roadways, properties, and storm drains. All remaining or excess drilling fluid shall be disposed of in accordance with State or Federal regulations and/ or permit conditions.

### 3. PIPE INSTALLATION

A. A qualified representative of the Contractor shall be in direct charge and control of the HDD operation at all times. The representative shall be thoroughly knowledgeable of the equipment and procedures to be performed, and shall be continuously present at the Project site during directional drilling operations.

B. Before beginning the HDD operation, the Contractor shall verify all existing utilities that are to be crossed, using subsurface utility engineering (vacuum evacuation), exposure by utility owner, or other approved method. Adjustments in the vertical alignment shall be made to provide a minimum of 12 inches clearance between the reamer and the existing utilities being crossed, as shown on the Plans, directed by the City, or required by the Permit. Change in vertical alignment shall be made gradually and shall not

exceed the manufacturer's recommendation for minimum allowable bending radius, unless approved by the Engineer. Pipe sections that are discovered to have cuts or gouges in excess of 10 percent of the wall thickness of the pipe shall be cut out and removed. These removed sections shall not be used. The undamaged portions of the pipe then shall be rejoined.

- C. The Contractor shall have properly working gauges that register the tensile force being used to pull the pipe section into the reamed borehole. The maximum allowable pulling force on the section of pipe during installation shall be in accordance with ASTM F1804 and the manufacturer's recommendations. A complete log shall be furnished to the City showing the tensile force used to pull the pipe section into the borehole.
- D. Pipe sections shall be installed in 300-foot to 500-foot pulls, unless approved otherwise, in order to minimize the number of boring pits and equipment setups. In no case shall the pipe be installed at less than the minimum depths of cover or clearances as specified. Elevation readings shall be recorded at a minimum of every 10 feet and shown on the record drawings, or as directed by the City.
- E. The pipe installed in conformity with this Section shall be pulled through and installed in a previously excavated HDD pilot hole. The pilot hole shall have been enlarged, by using a reamer tool, to the required size to accommodate the pipe. The enlargement to ease installation shall not allow the possibility of cavity formation or future settlement. The pullback tension on the pipe shall be continuously monitored during pullback, to prevent exceeding the maximum tension allowed, certified, or recommended by the manufacturer. Pipe shall be pulled in one continuous length without pause, to minimize sticking; when finished, adequate pipe shall protrude a minimum of 2 feet beyond the bore hole limits. During pullback, the drill pipe shall be connected to the pipe using a pullhead or pulling eye and a swivel. The swivel shall be used to prevent rotational torque from spinning the pipe or conduit. The enlargement reamer shall be placed between the pullhead and the drill pipe to ensure that the hole remains open and to allow more lubricating fluid (drilling fluid) to be pumped into the hole during the pullback. The entrance pit and a pathway for the pipe to be pulled through shall have been cleared of debris that could cut or gouge the pipe. Pipe shall be placed on sufficiently sized rollers during the pull. A sufficient number of rollers shall be used to prevent sagging of the pipe.
- F. If the pipe is withdrawn from the borehole, it shall be re-inspected on all sides for gouges prior to being pulled through again.
- G. If an annular area remains at the ground surface between the pipe and the soil after installation of the pipe, the annular area shall be grouted with standard cement to a point where the ground cover over the borehole exceeds 15 feet.

#### 4. MARKING THE INSTALLATION

- A. After installation, the Contractor shall paint hard surface as directed with permanent 12-inch long paint stripes above the pipe. The paint color shall be Safety Blue for potable water systems.

In addition, the Contractor shall install a continuous metal tape, equal to Teratape, 1 foot above the pipe, at each boring pit and at locations where installation was by open cut trench method. Tape shall be marked to identify the pipe used, as specified here or as approved.

- B. At underwater crossings, the Contractor shall furnish and install an 9-inch by 9-inch sign reading "CAUTION BURIED WATER MAIN- CALL CITY OF GULFPORT."

5. HYDROSTATIC TESTING OF HDPE PIPE

- A. Test Duration- The total test duration including initial pressurization, initial expansion, and time at test pressure, must not exceed 8 hours. If the test is not completed due to leakage, equipment failure, etc., the test section shall be depressurized and allowed to "relax" for a minimum of 8 hours before it is brought back to test pressure.
- B. Monitored Make-Up Water Test- The test procedure consists of initial expansion phase and test phase.
  - 1. Initial Expansion Phase- During the initial expansion phase, the test section is pressured to the test pressure, and enough make-up liquid is added each hour for 3 hours to return to test pressure.
  - 2. Test Phase- The test phase follows immediately, and shall be either 2 or 3 hours. At the end of the time test, the test section shall be returned to test pressure by adding a measured amount of liquid. The amount of make-up liquid added shall not exceed the following values plus allowable leakage:

**Allowance for Expansion Under Test Pressure\***  
**Allowance for Expansion per 100 Feet of Pipeline**  
**(gallons per hour)**

Test Pressure	<u>Nominal Pipe Diameter (inches)</u>							
	2	4	6	8	12	16	20	24
<b>2 Hours</b>	0.11	0.25	0.60	1.00	2.30	3.30	5.50	8.90
<b>3 Hours</b>	0.19	0.40	0.90	1.50	3.40	5.00	8.00	13.30

\* Applies to test period and not to initial expansion phase.

**Allowance Leakage per 100 Feet of Pipeline  
(gallons per hour)**

	<u>Nominal Pipe Diameter (inches)</u>							
	2	4	6	8	12	16	20	24
<b>Test Pressure</b>								
<b>100 psi</b>	.02	.03	.05	.06	.09	.12	.15	.18
<b>150 psi</b>	.03	.04	.06	.07	.11	.15	.18	.22

6. STERILIZATION TESTS

A. General

Sterilization of all equipment, pipelines, 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 sterilization and tests.

Sterilization tests shall be conducted in accordance with current Pinellas County Health Department Standard Specifications prevalent at the time of testing.

B. Sterilizing Agent

The sterilizing agent shall be liquid chlorine or sodium hypochlorite solution conforming to Federal Specification O-S-602b Sodium Hypochlorite, Grade D. Dry hypochlorite similar to "HTH" may also be used as the sterilizing agent, upon approval of the City.

C. Sterilization Methods

Flushing the System

All new piping shall be thoroughly flushed and washed prior to the time of sterilization. Clean water shall be flushed through the system for at least one-half hour or until no traces of cuttings, lead, oil, dirt, or other foreign matter is visible. Water shall be disposed of under the direction of the City.

Piping and Other Closed Units

The piping shall be sterilized by introducing the sterilizing 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 eighteen (18) hours and not longer than twenty-four (24) hours before the system is flushed.

D. Residual Chlorine Tests

After sterilizing agents have been permitted to remain for the specified contact periods, the pipelines and valves shall be thoroughly flushed with water until the residual chlorine test are not less than 0.2 ppm or greater than 3.0 ppm in each instance. The determination of the amount of residual chlorine in the system shall be made at such points and in accordance with required tests by means of a standard chlorine test kit.

E. Bacterial Tests

After the water system or any other units or portions of the project have been sterilized and thoroughly flushed, samples of water shall be taken by the Pinellas County HRS from several points in suitable sterilized containers. If repeated tests of such samples show the presence of coliform organisms, the sterilization shall be repeated or continued until tests indicate absence of pollution. Two consecutive samples shall be satisfactorily completed, and written notice is given before the system is placed in operation. Twenty-four hours notice will be given to the City before the system is placed in operation. Twenty-four hours notice will be given to the City before the samples are required. No samples shall be taken Thursday through Sunday or as otherwise mandated by the County Health Department.

F. Approval of Sterilization

The complete sterilization program and methods followed, especially if materially different from those specified, shall be in accord with directives of the State of Florida Department of Health and Rehabilitative Services, Division of Health, and all methods employed shall meet with their approval.

**END OF SECTION**

**Section 02110**  
**Site Clearing & Grubbing**

**Part 1 - General**

**1.1 Description**

A. General:

1. Furnish all labor, materials, tools, equipment, and services for all site clearing, tree protection, stripping topsoil and demolition as indicated, in accord with provisions of Contract Documents.
2. Completely coordinate with work of all other trades.
3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.

- B. The work specified under this section shall include the removal and disposal of all trees indicated to be removed on the plans, the removal and disposal of all brush, stumps, roots, rubbish and debris, and all obstructions resting on or protruding through the surface of existing ground and the surface of excavated areas. The work also includes the removal and disposal of all existing facilities indicated on the Plans to be removed.

**1.2 Quality Assurance**

- A. Perform work in accord with OSHA and EPA requirements and State and Local requirements.
- B. Erosion Control Standards: Section 104 of the FDOT "Standard Specifications for Road and Bridge Construction"

**PART 2 - Products**

NOT USED

**PART 3 - Execution**

**3.1 Protection**

- A. Provide barricades, coverings, and other protection necessary to prevent damage to existing improvements.
1. Protect improvements on adjoining properties as well as those on Owner's property.
  2. Restore any improvements damaged by this work to original condition, as acceptable to Owner or other parties or authorities having jurisdiction.

- B. Protect existing trees and other vegetation to remain against damage.
  - 1. Do not smother trees by stockpiling construction materials or excavated materials within drip line.
  - 2. Avoid foot or vehicular traffic or parking of vehicles within drip line.
  - 3. Provide temporary protection as required in the plans.
- C. Repair or replace trees and vegetation damaged by construction operations.
  - 1. Repair to be performed by a qualified tree surgeon.
  - 2. Remove trees which cannot be repaired and restore to full-growth status.
  - 3. Replace with new trees of minimum 4-inch caliper and a minimum of 8' tall.

### **3.2 Improvements on Adjoining Property**

- A. Contact Owner before performing any removal, storage or alteration work on adjoining property.

### **3.3 Site Clearing - General**

- A. Remove trees, shrubs and other vegetation, improvements, or obstructions that interfere with new construction.
  - 1. Removal includes stumps of trees and their roots.
  - 2. Carefully cut and protect roots and branches of trees indicated to be left standing, where they obstruct new construction. Large roots shall be cleaned before cutting, and cut with a saw or axe.
- B. Remove other items when specifically indicated.

### **3.4 Topsoil Removal**

- A. Strip topsoil to whatever depths encountered, in manner to prevent intermingling with underlying subsoil or objectionable material.
  - 1. Remove heavy growths of grass before stripping.
  - 2. Where trees are indicated to be left standing, stop topsoil stripping sufficient distance from such trees to prevent damage to main root system.
- B. Stockpile topsoil where directed.
  - 1. Construct storage piles to freely drain surface water.
  - 2. Seed or cover storage piles to prevent erosion.

- C. Do not strip topsoil in wooded areas where no change in grade occurs.
- D. Borrow topsoil to be reasonably free of subsoil, objects over 2 inches in diameter, weeds and roots.

### **3.5 Clearing and Grubbing**

- A. Clear from surface of existing ground all trees not marked to remain, shrubs, brush, downed timber, rotten wood, heavy growth of grass and weeds, vines, rubbish, structures and debris.
- B. Grub (remove) all stumps, roots, root mats, logs and debris encountered within limits of construction.
  - 1. Grubbing under areas to be paved: Remove all stumps and root mats, buried logs and other debris from within areas.
  - 2. Grubbing in lawn areas: In cut areas, totally grub. In fill areas, where fill is less than 3 feet totally grub ground. Where fill is 3 feet or more in depth, stumps may be left no higher than 6 inches above existing ground surface.

### **3.6 Disposal of Waste Materials**

- A. Do not burn combustible materials on site.
- B. Remove all waste materials from site.
- C. Do not bury organic matter on site.

**End of Section**

**SECTION 02120  
GEOTECHNICAL REPORT**

1. GEOTECHNICAL REPORT
  - A. Please see the attached Geotechnical Report.



**April 6, 2016**  
**AEI Project No. APGT-16-0047**

**TO:** **Advanced Engineering and Design, Inc.**  
3931 68<sup>th</sup> Avenue North  
Pinellas Park, Florida 33781

Attention: Mr. Justin Keller, P.E.

**SUBJECT:** Geotechnical Investigation, 31<sup>st</sup> Avenue Roadway and Potable Water System Improvements, Gulfport, Florida

Dear Mr. Keller:

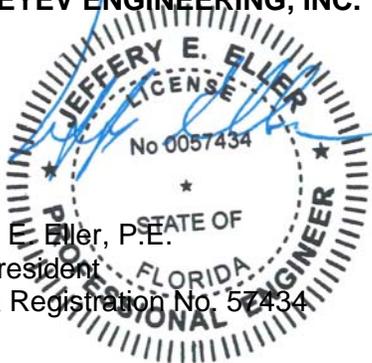
At your request, Andreyev Engineering, Inc. (AEI) has completed a geotechnical investigation for the above referenced project. Our work has been performed in general accordance with the AEI Proposal No: P3661.Pro dated March 23, 2016. This report presents the results of the field explorations performed together with an engineering evaluation of the observed soil and groundwater conditions.

AEI appreciates the opportunity to provide our geotechnical engineering services on this project and trust that the information presented herein is sufficient for your current needs. Should you have any questions concerning the contents of this report or if we may be of further service, during the construction phase, please do not hesitate to contact us.

Sincerely,

**ANDREYEV ENGINEERING, INC.**

4-6-16  
Jeffery E. Eller, P.E.  
Vice President  
Florida Registration No. 57434



## PROJECT DESCRIPTION

The proposed project will consist of the reconstruction/paving of an existing roadway and improvement/installation of a potable water distribution system.

## PURPOSE AND SCOPE

The purpose of this investigation was to determine the shallow soil and groundwater conditions at the boring locations for purposes of providing general recommendations for pavement reconstruction and potable water pipe installation.

The specific scope of investigation included the following:

1. Collected core samples of the existing pavement/base sections (asphalt and base) within the proposed reconstruction area.
2. Performed six (6) hand auger borings to depths of 4.5 feet within the proposed construction area.
3. Collected static cone penetrometer readings at each hand auger boring location.
4. Measured the depth of the groundwater table at each hand auger boring location.
5. Prepared this report detailing the results of our investigation and recommendations regarding the pavement construction and potable water pipe installation based on the soils and groundwater conditions encountered.

## EXISTING SITE CONDITIONS

The "Soil Survey of Pinellas County, Florida" published by the U.S. Department of Agriculture Soil Conservation Service (S.C.S.) was reviewed. The shallow soil types identified at the boring locations are Myakka soils and Urban Land: mixture of nearly level poorly drained sandy soils and areas of Urban Land. The seasonal high water table is generally at a depth of 6 to 18 inches.

The USGS, "Saint Petersburg, Fla." topographic map dated 1998, showing the area on which the borings are located, was reviewed. Based on this review, the ground surface over the project area is estimated to occur at elevations of approximately +7 feet above National Geodetic Vertical Datum (NGVD).

## FIELD EXPLORATION & SUBSURFACE CONDITIONS

### Field Exploration

For our study, six (6) hand auger borings (B-1 through B-6) were conducted to depths of 4.5 feet within the proposed reconstruction areas. The borings were approximately located in the field according to the site plan provided by the project civil engineer. The approximate boring locations are indicated on **Figure 1**. The recovered hand auger samples were visually classified in the field, and representative samples were placed in jars and transported to our office for further review and confirmation of the field classification.

The results of the subsurface exploration program including the soil stratification profiles and groundwater levels as well as penetrometer readings and a legend describing the different soil types encountered are presented on **Figure 2**. Soil stratification was based on the review of recovered soil samples and interpretation of the field boring logs by a geotechnical engineer. The stratification lines represent the approximate boundaries between soil types; the actual transition may be gradual. The soil strata were visually classified using the Unified Soils Classification System. Minor variations in soil types not considered important to our engineering evaluations may have been abbreviated or omitted for clarity.

### Subsurface Conditions

Based on the results of the borings conducted by AEI, the soil conditions generally consist of layers of fine sands (Stratum 1) and slightly silty to silty fine sands (Strata 2 and 3) extending to the termination depths of 4.5 feet.

Based on penetration resistance values taken from our hand auger borings, the sandy soils to a depth of about 4.5 feet (+/-) are generally considered to be very loose to medium-dense materials.

The penetration resistance values are presented adjacent to the soil profiles on **Figure 2**. Correlation of the penetration resistance values with SPT-N values and relative density are provided in the following table:

Coarse-Grained Soils		
Penetration Resistance	SPT-N Values	Relative Density of Sand
0-6	0-4	Very Loose
7-12	4-10	Loose
13-20	10-30	Medium-Dense
21-29	30-50	Dense
+30	+50	Very Dense

### Groundwater Conditions

Groundwater levels were recorded following the soil investigation. The measured levels are indicated adjacent to the boring profiles on **Figure 2**. The shallow groundwater table was encountered at depths of 1.2 to 2.0 feet below the ground surface. The difference in the encountered water table levels is attributed to the difference in the ground surface elevation at the boring locations.

Seasonal fluctuations of groundwater levels can be anticipated in response to variations in rainfall. The level recorded during this investigation is estimated to be higher than the normal seasonal high levels. Based on the review of the SCS soil survey, boring results, measured groundwater levels, adjacent surface water features and antecedent rainfall, the normal seasonal high groundwater table is estimated to occur at depths of about 0.5 to 1.0 feet below the existing ground surface at the locations tested.

## GEOTECHNICAL RECOMMENDATIONS

Based on the results of our investigations and analysis of the encountered conditions, it can be concluded that the existing roadway may be reconstructed and new potable water pipes may be installed at the proposed locations, provided that proper site preparation is conducted during reconstruction. Due to the high groundwater conditions it is recommended that a system of underdrains be installed to lower the groundwater table below the pavement areas. The following are our recommendations for the design and reconstruction of the existing roadway.

### Bedding and Backfill Requirements for Pipe Installation

The bottom of the excavation and backfill in areas of granular soils should be compacted using small hand-operated equipment. Any organics or unsuitable materials (clay, rock, grout) should be completely removed and backfilled with granular soil. Bedding and backfill should consist of non-cohesive granular material. The granular material may consist of the on-site sandy soil of Strata 1, or imported fine sand with less than 12% passing the #200 standard sieve. The pipe should be laid directly on the excavation bottom provided that the natural soil at the bottom level is granular. The trench bottom should be compacted to 95 percent of its Modified Proctor Density to a minimum depth of one foot. Pumping or disturbed soils should be overexcavated and replaced with dry granular materials. Backfilling should progress as rapidly as the construction and testing of the work will permit. All backfill should be suitable as described above and be free of deleterious material. The initial backfill should be carefully deposited on both sides of the pipe at the same time and uniformly compacted. In no case should backfill material be placed in the excavation in a manner that will cause shock to, or unequal pressure on the pipe. The backfill should be placed and compacted to 95 percent of maximum density as determined by AASHTO T-180.

In all areas except for those stated above, compaction must equal 90 percent of the maximum density as determined by AASHTO T-180 or as directed by the Geotechnical Engineer. Under no conditions should construction debris, concrete, etc., be included with the backfill. Native soils excavated from below the existing groundwater table may be saturated and difficult to compact. In such cases, sufficient time and adequate drying procedures should be provided to produce soil with a moisture content which is  $\pm 2$  percent of optimum. It may be more practical in some cases to bring in dry material from off-site than to dry the excavated soils.

It should be noted that dewatering will be necessary to facilitate the proper placement of fill material in some areas of the site. Prior to the beginning of reconstruction, the depth to the groundwater conditions should be checked and the project contractor should provide an appropriately designed dewatering system for this site.

### Pavement Design Considerations

In general the existing shallow subsurface soils should be acceptable for construction and support of a flexible (limerock base) or semi-flexible (soil cement base) type pavement section after proper subgrade preparation and compaction of the natural ground. Any fill which may be required to elevate the cleared pavement areas to subgrade elevation should consist of reasonably clean fine sands uniformly compacted.

Either limerock or soil cement could be considered as a pavement base course material at this site, dependent upon the degree of site drainage improvements and filling. Normal wet season groundwater levels should be controlled to at least 12 and 18 inches below a soil cement and limerock base, respectively, at all times. Based on the groundwater conditions encountered a soil cement base is recommended for the proposed reconstruction. A system of underdrains should also be installed in order to maintain the groundwater at least 12 inches below the bottom of the soil cement base.

### **Soil Cement Base**

1-1/2" asphaltic concrete wearing surface

6" soil cement base designed and constructed in accordance with current Portland Cement Association recommended methods. A minimum 7-day compressive design strength of 300 pounds per square inch should be used for the soil cement base course.

12" subgrade consisting of free draining natural fine sand or fine sand fill. Subgrade to be compacted to a minimum density of 95 percent of the Modified Proctor Maximum Density (AASHTO T-180).

### **Limerock Base**

1-1/2" asphaltic concrete wearing surface

8" limerock base course Quality of limerock to be in accordance with current Florida Department of Transportation specifications and compacted to a minimum density equivalent to 98 percent of the Modified Proctor Maximum Density (AASHTO T-180). The limerock should have a minimum Limerock Bearing Ratio of 100.

12" stabilized subgrade with a minimum LBR of 40. The subgrade should be compacted to a minimum density equivalent to 98 percent of the Modified Proctor Maximum Density (AASHTO T-180).

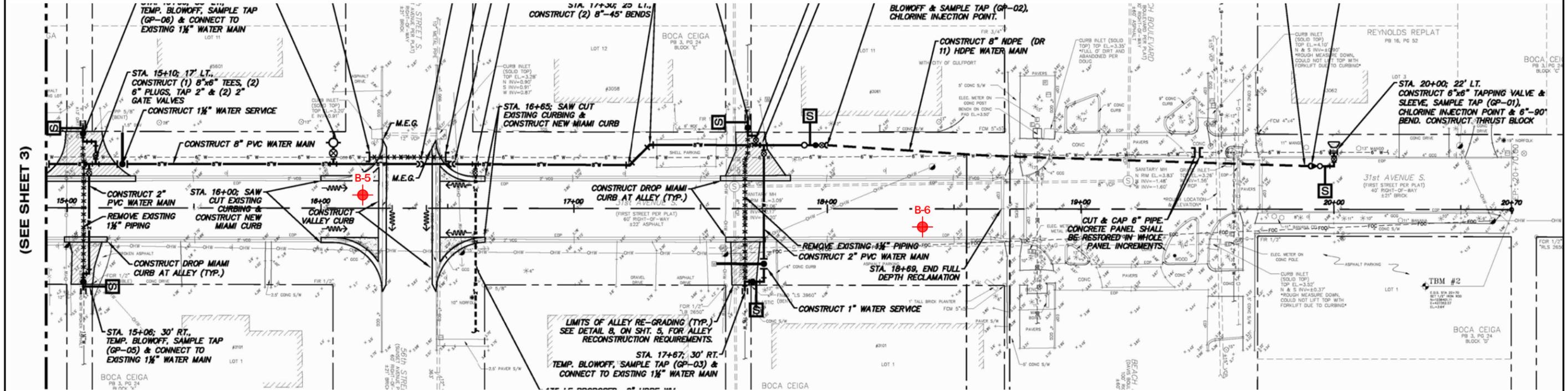
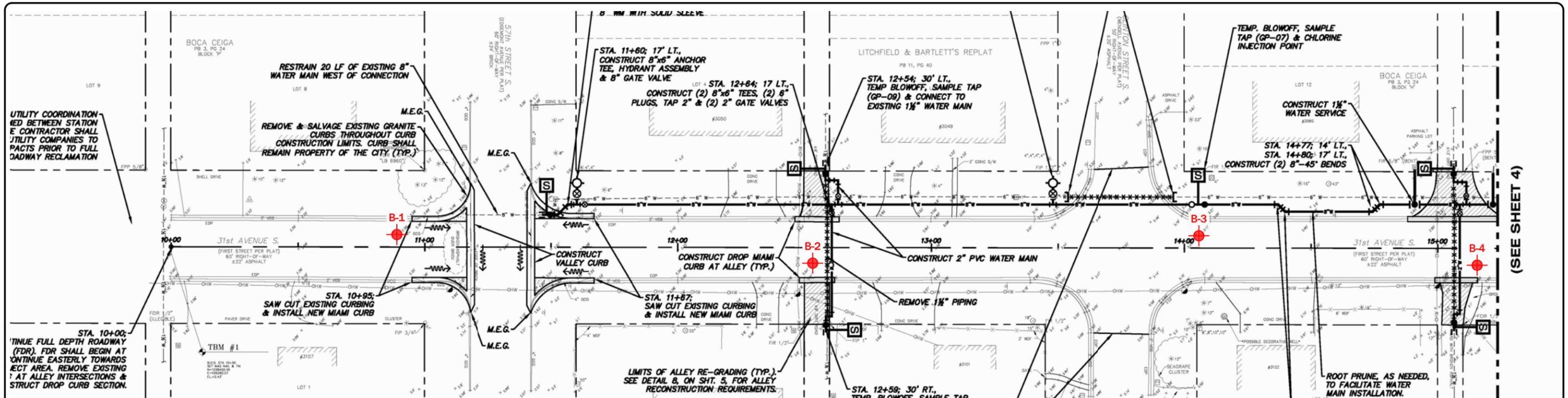
Asphaltic wearing surface normally consists of Type S-1 or S-3, meeting current Florida Department of Transportation specifications. The wearing surface should be compacted to a minimum density of 95 percent of the Laboratory Density as determined by the Marshall Stability Test method for the approved job mix formula.

Final pavement thickness design should be performed by the project civil engineer utilizing the data contained in this report and anticipated traffic conditions.

## **LIMITATIONS**

The geotechnical investigation and engineering recommendations submitted herein are based on the data obtained from the soil borings presented on **Figure 2**. This report does not reflect any variations which may occur adjacent to or between the individual borings. Should variations or anomalies then appear evident, it will be necessary for Andreyev Engineering, Inc. to re-evaluate our engineering recommendations after performing additional on-site observations and possible additional soil tests to note the characteristics of reported variations.

## FIGURES

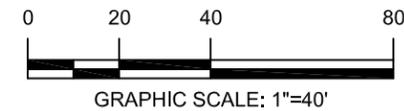


UTILITY COORDINATION  
BETWEEN STATION  
E CONTRACTOR SHALL  
UTILITY COMPANIES TO  
FACTS PRIOR TO FULL  
ROADWAY RECLAMATION

(SEE SHEET 4)

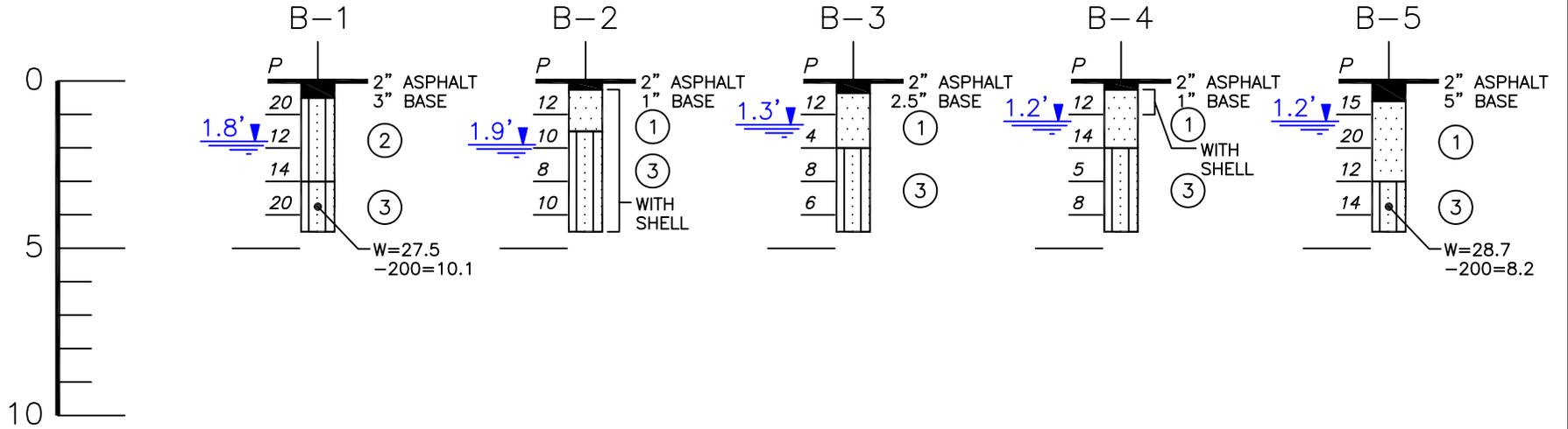
(SEE SHEET 3)

**LEGEND:**  
 APPROXIMATE LOCATION OF  
CORE SAMPLE/HAND AUGER BORING

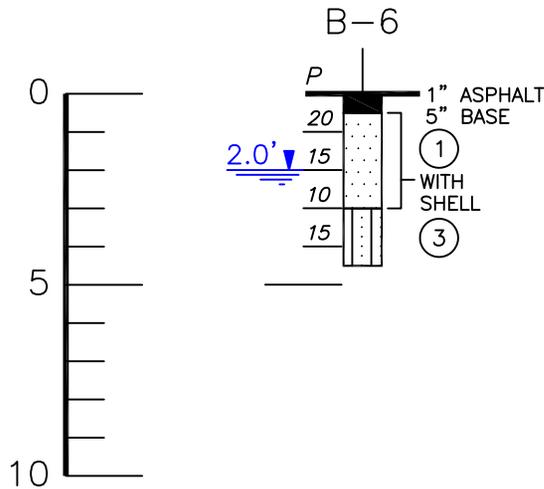


 <b>Andreyev Engineering, Inc.</b>	GEOTECHNICAL INVESTIGATION <b>31st AVENUE ROADWAY &amp; POTABLE WATER DISTRIBUTION IMPROVEMENTS</b> GULFPORT, PINELLAS COUNTY, FL	
	<b>BORING LOCATION PLAN</b> FIGURE 1	
APPROXIMATE SCALE: <b>1" = 40'</b>	DATE: 04/05/16 PN: APGT-16-0047	ENGINEER: JE DRAWN BY: DLS

DEPTH IN FEET



DEPTH IN FEET



**LEGEND:**

- ① LIGHT GRAY TO GRAY FINE SAND (SP)
- ② BROWN SLIGHTLY SILTY TO SILTY FINE SAND (SP-SM/SM)
- ③ GRAY TO DARK GRAY SLIGHTLY SILTY TO SILTY FINE SAND (SP-SM/SM)

(SP) UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL

1.0' DEPTH TO GROUNDWATER, APRIL 4, 2016

*P* HAND PENETROMETER READING

*W* MOISTURE CONTENT, IN PERCENT

-200 PERCENT OF FINES PASSING THE U.S. No. 200 SIEVE



**Andreyev  
Engineering,  
Inc.**

GEOTECHNICAL INVESTIGATION  
**31st AVENUE ROADWAY &  
 POTABLE WATER DISTRIBUTION  
 IMPROVEMENTS**  
 GULFPORT, PINELLAS COUNTY, FL

APPROXIMATE SCALE:

1"=5'

DATE: 04/05/16

ENGINEER: JE

PN: APGT-16-0047

DRAWN BY: DLS

SOIL PROFILES

FIGURE 2

**Section 02140  
Dewatering**

**Part 1 General**

**1.01 Description**

- A. Scope - This Section includes all dewatering work, complete with design of dewatering systems, construction and operation of dewatering systems, abandonment of dewatering systems, protection of personnel and structures, environmental protection and restoration.

**1.02 Quality Assurance**

- A. Design of Dewatering Construction - The CONTRACTOR shall be responsible for the complete design of all structures and methods proposed for dewatering the project site, including the implementation of all materials, tools and equipment proposed for use in the Work. Temporary wiring associated with the dewatering shall comply with applicable portions of the National Electrical Code.
- B. Requirements of Regulatory Agencies:
1. Soil Erosion and Sedimentation Control - All dewatering systems design and construction shall conform to the provisions of 2.01 Florida Environmental Land and Water Management Act of 1972 (380.012 F.S. et seq.) and related statutes. Where applicable, the CONTRACTOR shall obtain and pay for all permits and inspections for dewatering construction in accordance with the provisions of 2.01 Florida Environmental Land and Water Management Act of 1972 ( 380.012 F.S. et seq.) and related statutes, and all local government agencies having jurisdiction. No additional claim for compensation shall be allowed because of the CONTRACTOR'S failure to obtain or pay for such permits and inspections.
  2. Federal, State, and Local Regulations - Dewatering operations shall conform to the requirements of all federal, state, and local agencies having jurisdiction.
  3. The Contractor shall be responsible for the acquisition of all permits and/or approvals required for the proposed dewatering. This permitting effort shall be performed at the Contractor's cost.

**1.03 Job Conditions**

- A. Protection - Take all steps necessary, during the Work of this Section, to protect surrounding property and adjacent buildings, private water supplies, roads, drains, sewers, structures and appurtenances. Adequate measures shall be taken to protect such property and construction from the effects of the dewatering operations.

**Part 2 Products (Not Used)**

**Part 3 Execution**

**3.01 CONTRACTOR'S Verification**

- A. Existing Drainage Conditions - Prior to beginning any work, verify in the field the location, type and capacity of all existing drainage facilities and conditions that will affect the Work of

this Section. No allowances shall be made for conditions found during the progress of the dewatering operations because of the CONTRACTOR'S failure to verify such conditions.

- B. Existing Structures and Utilities - The CONTRACTOR shall make field verification of all existing structures and utilities at the site of the Work that are scheduled to remain and which may be affected by the Work of this Section. The CONTRACTOR shall be responsible for any damage to existing structures and/or utilities caused because of his Work and shall repair such damage at his expense to the satisfaction of the City.

### **3.02 Performance**

- A. Drainage of Excavations - The CONTRACTOR shall maintain all finished excavation Work free of water during the preparation of the subgrade and until the completion of the Work. No ground or surface water shall be discharged into any existing sanitary sewer. No unit of Work shall be constructed under water except as otherwise directed by the City. Provide and maintain adequate dewatering equipment to remove and dispose of all surface or groundwater entering excavations, trenches or other parts of the Work. Each excavation shall be kept dry during subgrade preparation and continually thereafter until the construction is complete. All excavations that extend down to or below the static groundwater elevation shall be dewatered by lowering and maintaining the groundwater level beneath such excavations a distance of not less than 12 inches below the bottom of the excavation or as directed by the City. Drainage system methods shall not cause any damage to wells or adjacent property. All outlet drainage piping and conduit shall be kept clean and free from sediment. The CONTRACTOR shall be held responsible for the condition of all pipes, conduits and structures that he may use for drainage.
- B. Dewatering Sumps and Pump Wells - Sumps and pump wells used as a part of the dewatering system shall be strongly sheathed and braced to protect the construction while in use. Tops of well casings must be covered to prevent animals and debris from entering and shall be two to three feet above ground. Sumps and wells, when abandoned, shall be backfilled and compacted to the satisfaction of the City.
- C. Drilling - Methods used in drilling wells associated with dewatering systems shall be the responsibility of the CONTRACTOR and shall be acceptable to the City. Drilling methods shall insure proper placement of well materials and shall not involve displacement of earth formations. Drilling shall be done with first class equipment of proper type and in good condition, acceptable to the City.
- D. Pumping - Equipment for pumping and pumping methods associated with dewatering systems shall be the responsibility of the CONTRACTOR and shall be acceptable to the City. The CONTRACTOR shall construct or furnish adequate discharge piping to conduct and dispose of the water so as to prevent damage to existing structures or property. Pumping equipment shall be first class, acceptable to the City, of proper type and size for the Work, in good condition, located away from adjacent residences, and shall be muffled as required to meet local noise ordinance limits. Provide all anchors and supports for pumping equipment.
- E. Filling and Grading - Upon completion of dewatering Work for the Project, abandon and/or fill all holes, trenches, ditches and other earth excavations created by the Work of this Section and not scheduled to remain. Do all filling, backfilling and grading to restore excavations and earth banks to the lines and levels indicated on the Plans and as directed by the City. All earth fills shall be compacted to a density equal to that of the surrounding undisturbed earth.

**End of Section**

**Section 02190**  
**Erosion and Sediment Control**

**Part 1 - General**

**1.1 Work Included**

- A. Take every reasonable precaution throughout construction to prevent the erosion of soil and the sedimentation of streams, bays, storm systems or other water impoundments, ground surfaces, or other property as required by State and Local regulations.

**1.2 Related Work**

- A. Provide protective covering for disturbed areas upon suspension or completion of land-disturbing activities. Permanent vegetation shall be established at the earliest practicable time. Temporary and permanent erosion control measures shall be coordinated to assure economical, effective, and continuous erosion and siltation control throughout the construction and post construction period.

**1.3 Regulatory Requirements**

- A. Prevent damage to properties outside the construction limits from siltation due to construction of the project. Assume all responsibilities to the affected property owners for correction of damages, which may occur. Erosion control measures shall be performed conforming to the requirements of, and in accordance with plans approved by applicable state and local agencies and as per the erosion control portion of the construction drawings and these specifications. The Contractor shall not allow mud and debris to accumulate in the streets. Should the Contractor pump water from trenches during construction, appropriate siltation preventative measures shall be taken prior to discharge of pumped water into any storm drain or stream.
- B. Per plan requirements, the Contractor shall provide confirmation that the required Erosion & Sediment Control training has successfully been completed by project personnel.

**Part 2 - Products**

**2.1 General**

- A. Open mesh biodegradable mulching cloth.
- B. Fertilizer shall be 10-10-10 grade or equivalent.
- C. Lime shall be Dolomitic Agricultural Ground limestone, per FDOT Section 982.
- D. Provide permanent grass seed in accordance with Section 02940.
- E. Provide temporary grass seed in accordance with Section 02940.

- F. Silt fence shall consist of non-biodegradable filter fabric (Trevira, Mirafi, etc.), per FDOT Section 985, wired to galvanized wire mesh fencing and supported by wood or metal posts.
- G. Floating or staked turbidity barriers per FDOT Section 985 and FDOT Standard Index 103.
- H. Erosion Stone: FDOT Section 530
  - 1. Sand-Cement Riprap
  - 2. Concrete Block
  - 3. Rubble 20 to 300 pounds each
- I. Filter Fabric for placement under Riprap shall meet the requirements FDOT Section 985.
- J. Synthetic baled hay or synthetic straw in accordance with FDOT Section 104.

### **Part 3 - Execution**

#### **3.1 Clearing**

- A. Clearing and grubbing shall be scheduled and performed in such a manner that subsequent grading operation and erosion control practices can follow immediately thereafter. Excavation, borrow, and embankment operations will be conducted as a continuous operation. All construction areas not otherwise protected shall be planted with permanent vegetative cover within 30 working days after completion of active construction.

#### **3.2 Stabilizing**

- A. The angle for graded slopes and fills shall be no greater than the angle, which can be retained by vegetative cover or other adequate erosion control devices or structures. All disturbed areas outside of embankment left exposed will, within 30 working days of completion of any phase of grading, be planted or otherwise provided with either temporary or permanent ground cover, devices, or structures sufficient to restrain erosion.

#### **3.3 Regulatory Requirements**

- A. Whenever land disturbing activity is undertaken on a tract, a ground cover sufficient to restrain erosion must be planted or otherwise provided within 30 working days on that portion of the tract upon which further active construction is to be undertaken.
- B. If any earthwork is to be suspended for any reason whatsoever for longer than 30 calendar days, the areas involved shall be seeded with vegetative cover or otherwise protected against excessive erosion during the suspension period. Suspension of work in any area of operation does not relieve the Contractor of the responsibility for the control of erosion in that area.

## **Part 4 – Construction Phase**

### **4.1 Practices**

- A. Avoid dumping soil or sediment into any stream bed, ditch or watercourse.
- B. Maintain an undisturbed vegetative buffer where possible between a natural watercourse and trenching and grading operations.
- C. Avoid equipment crossings of streams, creeks, and ditches where practicable.

## **Part 5 – Sediment Control Features**

### **5.1 General**

- A. All devices (silt fences, retention areas, etc.), for sediment control shall be constructed at the locations indicated prior to beginning excavation on the site. All devices shall be properly maintained in place until a structure or paving makes the device unnecessary or until directed to permanently remove the device.

### **5.2 Design Applications**

- A. Mulch shall be used for temporary stabilization of areas subject to excessive erosion, and for protection of seed beds after planting where required.
- B. Filter Fabric, hay bales, or other approved methods shall be placed and secured over the grates of each existing inlet, grating or storm pipe opening near the area of excavation to prevent silt and debris from entering the storm systems.
- C. Silt fences, hay bales and floating turbidity barriers shall be used as shown on the plans or as directed by the Project Representative to restrict movement of sediment from the site.
- D. Establish vegetative cover on all unpaved areas disturbed by the work.
  - 1. Preparation of Seedbed. Areas to be seeded shall be scarified a depth of four inches until a firm, well pulverized, uniform seedbed is prepared. Fertilizer shall be applied during the scarification process in accordance with the following rates.
    - a. Fertilizer - 10 to 15 pounds per 1,000 square feet
  - 2. Seeding. Disturbed areas along embankments shall be permanently seeded with mix specified in Section 02940.
  - 3. Mulch all areas immediately after seeding. Mulch shall be applied and anchored as specified herein before.

### **5.3 Maintenance**

- A. Maintain all temporary and permanent erosion control measures in functioning order. Temporary structures shall be maintained until such time as vegetation is firmly established and grassed areas shall be maintained until completion of the project. Areas which fail to show a suitable stand of grass or which are damaged by erosion shall be immediately repaired. No additional payment will be made to the Contractor for the re-establishment of erosion control devices, which may become damaged, destroyed, or otherwise rendered unsuitable for their intended function during the construction of the Project.
  
- B. Remove all silt, sediment and debris buildup on a regular basis to maintain functioning storm systems and erosion control devices.

### **5.4 Removal of Sediment Control Devices**

- A. Near completion of the project, when directed by the Owner's agent, the Contractor shall dismantle and remove the temporary devices used for sediment control during construction. All erosion control devices in seeded areas shall be left in place until the grass is established. Seed areas around devices and mulch after removing or filling temporary control devices. Cleanup all areas.

**End of Section**

**Section 02223**  
**Structure Excavation and Backfill**

**Part 1 General**

**1.01 Description**

- A. Scope - This Section includes excavation for structures, removal and disposal of excavated materials, backfilling, backfill materials and compaction.

**1.02 Quality Assurance**

- A. Reference Standards - Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:

ASTM - American Society of Testing and Materials

AASHTO-American Association of State Highway Transportation Officials

FDOT - Florida Department of Transportation

**1.03 Submittals**

A. Test Reports

1. Compaction - The testing laboratory shall provide the City with three (3) copies of the test results of the compaction of the backfill. The testing for compaction shall be performed by a testing laboratory approved by the City. The test results shall be signed and sealed by a Professional Engineer. Copies of the test result shall be delivered directly to the City by the testing laboratory within 5 working days.

**Part 2 Products**

**2.01 Materials**

- B. Granular Materials - Granular material shall be material passing a 1-inch sieve and at least 12% retained on a No. 200 sieve and meeting the approval of the City.

**Part 3 Execution**

**3.01 Preparation**

- A. Dewatering - The area within the vicinity of the new Work shall be dewatered prior to the excavation operation. The depth of the dewatering shall be sufficient to allow the excavation to remain in a dry condition during the construction of the structure, including the excavating, backfilling and compacting operations.

**3.02 Performance**

- A. Excavation - Excavation shall include the site clearing and grubbing, the excavating and disposing of all materials encountered, the supporting and protecting of all structures and/or utilities encountered above and below the ground surface, and the removal of water from the construction site. Excavation shall also include the removal of existing structures, as shown on the Plans or as directed by the City. Rock excavation, if applicable, shall be

performed as a part of the excavation in accordance with specifications contained elsewhere.

The CONTRACTOR shall keep the limits of his excavation operations within a reasonable close conformity with the location and grade, of each structure.

The excavated materials shall be temporarily stored in a manner that will not cause damage to trees, shrubs, fences, improvements, utilities, private property or traffic. The excavated materials shall not be placed at such locations that will endanger the banks of the excavation by imposing loads thereon.

The excavation shall be of sufficient size to allow for the construction of the new Work, the placing and compacting of the backfill and for the dewatering operation.

When concrete is to bear on or against an excavated surface other than rock, special care shall be taken not to disturb the surface. The final removal of the foundation material to grade shall not be made until just prior to the placing of the concrete.

Concrete shall not be placed until the depth of the excavation has been checked and the suitability of foundation material has been reviewed by the City.

Excavated material, determined by the City as suitable for backfill may be used. All excess materials shall be disposed by the CONTRACTOR, at his expense.

The elevations for the bottom of footings shall be subject to such changes as are necessary to insure a satisfactory foundation. Any changes required shall be reviewed by the City prior to making the change.

The surface of all rock or other hard material upon which concrete is to be placed shall be freed from all loose fragments, cleaned and cut to a firm surface. The surface shall be level, stepped or serrated, as shown on the Plans.

All unsound material underlying proposed structures shall be removed and replaced with material approved by the City, in layers not exceeding six (6) inches in depth. Each layer shall be compacted to 98% of maximum unit weight unless indicated otherwise on the Plans, or within these specifications.

- B. Sheeting, Shoring, and Bracing - The CONTRACTOR shall furnish, place and maintain at all times such sheeting, shoring, and bracing of the excavated area as may be required for safety of the workmen and for protection of the new Work or adjacent structures, including pavement, curbs, sidewalks, pipelines and conduits next to, or crossing the excavated area, and for the protection and safety of pedestrian and vehicular traffic.

The CONTRACTOR shall be responsible for the complete design of all the sheeting, shoring, and bracing Work. Prior to installing the sheeting, shoring or bracing, the CONTRACTOR shall submit Plans for this Work to the City for his information. At the request of the City, these plans shall be signed and sealed by a licensed Florida Professional Engineer.

Sheeting, shoring, and bracing shall conform to current federal or state regulations for safety.

Where indicated on the Plans and where necessary in the Work, install and leave sheeting, shoring and bracing in place. No extra compensation shall be paid to the CONTRACTOR for sheeting, shoring or bracing left in place.

Supports for pipes, conduits, etc., crossing the excavated area shall conform to the requirements of the owners of such facilities and if necessary, shall be left in place. The furnishing, placing, maintaining and removing of sheeting, shoring and bracing materials shall be at the CONTRACTOR's expense.

The CONTRACTOR shall not remove the sheeting, shoring or bracing until the structure has obtained sufficient strength to support the external loads. The sheeting, shoring and bracing material shall not come in contact with the structure, but shall be installed so that no concentrated loads or horizontal thrusts are transmitted to the structure.

- C. Backfill - Backfill material shall be placed only after the new Work and backfill material have been inspected by the City.

Backfill shall not be placed against any portion of the new Work until the required curing, surface finishing and waterproofing of such portions have been completed. Backfill that will place an unequalized horizontal loading on the new Work shall not be placed until the concrete has attained at least 70% of its design strength. To equalize horizontal loadings, the required backfill around the new Work shall be placed on opposite sides at the same time.

Granular material acceptable to the City shall be used for backfilling the new Work unless otherwise indicated on the Plans or within these specifications.

All spaces excavated and not occupied by the new Work or by the specified backfill material, shall be backfilled with suitable material from the excavation.

After the backfill has been placed and compacted to the flow line elevation of any weepholes indicated on the Plans, the back end of each weephole shall be covered with not less than two (2) cubic feet of No. 6 or 7 coarse aggregate.

Large stones, boulders, broken rocks, concrete, and masonry shall not be used in the backfill.

The backfill shall be carried up to the surface of the adjacent ground or to the elevation of the proposed earth grade, and its top surface shall be neatly graded. Fill around all new Work shall be trimmed to the lines shown on the Plans or as directed by the City.

Where unsuitable material is encountered above the compensation limits, the Contractor shall remove and replace the unsuitable material with suitable material at no additional cost to the City.

- D. Compacting Backfill - Backfill material shall be placed in accordance with the methods specified in FDOT, Section 125.

The backfill material shall be compacted to 100% of its maximum unit weight.

The maximum unit weight, when used as a measure of compaction or density of soils, shall be understood to mean the maximum unit weight per cubic foot as determined by AASHTO T-180.

Compaction of the backfill will not be paid for separately, but shall be considered incidental to the Work of backfilling and shall include all the Work of manipulating the soil to obtain the specified densities. No additional compensation will be allowed for any delay required to obtain the specified moisture content or the specified density.

- E. Cleanup - Immediately following the placing and compacting of the backfill, the excess material shall be removed and disposed of by the CONTRACTOR.

The construction area shall be graded and restored as indicated on the drawings.

### **3.03 Field Quality Control**

- A. Testing - During the course of the Work, the CONTRACTOR shall be required to test for compaction or density of the backfill at a minimum of one (1) test per two (2) feet vertical (compacted). Each successive test shall be performed at a different location around the structure to ensure backfill on all sides of the structure receive consistent compaction.

Testing procedures shall conform to AASHTO T-180.

- B. Failed Tests - Any portion of the backfill that is deficient in the specified density shall be re-compacted and re-tested.

Re-compacting and re-testing required because of deficiencies shall be at the CONTRACTOR's expense.

**End of Section**

**Section 02226**  
**Trenching, Backfilling, and Compacting**

**Part 1 General**

**1.01 Description**

- A. Scope - This Section includes open trench construction, complete with trenching, sheeting, bracing, backfilling, backfill materials and compaction.

**1.02 Quality Assurance**

- A. Reference Standards - Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:

ASTM - American Society of Testing and Materials

AASHTO - American Association of State Highway Transportation Officials

FDOT - Florida Department of Transportation

**1.03 Submittals**

A. Test Reports

1. Compaction - The testing laboratory shall provide the City with three (3) copies of the test results of the compaction of the backfill. The testing for compaction shall be performed by a testing laboratory approved by the City. Test results shall be signed and sealed by a Professional Engineer and submitted to the City within five (5) working days.

**Part 2 Products**

**2.01 Materials**

- A. Granular Materials - Granular material shall be material passing a 1-inch sieve and at least 12% retained on a No. 200 sieve and meeting the approval of the City.

**Part 3 Execution**

**3.01 Preparation**

- A. Dewatering - The area within the vicinity of the trenching operation shall be dewatered where necessary. The depth of the dewatering shall be sufficient to allow the trench excavating, pipe and structure installation, backfilling and compacting to proceed in a dry condition.

**3.02 Performance**

- A. Trench Excavation - Open cut trench excavation shall include the site clearing and grubbing, the excavating of all materials encountered, the supporting and protecting of all structures and/or utilities encountered above and below the ground surface, and the removal of water from the construction site.

The trenching operation shall commence at the downstream or outlet end of the new Work and proceed upstream, unless otherwise specified on the Plans or directed by the City.

The trench shall be excavated in reasonably close conformity with the lines and grades specified on the Plans or as established by the City.

The excavated materials shall be temporarily stored along the trench in a manner that will not cause damage to trees, shrubs, fences, improvements, utilities, private property, public property or traffic. The excavated materials shall not be placed at such locations that will endanger the trench banks by imposing loads thereon.

The trench shall be of sufficient width to provide adequate working space to permit the installation of the pipe and the compaction of the bedding material under and around the pipe. However, the width of the trench from below the pipe bedding to 12 inches above the top of the pipe shall not exceed the dimensions shown on the plans.

The trench shall be dry when the bottom is prepared. The trench bottom shall be excavated or filled and compacted, as required to bring it to grade and shaped to receive and support the pipe barrel. In addition, bell holes shall be excavated so that after placement only the barrel of the pipe receives bearing pressure from and is uniformly supported by, the bottom of the trench. Preparation of the trench bottom and placement of the pipe shall be such that the final position of the pipe is true to line and grade and uniformly supported throughout the barrel of each length. When pipe is placed in refill material, additional refill of the same material shall be tamped on each side of the barrel of the springline, thus forming a trough of firm bedding.

Excavation for manholes and other appurtenances shall be made to size that will allow at least twelve-inches between their outer surfaces and the embankment or shoring. Overdepth excavation and backfill to required depth below such appurtenances that has not been directed by the City shall be at the expense of the Contractor.

- B. Sheeting, Shoring, and Bracing - The CONTRACTOR shall furnish, place and maintain at all times such sheeting, shoring, and bracing of the trench and/or shaft as may be required for safety of the workmen and for protection of the new Work or adjacent structures, including pavement, curbs, sidewalks, pipe lines, conduits next to or crossing the trench, and the protection and safety of pedestrian and vehicular traffic.

Sheeting, shoring, and bracing shall conform to the current federal or state regulations for safety.

Prior to installing the sheeting, shoring, or bracing, the CONTRACTOR shall submit Plans for this Work to the City. Where required by the City, sheeting, shoring or bracing plans shall be signed and sealed by a Florida Licensed Professional Engineer.

Where indicated on the Plans and where necessary in the Work, install and leave sheeting, shoring and bracing in place. No extra compensation shall be paid to CONTRACTOR for sheeting, shoring or bracing left in place.

Supports for pipes, conduits, etc., crossing the trench shall conform to the requirements of the owners of such facilities, and if necessary, shall be left in place.

The furnishing, placing, bracing, maintaining, and removing of sheeting, shoring and trenching materials shall be at the CONTRACTOR's expense. The CONTRACTOR shall not remove the trench sheeting, shoring and bracing unless the pipe has been properly bedded, and the trench backfilled to sufficiently support the external loads. Also the sheeting, shoring and bracing material shall not come in contact with the pipe, but shall be installed so that no concentrated loads or horizontal thrusts are transmitted to the pipe.

- C. Backfilling Trenches - Backfill material shall be placed on sections of bedded pipes only after pipe bedding and backfill materials, and installed pipe have been inspected and approved by the City.

The trench backfilling shall follow the pipe laying as closely as possible. However, at no time shall the pipe laying in any trench precede backfilling of that trench by more than 100 feet, unless otherwise directed by the City.

The backfill material under roadways and structures shall be compacted to 98% of its maximum unit weight (Per AASHTO T-180) unless otherwise shown on the Plans.

The maximum unit weight, when used as a measure of compaction or density of soils, shall be the maximum unit weight per cubic foot or 98% as determined by AASHTO T-180. No additional compensation will be allowed for any delay required to obtain the specified moisture content or the specified density.

- D. Cleanup - Immediately following the placing and compacting of the backfill, the excess material shall be removed and disposed of by the CONTRACTOR. The construction area shall be leveled and left in a neat condition.

The disturbed area shall be restored as specified on the drawings.

### **3.03 Field Quality Control**

- A. Testing - During the course of the Work, the CONTRACTOR shall be required to test for compaction or density of the backfill per Pinellas County Minimum Testing Frequency Requirements (latest edition) or a minimum of one (1) test per two (2) feet vertical (compacted) each three hundred (300) LF or part thereof of trench. The taking of samples and the testing required shall be performed by a testing laboratory approved by the City. The cost for testing and sampling shall be at the expense of the CONTRACTOR.

Testing procedures shall conform to AASHTO T-180.

- B. Failed Tests - Any portion of the trench backfill that is deficient in the specified density shall be re-compacted and re-tested.

Re-testing or sampling required because of deficiencies shall be at the CONTRACTOR's expense.

**End of Section**

## Section 02229 Earthwork

### Part 1 General

#### 1.01 Description

- A. Scope - This Section includes Earthwork complete with excavation; subgrade undercut and backfill, right-of-way restoration, existing utilities, erosion control, field quality control and appurtenances.

#### 1.02 Quality Assurance

- A. Reference Standards - Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:

ASTM - American Society for Testing and Materials

AASHTO - American Association of State Highways and Transportation Officials

FDOT - Florida Department of Transportation

#### 1.03 Submittals

##### A. Test Reports

1. Sieve Analysis - The testing lab shall provide the City with three (3) copies of the sieve analysis of the backfill and subgrade materials. A testing laboratory approved by the City shall perform material testing. Test results shall be signed and sealed by a Professional Engineer.
2. Compaction and Moisture Testing - The testing lab shall provide the City with three (3) copies of the compaction and moisture tests of the backfill and subgrade materials. A testing laboratory approved by the City shall perform material testing. Test results shall be signed and sealed by a Professional Engineer and submitted within five (5) working days.
3. Bearing Value - The testing lab shall provide the City with three (3) copies of the bearing value of the subgrade and/or base materials. A testing laboratory approved by the City shall perform material testing. These results shall be signed and sealed by a Professional Engineer, and submitted within five (5) working days.

### Part 2 Products

#### 2.01 Materials

- A. Granular Materials - Granular material shall be material passing a 1-inch sieve and at least 12% retained on a No. 200 sieve and meeting the approval of the City.

## Part 3 Execution

### 3.01 Contractor's Verification

- A. Existing Utilities - The CONTRACTOR shall expose existing sewers and structures to which the new Work is to be connected and notify the City of it. The City will verify the vertical and horizontal locations of the existing system and shall inform the CONTRACTOR as to the necessary adjustments required to align the new Work with the existing system.

### 3.02 Performance

A. General

1. CONTRACTOR shall rough grade as close as possible to finished subgrade leaving a minimum to be removed in fine grading.
2. Any excavated material removed during grading and stored along the line of Work between curb and sidewalk on improved lawns shall not be left longer than 48 hours. Said lawns or otherwise improved parkway shall be left in a neat and clean state within the specified 48 hours.
3. During the excavation operation, including the placing of the base, the Work area shall be kept free of water. If needed, a dewatering system shall be provided and maintained by the CONTRACTOR at his expense. The dewatering system shall remain in operation as directed by the City.
4. The finish subgrade surface shall not vary more than 1-inch in ten (10) feet.

- B. Excavation - Excavation shall consist of all Work required to construct the earth grade and its appurtenances true to the lines, grades, and cross sections called for on the Plans and in accordance with these Specifications. Excavation shall consist of the following items, any or all of which may be included or incidental to it: removing trees, stumps, hedges, roots, culverts, sewers, miscellaneous structures, roadway excavation, removing of all asphalt or concrete pavements, curbs, curb and gutters, sidewalks, end headers, removing aggregate surfaces, salvaging and stockpiling topsoil, subgrade stabilization, excavation for structures, trimming and finishing earth grade, fine grading, right-of-way ditching and restoration, and the disposal of all unsuitable material.

All large stones, trees, stumps, brush, shrubs, logs, matted roots, other vegetation and debris shall be completely removed and properly disposed.

All earth and other existing materials shall be excavated for the full depth and width of the cross section as shown on the Plans. Material shall be excavated sufficiently for setting of forms or slip-form equipment.

Excess excavated material shall be removed from the project by the CONTRACTOR along approved routes to disposal sites approved by the City. Disposal of excess excavation and maintenance of the dumpsites shall be considered incidental to the work.

- C. Salvaging and Stockpiling Topsoil - Topsoil, within the grading limits for cuts, and where the fill is less than five (5) feet in height to the top of road surface, shall be removed to a depth and width specified on the Plans. Topsoil from peat and muck areas shall not be removed. All vegetation shall be cut to a height of approximately six (6) inches and all such vegetation, brush, stones, rocks, and any other objectionable litter or foreign material shall be removed before the ground is broken for removal of topsoil. The CONTRACTOR shall

dispose of all vegetation, stones and rocks, and other objectionable litter or foreign material. Equipment and methods of operations shall be such as to avoid the lifting of subsoil. The topsoil from the roadway shall be stockpiled in an approved location within the limits of the roadway or placed in the slopes as directed by the City. Upon completion of the Work, all stockpile areas shall be restored to a neat and satisfactory condition. Topsoil salvaged in excess of that required by the Plans will be disposed of by the CONTRACTOR at his expense.

- D. Utility Poles - The CONTRACTOR shall coordinate any removal or relocation required as a result of any conflict of existing utility poles with proposed improvements.
- E. Removing Structures - Structures and sewers to be removed shall be called for on the Plans or as directed by the City.

The structure shall be broken down to at least 12 inches below the subgrade. All pipes connected to the structure shall be plugged with a brick and masonry bulkhead approved by the City.

If a structure is to be removed from a system that is to remain in service, the service shall be reconnected. A bypass system, approved by the City, shall be installed and maintained by the CONTRACTOR, during the rebuilding period.

The broken down structure and void shall be backfilled with a granular material, compacted in place, and shall meet with the approval of the City.

- F. Holes - Earth removed during any phase of the excavation or removal operations, resulting in a hole or void, shall be replaced by backfilling to the proposed subgrade with a suitable granular material approved by the City. The material shall be compacted to 100% of maximum unit weight.

The furnishing, placing and compacting of the backfill material shall be at the CONTRACTOR'S expense.

- G. Preparing Roadway Subgrade - All muck, peat and other unsuitable material within the roadway shall be removed and shall be disposed of at the CONTRACTOR'S expense.

All road surfacing, gravel, crushed stone, or other, non-rigid type, occurring within the area of the roadbed and underlying proposed embankment less than 1-foot in depth, and which is not to be salvaged and incorporated in the new Work, shall be plowed or scarified full depth, spread and compacted to form a uniform foundation, before any new embankment is placed thereon.

Old pavement and other rigid structures, occurring within the area of the roadbed and underlying the proposed embankment less than 1-foot in depth and which are not to be incorporated into the new Work, shall be broken up and removed.

- H. Unsuitable Subgrade Excavation - Unsuitable subgrade excavation shall be the operation of removing unsuitable soils below the level of the ground after topsoil has been stripped and the removal of unsuitable soils, below the subgrade elevation, as determined by the City in cut areas after the subgrade has been established.

The areas excavated of unsuitable material shall be back-filled with material similar to the adjacent soil, except that when directed by the City for areas where free water due to seepage is present, the excavation shall be backfilled with Granular Material approved by

the City and drainage shall be provided. The backfill shall be compacted to not less than 100% of the maximum unit weight, unless otherwise specified.

- I. Subgrade - The area to be paved shall be excavated and graded to the line, grade and cross section as indicated on the Plans.

When called for on the Plans or in the Specifications the designated portions of the roadbed shall be stabilized to provide a firm and unyielding subgrade, having the required bearing value specified on the plans. This work shall be accomplished in accordance with FDOT Section 160.

The subgrade shall be compacted to 98% of the maximum unit weight (per AASHTO T-180).

The subgrade shall be completed ahead of placing forms a distance equal to the distance of one (1) day's average paving operation. Prior to the paving operation, the subgrade shall be shaped and compacted to the Plan cross section by approved mechanical means.

- J. Right-of-Way Restoration - The right-of-way shall be restored in accordance with the type and location specified on the Plans. The right-of-way may be shaped by "Machine Grading" or another method approved by the City to achieve the cross section, line and grade shown on the Plans.

The excess material from the right-of-way restoration operation shall be disposed of by the CONTRACTOR at his expense.

The right-of-way shall be graded to receive topsoil and sod. The topsoil, sod, fertilizer and mulch shall conform to the requirements specified on the Plans and in Section 02940, Sodding.

The CONTRACTOR, at his expense, shall furnish, place, and compact any additional fill, meeting the approval of the City, needed to construct the right-of-way to the cross sections called for on the Plans.

- K. Machine Grading - The Work of machine grading shall consist of light grading of such character that, in general, the excavation from ditches and roadbed will be utilized in shaping shoulders and adjacent shallow fills and the work can be performed by a blade grader or similar equipment. Machine grading shall apply on the sections shown on Plans or specified in the Proposal.

The Work shall include all necessary scarifying, plowing, disking, moving and shaping the earth to develop the cross section shown on Plans. Ditches shall be in reasonably close conformity with the line and grade as shown on the Plans or as directed and must drain runoff waters to outlets shown on the Plans or designated by the City. The roadbed shall be finished to grade with a blade grader or equivalent equipment. All intersections, approaches, entrances, and driveways shall be graded as shown or as directed, except that loading and hauling of earth will not be required as part of this Work.

- L. Trimming and Finishing Earth Grade - After the earth grade has been constructed to the required grade, all stones and rocks more than three (3) inches in diameter, appearing on the surface of the subgrade shall be removed.

The earth grade and the subgrade shall be trimmed to the grade called for on the Plans. The subgrade shall be trimmed to the established grade within  $\pm \frac{3}{4}$ -inch.

The earth grade outside the subgrade shall be trimmed, all irregularities made smooth and the entire site or roadway completed to the required lines, grades, and cross-sections. Back slopes and fill slopes shall be finished as specified or required.

- M. Existing Utilities - When existing utilities are shown on the Plans, their locations are approximate only, as secured in the field investigation and from available public records. The CONTRACTOR, prior to the start of construction, shall contact Sunshine State One Call Underground Facilities Locating Service and/or the public agency or utility having jurisdiction to request the verification of all utilities within the construction area.

When existing utility lines, structures or utility poles are encountered during the performance of the Work, the CONTRACTOR, at his expense, shall perform his operations in such a manner that the service will be uninterrupted.

The CONTRACTOR shall expose all existing utility lines prior to any excavation operation, to determine any conflict with the proposed improvement. The CONTRACTOR shall be responsible for any relocation required as a result of any conflict of existing utilities with the proposed improvement.

Should it become necessary to move any utility structure, line or pole, whether called for on the Plans or otherwise found necessary to be moved, the CONTRACTOR shall make all arrangements with the Owner of the utility for the moving. All costs incurred for such moving shall be at the CONTRACTOR's expense unless indicated otherwise. However, before disturbing a utility line, structure or pole, the CONTRACTOR shall furnish the City with satisfactory evidence, in writing, that proper arrangements have been made with the Owner of the utility.

- N. Soil Erosion and Sedimentation Control - Prior to commencing any type of earthwork, the CONTRACTOR shall install soil erosion and sedimentation control systems.

### **3.03 Field Quality Control**

- A. Testing - During the course of the Work, the City may require testing of backfill and subgrade for compaction and moisture, sieve analysis, thickness, and bearing value. Samples shall be taken and tested by a testing laboratory approved by the City.

1. Moisture density (proctor) and sieve analysis shall be determined by AASHTO T-180 for each uniform material.

Bearing values for subgrade material shall be determined per FDOT at road centerline each 400 lf in a staggered pattern and at all changes in soil classifications. Bearing values shall also be determined at curb lines each 400 lf, each side of road. Minimum bearing value shall be as specified per Plans. Thickness of base shall be determined each 300 lf of roadway in a staggered pattern. Minimum thickness shall be per Plans.

Field densities for subgrade shall be tested per AASHTO T-180 each 300 lf of roadway in a staggered pattern and one test each 300 lf at each curb line. Minimum acceptable density shall be 98%.

The testing laboratory shall furnish the City with three (3) certified copies of the results of all tests, within five (5) working days from the date of the test. Testing procedures shall conform to current FDOT Standards for Construction. The cost for testing and sampling shall be at the expense of the CONTRACTOR.

- B. Defective Work - Any portion of the subgrade, which is deficient in the specified density or bearing value, shall be corrected by methods meeting the approval of the City.

Any extra testing or sampling required by the City, because of deficiencies, shall be at the CONTRACTOR's expense.

**End of Section**

**Section 02230**  
**Base Course**

**Part 1 General**

**1.01 Description**

- A. Scope - This Section includes base courses constructed by the following method:
1. Limerock Base - The work specified in this Section consists of the construction of a base course composed of limerock. It shall be constructed on the prepared subgrade, in accordance with these specifications and in conformity with the lines, grades, notes and typical cross section shown in the plans.
  2. Crushed Concrete Road Base - The work specified in this Section consists of the construction of a base course composed of crushed concrete. It shall be constructed on the prepared subgrade, in accordance with these specifications and in conformity with the lines, grades, notes and typical cross section shown in the plans.
  3. Asphaltic Base Course - Asphaltic Base Courses included in the Work of this Contract shall be furnished and installed in accordance with the FDOT Standard Specifications for Road and Bridge Structures, latest edition, and all Supplemental Specifications. Except where the Contract Documents include more stringent requirements or noted deviations, the applicable specification sections by reference shall have the same force and effect as if bound directly.
    1. Section 280 - Asphalt Base Course
    2. Section 300 - Prime Tack Coats for Base Courses

**1.02 Quality Assurance**

- A. Reference Standards - Unless otherwise specified, the Work for this Section shall conform to the applicable portions of the following Standard Specifications:

ASTM - American Society of Testing and Materials

AASHTO - American Association of State Highways and Transportation Officials

FDOT - Florida Department of Transportation

- B. Allowable Tolerances

1. Base Courses - The finished surface shall be shaped to conform to within a tolerance of 1/2-inch in ten (10) feet to the cross section and grades called for on the Plans.

**1.03 Submittals**

- A. Test Reports

1. Thickness - The testing lab shall provide the City with three (3) copies of the test results. The sampling and testing shall be performed by a testing laboratory approved by the City. Test results shall be signed and sealed by a Professional Engineer, and submitted to the City within five (5) working days from the date of the test.

## 1.04 Product Delivery, Storage, and Handling

The base course material shall be transported to the point where it is to be used, over material previously placed if practicable, and dumped on the end of the preceding spread. Hauling over the subgrade and dumping on the subgrade will be permitted when, in the City's opinion, these operations will not be detrimental to the base.

## 1.05 Job Conditions

### A. Environmental Requirements

1. Temperature - Comply with the requirements for aggregate base course installations due to outside ambient air temperatures specified under Article 3.03 of this Section.

## Part 2 Products

### 2.01 Materials

- A. Limerock Base - The limerock material shall meet the requirements of FDOT Section 911. At the CONTRACTOR's option limerock of either Miami or Ocala formation may be used, but limerock of only one (1) formation may be used on any contract. (Limerock may be referred to hereinafter as "rock".)
- B. Crushed Concrete Road Base - The crushed concrete material shall consist of only crushed concrete. Any added materials to facilitate construction and achieve desired characteristics of the finished in-place product must be submitted for approval by the City. The road base material shall conform with the gradation requirements for graded aggregate base specified in FDOT Section 204. The minimum LBR value shall be 100.

## Part 3 Execution

### 3.01 CONTRACTOR'S Verification

- A. Excavation - Prior to the placing of any base material, examine the excavation for the grades, lines, and levels required to receive the new work. Ascertain that all excavation and compacted subgrade are adequate to receive the new work. Correct all defects and deficiencies before proceeding with the Work.
- B. Subgrade Conditions - Prior to the placing of any base material, examine the subgrade to ascertain that it is adequate to receive the base to be placed. If the subgrade remains wet after all surface water has been removed, the City may require the installation of edge drain.
- C. Existing Improvements - Investigate and verify locations of existing improvements, including structures, to which the new will be in contact.

Necessary adjustments in line and grade, to align the new work with the existing improvements must be approved by the City, prior to any changes.

### 3.02 Preparation

- A. Subgrade - The subgrade shall be fine graded to the cross section indicated on the Plans, and shall be thoroughly compacted prior to the placing of the base material.

### 3.03 Installation

- A. General - The width, thickness and type of base materials shall be indicated on the Plans or as directed by the City.

No base material shall be placed until the City has approved the subgrade.

- B. Limerock Road Base - The base course shall be placed by a mechanical spreader or other approved means, in uniform layers to such a depth that when compacted, the base course will have the thickness shown on the Plans.

The depth of any one (1) layer, when compacted, shall not be more than six (6) inches. If the required compaction cannot be obtained for the full depth of the base course spread, the thickness of each course shall be reduced or at the approval of the City, adequate equipment shall be used to compact the aggregate to the required unit weight.

The subgrade shall be shaped to the specified crown and grade and maintained in a smooth condition. If hauling equipment causes ruts or holes in the subgrade, the hauling equipment will not be permitted on the subgrade, but shall be operated on the base course behind the spreader.

The base course shall be compacted to at least 98% of maximum unit weight as determined by AASHTO T-180, by the use of approved pneumatic-tired compaction equipment or vibratory compactors.

The optimum moisture content shall be maintained until the prescribed unit weight is obtained and each layer shall be compacted until the maximum unit weight is attained before placing the succeeding layer.

When approved by the City, additional water may be applied by an approved means, to the base course to aid in the compaction and shaping of the material.

Motor graders or other approved equipment shall be used to shape the base course and maintain it until the surface course is placed.

When hauling material over the base course or subgrade, the CONTRACTOR shall limit the weight and speed of his equipment to avoid damage to the subgrade or base course. If the subgrade or base course becomes rutted due to the CONTRACTOR's operation, the subgrade or base course shall be removed and replaced, acceptable to the City, at the CONTRACTOR's expense.

- C. Maintenance During Construction - The base course shall be continuously maintained in a smooth and firm condition during all phases of the construction operation.

The CONTRACTOR, at his expense, shall provide additional materials to fill depressions or bind the aggregate, when directed by the City.

- D. Cleanup - Immediately following the compacting of the base course, the voids on both sides of the base course shall be backfilled with sound earth of topsoil quality.

The backfill shall be compacted, leveled and left in a neat, workmanlike condition.

At a seasonally correct time approved by the City, the disturbed area shall be raked, have topsoil placed thereon, fertilizer and sodded in accordance with Section 02940, Sodding.

### **3.04 Field Quality Control**

A. Testing - During the course of the work, the City may require testing for compaction or density and for thickness of material. The testing and coring required shall be performed by a testing laboratory approved by the City. The cost for testing shall be at the expense of the CONTRACTOR.

1. Thickness - A minimum of one depth (thickness) measurement will be made every 400 linear feet per traffic lane. The lane width shall be as indicated on the Plans or as determined by the City. If two (2) lanes are constructed simultaneously, only one (1) test is necessary to represent both lanes. For areas such as intersections, entrances, cross-overs, ramps, widening strips, acceleration and deceleration lanes, at least one depth measurement will be taken for each 1,200 square yards of such areas or fraction thereof. The location of the depth measurement will be at the discretion of the City.
2. Compaction - Testing procedures shall conform to AASHTO T-180 and to current FDOT Specifications. Field density tests (AASHTO T-180) shall be performed each 300 lf per lift at staggered locations. Minimum acceptable density shall be 98%.

B. Defective Work

1. Thickness - Measurements of base course thickness will be made to the nearest 1/4-inch. Depths may be 1/2-inch less than the thickness indicated on the Plans provided that the average of all measurements taken at regular intervals shall be equal to or greater than the specified thickness. In determining the average in place thickness, measurements which are more than 1/2-inch in excess of the thickness indicated on the Plans will be considered as the specified thickness plus 1/2-inch.

Locations of the depth measurements will be as specified herein unless otherwise directed by the City. Sections found to be deficient in depth shall be corrected by the CONTRACTOR using methods approved by the City.

Field compaction tests shall be retested upon re-compaction by the CONTRACTOR. Retesting and re-compaction shall be at the CONTRACTOR'S expense.

**End of Section**

**Section 02510  
Bituminous Paving**

**Part 1 General**

**1.01 Description**

A. Scope

This Section includes bituminous paving complete with bituminous materials; bituminous mixtures and pavement markings.

B. Standard Specifications for Bituminous Paving - All bituminous paving included in the Work of this Contract shall be furnished and installed in accordance with the "Pinellas County Department of Public Works Bituminous Concrete Specifications" dated April, 2013 except as modified below:

1. All testing and re-testing shall be performed at the Contractor's cost.
2. It is recommended that the Contractor confirm the cross slope of the roadway prior to paving.
3. The City has the right to require that a tack coat be placed in accordance with this document.
4. The Contractor shall ensure that prime/tack coats don't enter the City's stormwater collection system. Erosion control measures shall remain in place after prime/tack coat application.
5. Spreader speed shall be determined by the Contractor.
6. The City's shall be the responsible authority for rendering opinions on acceptability of mix segregation.
7. If the City's representative is not present during paving operations, the Contractor shall document the installed thickness of the asphalt using photography.

C. Pavement Markings (Roadways and Parking Areas)- Upon completion and approval of the finish asphaltic surface course, pavement markings shall be installed. Temporary striping shall be painted. All striping shall be thermoplastic and installed once the asphalt has cured.

**End of Section**

**Section 02511  
Full Depth Reclamation**

**Part 1 General**

**1.01 Description**

A. Scope

This work shall consist of the preparation of a base course constructed by in-place pulverizing and blending of the existing bituminous pavement and base materials, and the introduction of asphalt emulsion or foamed asphalt and other additives. Pulverize existing asphalt pavement and base material by a method that does not damage the material below the design depth as shown on the plans.

**1.02 Materials**

A. Asphalt Emulsion

If called for in the Contractor's mix design, utilize CSS-1h or CMS-2h meeting the requirements of AASHTO M 208-01.

B. Foamed Asphalt

If called for in the Contractor's mix design, utilize an asphalt binder meeting the requirements of Section 916 of the FDOT's SSRBC (Latest Edition) and listed on the FDOT's Approved Products List.

C. Water

The water for base course compaction and faming additive shall be clean and free from sewage, oil, acid, strong alkalines or vegetable matter and it shall be in sufficient supply for mixing and curing. Water of questionable quality shall be tested in accordance with the requirements of AASHTO T 26.

D. Portland Cement

Portland cement in either a dry or slurry form may be added to the reclaimed mixture if called for in the Contractor's mix design. Slurry made from Portland Cement shall contain a minimum of 30% dry solids content. Cement used for full depth reclamation shall be Type I or II and comply with Section 921 of the FDOT's SSRBC. Cement shall be limited to no more than 1.5 percent by dry weight of reclaimed material (unless approved by the Engineer).

**1.03 Mix Design**

Prior to construction, obtain an adequate number of core samples to develop the mix design(s). Representative samples of the asphalt paving material, underlying base material, and virgin materials, where applicable, shall be supplied to a nationally accredited laboratory for testing to determine the proportions of additives, foamed asphalt, and asphalt emulsion needed to produce a mix design meeting the requirements of Table 1 (this section). The optimum binder content shall be the binder content that results in the highest wet tensile strength while also having 70% retained tensile strength compared to the dry strength and additionally has a minimum 1,800 pounds Marshall Stability. The mix design shall be signed and sealed by a professional engineer and submitted to the Engineer prior

to use for approval.

The mix design target shall be 300 PSI.

**Table 1**

Mix Design Criteria		
Test	Test Method Number	Criteria
Gradation of reclaimed material	AASHTO T 27-11	Report
Determination of optimum binder content		
Compaction effort at optimum fluids content. Marshall Compactor; 50 blows/side or Superpave Gyratory Compactor, 100 mm diameter specimens, 30 gyrations. Density determination.	Asphalt Institute MS 14, Appendix F. ASTM D6926-10 AASHTO T 312-12 FM 1-T 166	Report
Marshall stability Cure at 60°C to constant weight. Test at 40°C.	ASTM D6927-06	1800 lbs. minimum stability
Resistance of compacted bituminous mixture to moisture induced damage. 55 to 75% vacuum saturation, water bath at 25°C for 23 hours, last hour in water bath at 40°C.	AASHTO T 283-07 (2011)	70% minimum retained tensile strength

## Part 2 Equipment

### 2.01 Road Reclaimer

Utilize a road reclaimer specifically designed for pavement reclaiming and capable of pulverizing and mixing pavement, base materials, and subgrade soil to a depth of 16-inches. It shall have the capability of introducing and metering additives uniformly and accurately and have positive displacement pumps which can accurately meter the planned amount of asphalt emulsion or foamed asphalt into the mixture. The reclaiming machine shall mix the emulsified or foamed asphalt additive thoroughly with the Reclaimed Asphalt Pavement (RAP) and soil materials. The pump shall be interlocked with the ground speed of the machine. The asphalt metering system and water metering system shall be capable of continuously monitoring flow and totaling the quantity of water and asphalt applied into the mixing chamber. Additives, if proposed in the Contractor's mix design, shall be uniformly distributed and mixed with the pulverized material and any existing underlying material.

### 2.02 Motor Grader

Utilize a motor grader of sufficient size and horsepower to adequately rough grade the pulverized material and rough finish grade the mixed and compacted base. The equipment shall be in good working order free from leaks and capable of maintaining an accurate grade and cross slope.

### 2.03 Rollers

Utilize rollers in good working order free from leaks and capable of compacting the mix to the requirements of this specification. The Contractor shall make all efforts to minimize the usage of vibratory drum rollers.

## 2.04 Additional Equipment

Utilize additional equipment as needed to complete the work in accordance with this and other specification sections.

## Part 3 Construction

### 3.01 Layout

The Contractor will be responsible for the string lining and layout of the roadway prior to paving. Elevations of the existing roadway must be referenced at sufficient intervals to ensure the roadway elevation is not changed in any location after the wearing surface is placed. Maintain roadway elevations except for cross slope correction as approved by the Engineer.

### 3.02 Weather & Seasonal Limitations

Do not mix or place the base while the air temperature is below 40-degrees F or when conditions indicate that the temperature may fall below 40-degrees F within 24 hours. Do not mix or place the base when the weather is foggy or rainy or when the soil or subgrade is frozen.

### 3.03 Additional Material

When additional material is to be added to correct cross slope deficiencies or change elevation as directed by the Engineer, use approved base material (based upon FDOT Design Index 514, Optional Base Materials; Crushed Concrete preferred) placed on the roadway prior to the final pass for pulverization and mix uniformly with the existing material.

### 3.04 Pulverization

Pulverize and blend the existing pavement and base material to the depth specified so that all of the material shall be uniformly graded in accordance with AASHTO T 27-11 to meet the requirements of Table 2.

**Table 2**

Gradation Requirements for Pulverized Material	
Sieve Size	Minimum Percent Passing
3 inches	100
2 inches	95
No. 4	55
No. 200*	5

\*For asphalt emulsion, the maximum allowable percent passing the No. 200 sieve is 20%.

Material gradation may vary due to local aggregates and conditions. A minimum of two passes of the reclaimer is required. Additional passes may be necessary to achieve the required gradation.

Remove pulverized material to the depth shown in the plans (if applicable).

Introduce the asphalt emulsion or foamed asphalt into the mix through the reclaimer uniformly and accurately metered such that areas are of equal consistency and moisture content. Combine the reclaimed material and additives in place to meet the requirements specified in the Contractor's mix design in such proportions that the reclaimed mixture is of acceptable composition and stability. Before the start and at the end of each day's work and at any time requested, permit the Engineer access to the mixing equipment in order to read the meter to verify the quantity of asphalt emulsion applied during the day's work. Make field adjustments, as necessary, to the mix design under the guidance of a knowledgeable and competent technician to obtain a satisfactory reclaimed mixture of consistent composition and stability throughout the project.

### **3.05 Compaction**

After the material has been processed, compact the base course to the lines, grades and depths required. Apply water as necessary to ensure optimum moisture content at the time of mixing and compaction.

Construct a control strip of not less than 500-feet to develop proper rolling/compaction patterns and methods to obtain the required density. Obtain density readings using a nuclear gauge in accordance with FM- 1-T 238, while witnessed by the Engineer. Wherever there is a change in the reclaimed material, compaction method, equipment, or unacceptable results occur, construct a new control strip. Begin rolling at the low side of the course, except leave three to six inches from any unsupported edge or edges unrolled initially to prevent distortion.

Furnish the proper number, weight and type of rollers to obtain the required compaction of the reclaimed material. Compact the base course to a field dry density (i.e. corrected gauge wet density) of at least 96% of the maximum laboratory dry density.

Correct any pavement shoving or other unacceptable displacement. Take care in rolling the edges of the reclaimed mixture so the line and grade of the edges are maintained.

At the end of each day's production, construct a transverse joint formed by a header or by cutting back into the compacted material to form a true vertical face free of loose material. Protect construction joints so that the placing, spreading, and compacting of base material will not damage previous work. Where it is necessary to operate or turn any equipment on the completed base course, protect and cover the finished surface using mats or wood planks to prevent damage.

### **3.06 Thickness**

Construct the base to a daily average thickness within 1/2-inch of the plan thickness. Individual measurements may deviate from the plan thickness by 3/4-inch. Measure the thickness while being witnessed by the Engineer or City. When the thickness is not within the tolerances given, the Engineer will evaluate the area and determine if it shall be reconstructed at the Contractor's expense or the deficiency deducted from the total material in place.

### **3.07 Finishing**

After completing all base course operations, assure the base course conforms to the lines and grades and cross section. If necessary, lightly scarify the surface to eliminate any imprints made by equipment then recompact the surface to the required density. Correct all straightedge or surface irregularities greater than 1/2-inch over 10-feet to the satisfaction of the Engineer.

### **3.08 Protection and Curing**

Protect and cure the completed base course by applying a prime coat meeting the requirements of Section 300 at a rate of 0.15 to 0.25 gallons per square yard. Apply the prime coat no later than 24 hours after the completion of finishing operations. Keep the finished base course continuously moist until the prime coat is placed. At the time the prime coat is supplied, ensure the surface is dense, free of all loose and extraneous material, and contains sufficient moisture to promote proper penetration of the bituminous material. Apply water in sufficient quantity to fill the surface voids immediately before the bituminous curing material is applied. Cure the reclaimed base until the moisture content reduces to 2.0 percent or less.

To prevent equipment from marring or damaging the completed work, protect finished portions of base used by equipment.

Do not allow traffic on the reclaimed base until it is assured the reclaimed base surface will not distort, shove, or ravel under the anticipated vehicular loading.

### **3.09 Quality Control Testing**

Perform the following quality control tests at the prescribed frequency. Correct all deficiencies unless otherwise approved by the Engineer.

#### Reclaimed Base Material Gradation

Determine the percent passing the following sieve sizes: 3 inches, 2 inches, No. 4 and No. 200. Obtain a sample at a frequency of one sample per 3,000 SY (not less than once per day) and confirm compliance with Table 2. Adjust the pulverization operation as needed to meet the specification. A 20 pound (min.) sample shall be tested.

#### Moisture /Density Relationship of Reclaimed Base

Establish a wet/dry density relationship for density specification compliance by obtaining a sample at the location of each nuclear density measurement, at a frequency of once per 1,000 SY (not less than once per day). Determine moisture content in accordance with AASHTO T 110-03, AASHTO T 265-12 or ASTM D 4643-08.

#### In-Place Field Density

Perform one nuclear density test per 1,000 SY (not less than once per day). The dry field density (i.e. the corrected gauge wet density) of the compacted mixture shall be at least 96% of the maximum laboratory dry density. No individual density test shall be lower than 92% of the maximum laboratory dry density. If one density test is below 92% or two consecutive density tests are below 96% of the maximum laboratory dry density, cease production and resolve the issue before resuming production.

### Marshall Stability

Perform Marshall Stability testing twice per day or once per day if less than 1,500 SY is reclaimed. Meet the requirements of Table 1. If the Marshall Stability test does not meet the specification, cease production and resolve the issue before resuming production.

### Compressive Strength of Molded Cylinders

Perform testing in accordance with ASTM D-1633 at a frequency of once each 3,000 SY (not less than once per day). If one test is below 250 PSI or two consecutive tests are below 300 PSI, cease production and resolve the issue before resuming production.

### Depth Measurements

Depth measurements shall be obtained at least once per 250 SY. Meet the requirements of 3.06.

**End of Section**

**Section 02523**  
**Concrete Sidewalks, Driveways, Curbs and Gutters**

**Part 1 General**

**1.01 Description**

- A. Scope - This section includes sidewalks, sidewalk ramps, driveways, and drive approaches, curbs & gutters complete with concrete materials, concrete curing compounds, joint materials, field quality control and appurtenances.

**1.02 Quality Assurance**

- A. Reference Standards - Unless otherwise specified, the work for this Section shall conform to the applicable portions of the following Standard Specifications:

ASTM - American Society of Testing and Materials

AASHTO - American Association of State Highway and Transportation Officials

FDOT - Florida Department of Transportation - Standard Specifications for Road and Bridge Construction.

FAC - Florida Accessibility Code

ADAAG - Americans with Disabilities Act Accessibility Guidelines

UFAS - Uniform Federal Accessibility Standards

**1.03 Submittals**

- A. Reports - Written permission for the use of all local disposal sites shall be obtained and copies shall be furnished to the City.

At the request of the City, the CONTRACTOR shall provide the City with certification that the various materials to be used conform to the ASTM Standards referred in the Specification.

B. Test Reports

1. Thickness and Compressive Strength - The City shall be provided with three (3) certified copies of the test results required under Section 3.04. The test shall be performed by a laboratory approved by the City.

**1.04 Job Conditions**

A. Environmental Requirements

1. Temperature - Comply with the requirements for concrete installation due to outside ambient air temperatures as specified under Article 3.03.H. of this Section.

B. Protection

1. Protection Against Rain - Comply with the requirements for protecting new Work against damage from rain, as specified under Article 3.03.H. of this Section.

## Part 2 Products

### 2.01 Materials

- A. Concrete - Concrete shall be in accordance with FDOT, Section 346, Class I, 3,000-psi minimum 28 day strength (unless specified otherwise).
- B. Ready-Mixed Concrete - Ready-mixed concrete shall conform to ASTM C94, Alternate 2.
- C. Water - Water to be used for mixing and curing concrete shall be reasonably clean and free from oil, salt, acid, alkali, chlorides, sugar, vegetable, or other substances injurious to the finished product. Waters from sources approved by the local Health Department as potable may be used without test. Water requiring testing shall be tested in accordance with the current Method of Test for Quality of Water to be Used in Concrete, AASHTO T26.
- D. Concrete Curing Compounds - White membrane curing compound for curing concrete shall conform to AASHTO M148, Type 1 clear, or Type 2 white per FDOT Section 925.
- E. Premolded Joint Filler - Fiber joint filler shall conform to ASTM D1751. Filler shall be of the thickness, as specified herein, or on the Plans. or as directed by the City.
- F. Steel Hook Bolts - Hook bolts shall conform the ASTM A706, or for Grade 60 of ASTM A615, A616, or A617. Hook bolts shall be 5/8-inch diameter, self tapping.
- G. Joint Sealant - Hot-poured type joint sealant shall conform to ASTM D1190.

## Part 3 Execution

### 3.01 CONTRACTOR'S Verification

- A. Excavation and Forming - Prior to the installation of any concrete, examine the excavation and forms for the proper grades, lines, and levels required to receive the new Work. The CONTRACTOR shall verify that all excavation and compacted subgrade are adequate to receive the concrete to be installed.

Correct all defects and deficiencies before proceeding with the Work.

- B. Existing Improvements – The CONTRACTOR shall investigate and verify location of existing improvements to which the new Work is to be connected.

The CONTRACTOR shall make necessary adjustments in line and grade to align the new Work with the existing improvements. The City must approve this work City prior to construction.

### 3.02 Preparation

- A. Forms - The forms shall be of wood or metal, straight and free from warp, clean, and sufficient strength to resist springing during the process of depositing concrete against them.

The forms shall be the full depth of the concrete.

### 3.03 Installation

- A. Sidewalks, Sidewalk Ramps, Driveways, and Driveway Approaches - All sidewalks and sidewalk ramps shall be four (4) inches thick except at driveways and alleys, where the thickness of the sidewalks shall be six (6) inches. Sidewalks shall be five (5) feet wide unless otherwise noted on the Plans or as directed by the City, and shall slope 1/4 inch per foot towards the center of the road. Normally sidewalks will be located within the right-of-way, parallel the property lines, at a distance of 2-foot from the property line.

Alleys, driveways and approaches shall be six (6) inches thick. The width of the driveways and driveway approaches shall be specified on the Plans or as directed by the City.

All sidewalks and driveways shall be reinforced as shown on the plans.

- B. Removal of Existing Curb for Sidewalk Ramps and Driveway Approaches - Construction of sidewalk ramps within street intersections where curbed pavement exists shall conform to the current FDOT Roadway and Traffic Design Standards.

Where there is no proper curb drop for the sidewalk ramp or driveway approach, the CONTRACTOR shall saw cut, to full depth of pavement, and remove a minimum of an 18-inch wide curb and gutter section. When mountable curbs are present, the CONTRACTOR shall remove a 24-inch wide curb and gutter section for the construction of sidewalk ramps, as specified above.

The length of curb and gutter removal shall be determined by the City in the field but shall be at least as wide as the proposed sidewalk ramp plus 1-foot on each side.

The removed curb and gutter section shall be replaced with material, equal to what was removed and seal joint with hot poured rubber asphalt.

The CONTRACTOR shall install 5/8-inch diameter self tapping hook bolts, in the existing concrete pavement as indicated on the Plans prior to placing concrete for the removed curb and gutter section.

- C. Placement of Forms - Wood forms, straight and free from warp, of nominal depth may be used for sidewalk sections less than 25 feet in length.

Forms shall be staked to line and grade in a manner that will prevent deflection and settlement.

When unit slab areas are to be poured, slab division forms shall be so placed that the slab division joints will be straight and continuous.

Forms shall be set for sidewalk ramps to provide a grade toward the centerline of the right-of-way in accordance with current standards. The grade shall be uniform, except as may be necessary to eliminate short grade changes.

Forms shall be oiled before placing concrete. Forms shall remain in place at least 12 hours after the concrete is placed. There shall be sufficient forms placed ahead of the pouring operations to maintain uninterrupted placement of concrete.

The use of slip form pavers can be allowed when approved by the City in lieu of the construction system described above.

- D. Joints - Transverse and longitudinal expansion and control joints shall be constructed at the locations specified herein, or as indicated on the Plans or as directed by the City.

The transverse expansion joints shall be placed for the full width and depth of the new Work. The transverse expansion joints placed against any existing pavement shall be a minimum of six (6) inches deep but no less than the thickness of the concrete being placed.

Longitudinal expansion joints shall conform to the same requirements as transverse expansion joints.

Joints shall be constructed true to line with their faces perpendicular to the surface of the sidewalk. The top shall be slightly below the finished surface of the sidewalk. Transverse joints shall be constructed at right angles to the centerline of the sidewalk and longitudinal joints shall be constructed parallel to the centerline or as directed by the City.

Unless otherwise specified in the Plans or unless directed by the City, when the sidewalk is constructed in partial width slabs, transverse joints in the succeeding slab shall be placed in line with like joints in the adjacent slab. Also in the case of widening existing sidewalks, transverse joints shall be placed in line with like joints in the existing sidewalk.

Transverse expansion joints, 1/2-inch thick, shall be placed through the sidewalk at uniform intervals of not more than 50 feet and elsewhere as shown on the Plans, or as directed by the City.

Expansion joints, 1/2-inch thick, shall be so placed between the sidewalk and back of abutting parallel curb, buildings or other rigid structures, concrete driveways and driveway approaches. When directed by the City, the expansion joint between sidewalks and buildings shall be placed 1-foot from the property line and parallel to it.

Control joints shall be formed every five (5) feet and shall be produced by use of slab divisions forms extending to the full depth of the concrete or by cutting joints in the concrete, after floating, to a depth equal to 1/4 the thickness on the sidewalk. The cut joints shall not be less than 1/8 inch or more than 1/4 inch in width and shall be finished smooth and shall be at right angles to the centerline on the sidewalk.

- E. Placing and Finishing Concrete - All concrete shall be placed on a prepared smooth, leveled, rolled and properly compacted subgrade as indicated on the Plans. The surface of the subgrade shall be moist with no visible water present prior to placement of the concrete.

The concrete shall be deposited, in a single layer, therein to the depth specified in the Plans or in the Proposal. The concrete shall be thoroughly spaded or vibrated and compacted to fill in all voids along the forms and joints. The concrete shall be struck off with a strike board until all voids are removed and the surface has the required grade and cross section as indicated on the Plans, or as directed by the City.

The surface of the concrete shall be floated just enough to produce a smooth surface free from irregularities. All edges and joints shall be rounded with an edger having a 1/4-inch radius.

The surface of sidewalks, driveways and approaches shall be broomed to slightly roughen the surface. The surface of the sidewalk ramps shall be textured with a coarse broom

transversely to the ramp slope, and shall be coarser roughened than the remainder of the sidewalk.

- F. Curing - After finishing operations have been completed and immediately after the free water has left the surface, the surface of the concrete (and sides if slip-forming is used) shall be completely coated and sealed with a uniform layer of white membrane curing compound. The curing compound shall not be thinned. The curing compound shall be applied at the rate of one gallon per 200 square feet of surface.
- G. Barricades - Suitable barricades and lights shall be placed around all newly poured sidewalks, sidewalk ramps, driveways, driveway approaches and curb and gutter sections in order to protect the new Work from damage from pedestrians, vehicles and others until the concrete has hardened.

Barricades shall be left in place for a minimum of two (2) days, except for driveway approaches and curb and gutter sections. Barricades shall remain in place for a minimum of three (3) days.

Any concrete that suffers surface or structural damage shall be removed and replaced by the CONTRACTOR at his expense.

#### H. Protection

- 1. Against Rain - The CONTRACTOR shall adequately protect new concrete from the effects of rain before the concrete has sufficiently hardened. For this Work the CONTRACTOR shall have available on the job site at all times enough burlap or 6-mil thick polyurethane film to cover and protect one day's work. When rain appears imminent, all operations shall stop and personnel shall begin covering. As soon as the rain ceases, the concrete shall be uncovered and the surface burlap dragged where necessary. Curing compound shall be applied to any areas where the compound has been disturbed or washed away.
  - 2. Concrete Temperature Limitations - Concrete shall not be placed when the temperature of the concrete at the point of placement is above 90 degrees F.
- I. Cleanup - After the concrete has gained sufficient strength, but no sooner than within 12 hours, the fixed forms shall be removed and the spaces on both sides shall be immediately backfilled with sound earth of topsoil quality. The backfill shall be compacted, leveled and left in a neat, workmanlike condition.
  - J. Gutters and Curbs - Gutters and Curbs shall be constructed in accordance with Section 520, FDOT Standard Specifications for Road and Bridge Construction, latest edition, including supplements.

### **3.04 Field Quality Control**

- A. Concrete Delivery Ticket - A ticket system shall be used for recording the transportation of concrete from the batching plant to point of delivery. This ticket shall be issued to the truck operator at the point of loading and given to the City upon delivery.
- B. Concrete Delivery Rejection - Concrete not permitted for inclusion in the Work by the City shall be removed from the site. Rejection of concrete will be determined through Field Quality Control and elapsed time from mixer charging to delivery.

C. Concrete Testing at Placement - Tests shall be made of each batch of concrete delivered, each 50 cubic yards, or whenever consistency appears to vary. The sampling and testing of slump, air content and strength will be performed at no additional cost to the City.

1. Sampling - Composite samples shall be secured in accordance with the Method of Sampling Fresh Concrete, ASTM C172.
2. Slump Test - Test shall be in accordance with ASTM C143. The CONTRACTOR shall use the least slump possible consistent with workability for proper placing of the various classifications of concrete.

Structural concrete for walls and slabs shall be placed, by means of vibratory equipment, with a slump of four (4) inches.

A tolerance of up to 1-inch above the indicated maximum shall be allowed for individual batches provided the average for all batches or the most recent ten (10) batches tested, whichever is fewer, does not exceed the maximum limit.

3. Air Content - Determine air content of normal weight concrete in accordance with Method of Test for Air Content of Freshly Mixed Concrete by the Pressure Method, ASTM C23 1, or by the volumetric method, ASTM C 173, for each strength test.
4. Compressive Strength - Make two (2) strength tests of three (3) samples each for each 50 cubic yards, or fraction thereof, of each mix design of concrete placed in any one (1) day.
  - a. Handling Samples - Mold and cure three (3) specimens from each sample in accordance with Method of Making and Curing Concrete Test Specimens in the Field, ASTM C31. Any deviations from the requirements of this Standard shall be recorded in the test report.
  - b. Testing - Test specimens in accordance with Method of Test for Compressive Strength of Cylindrical Concrete Specimens, ASTM C39. One (1) specimen shall be tested at seven (7) days for information and two (2) shall be tested at 28 days for acceptance. The acceptance test results shall be the average of the strengths of the two (2) specimens tested at 28 days. If one (1) specimen in a test manifests evidence of improper sampling, molding or testing, it shall be discarded and the strength of the remaining cylinder shall be considered the test result. Should both specimens in a test show any of the above defects, the entire test shall be discarded.
  - c. Acceptance of Concrete - The strength level of the concrete will be considered satisfactory so long as the averages of all sets of three consecutive strength test results equal or exceed the specified 28-day strength and no individual strength test result falls below the specified 28-day strength by more than 500 psi.

If the strength test is not acceptable, further testing shall be performed to qualify the concrete.
  - d. Concrete Temperature - Determine the temperature of concrete sample for each strength test.

**End of Section**

**Section 02940  
Sodding**

**Part 1 General**

**1.01 Description**

- A. Scope - This Section includes sodding complete with earth bed preparation, providing and placing topsoil, compacting and finishing topsoil, furnishing and placing sod, furnishing and placing stakes, watering sod, rolling and tamping sod, mowing sod, replacing defective or deteriorated sod and maintenance and care of sod in place.

**1.02 Quality Assurance**

A. Requirements of Regulatory Agencies

1. State Department of Agriculture - Comply with the applicable requirements of the Florida Pesticide Application Act of 1974 with Federal Environmental Pesticides Control Act of 1972 and Florida Department of Agriculture nursery grown sod.

**1.03 Submittals**

- A. Growers Certificate - Where applicable, submit copies of Sod Growers Certificate to the City indicating nursery from which sod was taken, grass species and percentage in accordance with the Florida Pesticide Application Act of 1974 with Federal Environmental Pesticides Control Act of 1972 and Florida Department of Agriculture Regulations referenced above in Article 1.02.A of this Section.
- B. Topsoil Borrow Pit Agreements - When requested by the City, submit evidence of topsoil borrow pit agreement for pits used by the CONTRACTOR.

**1.04 Product Delivery, Storage, and Handling**

- A. Delivery of Materials - Sod shall be delivered to the project site on suitably approved wooden pallets. Sod shall be delivered in manageable squares and the amount of sod delivered shall not exceed that which can be installed in one (1) 24-hour period. Sod that has been damaged during delivery will be rejected.
- B. Storage - Store sod in such a manner as to protect roots and grass material from exposure to wind and sunlight, freezing or other injury. Sod shall be kept moist during storage, under shade or covered with moistened burlap. Sod that has been damaged or has deteriorated because of storage will be rejected.
- C. Handling - Sod shall be handled in a manner to prevent breaking or other damage. Sod shall not be handled by pitchforks 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 will be rejected.

**1.05 Job Conditions**

A. Environmental Requirements

1. Soil Moisture Conditions For Sod Cutting - Perform sod cutting and removal during soil moisture conditions as specified under paragraph 3.02.B of this Section.

2. Seasonal Limitations - Sod shall not be placed during drought nor between the dates of June 1 and August 15, inclusive, unless directed by the City.
3. Temperature Limitations - Sod shall not be placed when the ambient air temperature is below 32 degrees F.

B. Protection

1. Signs and Barricades - Provide suitably approved warning signs and barricades for protection of new sodding from pedestrian or vehicular traffic. Protect all newly sodded areas during the progress of the Work and until the completion of the turf establishment period.
2. Adjacent Construction - Protect all adjacent construction from topsoil spills and perform such cleanup of affected surfaces before it becomes compacted by traffic.

- C. Planting Schedule - The CONTRACTOR will be required to have a minimum of 90% of the sod placed at least one (1) month prior to final acceptance of the complete Project to insure adequate rooting of the sod.

**Part 2 Products**

**2.01 Materials**

A. Sod

1. General - Dense, well-rooted growths of Bahia or St. Augustine sod indigenous to the general locality where it is proposed for use, free of noxious weed, relatively free of weeds and undesirable plants, large stones, roots and other material which might be detrimental to the growth, development or future maintenance of the sod.
2. Nursery Sod - Nursery sod, where used, shall have been grown in a prepared seed bed and regularly fertilized and maintained according to established practices for at least two (2) years before cutting.
3. Field or Salvage Sod - Salvage sod existing on areas to be disturbed in construction or field grown sod meeting the requirements of paragraph 2.01.A.1 of this Section shall be used as indicated on the Plans or as directed by the City.
2. Harvest Heights - Sod shall be of uniform height when harvested. Vegetation more than five (5) inches in height shall be mowed to a height of three (3) inches or less. When the sod is harvested (cut), the height of the grasses shall be as follows:

Field Grown Sod - 2 to 3 inches  
Nursery Grown Sod - 1 to 2 inches

3. Harvest Thickness - Sod when harvested shall have the following average thickness:

Field Grown Sod - 2 inches  
Nursery Grown Sod - 1 inch

- B. Topsoil - Topsoil shall be the top 12 inches or less of soil taken from the top of the natural and undisturbed ground level and shall be a loam containing a sufficient amount of organic matter to attain proper texture. Topsoil shall be free of undesirable grasses, weed roots or other unsuitable material. All topsoil shall be subject to acceptance by the City. The

CONTRACTOR shall obtain his own topsoil borrow pit source and shall obtain all necessary permits and agreements for the use of such borrow pits at his own expense.

### **Part 3 Execution**

#### **3.01 CONTRACTOR'S VERIFICATION**

- A. Earth Bed - Prior to placing any topsoil, verify that earth bed in areas to receive sod have been completely stabilized to prevent settling and that grades have been made smooth, uniform and parallel to the finished grades and cross sections shown on the Plans. Ascertain that the tops and bottoms of all slopes are rounded off to form vertical curves and have been found acceptable to the City. Do not place topsoil until all earth bed conditions are accepted.
- B. Topsoil - Prior to placing sod, verify that topsoil has been placed on the prepared earth bed to the proper depths shown on the Plans and as specified herein. Do not place any sod until topsoil conditions are satisfactory.

#### **3.02 Preparation**

- A. Off-Site Source Inspection - Prior to commencement of sodding operations, notify the City of the off-site sources from which sod is to be furnished. The City, at his discretion, will inspect the sod at the off-site source.
- B. Sod Harvesting - Sod shall be harvested by cutting into squares or into rectangular sections. The rectangular sections may vary in length, but shall be of equal width and of a size that will permit them to be lifted and rolled without breaking. During the stripping process and all other handling of the sod, care shall be taken to retain the native soil on the roots. Where off-site source inspection of sod is required by the City, no sod shall be harvested until such inspection is complete and sod is accepted. Sod shall be cut and moved only when the soil moisture conditions are such that favorable results can be expected. When the soil is too dry, permission to cut sod may be granted by the City only after it has been sufficiently watered to moisten the soil to the depth at which the sod is to be cut.
- C. Preparation of Subgrade - Complete all fine grading within the areas to be covered with topsoil as necessary to bring the surface of the proposed subgrade to the elevations indicated on the Plans and parallel to the proposed finished grade. The surface of the subgrade, immediately prior to being covered with topsoil, shall be raked or otherwise loosened to a minimum depth of two (2) inches to facilitate making a bond between the subsoil and the topsoil.

#### **3.03 Installation**

##### **A. Topsoil**

- 1. Placing and Spreading Topsoil - Topsoil shall be placed and spread over the area indicated on the Plans or as directed by the City. Topsoil shall be placed to a depth of three (3) inches, plus or minus 1-inch, unless otherwise indicated on the Plans. At a minimum, topsoil placed shall be sufficiently greater than that shown on the Plans so that, after natural settlement or rolling, the completed Work will conform to the lines, grades and elevations indicated on the Plans.
- 2. Finishing Topsoil - After spreading topsoil, all large lumps, rocks, roots, debris or other foreign matter shall be removed from the topsoil by raking and disposed of off the site of the Work. Spreading shall be completed in such a manner that sodding operations can

proceed without additional moving of topsoil. Topsoil furnished and placed shall be incidental to the sodding operations.

## B. Sodding

1. Placing - Sod shall be laid within 24 hours after cutting and shall be properly protected during handling and placing. Sod shall be lifted from trucks or storage piles and placed on a moist earth bed by hand, making close joints without overlapping. All gaps between sections of sod and openings at angles shall be plugged with sod. When placing sod on slopes, the Work shall begin at the base of the slope and progress upward by carefully placing the sod on the smooth slope, in rows, with the lengths running at right angles to the slope. The transverse joints of sod strips shall be staggered and the sod carefully laid to produce tight joints. When the top of slopes are reached, the sod shall be carried back at least two (2) feet over the crest and trimmed to a line which is parallel to the top of the bank. The areas back of the crest shall have been previously graded and the surface of the sod, when placed, shall be two (2) inches below the level of this area and covered with a layer of topsoil at least two (2) inches in depth and thoroughly compacted in a manner that will conduct the surface water from runoff over the edge of the sod.
2. Rolling - Rolling of the sod shall be done after initial watering and after the water has sufficiently soaked into the ground so that distortion of the sod surface and excessive compaction of the sod and the soil will not occur. The roller used shall be a water filled type at least three (3) feet wide and 30 inches in diameter and shall weigh approximately 300 pounds. Roller shall be adequate to cause sod to make firm contact with the soil. A tamper, acceptable to the City, shall be used to press the sod firmly in place in areas not accessible to a roller. After tamping or rolling, the sod shall present a smooth, even surface, free from bumps or depressions.
3. Defective Materials - Damaged, deteriorated or otherwise defective sod will be rejected by the City. Sod will be rejected which has been permitted to dry out or become otherwise injured during transportation handling, storage or placing.

## C. Turf Establishment

1. Watering - After laying, the sod shall be watered until saturated. Sod shall be watered whenever excessive drying is evident during the period set for establishment. Sufficient water shall be applied to wet the sod through completely and to wet at least two (2) inches of the sod bed each time watering is required. Watering shall be done in a manner that will prevent erosion due to the application quantities of water. The watering equipment shall be of a type that will prevent damage to the finished surfaces of topsoil and sod. The sod shall be watered as required until firmly knit in place and in a vigorous growing condition.
2. Mowing - The sodded areas shall be mowed with mowing equipment acceptable to the City. Sod shall be mowed to a height of two (2) inches whenever the average height of the grass becomes four (4) inches. When the amount of cut grass is heavy, the cuttings shall be removed from the sodded areas to prevent destruction of the underlying turf. Where weeds or other undesirable vegetation threaten to smother the planted species, such vegetation shall be mowed or, in the case of rank growths, uprooted, raked and removed from the area. All mowed cuttings, uprooted or raked vegetation, shall be legally disposed of away from the Project Site.

3. Establishment Period - The establishment period shall extend for a period from the time of sodding until the sodded area have received final acceptance of the entire Work covered by the Contract. The minimum period shall be 30 days.

**End of Section**