100% SPECS

SPECIFICATIONS & CONTRACT DOCUMENTS

FOR THE

PANAMA CITY BEACH

ALF COLEMAN ROAD

PREPARED FOR

CITY OF PANAMA CITY BEACH, FLORIDA

MARK SHELDON, MAYOR
PAUL CASTO, COUNCIL MEMBER, WARD 1
PHIL CHESTER, COUNCIL MEMBER, WARD 2
GEOFF MCCONNELL, COUNCIL MEMBER, WARD 3
MICHAEL JARMAN, COUNCIL MEMBER, WARD 4
DREW WHITMAN, CITY MANAGER

FPID NO. 441742-2-58-01 & 441742-2-58-02
FEBRUARY 2022

PREPARED BY: GREENMAN-PEDERSON, INC.

CITY OF PANAMA CITY BEACH
ALF COLEMAN ROAD

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SECTION 00010

ADVERTISEMENT FOR BIDS

NOTICE TO RECEIVE SEALED BIDS

PCB22-41 ITB ALF COLEMAN ROAD

FPID NO. 441742-2-58-01 & 441742-2-58-02

This project includes the installation of concrete sidewalks and street lighting along with the reconstruction of Alf Coleman Road from Panama City Beach Parkway to Hutchison Boulevard, including storm sewer piping, inlet structures and junction boxes and utilities. This project is approximately 3,150 feet in length.

Bid Documents may be downloaded online at www.demandstar.com or the City's website at https://www.pcbfl.gov/about-us/rfp-posts-list or by contacting the Purchasing Manager at purchasing@pcbfl.gov starting on March 15, 2022. The bid must conform to Section 287.133(3) Florida Statutes, with respect to Public Entity Crimes.

Bids will be received until **11:00 AM Central Time**, **April 18, 2022** at **City of Panama City Beach City Hall, 17115 Panama City Beach Parkway, Panama City Beach, Florida** and will be opened and read publicly immediately thereafter. All Bids shall be submitted in an envelope clearly marked "Sealed Bid **– PCB22-41 ITB ALF COLEMAN ROAD**. A Bid Bond in the amount of 5% of the total amount of the Bid shall accompany the Bid. The City of Panama City Beach ("City") reserves the right to reject any and all Bids. All Bids shall be firm (including all labor and material prices) for a period of 30 days after opening.

All Bidders shall be Florida Department of Transportation prequalified in flexible pavement and sidewalk and must provide proof of prequalification prior to Notice of Award.

The City shall award the Contract to the lowest responsive and responsible Bidder.

A mandatory Pre-Bid meeting will be held at **2:00 PM (CDT) on March 29, 2022** in the Panama City Beach Council Chamber, 17007 Panama City Beach Parkway, Panama City Beach, Florida 32413. Point of Contact will be Tina Kunst, Purchasing Manager. at (850) 233-5100 or Email purchasing@pcbgov.com.

Virtual participation for the mandatory pre-bid meeting may be acceptable through Zoom but must be requested 48 hours in advance.

The Zoom link for the meeting is:

Join Zoom Meeting
Topic: My Meeting
Time: Mar 29, 2022 02:00 PM Central Time (US and Canada)
Join Zoom Meeting
https://us06web.zoom.us/j/89874850520?pwd=MHFuL0NQSXhlUzgyK0k5R2EwK3Rpdz09
Meeting ID: 898 7485 0520
Passcode: 709157
One tap mobile
+13126266799,,89874850520#,,,,*709157# US (Chicago)
+19292056099,,89874850520#,,,,*709157# US (New York)
Dial by your location
+1 312 626 6799 US (Chicago)
+1 929 205 6099 US (New York)
+1 301 715 8592 US (Washington DC)
+1 346 248 7799 US (Houston)
+1 669 900 6833 US (San Jose)
+1 253 215 8782 US (Tacoma)
Meeting ID: 898 7485 0520
Passcode: 709157
Find your local number: https://us06web.zoom.us/u/kbyLAIZeGL

The following requirements required and recommended.

System requirements
An internet connection – broadband wired or wireless (3G or 4G/LTE)
Speakers and a microphone – built-in, USB plug-in, or wireless Bluetooth
A webcam or HD webcam - built-in, USB plug-in, or:

- An HD cam or HD camcorder with a video-capture card* Note: See the list of supported devices.
- Virtual camera software for use with broadcasting software like OBS or IP cameras* Note: For macOS, Zoom client 5.1.1 or higher is required.

Supported operating systems
macOS X with macOS 10.9 or later
Windows 11* Note: Windows 11 is supported on version 5.9.0 or higher.
Windows 10* Note: Devices running Windows 10 must run Windows 10 Home, Pro, or Enterprise. S Mode is not supported.
Windows 8 or 8.1
Windows 7
Ubuntu 12.04 or higher
Mint 17.1 or higher
Red Hat Enterprise Linux 6.4 or higher
Oracle Linux 6.4 or higher
CentOS 6.4 or higher
Fedora 21 or higher
OpenSUSE 13.2 or higher

ArchLinux (64-bit only)

Supported tablet and mobile devices
iOS and Android devices
Blackberry devices
Surface PRO 2 or higher, running Windows 8.1 or higher
o Notes: Tablet PCs running Windows 10 must run Windows 10 Home, Pro, or Enterprise. S Mode is not supported. Tablet PCs only support the desktop client.

Supported browsers
Windows: Internet Explorer 11+, Edge 12+, Firefox 27+, Chrome 30+
macOS: Safari 7+, Firefox 27+, Chrome 30+
Linux: Firefox 27+, Chrome 30+

The City is not responsible for any technical difficulties that may result from virtual attendance and the City will not postpone or delay the pre-bid conference due to technical difficulties associated with virtual attendance. Any technical questions may be addressed to Jason.pickle@pcbfl.gov. Virtual attendees are solely responsible for virtual attendance and must attend the entire pre-bid meeting.

Each bidder must comply with all applicable state and local laws concerning licensing, registration, and regulations of contractors doing business in Florida.

Advertisement Dates: March 21, 2022 and March 28, 2022

Notice to Publisher – Please forward the original "Proof of Publication" and the invoice to:
City of Panama City Beach
17007 Panama City Beach Parkway
Panama City Beach, Florida 32413

[END OF SECTION 00010]

SECTION 00020

INFORMATION FOR BIDDERS

BIDS will be received by City of Panama City Beach City Hall (herein called the "OWNER"), at 17007 Panama City Beach Parkway, Panama City Beach, Florida 32413 until **11:00 AM Central Time, April 18, 2022** then opened and read publicly promptly thereafter.

Each BID must be submitted in a sealed envelope addressed to City of Panama City Beach, 17007 Panama City Beach Parkway, Panama City Beach, Florida 32413. Each sealed envelope containing a BID must be plainly marked on the outside as "SEALED BID **PCB22-41 ITB Alf Coleman Road** and the envelope should bear on the outside the BIDDER'S name, address and license number if applicable, and the name of the project for which the BID is submitted.

Bidders are advised that http://www.demandstar.com is one of the sourcing methods of notices, addendum, bids and other documented communications. City of Panama City Beach is not under any obligation and does not guarantee that Bidders will receive email notifications concerning the posting, amendment or close of solicitations. Vendors are responsible to check http://www.demandstar.com for information and updates concerning solicitations or contact the Purchasing Manager on the information listed above.

All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed and executed when submitted. **Paper bids require two complete BID responses (One (1) original and one (1) copy) along with one (1) electronic copy (USB Preferred).**

A complete BID response shall consist of:

1. Bid Proposal Form – Section 00030
   - Includes addenda acknowledgement
2. Bid Bond – Section 00040
3. An executed copy of the Statement Under Section 287.087, Florida Statutes, On Preference to Businesses With Drug-Free Workplace Programs – Section 0095
4. Trench Safety Act Compliance Document – Section 00096
5. Public Entity Crimes Statement – Section 00097
6. Other Required Documents – Section 00098
7. Sales Tax Exemption Addendum – Section 000808
8. Certification of Current Capacity
9. DBE Bid Package Information
10. FHWA Form 1273
11. Certification of Disclosure of Lobbying Activities
12. Disclosure of Lobbying Activities
13. Non-Collusion and Declaration of Compliance with 49 CFR
14. Certification Regarding Suspension and Debarment

The OWNER may waive any informalities or minor defects or reject any and all BIDS. Any BID may be withdrawn by the BIDDER prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified shall not be considered, no exceptions. No BIDDER may withdraw a BID within 30 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period the time may be extended by mutual AGREEMENT between the OWNER and the apparent successful BIDDER.

This is a Lump Sum Contract. BIDDERS must satisfy themselves of the accuracy of any estimated quantities in the BID Schedules or Contract Documents by examination of the site and a review of the drawings and specifications including any ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done. **The CONTRACTOR shall visit the entire site before submitting a BID.**

The OWNER shall provide to BIDDERS prior to BIDDING, information which is pertinent to, and delineates and describes, the land upon which the WORK is to be performed, including its Ownership and rights-of-way acquired or to be acquired.

If necessary, ADDENDA will be issued to the Contract Documents. The BIDDERS must submit all questions, if any, in writing at least seven (7) days prior to the BID date.

The CONTRACT DOCUMENTS contain the provisions required for construction of the WORK. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the successful BIDDER or relieve the successful BIDDER from fulfilling all of their obligations under the contract. No Bid shall be considered or accepted unless at the time the Bid is submitted to OWNER the same shall be accompanied by a cashier's check, a cash bond posted with the City Clerk, a certified check payable to OWNER on some bank or trust company located in the State of Florida insured by the Federal Deposit Insurance Corporation, or Bid Bond, in an amount not less than 5% of **the bidder's maximum possible award (base bid plus all add alternates)** (collectively referred to herein as the "Bid Deposit"). The Bid Deposit shall be retained by OWNER as liquidated damages if the successful BIDDER fails to execute and deliver to OWNER the unaltered AGREEMENT, or fails to deliver the required Performance and Payment Bonds or Certificates of Insurance, all within ten (10) calendar days after receipt of the Notice of Award. Bid Bonds shall be executed by a corporate surety licensed under the laws of the State of Florida to execute such bonds, with conditions that the surety will, upon demand, forthwith make payment to OWNER upon said bond.

As soon as the BID prices have been compared, the OWNER will return the BID DEPOSITS (if requested) of all except the three lowest responsive and responsible BIDDERS. When the required AGREEMENT has been executed by the successful BIDDER and delivered to OWNER, together with the required Certificate(s) of Insurance, PERFORMANCE BOND AND PAYMENT BOND, the BID DEPOSITS of the successful BIDDER and two remaining unsuccessful BIDDERS will be returned (if requested).

A PERFORMANCE BOND and a PAYMENT BOND each in the amount of 100 percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract.

Attorneys-in-fact who sign BID BONDS or PAYMENT BONDS and PERFORMANCE BONDS must file with each BOND a certified and effective dated copy of their power of attorney.

The party to whom the contract is awarded will be required to obtain the required insurance, PAYMENT BOND and PERFORMANCE BOND, execute the AGREEMENT and deliver to OWNER said executed AGREEMENT together with the required Certificate of Insurance and the PERFORMANCE BOND and PAYMENT BOND, within ten (10) calendar days after the date the NOTICE OF AWARD is delivered to the BIDDER; the required forms for such AGREEMENT being set forth in Section 00050, the required form for the PERFORMANCE BOND being set forth in Section 00060, the required form for the PAYMENT BOND being set forth in Section 00070 and the required form for the Certificate of Insurance being set forth in Section 00099. In case of failure of the successful BIDDER to execute and deliver to OWNER, within said ten (10) day period the required AGREEMENT, together with the required Certificates of Insurance, PERFORMANCE BOND and PAYMENT BOND, the OWNER may consider the BIDDER in default, in which case the entire amount of the BID DEPOSIT accompanying the BID shall be paid to the OWNER. The BID DEPOSIT shall be retained by OWNER as liquidated damages if the successful Bidder fails to execute and deliver to OWNER the unaltered AGREEMENT, or fails to deliver the required Performance and Payment Bonds or Certificate(s) of Insurance, all within ten (10) calendar days after receipt of the Notice of Award.

If the OWNER intends to accept the successful BIDDER'S BID and enter into the contract with them, the OWNER, within thirty (30) days (or such longer period of time the OWNER and successful BIDDER may mutually agree to in writing) of receipt of an acceptable PERFORMANCE BOND, PAYMENT BOND, Certificate(s) of Insurance, and AGREEMENT signed by the successful BIDDER to whom the AGREEMENT was awarded, shall sign the AGREEMENT and return to such party an executed duplicate of the AGREEMENT. BIDDER acknowledges and agrees that unless and until the OWNER executes the AGREEMENT and returns the executed copy to the BIDDER, no contract or AGREEMENT between the OWNER and BIDDER shall exist. Should the OWNER not execute the AGREEMENT within such period, the BIDDER shall provide OWNER an additional seven days written notice of BIDDER'S intent to withdraw its signed copy of the AGREEMENT. If OWNER fails to execute the AGREEMENT within such seven days, the AGREEMENT shall be deemed withdrawn and BIDDER shall be released from its BID as of the date of the written notice.

All Bidders shall be Florida Department of Transportation prequalified and must include with their bid proposal a copy of their Certification of Current Capacity (Form 375-020-22) and Status of Contracts on Hand (Form 375-020-21).

The OWNER or its agents may make such investigations as deemed necessary to determine the ability of each BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER and its agents all such information and data for this purpose as the OWNER or its agents may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the AGREEMENT and to complete the WORK contemplated therein.

A conditional or qualified BID may be rejected by OWNER.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the AGREEMENT, PLANS, SPECIFICATIONS, and other CONTRACT DOCUMENTS, prior to submitting their BID. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to its BID.

Further, the BIDDER agrees to abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the equal opportunity clause set forth in the GENERAL CONDITIONS or any Supplemental Conditions.

No member, officer or employee of the CONTRACTOR or SUBCONTRACTOR or of the locality during his tenure or for 2 years thereafter shall have any interest, direct or indirect, in this contract or the proceeds thereof.

The successful BIDDER of each contract shall supply the names and addresses of major material SUPPLIERS and SUBCONTRACTORS when required to do so by the OWNER.

Each BIDDER shall provide a separate line item in their BID identifying the cost of compliance with the applicable trench safety standards set forth in the Trench Safety Act.

END OF SECTION 00020

SECTION 00030

BID PROPOSAL FORM

This proposal of _____ (hereinafter called "BIDDER"), organized and existing under the laws of the State of _____, doing business as _____(a corporation, a partnership or an individual), whose Florida contractor's license number is _____ is hereby submitted to the CITY OF PANAMA CITY BEACH (hereinafter called "OWNER").

In compliance with the requirements of the Advertisement for Bids, BIDDER hereby proposes to perform all WORK for the ALF COLEMAN PROJECT in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein, and at the prices stated below.

By submission of this BID, each BIDDER certifies, and in the case of a joint BID, each party thereto certifies as to its own organization, that this BID has been arrived at independently, without consultation, communication, or AGREEMENT as to any matter relating to this BID with any other BIDDER or with any competitor.

BIDDER hereby agrees to commence WORK under the CONTRACT DOCUMENTS within ten (10) calendar days after the NOTICE TO PROCEED to be issued by Owner in writing and achieve Substantial Completion of the WORK within 270 consecutive calendar days thereafter. Final Completion of the WORK shall be achieved by BIDDER within the calendar days specified in the General Conditions after the date of Substantial Completion.

BIDDER further agrees to pay as liquidated damages, the sum of $1,690_ for each consecutive calendar day that expires after the Contract Time until Substantial Completion of the WORK is achieved as provided in Section 15 of the General Conditions.

BIDDER acknowledges receipt of the following ADDENDUM:

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

BASE BID

BIDDER agrees to perform all the WORK described in the CONTRACT DOCUMENTS for the following lump sum: _____.

The BIDDER proposes and agrees, if this Proposal is accepted, to contract with the OWNER in the required form of the AGREEMENT, Section 00050, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary to complete the WORK in full and in accordance with the shown, noted, described and reasonably intended requirements of the CONTRACT DOCUMENTS according to the following schedule:

[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]

441742-2-58-01							
FINAL QUANTITY	UNIT	PAY ITEM / ITEM CODE			PAY ITEM DESCRIPTION	UNIT PRICE	EXTENDED PRICE
ROADWAY							
1.000	LS	101	1		MOBILIZATION		
1.000	LS	102	1		MAINTENANCE OF TRAFFIC (157 Days)		
4,500.000	ED	102	60		WORK ZONE SIGN		
3.000	EA	102	61		BUSINESS SIGN		
1,260.000	ED	102	74	1	CHANNELIZING DEVICE - TYPES I, II, DI, VP, DRUM, OR LCD		
1,260.000	ED	102	74	2	CHANNELIZING DEVICE - TYPES III, 6'		
138.000	LF	102	74	7	CHANNELIZING DEVICE - PEDESTRIAN LCD (LONGITUDINAL CHANNELIZING DEVICE)		
360.000	ED	102	99		PORTABLE CHANGEABLE MESSAGE SIGN, TEMPORARY		
3,871.000	LF	104	10	3	SEDIMENT BARRIER		
166.000	LF	104	11		FLOATING TURBIDITY BARRIER		
20.000	EA	104	18		INLET PROTECTION SYSTEM		
1.000	LS/AC	110	1	1	CLEARING & GRUBBING		
557.000	SY	110	4	10	REMOVAL OF EXISTING CONCRETE		
100.000	CY	120	1		REGULAR EXCAVATION		
68.600	CY	120	2	2	BORROW EXCAVATION, TRUCK MEASURE		
20.000	EA	425	1	910	INLETS, CLOSED FLUME		
1.000	EA	425	2	61	MANHOLES,P-8, <10'		
56.000	LF	430	174	118	PIPE CULV, OPT MATL,ROUND, 18" SD		
20.000	LF	430	963	1	PVC PIPE FOR BACK OF SIDEWALK, 4"		
5.000	EA	430	984	125	MITERED END SECTION, OPTIONAL ROUND, 18" SD		
984.000	LF	515	1	2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM		
3,217.000	LF	520	1	10	CONCRETE CURB & GUTTER TYPE F (MODIFIED)		
2,132.000	SY	522	1		CONCRETE SIDEWALK AND DRIVEWAYS, CONCRETE, 4" THICK		
139.000	SY	522	2		CONCRETE SIDEWALK AND DRIVEWAYS, CONCRETE, 6" THICK		
297.000	SF	527	2		DETECTABLE WARNINGS		
6.000	TN	530	3	4	RIPRAP, RUBBLE, F&I, DITCH LINING		
113.000	LF	536	73		GUARDRAIL REMOVAL		
1,479.000	SY	570	1	2	PERFORMANCE TURF, SOD		
						ROADWAY SUBTOTAL=	

SIGNING AND PAVEMENT MARKING							
7.000	AS	700	1	50	SINGLE POST SIGN, RELOCATE		
887.000	LF	711	11	123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK		
136.000	LF	711	11	125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE AND CROSSWALK		
					SIGNING AND PAVEMENT MARKING SUBTOTAL=		
					441742-2-58-01 SUBTOTAL=		

441742-2-58-02

FINAL QUANTITY	UNIT	PAY ITEM / ITEM CODE			PAY ITEM DESCRIPTION	UNIT PRICE	EXTENDED PRICE
ROADWAY							
1.000	LS	101	1		MOBILIZATION		
1.000	LS	102	1		MAINTENANCE OF TRAFFIC (157 Days)		
24.000	HR	102	14		TRAFFIC CONTROL OFFICER		
3,239.000	ED	102	60		WORK ZONE SIGN		
1.000	EA	102	61		BUSINESS SIGN		
6,461.000	ED	102	74	1	CHANNELIZING DEVICE - TYPES I, II, DI, VP, DRUM, OR LCD		
3,150.000	ED	102	74	2	CHANNELIZING DEVICE - TYPE III, 6'		
762.000	ED	102	99		PORTABLE CHANGEABLE MESSAGE SIGN, TEMPORARY		
314.000	ED	102	104		TEMPORARY SIGNALIZATION AND MAINTENANCE, INTERSECTION		
314.000	ED	102	107	1	TEMPORARY TRAFFIC DETECTION AND MAINTENANCE, INTERSECTION		
65.000	LF	104	10	3	SEDIMENT BARRIER		
57.000	LF	104	11		FLOATING TURBIDITY BARRIER		
1.090	LS/AC	110	1	1	CLEARING & GRUBBING		
269.000	SY	110	4	10	REMOVAL OF EXISTING CONCRETE		
198.700	CY	120	1		REGULAR EXCAVATION		
4,472.800	CY	120	2	2	BORROW EXCAVATION, TRUCK MEASURE		
442.500	CY	120	4		SUBSOIL EXCAVATION		
5,365.000	SY	160	4		TYPE B STABILIZATION		
4,884.000	SY	285	706		OPTIONAL BASE, BASE GROUP 06		
12,837.000	SY	327	70	5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH		
4,790.200	TN	334	1	52	SP ASPH CONC, TRAFFIC B, PG76-22		
893.200	TN	337	7	80	ASPH CONC, FRICTION, FC 9.5, PG76-22		
335.400	CY	400	0	11	CONC CLASS NS, GRAVITY WALL (SCHEME II)		
33.000	CY	400	1	2	CONC CLASS I, ENDWALLS		
5.000	EA	425	1	521	INLETS, DT BOT, TYPE C, <10'		
1.000	EA	425	1	551	INLETS, DT BOT, TYPE E, <10'		

2.000	EA	425	2	61	MANHOLES,P-8, <10'		
2.000	EA	425	2	91	MANHOLES,J-8,<10'		
5.000	EA	425	6		VALVE BOXES, ADJUST		
288.000	LF	430	174	118	PIPE CULV, OPT MATL,ROUND, 18" SD		
4.000	LF	430	175	115	PIPE CULV, OPT MATL,ROUND, 15" S/CD		
76.000	LF	430	175	118	PIPE CULV, OPT MATL,ROUND, 18" S/CD		
922.000	LF	430	175	124	PIPE CULV, OPT MATL, ROUND 24" S/CD		
240.000	LF	430	175	242	PIPE CULV, OPT MATL,OTHER SHAPE - ELLIP/ARCH, 42" S/CD		
2.000	EA	430	984	125	MITER END SECTION, OPTION ROUND, 18" SD		
142.000	LF	436	1	2	TRENCH DRAIN, SPECIAL		
2,241.000	LF	520	1	10	CONCRETE CURB & GUTTER TYPE F (MODIFIED)		
8.000	LF	520	5	26	TRAFFIC SEPARATOR		
49.000	SY	522	1		CONCRETE SIDEWALK & DRIVEWAYS, 4” THK		
38.000	LF	536	73		GUARDRAIL REMOVAL		
2,721.000	SY	570	1	2	PERFORMANCE TURF, SOD		
					ROADWAY SUBTOTAL=		

UTILITIES							
2.000	EA	635	2	11	PULL & SPLICE BOX, F&I, 13"x24" COVER SIZE		
965.000	LF	1050	16	4	UTILITY PIPE, REMOVE & DISPOSE, 8 - 19.9"		
139.000	LF	1050	18	4	UTILITY PIPE, PLUG & PLACE OUT OF SERVICE, 8-19.9"		
2.000	LF	1050	31	201	UTILITY PIPE-POLYVINYL CHLORIDE, FURNISH & INSTALL, 1"		
10.000	LF	1050	31	206	UTILITY PIPE-POLY VINYL CHLORIDE, FURNISH & INSTALL, WATER/SEWER, 6"		
249.000	LF	1050	31	208	UTILITY PIPE-POLYVINYL CHLORIDE, FURNISH & INSTALL, WATER/SEWER, 8"		
105.000	LF	1050	31	212	UTILITY PIPE-POLY VINYL CHLORIDE, FURNISH & INSTALL, WATER/SEWER, 12"		
377.000	LF	1050	42	202	UTILITY PIPE-HIGH DENSITY POLYETHYLENE, FURNISH & INSTALL, WATER/SEWER, 2"		
1,000.000	LF	1050	42	212	UTILITY PIPE-HIGH DENSITY POLYETHYLENE, FURNISH & INSTALL, WATER/SEWER, 12"		
9.000	EA	1055	31	112	UTILITY FITTINGS FOR PVC PIPE, FURNISH AND INSTALL ELBOW, 12"		
1.000	EA	1055	31	212	UTILITY FITTINGS FOR PVC PIPE, FURNISH AND INSTALL, TEE, 12"		
2.000	EA	1060	11	222	UTILITY STRUCTURE, BELOW GROUND, F&I, WATER/SEWER, >80 FT3, 6.1 - 12'		

1.000	EA	1060	11	223	UTILITY STRUCTURE, BELOW GROUND, F&I, WATER/SEWER, >80 FT3, >12'		
1.000	EA	1060	16		UTILITY STRUCTURE, BELOW GROUND, REMOVE & DISPOSE, CONTRACTOR TAKES OWNERSHIP		
1.000	EA	1080	21	600	UTILITY FIXTURE, VALVE/METER BOX, REMOVE		
2.000	EA	1080	23	112	UTILITY FIXTURE, TAPPING SADDLE/SLEEVE, FURNISH & INSTALL, 12"		
1.000	EA	1080	24	106	UTILITY FIXTURE, VALVE ASSEMBLY, FURNISH & INSTALL, 6"		
2.000	EA	1080	24	112	UTILITY FIXTURE, VALVE ASSEMBLY, FURNISH & INSTALL, 12"		
2.000	EA	1080	27	112	UTILITY FIXTURE, LINE STOP ASSEMBLY, FURNISH & INSTALL, 12"		
1.000	EA	1644	113	8	FIRE HYDRANT, FURNISH & INSTALL, STANDARD, 2 HOSE, 1 PUMPER, 6"		
1.000	EA	1644	900		FIRE HYDRANT, REMOVE		
					UTILITIES SUBTOTAL=		

SIGNING AND PAVEMENT MARKING							
4.000	AS	700	1	50	SINGLE POST SIGN, RELOCATE		
1.000	LS	710	90		PAINTED PAVEMENT MARKINGS, FINAL SURFACE		
149.000	LF	711	11	124	THERMOPLASTIC, STANDARD, WHITE, SOLID, 18" FOR DIAGONALS AND CHEVRONS		
158.000	LF	711	11	125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE AND CROSSWALK		
1.000	EA	711	11	160	THERMOPLASTIC, STANDARD, WHITE, MESSAGE		
22.000	EA	711	11	170	THERMOPLASTIC, STANDARD, WHITE, ARROW		
438.000	LF	711	11	224	THERMOPLASTIC, STANDARD, YELLOW, SOLID, 18" FOR DIAGONAL OR CHEVRON		
1.267	GM	711	16	101	THERMOPLASTIC, STANDARD-OTHER SURFACES, WHITE, SOLID, 6"		
0.031	GM	711	16	102	THERMOPLASTIC, STANDARD-OTHER SURFACES, WHITE, SOLID, 8"		
1.448	GM	711	16	201	THERMOPLASTIC, STANDARD-OTHER SURFACES, YELLOW, SOLID, 6"		
					SIGNING AND PAVEMENT MARKING SUBTOTAL=		
					441742-2-58-02 SUBTOTAL=		
					441742-2-58-01 & 441742-2-58-02 TOTAL=		

NOTE:

1. BIDS shall include sales tax and all other applicable taxes and fees. The OWNER may elect to utilize the Sales Tax Exemption Addendum (Section 00098) for material at its sole discretion.
2. BIDS shall be on the basis of a lump sum price, as noted above, and shall be the total compensation to be paid by OWNER for the complete WORK.
3. Bid unit prices and quantities, shall be applicable for any revisions to the WORK (either additions or omissions). In addition, these unit prices and quantities shall be reflected in the Schedule of Values as specified in the General Conditions. All unit prices are understood to include all associated charges for layout, insurance, taxes, field office and supervision, overhead and profit, bonds and miscellaneous items.
4. The OWNER reserves the right to reject any and all bids received.
5. **Failure to insert a bid amount for any item in the Bid Schedule will be considered grounds for the OWNER to determine the BID is non-responsive.**
6. By submitting this BID, the BIDDER and the BID BOND surety, are deemed to have stipulated and agreed that any and all claims, demands, actions or suits whatsoever, arising under this BID and/or BID BONDS, shall be subjected to the sole and exclusive jurisdiction and venue of the Circuit Court of Bay County, Florida. The BIDDER and BID BOND surety do agree, by submittal of this BID, that the sole and exclusive jurisdiction and venue in said forum is proper and appropriate since performance of the underlying contract to be awarded is to be accomplished within Bay County, Florida.

Bidder's Certification

BIDDER certifies that it has thoroughly familiarized itself with and inspected the site and has read and is thoroughly familiar with the CONTRACT DOCUMENTS. Additional site investigation, if deemed necessary by the BIDDER, shall be performed prior to BID submittal at the BIDDER's sole expense. Bidder certifies that the BID submitted is complete and is sufficient for the Bidder to provide a fully operational and working system in accordance with the CONTRACT DOCUMENTS. Furthermore, BIDDER certifies its understanding that neither the OWNER, PROJECT REPRESENTATIVE, nor ENGINEER shall provide any labor, equipment or materials of any kind, which may be required for the performance of the WORK, unless otherwise specifically directed by OWNER. Likewise, BIDDER certifies that it shall provide all equipment, materials, labor and services necessary to complete the WORK in accordance with the CONTRACT DOCUMENTS whether or not such equipment, material, labor, or service is expressly identified. Such occurrences are deemed subsidiary obligations of the contract for which complete compensation is made under the Lump Sum. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to its BID.

As required, the following documents are submitted with this Bid Proposal:

1. Bid Bond – Section 00040
2. Statement With Drug-Free Workplace Programs – Section 0095
3. Trench Safety Act Compliance Document – Section 00096
4. Public Entity Crimes Statement – Section 00097
5. Conflict of Interest – Section 00098

6. E-Verify Statement – Section 00098
7. Sales Tax Exemption Addendum – Section 000808
8. Certification of Current Capacity
9. DBE Bid Package Information
10. FHWA Form 1273
11. Certification of Disclosure of Lobbying Activities
12. Disclosure of Lobbying Activities
13. Non-Collusion and Declaration of Compliance with 49 CFR
14. Certification Regarding Suspension and Debarment

CONTRACTOR:

_____

_____
Address

_____

_____
Phone Number

_____
Date

[END OF SECTION 00030]

SECTION 00040

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned, _____, as Principal, and _____, as Surety, are hereby held and firmly bound unto the City of Panama City Beach, as OWNER, in the penal sum of _____ _____ for the payment of which, will and truly be made, we hereby jointly and severally bind ourselves, successors and assigns. Signed this ____ day of _____, 20__. The Condition of the above obligation is such that whereas the principal has submitted to the OWNER a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the construction of the **PCB22-41 ITB Alf Coleman Road Project.**

NOW THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver the AGREEMENT in the form of contract as set forth in Section 00050 (properly completed in accordance with said BID) and shall furnish a BOND for faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform its obligations created by OWNER's acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

(c) NOW, THEREFORE, if the OWNER shall accept the BID of the Principal and the Principal shall execute and deliver to OWNER the required AGREEMENT and within ten days after the date of a written Notice of Award in accordance with the terms of such BID, and within said ten days deliver to OWNER the required Certificates(s) of Insurance, together with the required Performance and Payment Bonds in an amount of 100% the total Contract Amount as specified in the Bidding Documents or Contract Documents with good and sufficient surety for the faithful performance of the AGREEMENT and for the prompt payment of labor, materials and supplies furnished in the prosecution thereof or, in the event of the failure of the Principal to execute and deliver to OWNER such AGREEMENT or to give such bond or bonds, and deliver to OWNER the required certificates of insurance, if the Principal shall pay to OWNER the fixed penal sum of $ 1,690 noted above as liquidated damages, and not as a penalty, as provided in the Instructions for Bidders, then this obligation shall be null and void, otherwise to remain in full force and effect.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may have to accept said BID; and Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

_____

Principal

_____

Surety

By:

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Florida.

[END OF SECTION 00040]

SECTION 00050

AGREEMENT

THIS AGREEMENT is made this _____day of _____, 20__ by and between THE CITY OF PANAMA CITY BEACH, FLORIDA, (hereinafter called "OWNER") and_____, doing business as a _____(an individual), or (a partnership), or (a corporation), having a business address of _____ (hereinafter called "CONTRACTOR") , for the performance of the Work (as that terms is defined below) in connection with the construction of **Alf Coleman Road** (“Project”), to be located at Panama City Beach, Florida _____, in accordance with the Drawings and Specifications prepared by **Greenman-Pederson, Inc.**. the Engineer of Record (hereinafter called “Engineer”) and all other Contract Documents hereafter specified.

OWNER and CONTRACTOR, for the consideration herein set forth, agree as follows:

1. The CONTRACTOR shall furnish, at its sole expense, all supervision, labor, equipment, tools, material, and supplies to properly and efficiently perform all of the work required under the Contract Documents and shall be solely responsible for the payment of all taxes, permits and license fees, labor fringe benefits, insurance and bond premiums, and all other expenses and costs required to complete such work in accordance with this AGREEMENT (collectively the “Work”). CONTRACTOR’S employees and personnel shall be qualified and experienced to perform the portions of the Work to which they have been assigned. In performing the Work hereunder, CONTRACTOR shall be an independent contractor, maintaining control over and having sole responsibility for CONTRACTOR’S employees and other personnel. Neither CONTRACTOR, nor any of CONTRACTOR’S sub-contractors or sub-subcontractors, if any, nor any of their respective employees or personnel, shall be deemed servants, employees, or agents of OWNER.
2. The CONTRACTOR will commence the Work required by the Contract Documents within ten (10) calendar days after the date of the NOTICE TO PROCEED to be issued by OWNER in writing within thirty (30) calendar days from the date of this

AGREEMENT and will achieve Substantial Completion of the Work within 270 days of the required commencement date, except to the extent the period for Substantial Completion is extended pursuant to the terms of the Contract Documents ("Contract Time"). Final Completion of the Work shall be achieved by CONTRACTOR within the time period set forth in Section 15.2 of Section 00100, General Conditions.

3. The CONTRACTOR agrees to pay the OWNER, as liquidated damages, the sum of $1,690 for each calendar day that expires after the Contract Time for Substantial Completion as more fully set forth in Section 15 of the General Conditions.

4. The CONTRACTOR agrees to perform all of the Work described in the Contract Documents and comply with the terms therein for the sum of $_____ as shown in the BID SCHEDULE, included within the Bid Proposal Form, as said amount may be hereafter adjusted pursuant to the terms of the Contract Documents ("Contract Price").

5. The term "Contract Documents" means and includes the following documents, all of which are incorporated into this AGREEMENT by this reference:

Section 00010	ADVERTISEMENT FOR BIDS
Section 00020	INFORMATION FOR BIDDERS
Section 00030	BID PROPOSAL FORM
Section 00040	BID BOND
Section 00050	AGREEMENT
Section 00060	PERFORMANCE BOND
Section 00070	PAYMENT BOND
Section 00080	NOTICE OF AWARD
Section 00090	NOTICE TO PROCEED
Section 00095	STATEMENT UNDER SECTION 287.087, FLORIDA STATUTES, ON PREFERENCE TO BUSINESSES WITH DRUG-FREE WORKPLACE PROGRAMS
Section 00096	TRENCH SAFETY ACT CERTIFICATE OF COMPLIANCE
Section 00097	PUBLIC ENTITY CRIMES STATEMENT
Section 00099	CERTIFICATE OF INSURANCE
Section 00100	GENERAL CONDITIONS

Section 00800 SUPPLEMENTAL CONDITIONS

LAP Division 1 Specifications

Certification of Current Capacity

DBE Bid Package Information

Exhibit A - FHWA Form 1273

Certification of Disclosure of Lobbying Activities

Disclosure of Lobbying Activities

Non-Collusion and Declaration of Compliance with 49 CFR

Certification Regarding Suspension and Debarment

DRAWINGS prepared by Greenman-Pederson, Inc.

numbered _Cover Sheet_ through_SQ-15_ and dated _2021_.

SPECIFICATIONS prepared or issued by Greenman-Pederson, Inc.
dated __2021___.

ADDENDA

No. ____, dated _____, 20___

No. ____, dated _____, 20___

No. ____, dated _____, 20___

No. ____, dated _____, 20___

The Contract Documents also includes any written amendments to any of the above signed by the party to be bound by such amendment. The Contract Documents are sometimes referred to herein as the “AGREEMENT”.

6. The OWNER will pay the Contract Price to the CONTRACTOR in the manner and at such times as set forth in Contract Documents.
7. This AGREEMENT shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.
8. This AGREEMENT shall be governed by the laws of the State of Florida.
9. All notices required or made pursuant to this AGREEMENT shall be in writing and, unless otherwise required by the express terms of this AGREEMENT, may be given either (i) by mailing same by United States mail with proper postage affixed thereto,

certified, return receipt requested, or (ii) by sending same by Federal Express, Express Mail, Airborne, Emery, Purolator or other expedited mail or package delivery, or (iii) by hand delivery to the appropriate address as herein provided. Notices to OWNER required hereunder shall be directed to the following address:

If to Owner:

City of Panama City Beach
17007 Panama City Beach Parkway
Panama City Beach, FL 32413
ATTENTION: Drew Whitman, City Manager
Fax No.: (850) 233-5108

If to Contractor:

_____
_____
_____
ATTENTION: _____
Fax No.: _____

Either party may change its above noted address by giving written notice to the other party in accordance with the requirements of this Section.

10. CONTRACTOR recognizes that OWNER is exempt from sales tax and may wish to generate sales tax savings for the Project. Accordingly, to the extent directed by and without additional charge to OWNER, CONTRACTOR shall comply with and fully implement the sales tax savings program as more fully described in the Sales Tax Exemption Addendum. If required by OWNER, the Sales Tax Exemption Addendum shall be made a part of the Contract Documents, the form of which is set forth in Section 00808.

11. The failure of OWNER to enforce at any time or for any period of time any one or more of the provisions of the AGREEMENT shall not be construed to be and shall not be a continuing waiver of any such provision or provisions or of its right thereafter to enforce each and every such provision.

12. Each of the parties hereto agrees and represents that the AGREEMENT comprises the full and entire AGREEMENT between the parties affecting the Work contemplated, and no other AGREEMENT or understanding of any nature concerning the same has been entered into or will be recognized, and that all negotiations, acts, work performed, or payments made prior to the execution hereof shall be deemed merged in, integrated and superseded by this AGREEMENT.

13. The Parties agree to comply with s.20.055(5) Florida Statutes, and to incorporate in all subcontracts the obligation to comply with s.20.055(5) Florida Statutes. "(5) It is the duty of every state officer, employee, agency, special district, board, commission, contractor, and subcontractor to cooperate with the inspector general in any investigation, audit, inspection, review, or hearing pursuant to the section"

14. Should any provision of the AGREEMENT be determined by a court with jurisdiction to be unenforceable, such a determination shall not affect the validity or enforceability of any other section or part thereof.

15. Unless the context of this AGREEMENT otherwise clearly requires, references to the plural include the singular, references to the singular include the plural. The term "including" is not limiting, and the terms "hereof", "herein", "hereunder", and similar terms in this AGREEMENT refer to this AGREEMENT as a whole and not to any particular provision of this AGREEMENT, unless stated otherwise. Additionally, the parties hereto acknowledge that they have carefully reviewed this AGREEMENT and have been advised by counsel of their choosing with respect thereto, and that they understand its contents and agree that this AGREEMENT shall not be construed more strongly against any party hereto, regardless of who is responsible for its preparation.

16. For this Project, OWNER has designated a Project Representative to assist OWNER with respect to the administration of this AGREEMENT. The Project Representative to be utilized by OWNER for this Project, shall be Dewberry Engineers, Inc., Clifford Wilson, III, P.E., Vice President.

17. CONTRACTOR acknowledges and agrees that no interruption, interference, inefficiency, suspension or delay in the commencement or progress of the Work from any cause whatever, including those for which the OWNER, PROJECT REPRESENTATIVE, or ENGINEER may be responsible, in whole or in part, shall relieve CONTRACTOR of its duty to perform or give rise to any right to damages or additional compensation from OWNER. CONTRACTOR expressly acknowledges and agrees that it shall receive no damages for delay. CONTRACTOR's sole remedy, if any, against OWNER will be the right to seek an extension to the Contract Time; provided, however, the granting of any such time extension shall not be a condition precedent to the aforementioned "No Damage For Delay" provision. This section shall expressly apply to claims for early completion, as well as to claims based on late completion. Notwithstanding the foregoing, if the Work is delayed due to the fault or neglect of OWNER or anyone for whom OWNER is liable, and such delays have a cumulative total of more than 90 calendar days, CONTRACTOR may make a claim for its actual and direct delay damages accruing after said 90 calendar

days as provided in Section 00805 Supplemental Conditions, Contract Claims and Changes. Except as expressly set forth in this section, in no event shall OWNER be liable to CONTRACTOR whether in contract, warranty, tort (including negligence or strict liability) or otherwise for any acceleration, soft costs, lost profits, special, indirect, incidental, or consequential damages of any kind or nature whatsoever.

18. INSURANCE AND INDEMNIFICATION

The CONTRACTOR shall at its expense maintain in force during the Contract Term the insurance on policies and insurers acceptable to the City as required by the City's Insurance Requirements (Section 00099). Current Insurance Service Office (ISO) policies, forms, and endorsements or equivalents, or broader, shall be used where applicable.

A. Within thirty days of the date of the Award, and thereafter upon the written request of the City, Bidder shall furnish to the City such certificates of coverage and certified copies of policies pursuant to the City's Insurance Requirements In order to satisfy this provision, the documentation required by this part must be sent to the following address: Attn: Lori Philput, Risk Manager, 17007 Panama City Beach Parkway, Panama City Beach, FL 32413.

B. Regardless of the coverage provided by any insurance, the successful Bidder shall indemnify, save harmless and defend the City, its agents, servants, or employees from and against any and all claims , liability, losses and/or causes of action which may arise from any negligent act or omission of the successful Bidder, its sub-Bidders, agents, servants or employees during the course of performing services or caused by the goods provided pursuant to these Bid documents and/or resultant contract.

C. If any third-party claim is made against the City that, if sustained, would give rise to indemnification liability of the Bidder under this Agreement, the City shall promptly cause notice of the claim to be delivered to the successful Bidder and shall afford the Bidder and its counsel, at the Bidder's sole expense, the opportunity to join in defending or compromising the claim. The covenants contained in this paragraph shall survive the termination of this Agreement.

This is a Federal-Aid Project that shall be funded, in whole or in part, with federal funding. By Executing this AGREEMENT, Contractor agrees to comply with the Federal-Aid Construction Contract requirements set forth in Form FHWA 1273, attached hereto as Exhibit A, and all applicable procedures, guidelines, manuals, standards and directives provided in the FDOT Local Agency Program Manual. The Contractor further agrees to include these requirements in all sub-contracts.

IN WITNESS WHEREOF, the parties hereto have executed or caused to be executed by their duly authorized officials, this AGREEMENT in two (2) copies each of which shall be deemed an original on the date first written above.

(SEAL)

OWNER:

CITY OF PANAMA CITY BEACH, FLORIDA

ATTEST:

BY: _____

_____
City Clerk

NAME:_____
(Please type)

TITLE:_____
_____

_____
City Attorney (as to form only)

CONTRACTOR:

ATTEST:

BY: _____

_____

NAME:_____
(Please Type)

NAME_____
(Please Type)

ADDRESS:_____

[END OF SECTION 00050]

SECTION 00060

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal and
(Corporation, Partnership, or Individual)

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto:

City of Panama City Beach
(Name of Owner)

17007 Panama City Beach Parkway, Panama City Beach, FL 32413
(Address of Owner)

hereinafter called OWNER in the total aggregate penal sum of _____ _____ Dollars ($_____) in lawful money of the United States, for payment of which, we bind ourselves, our heirs, personal representatives, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that if the Principal performs its duties, all the undertakings, covenants, terms, and conditions of that certain Contract between the Principal and the OWNER, dated the _____ day of _____, 20___, a copy of which is hereto attached and made a part hereof for the construction of:

during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the SURETY and during the guaranty period and if the PRINCIPAL 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, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said SURETY, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying same shall in any way affect its obligation on this BOND, and does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that it is expressly agreed that the BOND shall be amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the Contract Price more than twenty percent, so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the CONTRACT as so amended. The term "Amendment", wherever used in this BOND, and whether referring to this BOND, or the CONTRACT DOCUMENTS, shall include any alteration, addition, extension or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the PRINCIPAL shall abridge the rights of OWNER hereunder. The OWNER is the only beneficiary hereunder.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]

IN WITNESS WHEREOF, this instrument is executed in **three (3)** counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20___.

_____
Principal

_____
(Principal) Secretary

(SEAL) BY _____

_____
(Address)

_____

_____
Witness as to Principal

_____
(Address)

_____

_____
(Surety)

ATTEST:

_____ BY _____
Witness to Surety Attorney-In-Fact

_____ _____
(Address) (Address)

_____ _____

NOTE: Date of BOND must not be prior to date of Contract.
Contractor's Surety shall use this form along with their personal documentation.

If CONTRACTOR is partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the Project is located.

[END OF SECTION 00060]

SECTION 00070

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS: that

_____
(Name of Contractor)

_____
(Address of Contractor)

a _____, hereinafter called Principal and
(Corporation, Partnership, or Individual)

_____
(Name of Surety)

_____
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto:

City of Panama City Beach
(Name of Owner)

17007 Panama City Beach Parkway, Panama City Beach, Florida 32413
(Address of Owner)

hereinafter called OWNER, and unto all persons, firms and corporations who or which may furnish labor, or who furnish materials to perform as described under the Contract and to their successors and assigns in the total aggregate penal sum of _____ _____ Dollars ($_____) in lawful money of the United States, for the payment of which, we bind ourselves, our heirs, personal representatives, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that if the PRINCIPAL properly makes payment to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, materials or supplies, used directly or indirectly by the Principal in the prosecution of the WORK provided for under that certain contract between the Principal

and the OWNER, dated the ____ day of _____, 20___, a copy of which is hereto attached and made a part hereof for the construction of :

FPID NO. 441742-2-58-01 & 441742-2-58-02

PCB 22-41 ALF COLEMAN ROAD

and any authorized extensions or modification thereof, including all amounts due for materials, lubricants, fuel, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and for all labor cost incurred in such WORK including that by a SUBCONTRACTOR or SUPPLIER of any tier, and to any construction lien holder whether it acquires its lien by operation of State or Federal law; then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, that said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to WORK to be performed thereunder or SPECIFICATIONS accompanying the same shall in any way 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, every suit instituted upon the BOND shall be brought in a court of competent jurisdiction for the county or circuit in which the Contract was to be performed. Owner shall not be joined as a party in any such suit. The notice and time limits of Section 255.05, Florida Statutes, are incorporated herein.

PROVIDED, FURTHER, that it is expressly agreed that this BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the Contract Price more than twenty percent so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the Contract as so amended. The term "Amendment", wherever used in this BOND and whether referring to this BOND, or the CONTRACT DOCUMENTS shall include any change, alteration, addition, extension, or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the rights of the OWNER hereunder.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]

WITNESS WHEREOF, this instrument is executed in **three (3)** counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20___.

_____
Principal

_____
(Principal) Secretary

(SEAL) BY _____

_____
(Address)

_____

_____
Witness as to Principal

_____
(Address)

_____

_____
(Surety)

ATTEST:

_____ BY _____
Witness as to Surety Attorney-In-Fact

_____ _____
(Address) (Address)

_____ _____

NOTE: Date of BOND must not be prior to date of Contract.

If CONTRACTOR is partnership, all partners should execute BOND. Contractor's Surety shall use this form along with their personal documentation.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

[END OF SECTION 00070]

SECTION 00080

NOTICE OF AWARD

TO: _____
_____
_____

PROJECT DESCRIPTION:

PCB22-42 ITB ALF COLEMAN ROAD

The City of Panama City Beach ("City") has considered the BID submitted by you for the above-described Project in response to its Advertisement for Bids dated _____, 20___, and associated Information for Bidders.

You are hereby notified that your Bid in the amount of $ _____ has been accepted by the City. Provided, however, nothing in this Notice or your delivery to the City of the AGREEMENT executed by you (with the required Bonds and Certificates of Insurance) shall in any manner or way be deemed to create any contract between you and the City. No such contract shall be created unless and until the City signs the AGREEMENT.

You are required by the Information for Bidders to execute the AGREEMENT and furnish the required CONTRACTOR'S Performance Bond, Payment Bond, and Certificates of Insurance within ten (10) calendar days from the date of this Notice.

If you fail to execute said AGREEMENT, together with the required Certificates of Insurance and Bonds, within ten (10) calendar days from the date of this Notice, City will be entitled to consider all your rights arising out of City's acceptance of your BID as abandoned and as a forfeiture of your Bid Deposit. The City will be entitled to all other rights and remedies as may be available to it at law.

You must return an acknowledged copy of this Notice of Award to the City, with the executed AGREEMENT and required Certificates of Insurance and Bonds, within the above noted ten (10) calendar day period.

Dated this _____ day of _____, 20___.

[REMIAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]

CITY OF PANAMA CITY BEACH
Owner

By_____

Name: Drew Whitman

Title City Manager

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged

By_____

This the _____day of _____, 20___.

Name_____

Title_____

[END OF SECTION 00080]

SECTION 00090

NOTICE TO PROCEED

TO: _____
_____
_____

PROJECT DESCRIPTION:
PCB22-41 ITB ALF COLEMAN ROAD

You are hereby notified to commence WORK in accordance with the AGREEMENT dated _____, 20___ on or before _____, 20___, and you are to substantially complete the WORK within __270__ consecutive calendar days thereafter. The date of Substantial Completion is therefore _____, 20___. You are to achieve Final Completion within 30 days of achieving Substantial Completion. You must return and acknowledge a copy of this Notice to Proceed to the City within five (5) calendar days of your receipt of this Notice.

CITY OF PANAMA CITY BEACH

By: _____

Name: Drew Whitman

Title City Manager

ACCEPTANCE OF NOTICE
Receipt of the above Notice to Proceed is hereby acknowledged

By_____
(Company Name)

This the _____ day of _____, 20___

_____
(Signature)

_____
(Type or Print Name)

_____
(Title)

[END OF SECTION 00090]

SECTION 00095

STATEMENT UNDER SECTION 287.087 FLORIDA STATUTES, ON PREFERENCE TO BUSINESSES WITH DRUG-FREE WORKPLACE PROGRAMS

IDENTICAL TIE BIDS: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more BIDS which are equal with respect to price, quality and service are received by the OWNER for this PROJECT, a bid received from a BIDDER that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. In order to have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business' policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under BID a copy of the statement specified in paragraph (1).
4. In the statement specified in paragraph (1), notify the employees that, as a condition of working on the commodities or contractual services that are under BID, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace not later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program is such is available in the employee's community, by an employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this Section.

As the person authorized to sign this statement, I certify that this firm complies fully with the above requirements.

_____

BIDDER SIGNATURE

[END OF SECTION 00095]

SECTION 00096

CERTIFICATE OF COMPLIANCE WITH THE FLORIDA TRENCH SAFETY ACT

Bidder acknowledges sole responsibility for complying with the Florida Trench Safety Act (Act). Section 553.60, Florida Statutes. Bidder further acknowledges that included in the various items of its BID and in its Total Lump Sum Bid are costs for complying with the Florida Trench Safety Act. The Bidder further identifies the costs to be summarized below:

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

Total $_____

Failure to complete the above may result in your BID being declared non-responsive. The costs indicated above are provided to comply with the Act and shall not constitute grounds for any additional compensation to that listed for the separate line items of the Bid Form.

Bidder _____
By: _____
Its _____

Date _____

_____
Authorized Signature

[END OF SECTION 00096]

SECTION 00097

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

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

1. This sworn statement is submitted to _____

   by _____

   For _____

   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 Section 287.133 (1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid, proposal, reply, or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

   I understand that "convicted" or "conviction" as defined in Section 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, nonjury trial, or entry of a plea of guilty or nolo contendere.

3. I understand that "affiliate" as defined in Section 2871.33 (1)(a) , Florida Statutes, means:
   (a.) A predecessor or successor of a person convicted of a public entity crime, or

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

4. I understand that a “person” as defined in Section 287.133 (1)(e), Florida Statute, means any natural person or any entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts 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.

5. Based on information and belief, the statement which I have marked below is true in relation to the person submitting this sworn statement. [indicate which statement applies.]

_____Neither the person submitting this sworn statement nor any affiliate of the person has been charged with and convicted of a public entity crime causing such person or affiliate to be placed on the convicted vendor list within the last thirty-six (36) months.

_____The person submitting this sworn statement or an affiliate of the person has been charged with and convicted of a public entity crime causing such person or affiliate to be placed on the convicted vendor list within the last thirty-six (36) months.

_____The person submitting this sworn statement or an affiliate of the person has been charged with and convicted of a public entity crime causing such person or affiliate to be placed on the convicted vendor list within the last thirty-six (36) months. However, it has been determined, pursuant to Section 287.133, Florida Statutes, that it was not in the public interest to place the person submitting this sworn statement or its affiliate on the convicted vender list. [Attach a copy of the final order].

6. I understand by my execution of this document, I acknowledge that the person submitting this sworn statement has been informed by the City of Panama City Beach, of the terms of Section 287.133(2)(a) of the Florida Statutes which read as follows:

"A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or

repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017 for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted vendor list."

7. I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THE PUBLIC ENTITY ONLY AND THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY IMMEDIATELY OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]

By: _____

Print name: _____

Its: _____

Sworn to and subscribed before me this _____day of _____, 20___.

Personally known _____ OR Produced identification _____

Notary Public- State of _____

My commission expires_____

_____
[printed, typed or stamped Commissioned Name of Notary Public]

[END OF SECTION 00097]

NON-COLLUSION AFFIDAVIT

STATE OF FLORIDA
COUNTY OF_____

_____ being, first duly sworn, deposes and says that he is of _____, the party making the foregoing Proposal or Bid; that such Bid is genuine and not collusive or sham: that said bidder is not financially interested in or otherwise affiliated in a business way with any other bidder on the same contract; that said bidder has not colluded, conspired, connived, or agreed, directly or indirectly, with any bidders or person, to put in a sham bid or that such other person shall refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the bid price or affiant or any other bidder, or to fix any overhead, profit or cost element of said bid price, or that of any other bidder, or to secure any advantage against the City of Panama City Beach, Florida, or any person or persons interested in the proposed contract; and that all statements contained in said proposal or bid are true; and further, that such bidder has not directly or indirectly submitted this bid, or the contents thereof, or divulged information or data relative thereto to any association or to any member or agent thereof.

_____
Affiant

Sworn to and subscribed before me this_____day of_____, 2022.

_____
Notary Public

_____
Printed Name

E-VERIFY FORM

PER FLORIDA STATUTE 448.095, CONTRACTORS AND SUBCONTRACTORS MUST REGISTER WITH AND USE THE E-VERIFY SYSTEM TO VERIFY THE WORK AUTHORIZATION STATUS OF ALL NEWLY HIRED EMPLOYEES.

THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID/PROPOSAL. FAILURE TO SUBMIT THIS FORM AS REQUIRED MAY DEEM YOUR SUBMITTAL NONRESPONSIVE.

The affiant, by virtue of the signature below, certifies that:

1. The Contractor and its Subcontractors are aware of the requirements of Florida Statute 448.095.
2. The Contractor and its Subcontractors are registered with and using the E-Verify system to verify the work authorization status of newly hired employees.
3. The Contractor will not enter into a contract with any Subcontractor unless each party to the contract registers with and uses the E-Verify system.
4. The Subcontractor will provide the Contractor with an affidavit stating that the Subcontractor does not employ, contract with, or subcontract with unauthorized alien.
5. All employees hired by Contractor on or after January 1, 2021, have had their work authorization status verified through the E-Verify system.
6. The City may terminate this Contract on the good faith belief that the Contractor or its Subcontractors knowingly violated Florida Statutes 448.09(1) or 448.095(2)(c).
7. If this Contract is terminated pursuant to Florida Statute 448.095(2)(c), the Contractor may not be awarded a public contract for at least 1 year after the date on which this Contract was terminated.
8. The Contractor is liable for any additional cost incurred by the City as a result of the termination of this Contract.

_____
Authorized Signature

_____
Printed Name

_____
Title

_____
Name of Entity/Corporation

STATE OF _____

COUNTY OF _____

My Commission Expires: _____

_____
Notary Public

NOTARY SEAL ABOVE

_____
Printed Name

CONFLICT OF INTEREST STATEMENT

Check one:

[ ] To the best of our knowledge, the undersigned Respondent has no potential conflict of interest due to any other clients, contracts, or property interest for this project.

or

[ ] The undersigned Respondent, by attachment to this form, submits information which may be a potential conflict of interest due to other clients, contracts, or property interest for this project. This includes and requires disclosure of any officer, director, partner, proprietor, associate or agent of the Respondent who is also an officer or employee of the City or of its boards or committees.

LITIGATION STATEMENT

Check One:

[ ] The undersigned Respondent has had no litigation and/or judgments entered against it by any local, state or federal entity and has had no litigation and/or judgments entered against such entities during the past ten (10) years.

or

[ ] The undersigned Respondent, by attachment to this form, submits a summary and disposition of individual cases of litigation and/or judgments entered by or against any local, state or federal entity, by any state or federal court, during the past ten (10) years.

COMPANY:_____

SIGNATURE:_____

NAME:_____

TITLE:_____

DATE:_____

Failure to check the appropriate blocks above may result in disqualification of your proposal. Likewise, failure to provide documentation of a possible conflict of interest, or a summary of past litigation and/or judgments, may result in disqualification of your proposal.

SECTION 00099

INSURANCE REQUIREMENTS

SECTION 1: DEFINITIONS

"Location" means the location subject of the Subcontract/Purchase Order. "Project" means the project subject of the Subcontract/Purchase Order.

"Scope" means the scope of work to be provided by the Subcontractor under the Contract or the Goods and Services to be supplied and performed by Seller under the Purchase Order, as applicable.

"State" means a state of the United States or the District of Columbia or the Commonwealth of Puerto Rico, as applicable

"Alternate/ Leased Employer Endorsement" is an endorsement added to a workers compensation policy that provides an entity scheduled as an alternate employer with primary workers compensation and employers' liability coverage as if it were an insured under the policy. This endorsement is commonly used when a temporary help agency (the insured) is required by its customer (the alternate employer) to protect the alternate employer from claims brought by the insured's employees.

SECTION 2: STANDARD INSURANCE COVERAGES

Successful Bidder shall comply with the following:

1. Unless higher limits or additional coverages are required by the Contract/Purchase Order or Owner Contract, the Successful Bidder shall secure and maintain the minimum from the earlier commencement of work, or the effective date of the Contract/Purchase Order insurance coverages and limits required by this Exhibit A.
2. Failure of the Contractor/Buyer to identify deficiencies in any insurance provided by Successful Bidder shall not relieve Successful Bidder from any insurance obligations. Required coverages are as follows:

2.1. Commercial General Liability Insurance Coverages:

Commercial General Liability insurance using ISO's CG 00 01 or its substantial equivalent with **City of Panama City Beach** as an additional insured using ISO's CG 20 10 or its substantial equivalent for ongoing operations and ISO's CG 20 37 or its substantial equivalent for completed operations with the following minimum limits:

- $1,000,000 Each Occurrence
- $1,000,000 Personal and Advertising Injury
- $2,000,000 General Aggregate
- $2,000,000 Products-Completed Operations Limit
- $500,000 Damage to Rented Premises

Per Project using ISO's CG 25 04 or its substantial equivalent

The Successful Bidder must disclose to City of Panama City Beach any endorsements that limit or exclude coverage customarily provided by ISO's CG 00 01.

The Successful Bidder's Commercial General Liability policy shall not contain an exclusion or restriction of coverage for the following:

1. Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
2. Claims for property damage to the Successful Bidder's Work arising out of the products-completed operations hazard where a Subcontractor performed the damaged Work or the Work out of which the damage occurs.
3. Claims for bodily injury other than to employees of the insured.
4. Claims for indemnity arising out of injury to employees of the insured.
5. Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
6. Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
7. Claims related to residential, multi-family, or other habitational projects if the work is to be performed on such a project.
8. Claims related to roofing if the work involves roofing.
9. Claims related to exterior insulation finish systems (EIFS), synthetic stucco, or similar exterior coatings or surfaces if the work involves such coatings or surfaces.
10. Claims related to earth subsidence or movement, where the work involves such hazards.
11. Claims related to explosion, collapse, and underground hazards, where the work involves such hazards.

The Successful Bidders Commercial General Liability insurance will remain in force with annual policy periods for the period of the statute of repose applicable to this project. ***Alternatively, suppose a "project-specific" General Liability policy is used to satisfy these requirements. In that case, it must be endorsed to provide extended completed operations for the period of the statute of repose applicable to this project.***

2.2. Workers Compensation

Worker's Compensation Insurance and Employer's Liability Insurance (including occupational disease) to cover statutory benefits and limits under the Worker's Compensation laws of any applicable jurisdiction in which the Scope is to be performed and minimum limits.

- Bodily Injury by Accident - $100,000 Each Accident
- Bodily Injury by Disease - $500,000 Policy Limit
- Bodily Injury by Disease - $100,000 Each Employee

Policy coverage terms and conditions to include:

- USL&H – where applicable.
- Jones Act – where applicable.
- All State's endorsement – where applicable.

- Employers Liability/Stop Gap Liability if work is performed in Washington, Wyoming, Ohio, North Dakota, or the Commonwealth of Puerto Rico.
- For the attainment of Workers Compensation in monopolistic states and Puerto Rico, coverage must be secured through the state fund of that State.
- The certificate must identify that coverage applies in the State where the Project is located.

2.3. Automobile Liability

Commercial Automobile Liability insurance covers all owned, leased, and non-owned vehicles used in connection with the Scope. Business Auto Coverage Form using ISO's CA 00 01 or its substantial equivalent including liability coverage for all autos owned (Symbol 1), rented, hired, or borrowed by the contractors, as well as liability coverage for mobile equipment subject to compulsory insurance or financial responsibility laws or other motor vehicle insurance laws with the following minimum limit:

□ $1,000,000 – Any One Accident – Combined Single Limit

Suppose the Contractor/Sub-Contractor/Vendor is responsible for removing any pollutants from a site. In that case, the Successful Bidder will need to cover its automobile exposure for transporting the pollutants from the site to an approved disposal site. Therefore, auto liability coverage should be endorsed to include the required auto pollution endorsements and Motor Carrier Act Endorsement, MCS 90, and the ISO Form CA 9948 (Pollution Liability Broadened Coverage for Business Automobile).

2.4. Umbrella or Excess Liability Required: Yes

Also, the Successful Bidder shall provide an umbrella or excess liability insurance providing in excess of the underlying Commercial General Liability, Business Automobile Liability, Pollution Liability (if required), and Employers' Liability insurance above, with the following minimum limits:

□ $3,000,000 Each Occurrence

□ $3,000,000 Annual Aggregate (where applicable in the underlying)

Such umbrella or excess liability policy shall provide substantially the same coverage as the underlying Commercial General Liability (including City of Panama City Beach as additional insured), Business Automobile Liability, Pollution Liability, and Employers' Liability insurance. In addition, it shall expressly provide that the umbrella or excess policy will drop down over the underlying insurance's reduced or exhausted aggregate limit. The umbrella or excess policy shall also be primary insurance to City of Panama City Beach(including primary insurance to City of Panama City Beach's own Commercial General Liability and Umbrella policies), and Successful Bidder s umbrella insurer agrees not to seek contribution from City of Panama City Beach insurance.

2.5. Professional Liability Required: No

Professional Liability Insurance is required to cover liability for claims that arise from the errors, omissions, or acts of the Successful Bidder or any entity the Successful Bidder is

legally responsible in the provision of professional services. The policy shall be primary and non-contributory, with the insuring agreement to read: "to pay on behalf of" and shall be effective (retroactively, if applicable) from the commencement date of all professional activities in connection with the Scope. The coverage shall be maintained for three years following the final acceptance of the Project.

Minimum limits are:

- Prime Design Professional: Choose limits when required per claim/annual aggregate;
- Sub-Design Professional: Choose limits when required per claim/annual aggregate.

Upon request, a copy of the policy shall be provided to City of Panama City Beach. Coverages shall not include any exclusions or other limitations related to the scope of the services, delays in project completion, or cost overruns.

For Professional Liability Insurance, the term "Prime Design Professional" means the architect and/or engineer providing architectural, engineering, and/or other professional services under a contract directly with our company. The term "Sub-Design Professional" means any architect and/or engineer providing architectural, engineering, and/or other professional services directly or indirectly to a Prime Design Professional in connection with the project. A Prime Design Professional is also a Contractor/Subcontractor, and a Sub-Design Professional is also a Sub-subcontractor.

2.6 Riggers Liability Required: No

If marked as required, the Scope involves the rigging, hoisting, lowering, raising, or moving of property or equipment belonging to others. Riggers Liability Insurance is required to insure against physical loss or damage to the property or equipment.

2.7 Aircraft/Watercraft: Required: No

If marked as required, the Scope involves using any owned, leased, chartered, or hired aircraft or watercraft of any type. As applicable, Aircraft Liability Insurance or Watercraft Liability Insurances required in an amount of not less than Choose limits when required per occurrence, including Passenger Liability for bodily injury and property damage.

2.8 Property Insurance:

Property Insurance coverage for tools and equipment owned, leased, or used by the Subcontractor/Seller in the performance of the Scope. The Property Insurance shall extend to equipment, materials, and supplies stored off the Project site or in transit to the Project site to be furnished as part of the Scope and incorporated into the Project.

2.8.1 Pollution Liability Insurance: Required: No

Successful Bidder shall secure and maintain the minimum Pollution Liability Insurance coverage and limits required by this Exhibit A from the effective date of the Contract/Purchase Order until the end of the applicable warranty period. The policy shall

be submitted to the Contractor/Buyer for review and approval before commencement of the Scope. Failure of the Contractor/Buyer to identify deficiencies in the Pollution Liability Insurance provided by Subcontractor/Vendor shall not relieve Subcontractor/Vendor from any obligations.

Minimum limits are: Including Cleanup Cost

- Choose limits when required per occurrence or claim
- Choose limits when required policy aggregate.

The coverage shall be as follows: Subcontractor shall provide Pollution Liability Insurance covering all asbestos, lead, and any other pollution operations. If the policy contains a general aggregate, this aggregate must apply on a per-project basis and shall be evidenced on Subcontractor's/Vendors Certificate of Insurance. The limits shall not be subject to reduction as to the Contractor/Buyer or Owner because of any claim asserted against the Subcontractor/Vendor other than in connection with the Scope. Instead of indemnifying, the policy must read "to pay on behalf of." In addition, the following coverages must be included: (1) Completed Operations (five (5) year continuation beyond completion of the Scope); (2) Broad Form Contractual and Independent Contractors (including coverage for third party over claims); (3) On-Site, Off-Site and In-Transit exposures; and (4) Loading and Unloading. Exclusions or restrictions pertaining to mold and EIFS are not permitted. The coverage may be written on an "occurrence" or "claims made" basis. If written on a "claims made" basis, the retroactive date must be included to coincide with the effective date of the Subcontract/Purchase Order, and an extended reporting period (three (3) years minimum) must be included.

The coverage may be written on an "occurrence" or "claims made" basis. If written on a "claims made" basis, the retroactive date must be included to coincide with the effective date of the Subcontract/Purchase Order, and an extended reporting period (three (3) years minimum) must be included.

Deductibles/Denial of Claims:

Contractor/Vendor shall be responsible, at no additional cost to Contractor/Buyer, for the payment of any deductibles or self-insured retention in connection with the insurance coverages required by this Exhibit A both for itself and all Additional Insureds. Any self-insured retention or deductible in excess of $25,000 must be declared when Subcontractor/Seller submits its bid and must be approved explicitly by Contractor/Buyer before executing the Subcontract/Purchase Order. Subcontractor/Seller shall be responsible for any loss arising from coverage denial by its insurance carrier.

Leased Successful Bidder Employee Liability

If the leases one or more employees through the use of a payroll, employee management, or other company, the Successful Bidder must directly procure workers compensation/employer's liability insurance. The insurance shall be written on a "Minimum Premium" or "If Any" policy form.

In addition, the worker's compensation/employer's liability coverage provided to and for the

leased employees by the payroll, employee management, or other company must be evidenced and include an Alternate / Leased Employer Endorsement or its substantial equivalent WC endorsement for that State, naming Successful Bidder as the alternate employer.

Insurer Requirements

Each insurer providing insurance coverage as required by this contract shall be a licensed admitted insurer authorized to issue such coverages in each State in which any part of the Scope is performed. The insurer shall be acceptable to City of Panama City Beach and have an AM Best rating of "A-" or better.

Before accepting the Contractor/Sub-Contractor/Vendor's bid, **City of Panama City Beach** reserves the right to require more significant limits based on the nature of the operations performed by the Successful Bidder.

Certificate of Insurance

Before commencing its performance and throughout the warranty period under the Contract /Purchase Order, the Successful Bidder shall provide City of Panama City Beach a current certificate of insurance evidencing the coverages required by this contract (a sample Certificate of Insurance is attached for reference purposes).

Sub-subcontractor/Sub-Vendor

Before permitting any lower tier Sub-subcontractor/Sub-vendor to perform Scope under the Contract/Purchase Order, the Successful Bidder shall require its sub-subcontractor/Sub-vendor to maintain insurance in like form and amounts to that required herein. Successful Bidder shall be responsible for ensuring that it's sub- subcontractor/Sub-vendor maintains insurance in like form and amounts and shall provide evidence of same to **City of Panama City Beach** if requested.

Any subcontractors engaged by the Contractor shall comply with the above requirements. Consideration for specific trades can be made with prior approval.

Notice of Cancellation

All insurance coverages required by this contract shall contain a provision that the coverage afforded hereunder cannot be canceled, non-renewed, allowed to lapse, or have any restricted modifications added unless at least thirty 45) days prior written notice has been given to City of Panama City Beach

Additional Insureds

All insurance required by this contract (excluding only Workers Compensation Insurance and Professional Liability Insurance) shall name the **City of Panama City Beach** and its officials, employees, and volunteers as Additional Insureds and any other parties as required by the Owner Contract, and shall be primary and non-contributory to any insurance maintained by Indemnified Parties and Additional Insureds and any other parties as required by Owner Contract, all of which shall be stated on the Certificate of Insurance provided by the Successful Bidder.

The General Liability Additional Insured Endorsement shall use ISO's or CG 2010 or its substantial equivalent for ongoing operations and ISO's CG 20 37 or its substantial equivalent for completed operations. By endorsement or policy language, evidence of Additional Insured and Primary and Non-Contributory coverage must be provided with the certificate of insurance for General Liability. The Successful Bidder's insurers will provide insurance to City of Panama City Beach , on a primary basis and agree not to seek contribution from insurance by using ISO's CG 20 01 or its substantial equivalent. Successful Bidders insurers also agree to waive rights of subrogation against **City of Panama City Beach** using ISO's CG 24 04 or its substantial equivalent.

Waiver of Subrogation

All insurance coverages maintained by Successful Bidder shall include a waiver of any right of subrogation of the insurers thereunder against Indemnified Parties and Additional Insureds and all of their respective assigns, subsidiaries, affiliates, employees, insurers, and underwriters, and of any right of the insurers to any set-off or counterclaim or any other deduction, whether by attachment or otherwise, in respect of any liability of any person insured under any such policy (Workers Compensation – where permitted).

The Successful Bidder further waives all claims and all rights of subrogation against Indemnified Parties' and Additional Insureds' other contractors and all of their respective assigns, subsidiaries, affiliates, employees, insurers, and underwriters for loss of, or damage to, contractors Scope, tools, machinery, equipment, material, supplies, or any other losses within the scope of any insurance maintained by **City of Panama City Beach**. If any of the Indemnified Parties and Additional Insureds are partially or wholly self-insured, then the waiver of subrogation shall apply as if their insurance covered them.

Insurance Policy Review/Exclusions/Copies

City of Panama City Beach can receive copies of all insurance policies upon request. Policies shall not contain any exclusions that are unacceptable to City of Panama City Beach. If requested by **City of Panama City Beach**, all insurance carriers must certify all policies as accurate and complete. At their sole discretion, policies shall not contain any unacceptable exclusions to City of Panama City Beach. **City of Panama City Beach's** right to review and approve all insurance policies will not constitute a waiver of any rights created by or provisions contained in this contract should they differ from those contained in such policies.

Claims-Made Policies

Except for Professional Liability Insurance, claims-made policies are not acceptable.

Effect of Specified Coverages

The Insurance obligations under this agreement shall be 1—all the Insurance coverage and/or limits carried by or available to the Contractor; or 2—the minimum Insurance coverage requirements and/or limits shown in this agreement, whichever is greater. Any insurance proceeds in excess of or broader than the minimum required coverage and/or minimum required limits, which apply to a given loss, shall be available to **City of Panama City Beach.** No representation is made that this agreement's minimum insurance

requirements are sufficient to cover the Contractor's obligations under this agreement.

Breach of Insurance Requirements

Successful Bidder's failure to obtain and maintain insurance coverages as required by this Exhibit A or any other Exhibit or attachment shall constitute a material breach of the Contract/Purchase Order. In such event, in addition to any other rights and remedies contained in the Contract/Purchase Order, (i) City of Panama City Beach may, at its option, terminate the contract for default; (ii) City of Panama City Beach may, at its option, purchase such coverage and back charge the premium and associated costs to Successful Bidder; and/or (iii) any of the Indemnified Parties, or Additional Insureds can require, that contractor and/or its subcontractors to pay for all attorney's fees, expenses, and liability as a result of any claim or lawsuit for which coverage would have been provided to the Indemnified Parties or Additional Insureds under contractors insurance program but for a breach by Contractor or any of its subcontractors.

Furthermore, to the extent of their respective interests, the Insurers of those entities that were to be included as Additional Insureds are deemed third-party beneficiaries of the insurance procurement obligation and have the same rights against the breaching party as the Indemnified Parties or Additional Insureds.

If any of the preceding insurance coverages are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final application for payment as required. If the insurer does not furnish any information concerning the reduction of coverage, it shall be furnished by the contract with reasonable promptness according to the Successful Bidder 's information and belief. Suppose Successful Bidder fails to maintain insurance. City of Panama City Beach may (at its sole option) terminate the Successful Bidder or place such insurance and deduct any cost, fees, and related expenses from Successful Bidder pay request.

Any Successful Bidder *engaged by the Contractor shall comply with the above requirements. Consideration for specific trades can be made with prior approval.*

City of Panama City Beach Endorsements to be attached:

General Liability	Endorsement #	Edition Dates	Carrier	Policy #'s to be listed
Added Insured - Ongoing Operations	CG 20 10	All	ISO Standard or Equal	Yes
Added Insured – Completed Operations	CG 20 37	All	ISO Standard	Yes
Waiver of Subrogation	CG 24 04		ISO Standard	
Primary & Non-Contributory	CG 20 01		ISO Standard	
Automobile Liability				
No Endorsements Required				
Umbrella or Excess Liability				
List all lines this policy applies.				

* State Waiver of Subrogation Provisions Overview: Kansas, Kentucky, Missouri, New Hampshire, and New Jersey disallow waivers of subrogation by statute. However, only Kansas

and Missouri bar waivers of subrogation in the construction industry. (Note that Kansas does not prohibit the use of waivers of subrogation for consolidated or wrap-up insurance programs.) The monopolistic states either disallow waivers of subrogation or allow the state fund to make that decision. The remaining states allow for waivers of subrogation through judicial interpretation or administrative rules.

*Stop Gap endorsement required in monopolistic states such as ND, OH, WA WY, or Puerto Rico

*Coverage must apply in the State where the work is being performed if the vendor is from a state other than the one where the project is located.

We accept endorsements that are equal to those requested. Most insurance company forms are manuscript; therefore, they might not be compliant (most are not). We review all forms during the review process. Forms that are compliant today may not be compliant tomorrow. Our decisions are based on case law and claim history. Additional Insured or Organization Name to

be listed on all endorsements along with policy numbers as applicable. Blank endorsements will not be excepted. Sample Endorsements Attached

Blanket Certificates of Insurance

For ease of paperwork, subcontractors may submit insurance documentation on a blanket basis to work on multiple projects under just one insurance certificate. (View sample certificate above or in compliance database)

Subcontractor performing work on multiple projects in the same State

Each of our projects requires a project-specific certificate of insurance (COI) for EACH project they work on; however, a lot of our Subcontractors are doing multiple projects in one State, which creates an opportunity to reduce paperwork by providing a blanket certificate of insurance and allowing the Subcontractor to work on all projects (Non-OCIP or CCIP) under one COI. If providing a blanket certificate, the following guidelines will be in addition:

1. On the COI, instead of stating an individual project name, replace with the following verbiage in the Description of Operations section of the certificate: "All projects performed for City of Panama City Beach
2. When stating the additional insureds, state the following along with the other required Description of Operations wording: "All insurance (excluding Workers Compensation and Professional Liability) include Owner, City of Panama City Beach, Indemnified Parties ,any other parties as required by Owner Contract and their respective directors, officers, employees, and affiliates as Additional Insureds, and shall be primary and non-contributory to any insurance maintained by Additional Insureds."
3. All endorsements and waivers must be blanket-based, either per form or blanket wording. For example, a contract requires endorsements/waivers in such schedules instead of listing each entity.

Commercial General Liability

CG 20 10 10 01

POLICY NUMBER: Required

COMMERCIAL GENERAL LIABILITY
CG 20 10 10 01

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name of Person or Organization:
Certificate Holders Name

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. **Section II – Who Is An Insured** is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of your ongoing operations performed for that insured.

B. With respect to the insurance afforded to these additional insureds, the following exclusion is added:

2. Exclusions

This insurance does not apply to "bodily injury" or "property damage" occurring after:

(1) All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the site of the covered operations has been completed; or

(2) That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

CG 20 37 10 01

POLICY NUMBER: Required

COMMERCIAL GENERAL LIABILITY
CG 20 37 10 01

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – COMPLETED OPERATIONS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name of Person or Organization:
Certificate Holders Name
Location And Description of Completed Operations:
All locations required by contract
Additional Premium:

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

Section II – Who Is An Insured is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" at the location designated and described in the schedule of this endorsement performed for that insured and included in the "products-completed operations hazard".

CG 24 04 05 09

POLICY NUMBER: Required

COMMERCIAL GENERAL LIABILITY
CG 24 04 05 09

WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

SCHEDULE

Name Of Person Or Organization:
Certificate Holders Name
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

The following is added to Paragraph **8. Transfer Of Rights Of Recovery Against Others To Us** of **Section IV – Conditions:**

We waive any right of recovery we may have against the person or organization shown in the Schedule above because of payments we make for injury or damage arising out of your ongoing operations or "your work" done under a contract with that person or organization and included in the "products-completed operations hazard". This waiver applies only to the person or organization shown in the Schedule above.

CG 20 01 04 13

COMMERCIAL GENERAL LIABILITY
CG 20 01 04 13

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

PRIMARY AND NONCONTRIBUTORY – OTHER INSURANCE CONDITION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

The following is added to the **Other Insurance** Condition and supersedes any provision to the contrary:

Primary And Noncontributory Insurance

This insurance is primary to and will not seek contribution from any other insurance available to an additional insured under your policy provided that:

(1) The additional insured is a Named Insured under such other insurance; and

(2) You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other insurance available to the additional insured.

Workers Compensation

WC 00 03 13

WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE POLICY **WC 00 03 13**

(Ed. 4-84)

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

Schedule

In Favor of:

Certificate Holders Name and Project Owner

Work Performed by:

Client (Our Subcontractor)

Client Address

On the Following Project or Location

All Projects or Locations as Required by Contract

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Endorsement Effective Required | Policy No. Required | Endorsement No.

Insured Required | Premium

Insurance Company Required | Countersigned by_____

WC 00 03 13
(Ed. 4-84)

WC 00 03 01A

WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE POLICY **WC 00 03 01 A**

(Ed. 2-89)

ALTERNATE EMPLOYER ENDORSEMENT

This endorsement applies only with respect to bodily injury to your employees while in the course of special or temporary employment by the alternate employer in the state named in Item 2 of the Schedule. Part One (Workers Compensation Insurance) and Part Two (Employers Liability Insurance) will apply as though the alternate employer is insured. If an entry is shown in Item 3 of the Schedule the insurance afforded by this endorsement applies only to work you perform under the contract or at the project named in the Schedule.

Under Part One (Workers Compensation Insurance) we will reimburse the alternate employer for the benefits required by the workers compensation law if we are not permitted to pay the benefits directly to the persons entitled to them.

The insurance afforded by this endorsement is not intended to satisfy the alternate employer's duty to secure its obligations under the workers compensation law. We will not file evidence of this insurance on behalf of the alternate employer with any government agency.

We will not ask any other insurer of the alternate employer to share with us a loss covered by this endorsement.

Premium will be charged for your employees while in the course of special or temporary employment by the alternate employer.

The policy may be canceled according to its terms without sending notice to the alternate employer.

Part Four (Your Duties If Injury Occurs) applies to you and the alternate employer. The alternate employer will recognize our right to defend under Parts One and Two and our right to inspect under Part Six.

Schedule

1. **Alternate Employer**
   Our Subcontractor - *Not the PEO*
   Address
   Our Subcontractors Address
2. **State of Special or Temporary Employment**
   All Applicable States
3. **Contract or Project**
   All Locations or Projects Required by Contract

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Endorsement Effective Date Here is Required | Policy No. Policy Number Required | Endorsement No. Premium $

Insured Required | Countersigned by_____

Insurance Company Required

WC 00 03 01 A
(Ed 2-89)

SECTION 00100

GENERAL CONDITIONS

1. Definitions
2. Additional Instructions and Detail Drawings
3. Schedules, Reports and Records
4. Intent of the Contract Documents, Drawings and Specifications
5. Shop Drawings
6. Materials, Services, and Facilities
7. Inspection and Testing
8. Substitutions
9. Patents
10. Surveys, Permits, Regulations, and Project Layout
11. Protection of Work, Property, Persons
12. Supervision by Contractor
13. Changes in the Work
14. Changes in Contract Price
15. Time for Completion and Liquidated Damages
16. Correction of Defective Work
17. Suspension of Work, Termination, and Delay
18. Payments to Contractor
19. Acceptance of Final Payment as Release
20. Contract Security
21. Assignments
22. Indemnification
23. Separate Contracts
24. Subcontracting
25. Engineer's Authority
26. Land and Right-of-Ways
27. Guarantee
28. Claims and Disputes
29. Taxes
30. Contract Time, Schedule of the Work, and Time Extensions
31. Use of Site
32. Temporary Facilities
33. Clean Up and Disposal of Waste Materials
34. Warranty of Title
35. Ownership of Hidden Valuable Materials
36. As-Built Plans and Documents to be kept at the Site
37. Silence of Specifications
38. Gratuities
39. Audit and Access to Records
40. Equal Opportunity Requirements
41. Changed Conditions
42. Compliance with Laws
43. Public Entity Crimes
44. Insurance Requirements

1.0 DEFINITIONS

1.1 Unless otherwise expressly noted, wherever used in the Contract Documents the following terms shall have the meanings indicated and shall be applicable to both the singular and plural thereof:

1.2 ADDENDA - Written or graphic instruments, issued by Owner or Engineer prior to the execution of the AGREEMENT, which modify or interpret any of the Contract Documents by additions, deletions, clarifications, or corrections.

1.3 BID - The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

1.4 BIDDER - Any person, firm, or corporation submitting a Bid for the Work.

1.5 BONDS - Bid, Performance, and Payment Bonds and other instruments or surety, furnished by the Contractor and the Contractor's surety in accordance with the Contract Documents.

1.6 CHANGE ORDER - A written order to the Contractor issued in accordance with the procedures set forth in the Contract Documents, authorizing an addition, deletion, or revision in the Work within the general scope of the Contract Documents, or authorizing an adjustment in the Contract Price or Contract Time.

1.7 CONSTRUCTION CHANGE DIRECTIVE – A Construction Change Directive is a written order prepared by the Engineer and signed by the Owner, directing a change in the Work prior to AGREEMENT on adjustment, if any, in the Contract Price or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the AGREEMENT, order changes in the Work within the general scope of the AGREEMENT consisting of additions, deletions or other revisions, the Contract Price and Contract Time being adjusted accordingly.

1.8 CONTRACT DOCUMENTS – Collectively the AGREEMENT, Proposal Form, Payment Bond, Performance Bond, General Conditions, Supplemental Conditions, if any, Notice of Award, Notice to Proceed, Drug Free Workplace Program Statement, Trench Safety Act Certificate of Compliance, Public Entity Crimes Statement, Certificate of Insurance, Release and Affidavit from Contractor, Release and Affidavit from Subcontractor, Application and Certificate for Payment, Certificate of Substantial Completion, Contract Change Order(s), Construction Change Directives, Field Orders, Drawings, Specifications and Addenda. The Contract Documents are sometimes referred to herein as the AGREEMENT.

1.9 CONTRACT PRICE - The total compensation payable by Owner to Contractor under the terms and conditions of the Contract Documents.

1.10 CONTRACT TIME - The total period of time beginning with the date of commencement of the Work as authorized by the City and ending on the required date for Substantial Completion of the Work. The Contract Time is set forth with

more specificity in Section 2 of the AGREEMENT.

1.11 CONTRACTOR - The Contractor is the person or entity identified as such in the AGREEMENT and is referred to throughout the Contract Documents as if singular in number. The term "Contractor" means the Contractor or the Contractor's authorized representative.

1.12 CITY or OWNER – The City of Panama City Beach, Florida, acting through its City Council and Charter Officers.

1.13 DRAWINGS - The Drawings are the 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.

1.14 ENGINEER - The person, firm or corporation named as such in the AGREEMENT.

1.15 FIELD ORDER - A written order effecting a clarification or change in the Work not involving an adjustment in the Contract Price or an extension of the Contract Time, issued by Engineer or Owner to Contractor during construction.

1.16 NOTICE OF AWARD - The written notice of the acceptance of the Bid from the City to the successful Bidder.

1.17 NOTICE TO PROCEED - Written communication issued by the City to the Contractor authorizing it to proceed with the Work and establishing the date for commencement of the Work.

1.18 OWNER - Same as CITY; same as City of Panama City Beach, Florida.

1.19 PROJECT – The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the City or by separate contractors, and is formally known as the Loop Road

1.20 PROJECT ADMINISTRATION MANUAL (sometimes referred to herein as the “MANUAL”) – The City’s manual of forms and standard administrative procedures regarding project administration. Contractor acknowledges and agrees it has received a copy of the current Manual and shall incorporate any modifications or updates issued by the City into its copy of the Manual to ensure the Manual is kept up to date.

1.21 PROJECT REPRESENTATIVE -The Project Representative shall be the City’s representative with respect to the Project and may be a City employee or an outside consultant. The Project Representative shall have authority to transmit instructions, receive information, and interpret and define the City’s policies and decisions with respect to the Work. However, except as may be otherwise expressly authorized in writing by the City, the Project Representative is not authorized on behalf of the City to issue any verbal or written orders or instructions

to Contractor that would have the affect, or be interpreted to have the affect, of amending or modifying the terms or conditions of the Contract Documents or modifying or amending in any way whatever the: (1) scope or quality of Work to be performed and provided by Contractor as set forth in the Contract Document; (2) the time within which Contractor is obligated to complete the Work; or (3) the amount of compensation the City is obligated or committed to pay Contractor as set forth in the Contract Documents.

1.22 SHOP DRAWINGS - All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a Subcontractor, manufacturer, supplier or distributor, which illustrate how specific portions of the Work shall be fabricated or installed.

1.23 SPECIFICATIONS - The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

1.24 SUBCONTRACTOR - An individual, firm, or corporation having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the site.

1.25 SUBSTANTIAL COMPLETION - That date certified by the Engineer when the Work or an Owner specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Work or the Owner specified part thereof can be utilized by Owner for the purposes for which it is intended.

1.26 SUPPLEMENTAL CONDITIONS - Modifications to the General Conditions required by Owner, set forth in the Section 00800 series of documents.

1.27 SUPPLIER - Any person or organization who supplies materials or equipment for the Work for or on behalf of Contractor, including those fabricated to a special design, but who does not perform labor at the site.

1.28 WORK - The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

2.0 ADDITIONAL INSTRUCTION AND DETAIL DRAWINGS

2.1 From time to time, Contractor may be furnished additional instructions and detail drawings by the Engineer as necessary to permit Contractor to carry out the Work required by the Contract Documents.

2.2 Any such additional drawings and instructions supplied to Contractor shall be issued as a Field Order. The Contractor shall carry out the Work in accordance

with the additional detail drawings and instructions.

3.0 SCHEDULES, REPORTS AND RECORDS

3.1 The Contractor shall submit to the City such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data where applicable as are required by the Contract Documents for the Work to be performed.

3.2 Contractor shall prepare and provide its construction progress schedule ("Construction Schedule") prior to submitting is first Application for Payment, showing the order in which the Contractor proposes to carry on the Work, including dates at which the various parts of the Work will be started, estimated date of completion of each part and, as applicable, the dates at which special drawings will be required and dates for submission of Shop Drawings, the beginning of manufacture, the testing and the installation of materials, supplies and equipment. Further, the Construction Schedule shall not only include the overall progress schedule for the Work to be provided by Contractor hereunder, but also shall include reasonable time periods for Engineer's performance, as accepted by Engineer. The Construction Schedule and any other schedules required by the City hereunder shall be updated monthly. The Construction Schedule and all updates to it shall not exceed the time periods established in the Contract Documents and shall be subject to the City's and Engineer's review and comment. Contractor's submittal of a satisfactory Construction Schedule and updates thereto and the City's acceptance of same shall be a condition precedent to the City's obligation to pay Contractor; provided, however, the acceptance of any such schedule or update by Owner shall not be deemed an admission by Owner that such schedule or update is reasonable, accurate or correct.

3.3 The Contractor shall also submit a schedule of payments, for Owner's review and approval that the Contractor anticipates will be earned during the course of the Work.

4.0 INTENT OF THE CONTRACT DOCUMENTS, DRAWINGS AND SPECIFICATIONS

4.1 It is the intent of the Contract Documents to describe a functionally complete Project (or portion thereof) to be constructed in accordance with the Contract Documents. Any work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied whether or not specifically called for in the Contract Documents. If the Contract Documents include words or terms that have a generally accepted technical or industry meaning, then such words or terms shall be interpreted to have such standard meaning unless otherwise expressly noted in the Contract Documents. Reference to standard specifications, manuals or codes of any technical society, organization or association or to the laws or regulations of any governmental authority having jurisdiction over the Project, whether such reference be specific or by implication, shall mean the latest standard

specification, manual, code, law or regulation in affect at the time the Work is performed, except as may be otherwise specifically stated herein. Provided, however, in the event the standard specification, manual, code, law or regulation is changed after the AGREEMENT has been executed by the parties, a Change Order shall be issued equitably adjusting the Contract Price and/or Contract Time to the extent such change materially impacts the Contract Time and/or Contract Price.

4.2 Contractor shall perform the Work consistent with the intent of the Drawings, Specifications, and other Contract Documents, and Contractor shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the Work in accordance with the Contract Documents and all incidental items necessary to complete the Work in an acceptable manner, ready for use, occupancy or operation by the City.

4.3 Drawings are intended to show general arrangements, design and extent of Work and are not intended to serve as shop drawings. Specifications are separated into divisions for convenience of reference only and shall not be interpreted as establishing divisions for the Work, trades, subcontracts or extent of any part of the Work. In the event of a discrepancy between or among the Drawings, Specifications or other Contract Document provisions, Contractor shall be required to comply with the provision which is the more restrictive or stringent requirement upon Contractor, as determined by the City.

4.4 If during the performance of the Work Contractor discovers a conflict, error or discrepancy in the Contract Documents, including the Drawings and Specifications, Contractor immediately shall report same to Engineer and Owner in writing, and before proceeding with the Work affected thereby, shall obtain a written interpretation or clarification from Engineer. Work done by the Contractor after discovery of such conflict, error, or discrepancy without such written interpretation or clarification from Engineer, shall be done at the Contractor's risk. Prior to commencing the Work, Contractor shall first take all necessary field measurements and verify the applicable field conditions. After taking such measurements and verifying such conditions, Contractor shall carefully compare such measurements and conditions with the requirements of the Contract Documents, taking into consideration all other relevant information known to Contractor, for the purpose of identifying and bringing to Engineer’s and City’s attention all conflicts or discrepancies with the Contract Documents. Contractor is solely responsible for verifying all field measurements and conditions.

4.5 Contractor shall comply with the City’s standard forms and procedures as set forth in the City’s Project Administration Manual relating to Project administration. To the extent there is no form or procedure for a particular matter, then Contractor shall comply with the form or procedure reasonably required by the City. Once a standard form has been executed by Contractor and Owner as necessary, the executed copy shall become part of the Contract Documents.

5.0 SHOP DRAWINGS

5.1 The Contractor shall provide shop drawings as may be necessary for the prosecution of the Work as required by the Contract Documents. The Engineer shall promptly review all shop drawings. The Engineer's approval of any shop drawing shall not release the Contractor from responsibility for deviations from the Contract Documents. Any shop drawing which deviates from the requirements of the Contract Documents must be first authorized by a Change Order.

5.2 When submitted for the Engineer's review, shop drawings shall bear the Contractor's certification that it has reviewed, checked and approved the shop drawings and that they are in conformance with the requirements of the Contract Documents.

5.3 Portions of the Work requiring a shop drawing or sample submission shall not begin until the shop drawing or submission has been approved by the Engineer. A copy of each approved shop drawing and each approved sample shall be kept in good order by the Contractor at the site and shall be available to the Engineer.

6.0 MATERIALS, SERVICES AND FACILITIES

6.1 It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete and deliver the Work within the Contract Time.

6.2 Materials and equipment shall be stored by Contractor to ensure the preservation of their quality and fitness for the Work. Stored materials and equipment to be incorporated in the Work shall be located so as to facilitate prompt inspection.

6.3 Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used cleaned and conditioned as directed by the manufacturer.

6.4 Materials, supplies, and equipment shall be in accordance with samples submitted by the Contractor and approved by the Engineer.

6.5 Materials, supplies and equipment to be incorporated into the Work shall not be purchased by the Contractor or the Subcontractor subject to a chattel mortgage or under a conditional sale contract or other AGREEMENT by which an interest or lien is retained by the seller.

7.0 INSPECTION AND TESTING

7.1 All materials and equipment used in the construction of the Project shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the Contract Documents or required by

applicable governmental law, rule or regulation.

7.2 The City, Engineer, their respective representatives, agents and employees and governmental agencies with jurisdiction over the Project shall have access at all times to the Work whether the Work is being performed on or off of the Project site, for their observation, inspection and testing. Contractor shall provide proper and safe conditions for such access, and also for any inspection or testing thereof. Contractor shall provide the City and Engineer with timely prior written notice (at least 48 hours) of the readiness of the Work for all required inspections, tests or approvals. In addition, authorized representatives and agents of any participating Federal or State agency shall be permitted to inspect all Work, materials, payrolls, personnel records, material invoices, and other relevant data and records.

7.3 The Contractor shall provide at the Contractor's expense all testing and inspection services required by the Contract Documents or any applicable governmental law, rule or regulation. Re-inspection and re-testing fees and costs of all testing failures shall be at the Contractor's expense.

7.4 If the Contract Documents or any applicable governmental law, rule, or regulation requires any portion of the Work to specifically be inspected, tested, or approved, Contractor shall assume full responsibility therefore, pay all costs in connection therewith and furnish the Engineer the required certificates of inspection, testing or approval. All inspections, tests or approvals shall be performed in a manner and by organizations acceptable to the City and Engineer.

7.5 Neither observations by Engineer or the City, nor inspections, tests or approvals by the Engineer or others shall relieve the Contractor from the obligations to perform the Work in accordance with the requirements of the Contract Documents.

7.6 If any Work is covered contrary to the written instruction of the Engineer, it must, if requested by the Engineer, be uncovered for the Engineer’s observation and replaced at the Contractor's expense.

7.7 If any Work that is to be inspected, tested or approved pursuant to the Contract Documents or any applicable governmental law, rule or regulation is covered without such inspection, testing or approval having been satisfactorily obtained by Contractor and without obtaining the written concurrence from Engineer, Contractor shall uncover, expose or otherwise make available the Work for such observation, inspection or testing as directed by Engineer, and Contractor shall be responsible for all such costs of uncovering, exposing, observation, inspection, testing, and reconstruction.

7.8 If the Engineer considers it necessary or advisable that covered Work be inspected or tested by others that was not otherwise required to be tested or inspected by the terms of the Contract Documents or any applicable governmental law, rule or regulation, the Contractor, at the Engineer 's request, will uncover, expose or otherwise make available for observation, inspection or testing as the Engineer may require, that portion of the Work in question, furnishing all

necessary labor, materials, tools, and equipment. If it is found that such Work is defective, the Contractor will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such Work is not found to be defective, the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate Change Order shall be issued.

8.0 SUBSTITUTIONS

8.1 Whenever a material, article, or piece of equipment is identified on the Drawings or Specifications by reference to brand name or catalogue numbers, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function may be considered. The Contractor may recommend the substitution of a material, article, or piece of equipment of equal substance, quality, and function for those referred to in the Contract Documents by reference to brand name or catalogue number, and if, in the opinion of the Engineer, such material, article, or piece of equipment is of equal substance, quality and function to that specified, the Engineer may allow its substitution and use by the Contractor. If the Contractor based its bid on "or equal" products and the City and/or Engineer determine that one or more of the Contractor's proposed "or equal" products included in its bid fails to meet the requirements of the Contract Documents, Contractor may be required, at City's sole discretion, to provide products conforming with the requirements of the Contract Documents at no additional cost to the City per the City's direction.

8.2 If Contractor wishes to furnish or use a substitute item of material or equipment, Contractor shall certify that the proposed substitute shall perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. Contractor shall also certify that the evaluation and acceptance of the proposed substitute will not prejudice Contractor's achievement of Substantial Completion of the Work within the Contract Time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for the Project) to adapt the design to the proposed substitute and whether or not incorporation or use by the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service shall be indicated. Contractor shall also provide an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs for redesign and claims of other contractors affected by the resulting change, all of which shall be considered by Engineer in evaluating the proposed substitute. Engineer or Owner may require Contractor to furnish at Contractor's expense additional data about the proposed substitute. Further, Contractor shall reimburse Owner for the changes of Engineer and Engineer's consultants for evaluating each proposed substitute submitted

after the effective date of the AGREEMENT and all costs resulting from any delays in the Work while the substitute was undergoing review.

9.0 PATENTS

9.1 The Contractor shall pay all applicable royalties and license fees, and shall defend all suits or claims for infringement of any patent rights and save the City harmless from loss on account thereof, except that the City shall be responsible for any such loss when a particular process, design, or product of a particular manufacturer or manufacturers is specified. Provided, however, if the Contractor has reason to believe that the design, process or product specified is an infringement of a patent, the Contractor shall be responsible for such loss or claim unless the Contractor promptly gives such information in writing to the Engineer and City.

10.0 SURVEYS, PERMITS, REGULATIONS, AND PROJECT LAYOUT

10.1 The City shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the Work together with a suitable number of bench marks adjacent to the Work as shown in the Contract Documents. From the information provided by the City, unless otherwise specified in the Contract Documents, the Contractor shall develop and make all detail surveys needed for construction such as slope stakes, batten boards, stakes for pipe locations and other working points, lines, elevations and cut sheets.

10.2 The Contractor shall carefully preserve benchmarks, reference points and stakes. Contractor is solely responsible for maintaining all benchmarks, reference points, and stakes, and is solely responsible for any mistake that may be caused by their loss or disturbance. The Contractor shall be held responsible for all mistakes that may be caused by the loss or disturbance of any such benchmarks, reference points or stakes.

10.3 The Contractor shall engage for the performance of Project layout and control, a Professional Land Surveyor registered in the State of Florida to practice land surveying. Said surveyor must carry Professional Liability Insurance in the amount of at least one million dollars ($1,000,000) per occurrence. The land surveyor employed for this Project must comply with the Minimum Technical Standards for Surveying and Mapping pursuant to Florida Statute 472.027.

10.4 Should the Contractor in the course of its Work find that the points, grades and levels which are shown upon the Drawings are not conformable to the physical conditions of the locality at the proposed work or structure, it shall immediately inform the Engineer of the discrepancy between actual physical conditions of the locality of the proposed work, and the points, grades and levels which are shown on the drawings. No claim shall be made by the Contractor against the City for compensation or damage by reasons of failure of the Engineer to represent upon the Drawings points, grades and levels conformable to the actual physical conditions of the locality of the proposed work.

10.5 All permits and licenses necessary for the prosecution of the Work shall be secured and paid for by the Contractor unless otherwise expressly noted in the Contract Documents. These shall include all building permits, burn permits, debris disposal permits, etc. All licenses, easements and variances for permanent structures or permanent changes in existing facilities shall be secured and paid for by the City, unless otherwise specified in the Contract Documents. The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and governmental permits and approvals bearing on the conduct of the Work as drawn and specified. If the Contractor observes that the Contract Documents are at variance therewith, the Contractor shall promptly notify the Engineer and City in writing, and any necessary changes shall be adjusted as provided in Section 13 below.

11.0 PROTECTION OF WORK, PROPERTY, AND PERSONS

11.1 The Contractor is responsible for the safety and protection of all persons and property on or about the Project site during the progress of the Work, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction. Further, it is Contractor's responsibility to protect from damage or loss all material and equipment to be incorporated into the Work whether in storage on or off the Project site. Contractor shall initiate, maintain and supervise all safety precautions and programs in connection with the Work and shall develop and implement, in accordance with the requirements of the Contract Documents, a safety plan for the Work. Contractor's safety plan shall include a hurricane protection plan. Contractor's duties and responsibilities for the safety and protection of the Work shall continue until such time as the Work is completed and final acceptance of same by the City has occurred.

11.2 The Contractor will comply with all applicable codes, laws, ordinances, rules, regulations and orders of the City and any public body having jurisdiction over the Work, including the Occupational Safety and Health Administration (OSHA) and any State Safety and Health agency requirements and all of their safety codes, laws, ordinances, rules and regulations. The Contractor will erect and maintain, as required by the conditions and progress of the Work, all necessary safeguards for safety and protection. Contractor shall notify owners of adjacent property and of any underground structures or improvements and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation or replacement of their property. The Contractor will remedy all damage, injury or loss to any property caused by the Contractor, any Subcontractor or anyone directly or indirectly employed by any of them or anyone of whose acts any of them be liable.

11.3 Barricades, Guards and Safety Provisions: To protect persons from injury and to avoid property damage, adequate barricades, construction signs, torches, red lanterns and guards shall be placed and maintained during progress of construction work and until it is safe for both pedestrians and vehicular traffic. Rules and regulations of local authorities regarding safety provisions shall be observed.

11.4 In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instructions or authorization from the Engineer or City, shall act to prevent threatened damage, injury or loss. The Contractor will give the Engineer prompt written notice of any such emergency and to the extent the emergency was not caused by the fault or neglect of Contractor or anyone for whom Contractor is responsible, a Change Order shall be issued covering the necessary and reasonable changes and deviations involved.

11.5 At all times during the performance of the Work at the Project site, Contractor shall have designated, and located on a full time basis at the Project site, a qualified individual whose responsibility shall be to monitor and enforce Contractor's safety program at the Project site; such individual shall be deemed to be the Contractor's Project Superintendent. However, Contractor may designate by written notice to the City another individual, reasonably acceptable to the City, who shall be Contractor's safety representative at the Project site.

11.6 Alcohol, drugs and all illegal substances are strictly prohibited on the Project site and any City property. All employees of Contractor, as well as those of all Subcontractors and those of any other person or entity for whom Contractor is legally liable (collectively referred to herein as "Employees"), shall not possess or be under the influence of any such substances while on the Project site or any City property. Further, employees shall not bring on to the Project site or any City property any gun, rifle or other firearm, or explosives of any kind. Provided, however, to the extent explosives are reasonably required with respect to the performance of the Work, Contractor shall strictly comply with the Contract Documents and any and all rules and regulations of Owner or of any applicable governmental agency as it relates to the storage, handling and use of such explosives.

12.0 SUPERVISION BY CONTRACTOR

12.1 The Contractor will supervise and direct the Work. Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. The Contractor will employ and maintain on the Project site on a full time basis a qualified superintendent acceptable to the City. The superintendent and his or her designees shall have full authority to act on behalf of the Contractor and all communications given to the superintendent or his or her designee shall be as binding as if given to the Contractor. The superintendent or his or her designee shall be present on the site at all times when any portion of the Work is being performed to ensure adequate supervision and coordination of the Work.

13.0 CHANGES IN THE WORK

13.1 The City may at any time during the progress of the Work, as the need arises and in its sole discretion, order changes within the general scope of the Work without invalidating the AGREEMENT. Promptly after being notified of a change, but in no event more than fourteen (14) days after its receipt of such notification (unless the

City has agreed in writing to a longer period of time), Contractor shall submit an itemized estimate of any cost or time increases or savings it foresees as a result of the change. Except in an emergency endangering life or property, no addition or changes to the Work shall be made except upon a properly issued Change Order, Construction Change Directive or Field Order. No officer, employee or agent of the City is authorized to direct any extra or changed work without a properly issued Change Order, Construction Change Directive, or Field Order.

13.2 All changes to the Work must be authorized by means of a written Change Order that is mutually agreed to by the City and Contractor or a Construction Change Directive issued by the City or a Field Order issued by the City or Engineer. If the change is to be accomplished through a Change Order, the Change Order, in the form set forth in the City's Project Administration Manual, shall be prepared by Contractor, reviewed by Engineer and the City, and executed promptly by the parties after an AGREEMENT is reached between Contractor and the City concerning the requested changes. Contractor shall promptly perform changes authorized by duly executed Change Orders. The Contract Price and Contract Time shall be adjusted in the Change Order in the manner as the City and Contractor shall mutually agree. The Change Order shall identify the changed work. Also, where the Contract Price is based upon unit prices, a Change Order may be used for work for which quantities have been altered from those shown in the bidding schedule, as well as decreases or increases in the quantities of installed units which are different than those shown in the bidding schedule because of final measurements. All changes must be recorded on an executed Change Order before they can be included in a monthly Application for Payment.

13.3 To the extent the Contract Price is based on unit prices, the City reserves the right to increase or decrease a unit price quantity as may be deemed reasonable or necessary in order to complete the Work contemplated by this AGREEMENT.

13.4 If the City and Contractor are unable to agree on a Change Order for the requested change, Contractor shall, nevertheless, promptly perform the change as directed by the City in a written Construction Change Directive. In that event, the Contract Price and Contract Time shall be adjusted in the Construction Change Directive as determined by the City. If Contractor disagrees with the City's adjustment determination, Contractor must make a claim strictly in accordance with the terms of the Contract Documents or else be deemed to have waived any claim it might otherwise have had on that matter.

13.5 The City shall have the right to conduct an audit of Contractor's books and records, as well as those of its Subcontractors and Suppliers, to verify the accuracy of Contractor's estimates or claims with respect to Contractor's cost and time impacts associated with any Change Order or Construction Change Directive.

13.8 The Engineer or City at any time may direct Contractor to make changes to the Work by issuing a Field Order, so long as such changes do not require or result in any adjustment to the Contract Price or Contract Time, and are generally within the scope of the Work. Contractor shall proceed with the performance of any changes in the Work so ordered by the Engineer or City unless the Contractor

believes that such Field Order entitles the Contractor to a change in the Contract Price or Contract Time, or both. In the event Contractor believes the Field Order requires a change to the Contract Price or Contract Time, it must provide written notice to the Engineer and City within five (5) business days of receipt of the Field Order and before starting with any changed Work. Failure to provide such notice waives Contractor's right to claim such work requires a change in the Contract Price or Contract Time. Once Contractor has provided timely written notice, it shall proceed as directed by City in writing, and thereafter shall file a claim in accordance with the procedures required herein.

14.0 CHANGES IN CONTRACT PRICE

Reference LAP Division 1 Specifications Section 4-3, attached hereto

15.0 TIME FOR COMPLETION AND LIQUIDATED DAMAGES

Reference LAP Division 1 Specifications Section 8-1, attached hereto

16.0 CORRECTION OF DEFECTIVE WORK

16.1 Work not conforming to the requirements of the Contract Documents shall be deemed defective Work. If required by the City or Engineer, the Contractor shall as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the defective Work has been rejected by the City or Engineer, remove it from the site and replace it with non-defective Work in accordance with the Contract Documents and without additional expense to the City. Further, Contractor shall bear the expense of making good all work of other contractors performing work on the Project destroyed or damaged by such removal or replacement. Contractor shall bear all direct, indirect and consequential costs of such correction or removal (including, but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby, and shall hold the City and Engineer harmless for same. Notwithstanding anything herein to the contrary, the City may determine, at its sole discretion, to accept defective Work. If such determination is rendered prior to final payment, a Change Order or Construction Change Directive shall be executed evidencing such acceptance of such defective Work, incorporating the necessary revisions in the Contract Documents and reflecting an appropriate decrease in the Contract Price. If the City accepts such defective Work after final payment, Contractor shall promptly pay the City an appropriate amount determined by the City to adequately compensate the City for its acceptance of the defective Work.

16.2 If the Contractor does not take action to correct defective Work or to remove and replace rejected defective Work or if Contractor fails to comply with any of the provisions of the Contract Documents within ten (10) days after receipt of written

notice from the City or Engineer, the City may correct and remedy any such deficiency at the expense of the Contractor. To the extent necessary to complete corrective and remedial action, the City may exclude Contractor from any or all of the Project site, take possession of all or any part of the Work, and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Project site and incorporate in the Work all materials and equipment stored at the Project site or for which the City has paid Contractor but which are stored elsewhere. Contractor shall allow the City, Engineer and their respective representatives, agents, and employees such access to the Project site as may be necessary to enable the City to exercise the rights and remedies under this Section. All direct, indirect and consequential costs of the City in exercising such rights and remedies shall be at Contractor's expense, and a Change Order or a Construction Change Directive shall be issued, incorporating the necessary revisions to the Contract Documents, including an appropriate decrease to the Contract Price. Such direct, indirect and consequential costs shall include, but not be limited to, fees and charges of engineers, architects, attorneys and other professionals, and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of Contractor's defective Work. Contractor shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by the City of the City's rights and remedies hereunder.

17.0 SUSPENSION OF WORK, TERMINATION, AND DELAY

17.1 The City shall have the right to suspend the Work or any portion thereof for a period of not more than ninety (90) days or such additional time as agreed upon by the Contractor, upon giving Contractor written notice of such suspension to the Contractor. The City or Engineer shall fix the date on which Work shall be resumed. The Contractor will resume that Work on the date so fixed unless otherwise directed by the City. Provided Contractor strictly complies with the Change Order and Claims procedures set forth in the Contract Documents, Contractor will be entitled to a Change Order adjusting the Contract Price and Contract Time, as provided in the Contract Documents, to the extent attributable to any such suspension, unless said suspension is due to the fault or neglect of Contractor or anyone for whom Contractor is responsible.

17.2 If, through no act or fault of the Contractor, the Work is suspended for a period of more than ninety (90) days by the City or under an order of court or other public authority, or the Engineer fails to act on any request for payment within thirty (30) days after it is submitted, or the City fails to pay the Contractor any undisputed amounts within thirty (30) days of its approval, then the Contractor may after ten (10) days from delivery of a written notice to the City and the Engineer and the City's failure to cure such default (or a maximum of sixty (60) days in the event the default cannot reasonably be cured within ten (10) days provided that the City commences to cure within ten (10) days and thereafter diligently and continuously pursues said cure) terminate the AGREEMENT and recover from the City payment for all Work properly executed and reasonable termination expenses sustained. In addition, and in lieu of terminating the AGREEMENT, if the Engineer has failed to

act on a request for payment or if the City has failed to make any payment within the aforesaid thirty (30) day periods, the Contractor may upon ten (10) days written notice to the City and the Engineer stop the Work until paid all amounts then due, in which event and upon resumption of the Work, a Change Order shall be issued adjusting the Contract Price and Contract Time as provided in the Contract Documents.

17.3 Contractor shall be considered in material default of the AGREEMENT and such default shall be considered cause for the City to terminate the Contractor's right to continue to perform under the AGREEMENT, in whole or in part, as further set forth in this Section, if Contractor: (1) fails to begin the Work under the Contract Documents within the time specified herein; or (2) fails to properly and timely perform the Work as directed by the City or Engineer or as provided for in the approved Construction Schedule; or (3) performs the Work unsuitably or neglects or refuses to remove materials or to correct or replace such Work as may be rejected as unacceptable or unsuitable; or (4) discontinues the prosecution of the Work contrary to the requirements of the AGREEMENT; or (5) fails to resume Work which has been suspended within a reasonable time after being notified to do so; or (6) becomes insolvent or is declared bankrupt, or commits any act of bankruptcy; or (7) allows any final judgment to stand against it unsatisfied for more than ten (10) days; or (8) makes an assignment for the benefit of creditors; or (9) fails to comply with any applicable codes, laws, ordinances, rules or regulations with respect to the Work; or (10) fails to supply sufficient skilled workmen or suitable materials or equipment; or (11) fails to promptly pay its Subcontractors and Suppliers; or (12) disregards the authority of the City or Engineer; or (12) materially breaches any other provision of the Contract Documents. In rendering its decision as to whether one of the causes under Section 17.3 exist which would permit the City to terminate the AGREEMENT, the City shall be entitled to rely upon the determination of the Engineer concerning such matter.

17.3.1 In such event, and after giving the Contractor and its surety a minimum of ten (10) days from delivery of a written notice to cure any such default (or a maximum of sixty (60) days in the event the default cannot reasonably be cured within ten (10) days provided that Contractor commences to cure within ten (10) days and thereafter diligently and continuously pursues said cure), the City may at its option, and without releasing or waiving its rights and remedies against Contractor's sureties and without prejudice to any other right or remedy, terminate Contractor's right to proceed under the AGREEMENT in whole or in part, and take possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor, take assignments of any of Contractor's subcontracts and purchase orders that the City may designate, and finish the Work by whatever method the City in its sole discretion may deem expedient.

17.3.2 If Contractor's right to proceed under the AGREEMENT is terminated, Contractor shall not be entitled to receive any further payment until the Work is finished. All monies expended and all of the costs, losses, damages and extra expenses, including all management, administrative and other overhead and other

direct and indirect expenses (including Engineer and attorneys' fees) or damages incurred by the City incident to such completion (collectively "Completion Costs"), shall be deducted from the unpaid balance of the Contract Price. Upon the City's completion, if the unpaid balance of the Contract Price exceeds the Completion Costs, such excess shall be paid to the Contractor. If the Completion Costs exceed the unpaid balance of the Contract Price, Contractor shall pay promptly to the City on demand the full amount of such excess and interest thereon at a rate of 6% per annum until paid.

17.3.3 The liability of Contractor hereunder for Completion Costs shall extend to and include the full amount of any and all sums paid, expenses and losses incurred, damages sustained, and obligations assumed by the City in good faith under the belief that such payments or assumptions were necessary or required, in completing the Work and providing labor, materials, equipment, supplies, and other items therefor or re-letting the Work, and in settlement, discharge or compromise of any claims, demands, suits, and judgments pertaining to or arising out of the Work hereunder. Further, in the event the City has exercised its right to terminate due to Contractor's default, Contractor shall be prohibited from bidding or otherwise seeking additional work from the City in accordance with the City's then current debarment policy.

17.3.4 The City may deduct from any payment, any sum owed by the City to Contractor, either under this AGREEMENT or any other AGREEMENT between the City and the Contractor. Further, a default by Contractor under any other AGREEMENT with the City shall be deemed a default under this AGREEMENT and a default under this AGREEMENT shall be deemed a default under any other AGREEMENT between the City and Contractor.

17.4 Where the Contractor's services have been so terminated by the City, said termination shall not affect any right of the City against the Contractor then existing or which may thereafter accrue. Any retention or payment of monies by the City due the Contractor will not release the Contractor from compliance with the Contract Documents. Further, if after notice of termination of Contractor's right to proceed pursuant to Section 17.3, it is determined for any reason that Contractor was not in default, or that its default was excusable, or that the City is not entitled to the remedies against Contractor provided herein, then such termination shall be deemed a termination for the City's convenience and Contractor's remedies against the City shall be the same as and limited to those afforded Contractor under Section 17.5 below.

17.5 The City shall have the right to terminate this AGREEMENT without cause upon ten (10) days from delivery of a written notice to the Contractor. In the event of such termination for convenience, Contractor's sole and exclusive recovery against the City shall be limited to that portion of the Contract Price earned through the date of termination, together with any retainage withheld and reasonable termination expenses incurred, but Contractor shall not be entitled to any other or further recovery against the City, including, but not limited to, damages or any anticipated profit on portions of the Work not performed.

18.0 PAYMENT TO CONTRACTOR

Reference LAP Division 1 Specifications Section 9-5, attached hereto

19.0 ACCEPTANCE OF FINAL PAYMENT AS RELEASE

19.1 The acceptance by the Contractor of final payment shall be and shall operate as a full release and waiver of any and all claims by Contractor against the City arising out of this AGREEMENT or otherwise relating to the Project, except those identified in writing by Contractor as unsettled in its final Application for Payment. Any payment, however, final or otherwise shall not release the Contractor or its sureties from any obligations under the Contract Documents or the Performance and Payment Bonds. Neither the acceptance of the Work nor payment by the City shall be deemed to be a waiver of the City's right to enforce any obligations of Contractor hereunder or to the recovery of damages for defective Work not discovered by the City or Engineer at the time of final inspection.

20.0 CONTRACT SECURITY

20.1 The Contractor shall within ten (10) days after the receipt of the Notice of Award and prior to the start of any Work furnish the City with a Performance Bond and a Payment Bond in penal sums equal to 100% of the amount of the Contract Price and in the forms attached as Sections 00060 and 00070. Such Bonds shall be executed by the Contractor and a corporate bonding company licensed to transact such business in the State of Florida and named on the current lists of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570 and approved by the City. The expense of these Bonds shall be borne by the Contractor. If at any time a surety on any such Bond is declared as bankrupt or loses its rights to do business in Florida or is removed from the list of Surety Companies accepted on Federal Bonds, Contractor shall within ten (10) days after notice from the City to do so, substitute an acceptable Bond (or Bonds) in such form and sum and signed by such other surety or sureties as may be satisfactory to the City. The premiums on such replacement Bond shall be paid by the Contractor. No further payment shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable Bond to the City.

20.2 The Contractor and its Surety, for value received, hereby stipulate and agree that any and all claims, demands, actions or suits whatsoever, arising under this AGREEMENT and/or bonds, shall be subject to the sole and exclusive jurisdiction and venue of the appropriate state court in and for Bay County, Florida. The Contractor and its Surety do agree, by execution of these documents, that the sole and exclusive jurisdiction and venue in said forum is proper and appropriate since performance of the underlying contract for which these documents are executed is to be accomplished within Bay County, Florida.

21.0 ASSIGNMENTS

21.1 Contractor shall not assign this AGREEMENT or any part thereof, without the prior consent in writing of the City, which consent shall be at City's' sole discretion. If Contractor does, with City's written approval, assign this AGREEMENT or any part thereof, Contractor shall not be released from any of its obligations or responsibilities under this AGREEMENT.

22.0 INDEMNIFICATION AND HOLD HARMLESS

22.1 To the extent provided by law, Contractor shall indemnify, defend, and hold harmless the City and the State of Florida, Department of Transportation, including the Department's officers, agents, and employees, against any actions, claims, or damages arising out of, relating to, or resulting from negligent or wrongful act(s) of Contractor, or any of its officers, agents, or employees, acting within the scope of their office or employment, in connection with the rights granted to or exercised by Contractor hereunder, to the extent and within the limitations of Section 768.28, Florida Statutes.

The foregoing indemnification shall not constitute a waiver of sovereign immunity beyond the limits set forth in Florida Statutes, Section 768.28. Nor shall the same be construed to constitute AGREEMENT by Contractor to indemnify the City for the negligent acts or omissions of the City, its officers, agents, or employees, or third parties. Nor shall the same be construed to constitute AGREEMENT by Contractor to indemnify the Department for the negligent acts or omissions of the Department, its officers, agents, or employees, or third parties. This indemnification shall survive the termination of this AGREEMENT.

22.2 Contractor's obligation to indemnify and hold harmless under this Article 22 will survive the expiration or earlier termination of this AGREEMENT until it is determined by final judgment that an action against the City or an indemnified party for the matter indemnified hereunder is fully and finally barred by the applicable statute of limitations.

22.3 The obligation of the Contractor under this Article 22 shall not extend to the liability of the Engineer, its agents or employees arising out of the preparation of approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications.

23.0 SEPARATE CONTRACTS AND COOPERATION

23.1 The City reserves the right to perform other work related to the Project at the site by the City's own forces, have other work performed by utility owners or let other direct contracts for work to be constructed at the same time, and in connection with, the Work included in this AGREEMENT. The Contractor shall cooperate with all other contractors in such a manner, and to such extent, as best to facilitate the completion of the entire Project in the shortest time possible, subject to, at all times, the

approval of the Engineer and Owner. It shall be the duty of each contractor to work with the other contractors, render such assistance, and to arrange its work in such a manner that shall allow the entire Project to be delivered complete and in the best possible condition. The Contractor shall afford other contractors and utility owners reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate the Work with theirs. If the proper execution or results of any part of the Contractor's Work depends upon the work of any other Contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such work that render it unsuitable for such proper execution and results.

23.2 If the performance of additional work by other contractors, utility owners, or the City is not noted in the Contract Documents prior to the execution of the AGREEMENT, written notice thereof shall be given to the Contractor prior to starting any such additional work. If the Contractor believes that the performance of such undisclosed additional work by the City or others involves it in additional expense or entitles it to an extension of the Contract Time, the Contractor shall send written notice of that fact to the City and Engineer within seven (7) calendar days of being notified of the other work and the Contractor may make a claim thereof as provided in Sections 13 and 14. If Contractor fails to send the above required seven (7) calendar days' notice, Contractor will be deemed to have waived any rights it otherwise may have had to seek an extension to the Contract Time or adjustment to the Contract Price.

23.3 Contractor shall afford each utility owner and City's other contractors (or the City, if the City is performing the additional work with the City's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work and shall properly connect and coordinate its Work with theirs. Contractor shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. Contractor shall be responsible for all damage to the work of others caused by the performance of its Work. Further, Contractor shall not in any way cut or alter the work of others without first receiving the written consent of that other person and Engineer. If any part of Contractor's Work depends for proper execution or results upon the work of any other contractor or utility owner (or the City), Contractor shall inspect and promptly report to Engineer in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. Such report must be made within three (3) business days of the time Contractor first became aware of the delay, defect or deficiency. Contractor's failure to report within the allotted time will constitute an acceptance of the other work as fit and proper for integration with Contractor's Work, except for latent defects not discovered by Contractor.

23.4 The Contractor shall keep itself fully informed at all times regarding all details of the work of other contractors working at the site, and it shall be responsible for all delays that may result from its failure to install the Work in the proper manner and at the proper time.

23.5 The Contractor shall be responsible for coordinating the relocation of existing utilities (with the respective utility companies) as needed to construct the Project. Attention

is called to the fact that Contractor is responsible for contacting all utility companies to obtain locations of all existing utilities or obstructions which it may encounter during construction. After location of utilities by the appropriate utility company, it is the Contractor's liability to protect all such utility lines, including service lines and appurtenances, and to replace at its own expense any which may be damaged by the Contractor's equipment or forces during construction of the Project. The City will pay fees charged by the utility company for relocating these utilities.

24.0 SUBCONTRACTING

24.1 Contractor shall review the design and shall determine how it desires to divide the sequence of construction activities. Contractor will determine the breakdown and composition of bid packages for award of subcontracts, based on the current Construction Schedule, and shall supply a copy of that breakdown and composition to the City and Engineer for their review and approval. The Contractor may utilize the services of specialty Subcontractors on those parts of the Work which, under normal contracting practices, are performed by specialty Subcontractors. Contractor shall be solely responsible for and have control over the Subcontractors.

24.2 Prior to submitting its first Application for Payment, Contractor shall submit to the City a list of the names, addresses, licensing information and phone numbers of the Subcontractors Contractor intends to use for each portion of the Work, as well as identifying in writing those portions of the Work it intends to perform with its own employees. The Contractor shall not use a Subcontractor or Supplier against whom the Owner has a reasonable objection. The list identifying each Subcontractor cannot be modified, changed, or amended without prior written approval from the City. Contractor shall continuously update that list, so that it remains current and accurate throughout the entire performance of the Work. Any and all work to be self-performed by Contractor must be approved in writing by the City in its sole discretion prior to commencement of such Work. The Contractor shall not award work to Subcontractor(s) in excess of fifty percent (50%) of the Contract Price, without prior written approval of the City.

24.3 The Contractor shall be fully responsible for and have control over the acts and omissions of its Subcontractors, and of persons either directly or indirectly employed by them, as the Contractor is for the acts and omissions of persons directly employed by it.

24.4 The Contractor shall cause appropriate provisions to be inserted in all Subcontracts relative to the work to bind Subcontractors to the Contractor by the terms of the Contract Documents insofar as applicable to the work of Subcontractors and give the Contractor the same power to terminate any subcontract that the City may exercise over the Contractor under any provision of the Contract Documents. Further, each subcontract shall require that any claims by a Subcontractor for delay or additional cost must be submitted to Contractor within the time and in the manner in which Contractor must submit such claims to the City, and that failure to comply with such conditions for giving notice and submitting claims shall result in the waiver of such claims.

24.5 All subcontracts between Contractor and its Subcontractors shall be in writing and are subject to the City's approval. Further, all subcontracts shall (1) require each Subcontractor to be bound to Contractor to the same extent Contractor is bound to the City by the terms of the Contract Documents, as those terms may apply to the portion of the Work to be performed by the Subcontractor, (2) provide for the assignment of the subcontracts from Contractor to the City at the election of the City upon termination of Contractor, (3) provide that the City will be an additional indemnified party of the subcontract, (4) provide that the City will be an additional insured on all insurance policies required to be provided by the Subcontractor except workmans' compensation, (5) assign all warranties directly to the City, and (6) identify the City as an intended third-party beneficiary of the subcontract.

24.6 Nothing contained in this AGREEMENT shall create any contractual relation between any Subcontractor or Supplier and the City. All subcontracts and purchase orders entered into by Contractor must be in writing, and upon demand from City, Contractor shall deliver to City a full and complete copy of any or all such subcontracts and purchase orders.

24.7 Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract, copies of the Contract Documents to which the Subcontractor will be bound. Each Subcontractor shall similarly make copies of such documents available to its sub-subcontractors.

24.8 The Contractor shall not use a Subcontractor or Supplier against whom the City has a reasonable objection and Contractor shall not be required to contract with anyone it reasonably objects to.

24.8 The City and Engineer are under no duty or obligation whatsoever to any Subcontractor, Supplier, laborer or other party to ensure that payments due and owing by the Contractor to any of them will be made. Such parties shall rely only on the Contractor's surety bonds for remedy of nonpayment by the Contractor.

25.0 ENGINEER'S AUTHORITY

25.1 The Engineer shall act as the City's representative during the construction period, shall decide questions which may arise as to quality and acceptability of materials furnished and Work performed, and shall interpret the intent of the Contract Documents in a fair and reasonable manner. The Engineer will make visits to the site and determine if the Work is proceeding in accordance with the Contract Documents.

25.2 The Contractor will be held strictly to the intent of the Contract Documents in regard to the quality of materials, workmanship, and execution of the Work. Inspections may be at the factory or fabrication plant of the source of material supply.

25.3 The Engineer and the City will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

25.4 The Engineer shall promptly make decisions relative to interpretation of the Contract Documents.

26.0 LAND AND RIGHT-OF-WAYS

26.1 Prior to the issuance of the NOTICE TO PROCEED, the City shall obtain all land and rights-of-way necessary for carrying out and for the completion of the Work to be performed pursuant to the Contract Documents, unless otherwise noted in the Contract Documents.

26.2 The City shall provide to the Contractor information which delineates and describes the lands owned and rights-of-way acquired.

26.3 The Contractor shall provide at its own expense and without liability to the City any additional land and access thereto that the Contractor may desire for temporary construction facilities, or for storage of materials.

27.0 GUARANTEE

27.1 The Contractor warrants to the City and Engineer that materials and equipment furnished under the AGREEMENT will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Contractor further warrants to the City that all materials and equipment furnished under the Contract Documents shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturers, fabricators, suppliers or processors except as otherwise provided for in the Contract Documents. Further, any special warranty to be provided will be in such form as is acceptable to the City and shall not include any exclusions, exceptions or modifications except to the extent approved by the City in its sole discretion. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear from normal usage. If required by the Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

27.2 Contractor expressly warrants to the City that it shall promptly correct, upon receipt of written notice from the City, any portion of the Work which is found to be defective or otherwise not in conformance with the requirements of the Contract Documents. The City will give notice of observed defects with reasonable promptness. Provided, however, in the event that any defective or non-conforming Work is determined by the City in its sole discretion to present an immediate threat to safety or security, the City shall be entitled to correct or replace such defective or non-conforming portions of the Work, and Contractor shall reimburse the City for all costs and expenses incurred by the City in correcting or replacing such Work. In the event that the Contractor should fail to make such repairs, adjustments, or other work that may be made necessary by such defects, the City may do so and charge the Contractor the cost thereby incurred. The Performance Bond shall remain in full force and effect through the guarantee period. With respect to the correction or replacement of any defective or nonconforming Work, Contractor shall be liable for all damage to any part of the Work itself and to any adjacent property which is caused by such corrective or replacement work.

27.3 If, within one year after the date of final acceptance of the Work by the City, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the City to do so unless the City has previously given the Contractor an express written acceptance of such condition. The City shall give such notice promptly after discovery of the condition. If the Contractor fails to correct nonconforming Work within a reasonable period of time (not to exceed 10 days) after receipt of notice from the City or Engineer, the Owner may correct or replace it in accordance with Section 27.2 above. This one year correction period is in addition to all other rights and does not limit the time period the City can seek to have the defective Work corrected.

27.4 Contractor shall obtain and assign to the City all express warranties given to Contractor by any Subcontractors or by Suppliers.

28.0 CLAIMS AND DISPUTES

Reference LAP Division 1 Specifications, Section 5-12, attached hereto

29.0 TAXES

29.1 The Contractor will pay all applicable sales, consumer, use and other similar taxes required by the laws of the place where the Work is performed.

30.0 CONTRACT TIME, SCHEDULE OF WORK AND TIME EXTENSIONS

30.1 Contractor shall diligently pursue the completion of the Work and coordinate the Work being done on the Project by its Subcontractors and Suppliers, as well as

coordinating its Work with all work of others at the Project site, so that its Work or the work of others shall not be delayed or impaired by any act or omission by Contractor or anyone for whom Contractor is liable. All Work under this AGREEMENT shall be arranged and be carried out in such a manner as to complete the Work on or before the required date of Substantial Completion. The Contractor must notify the City at the time of bidding if the chronology of the Work as shown or the subdivision of work will affect warranties or guarantees in any way. No such claims shall be allowed once the Work has begun.

30.2 Should Contractor be obstructed or delayed in the prosecution of or completion of the Work as a result of unforeseeable causes beyond the control of Contractor, and not due to its fault or neglect, including but not restricted to acts of God or of the public enemy, acts of government, fires, floods, epidemics, quarantine regulation, strikes, lockouts, unusually severe weather conditions by comparison with the ten-year Bay County, Florida average not reasonably anticipatable (to the extent Contractor was unable to perform any portion of the Work that was on the critical path of the approved Construction Schedule during those inclement weather days), Contractor shall notify Owner and Engineer in writing within seven (7) calendar days after the commencement of such delay, stating the cause or causes thereof, or be deemed to have waived any right which Contractor may have had to request a time extension.

30.3 The Contractor is required to furnish adequate manpower at the Project to complete the Work within the Contract Time and in accordance with the Construction Schedule. Should payment of premium time, bonuses, or the like be necessary to attract sufficient manpower for the Project, such extra labor costs shall be borne by the Contractor without additional compensation from the City. Further, should the Contractor's Work, through no fault of the Engineer, the City, or City's other contractors, fail to progress in accordance with the Construction Schedule, and if, in the opinion of the Engineer, the Work cannot be substantially completed within the Contract Time, or if deemed necessary to protect this or adjoining work from damage, the Contractor shall work such additional time over the established hours of work, but excluding Holidays, as required to meet the schedule time without additional expense to the City. In such event, Contractor shall reimburse City for any additional costs incurred by the City associated with such overtime, including any additional costs of the Engineer.

30.4 When so ordered in writing by the Engineer or City, whether to advance the date of Substantial Completion, or for any other reason for the City's benefit, the Contractor shall work overtime and or additional shifts. If the order for such acceleration is not the result of Contractor being behind the approved Construction Schedule, Contractor shall be entitled to a Change Order increasing the Contract Price by its actual net premium costs of such overtime and or shifts so ordered and so worked, including insurance and taxes applicable thereto, (without other overhead or profit). Such costs and expenses shall be subject to audit by the City.

30.5 When any period of time is referenced by days herein, it shall be computed to exclude the first day and include the last day of such period. If the last day of any

such period falls on a Saturday or Sunday or on a day recognized by the City as a legal holiday, such day shall be omitted from the computation, and the last day shall become the next succeeding day which is not a Saturday, Sunday or legal holiday. The term “business day” as used herein shall mean all days of the week excluding Saturdays, Sundays and all legal holidays observed by the City.

31.0 USE OF SITE

31.1 The Contractor shall confine its use of the site for storage of materials, erection of temporary facilities and parking of vehicles to areas within its AGREEMENT limits as directed by the Engineer. The Contractor shall not unnecessarily encumber the site at any time.

31.2 Contractor acknowledges that areas of the site in which Work under this AGREEMENT may be performed may be used by other contractors for storage of materials, erection of temporary facilities and parking of vehicles. Areas used by other contractors will be vacated, as directed by the Engineer to permit Work under this AGREEMENT, provided reasonable notice is given requesting such, all in accordance with the approved Construction Schedule.

31.3 No signs or advertisements shall be displayed on the site or building except with the written consent of the City.

32.0 TEMPORARY FACILITIES

32.1 The Contractor shall provide electric power and water as it may require for its construction purposes, and shall pay all costs incurred. At completion of the Work, all temporary facilities shall be removed from the site. Upon Substantial Completion of the Work, Contractor shall cause all permanent utilities to be utilized by the City that were in Contractor’s name during construction of the Project to be transferred over to the City’s name.

32.2 The Contractor shall provide sanitary facilities for its workmen at all times. Sanitary facilities shall be of an approved chemical type with regular servicing and appropriately screened from public view, as approved by the Engineer and all applicable health authorities.

33.0 CLEAN UP AND DISPOSAL OF WASTE MATERIALS AND HAZARDOUS MATERIALS

33.1 No burial of waste materials will be permitted on the site. The Contractor shall at all times keep the site free from accumulations of waste material or debris caused by its operations and shall immediately remove same when necessary or required by the Engineer or the City. If Contractor fails to keep the Project site clean, the City has the right, after providing a twenty-four (24) hour written notice, to perform any required clean up and to backcharge Contractor for the costs of such clean up. At the completion of the Work, and before final inspection and acceptance of the Work, Contractor shall clean ditches, shape shoulders and restore all disturbed areas,

including street crossings, grass plots, regrassing if necessary, to as good condition as existed before Work started, and remove all debris, rubbish and waste materials from and about the Project site, as well as all of Contractor's (and its Subcontractors') tools, appliances, construction equipment and machinery and surface materials, and shall leave the Project site clean and ready for occupancy by the City. Any existing surface or subsurface improvements, including, but not limited to, pavements, curbs, sidewalks, pipes, utilities, footings, structures, trees and shrubbery, not indicated in the Contract Documents to be removed or altered, shall be protected by Contractor from damage during the prosecution of the Work. Any such improvements so damaged shall be restored by Contractor to condition at least equal to that existing at the time of Contractor's commencement of the Work

33.2 If Contractor encounters on the Project site any materials reasonably believed by Contractor to be petroleum or petroleum related products or other hazardous or toxic substances which have not been rendered harmless, Contractor immediately shall (i) stop Work in the area affected and (ii) report the condition to the City in writing. If the Work is so stopped and hazardous material is found, the Work in the affected area shall not thereafter be resumed except by Change Order. Any such Change Order shall include, but not be limited to, an equitable adjustment to the Contract Time and Contract Price as appropriate and in accordance with the terms of the Contract Documents. If no hazardous material is found after the Work is stopped, no Change Order is required to resume the Work in the affected area. Further, if the hazardous material was generated or caused by Contractor or anyone for whom Contractor is responsible, or if Contractor failed to stop Work or give the written notice required above, no Change Order will be required for an adjustment in the Contract Time or Contract Price and Contractor shall indemnify the City and hold the City harmless for any costs incurred by the City with respect to such hazardous material generated or caused by Contractor or anyone for whom it is responsible or any increased costs incurred by City as a result of Contractor's failure to stop Work or give the required written notice.

34.0 WARRANTY OF TITLE

34.1 No material, supplies or equipment for the Work shall be purchased by the Contractor subject to any chattel mortgage or under a conditional sale or other AGREEMENT by which a lien or an interest therein or any part thereof is retained by the seller or supplier. The Contractor warrants good title to all materials, supplies and equipment installed or incorporated in the Work and title to all such items shall pass to the City upon its incorporation into the Work or payment, whichever occurs first. Contractor shall, at all times, keep the site, together with all improvements and appurtenances constructed or placed thereon by it, free from any claims, liens or charges and further agrees that neither Contractor nor any person, firm, or corporation furnishing any material or labor for any Work covered by this AGREEMENT shall have any right to a lien upon the Work, site or any improvements or appurtenances thereon. The Contractor shall not at any time suffer or permit any lien, attachment, or other encumbrances under the law of Florida or otherwise by any person or persons whomsoever to remain on file with the City against any money due or to become due for any work done or materials furnished under the AGREEMENT or by reason of any other claim or demand against the Contractor. Such lien, attachment, or other

encumbrance, until it is removed, shall preclude any and all claims or demands for any payment to Contractor under virtue of this AGREEMENT.

35.0 OWNERSHIP OF HIDDEN VALUABLE MATERIALS

35.1 All items having any apparent historical or archaeological interest or treasure or valuable materials discovered during any construction activities shall be carefully preserved and reported immediately to the City for determination of appropriate actions to be taken. Any increases to Contractor's time or cost of performance due to historical or archaeological items discovered on the site shall entitle Contractor to a Change Order equitably adjusting the Contract Time and the Contract Price as appropriate and in accordance with the terms of the Contract Documents. Notwithstanding anything in the Contract Documents to the contrary, Contractor shall have no claim or entitlement to any such historical or archaeological interest or treasure or other valuable materials discovered, and all such items shall remain the property of the City.

36.0 AS-BUILT PLANS and DOCUMENTS TO BE KEPT AT THE SITE

36.1 Before final inspection the Contractor shall turn over to the Engineer a set of drawings showing field changes and actual installed conditions. CONTRACTOR shall provide to the ENGINEER two (2) hard copies and one (1) electronic copy of the as-built plans in AutoCAD Civil 3D 2014. The plans shall be certified by a P.L.S. registered in the State of Florida.

36.2 Contractor shall maintain at the Project site or such other place as may be expressly approved in writing by Owner, originals or copies of, on a current basis, all Project files and records, including, but not limited to, the following administrative records: Subcontracts and Purchase Orders; Subcontractor Licenses; Shop Drawing Submittal/Approval Logs; Equipment Purchase/Delivery Logs; Contract Drawings and Specifications with Addenda; Warranties and Guarantees; Cost Accounting Records; Payment Request Records; Meeting Minutes; Insurance Certificates and Bonds; Contract Changes; Permits; Material Purchase Delivery Logs; Technical Standards; Design Handbooks; "As-Built" Marked Prints; Operating & Maintenance Instruction; Daily Progress Reports; Monthly Progress Reports; Correspondence Files; Transmittal Records; Inspection Reports; Bid/Award Information; Bid Analysis and Negotiations; Punch Lists; and a Construction Schedule (including all updates). The Project files and records shall be available at all times to the City and Engineer or their designees for reference, review or copying.

37.0 SILENCE OF SPECIFICATIONS

37.1 To the extent the Work involves road or bridge construction, the apparent silence of the Contract Documents as to any details or the omission from them of a detailed description concerning any point shall be regarded as meaning that such portion of the Work shall be performed in accordance with the latest edition of the Florida DOT Standard Specifications for Road and Bridge Construction.

38.0 GRATUITIES

38.1 If the City finds after a notice and hearing that the Contractor, or any of the Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts or otherwise) to any official, employee, or agent of the City, the State, or other officials in an attempt to secure this AGREEMENT or favorable treatment in awarding, amending, or making any determinations related to the performance of this AGREEMENT, the City may, by written notice to the Contractor, terminate this AGREEMENT for Contractor default. The City may also pursue other rights and remedies that the law or this AGREEMENT provides.

38.2 In the event this AGREEMENT is terminated as provided in Section 38.1, the City may pursue the same remedies against the Contractor as it could pursue in the event of a breach of the AGREEMENT by the Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, the City may pursue exemplary damages in an amount (as determined by the City) which shall be not less than three nor more than ten times the costs the Contractor incurs in providing any such gratuities to any such official, agent or employee of the City.

39.0 AUDIT AND ACCESS TO RECORDS

39.1 Contractor shall keep all records and supporting documentation which concern or relate to the Work hereunder for a minimum of three (3) years from the date of termination of this AGREEMENT or the date the Project is completed, whichever is later or such longer period of time as may be required by law. Contractor shall require all of its Subcontractors to likewise retain all of their Project records and supporting documentation. The City, and any duly authorized agents or representatives of the City, shall be provided access to all such records and supporting documentation at any and all times during normal business hours upon request by the City. Contractor shall make all such Project records and supporting documentation available in Bay County, Florida. Further, the City, and any duly authorized agents or representatives of the City, shall have the right to audit, inspect and copy all of Contractor’s and any Subcontractor’s Project records and documentation as often as they deem necessary and Contractor shall cooperate in any audit, inspection, or copying of the documents. These access, inspection, copying and auditing rights shall survive the termination of this AGREEMENT.

40.0 EQUAL OPPORTUNITY REQUIREMENTS

40.1 For all contracts in excess of $10,000, the Contractor shall comply with Executive Order 11246, entitled "Equal Employment Opportunity", as amended by Executive Order 11375, and as supplemented in Department of Labor regulations (41 CFR Part 60).

40.2 The Contractor's compliance with Executive Order 11246 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the Standard Federal Equal Employment Opportunity

Construction Contract Specifications, as set forth in 41 CFR Part 60-4 and its efforts to meet the goals established for the geographic area where the AGREEMENT is to be performed.

41.0 CHANGED CONDITIONS

41.1 Notwithstanding anything in the Contract Documents to the contrary, if conditions are encountered at the Project site which are (i) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (ii) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, and which reasonably should not have been discovered by Contractor as part of its scope of site investigative services required pursuant to the terms of the Contract Documents, then Contractor shall provide the City with prompt written notice thereof before conditions are disturbed and in no event later than seven (7) calendar days after first observance of such conditions. the City and Engineer shall promptly investigate such conditions and, if they differ materially and cause an increase or decrease in Contractor's cost of, or time required for, performance of any part of the Work, the City will acknowledge and agree to an equitable adjustment to the Contract Price or Contract Time, or both, for such Work. If the City determines that the conditions at the site are not materially different from those indicated in the Contract Documents or not of an unusual nature or should have been discovered by Contractor as part of its investigative services, and that no change in the terms of the AGREEMENT is justified, the City shall so notify Contractor in writing, stating its reasons. Claims by Contractor in opposition to such determination by the City must be made within seven (7) calendar days after Contractor's receipt of the City's written determination notice. If the City and Contractor cannot agree on an adjustment to the Contract Price or Contract Time, the dispute resolution procedure set forth in the Contract Documents shall be complied with by the parties.

42.0 COMPLIANCE WITH LAWS

42.1 Contractor agrees to comply, at its own expense, with all federal, state and local laws, codes, statutes, ordinances, rules, administrative orders, regulations and requirements applicable to the Project, including but not limited to those dealing with safety (including, but not limited to, the Trench Safety Act, Chapter 553, Florida Statutes). An executed copy of Contractor's Trench Safety Act Certificate of Compliance (the form of which is attached hereto as Section 00096) has been delivered to City with the Contractor's Bid Proposal Form. If Contractor observes that the Contract Documents are at variance therewith, it shall promptly notify the City and Engineer in writing. Contractor has provided a separate line item in its Bid identifying the cost of compliance with the applicable trench safety standards set forth in the Trench Safety Act.

43.0 PUBLIC ENTITY CRIMES

43.1 By its execution of the AGREEMENT and the Contractor's Public Entities Crime

Statement, in the form set forth in Section 00097). Contractor acknowledges that it has been informed by the City of and warrants that it is in compliance with the terms of Section 287.133(2)(a) of the Florida Statutes which reads as follows:

> "A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity in excess of the threshold amount provided in s. 287.017 for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list."

44.0 INSURANCE

44.1 During the term of this AGREEMENT, Contractor shall provide, pay for, and maintain, with companies satisfactory to the City, the types and limits of insurance required by the Contract Documents. All insurance shall be from responsible companies eligible to do business in the State of Florida. Simultaneously with the execution and delivery of this AGREEMENT by Contractor, Contractor shall deliver to the City the properly completed and executed Certificate of Insurance, in the form set forth in Section 00099 along with any other properly completed and executed Certificates of Insurance that may be necessary, evidencing the fact that Contractor has acquired and put in place the insurance coverages and limits required herein. In addition, certified, true and exact copies of all insurance policies required shall be provided to the City, on a timely basis, if requested by the City. These Certificates and policies shall contain provisions that at least thirty (30) calendar days advanced written notice by registered or certified mail shall be given the City of any cancellation, intent not to renew, or any policy change that would result in a reduction in the policies' coverages, except in the application of the Aggregate Limits Provisions. The renewal of any insurance required to be maintained by Contractor hereunder shall be by a renewal Certificate of Insurance in the same form as was required for the original Certificate of Insurance, which renewal Certificate of Insurance shall be delivered to City at least ten (10) calendar days prior to expiration of current coverages so that there shall be no interruption in the Work due to lack of proof of insurance coverages required of Contractor under this AGREEMENT.

44.2 Contractor shall also notify the City, in the same manner required in Section 44.1 above, within two (2) calendar days after Contractor's receipt, of any notices of expiration, cancellation, non-renewal or material change in coverages or limits received by Contractor from its insurer, and nothing contained herein shall relieve Contractor of this requirement to provide notice. In the event of a reduction in the aggregate limit of any policy to be provided by it hereunder, Contractor shall immediately take steps to have the aggregate limit reinstated to the full extent permitted under such policy. If, at any time, City requests a written statement from

an insurance company as to any impairment to any aggregate limit of any policy to be provided by it hereunder, Contractor shall promptly authorize and cause to be delivered such statement to City. All insurance coverages of Contractor shall be primary to any insurance or self-insurance program carried by the City applicable to this AGREEMENT. Any such self-insurance programs or coverages shall not be contributory with any insurance required of the Contractor under the terms of this AGREEMENT. All insurance policies, other than the Workers Compensation policy and the Surveyor's Professional Liability policy, provided by Contractor to meet the requirements of this AGREEMENT shall name the City as an additional insured through the use of ISO Endorsement No. CG 20.10.10.01 and No. CG 20.37.10.01 wording, as to the operations of Contractor under the Contract Documents and shall also provide the Severability of Interest provision (also referred to as the Separation of Insureds provision). Companies issuing the insurance policy or policies shall have no recourse against the City for payment of premiums or assessments for any deductibles which all are at the sole responsibility and risk of Contractor.

44.3 All insurance policies to be provided by Contractor pursuant to the terms hereof shall be performable in Bay County, Florida and must expressly state that the insurance company will accept service of process in Bay County, Florida and that the exclusive venue and exclusive jurisdiction for any action concerning any matter under those policies shall be in the appropriate state court situated in Bay County, Florida.

44.4 The acceptance by the City of any Certificate of Insurance pursuant to the terms of this AGREEMENT evidencing the insurance coverages and limits required hereunder does not constitute approval or AGREEMENT by the City that the insurance requirements have been met or that the insurance policies shown on the Certificates of Insurance are in compliance with the requirements of this AGREEMENT.

44.5 Before starting and until completion of all Work required hereunder, Contractor shall procure and maintain insurance of the types and to the limits specified in the Contract Documents. Contractor shall require each of its Subcontractors to procure and maintain, until the completion of that Subcontractor's work or services, insurance of the types and to the limits specified in the Contract Documents, unless such insurance requirement for the Subcontractor is expressly waived or modified in writing by the City. Contractor shall not enter or otherwise occupy the Project site or commence any Work to be performed under this AGREEMENT at the Site or any other property of the City until all insurance required hereunder has been obtained by Contractor and such proof of insurance, as the same is required under this AGREEMENT, has been delivered to City. Contractor shall require all property insurance policies related to the Work and secured and maintained by Contractor and its Subcontractors to include provisions providing that each of their insurance companies shall waive all rights of recovery, under subrogation or otherwise, against the City and any of its separate contractors and the agents, employees and subcontractors of any of them.

44.6 Should at any time Contractor or any of its Subcontractors not maintain the

insurance coverages required in this AGREEMENT, the City may terminate this AGREEMENT for Contractor default or at its sole discretion shall be authorized to purchase such coverages and charge Contractor for such coverages purchased, to include a fifteen percent (15%) administrative fee. If Contractor fails to reimburse the City for such costs within thirty (30) calendar days after demand, the City has the right to offset those costs from any amount due Contractor under this AGREEMENT. The City shall be under no obligation to purchase such insurance, nor shall it be responsible for the coverages purchased or the insurance company/companies used. The decision of the City to purchase such insurance coverages shall in no way be construed to be a waiver of any of its rights under this AGREEMENT. If the City exercises its option to purchase such required coverages, the coverages shall not be cancelled by Contractor and shall stay in force until the normal expiration date according to the terms and conditions of the insurance policy.

44.7 As may be required by City from time to time, the status of any insurance aggregate limits are to be confirmed in writing by the respective insurance companies. The amounts and types of insurance Contractor shall comply with all of the requirements of this Section 44 unless otherwise agreed to, in writing, by City.

[END OF SECTION 00100]

SECTION 00800

SUPPLEMENTARY CONDITIONS

PART 1 - GENERAL

1.1 CLAIM PERIOD

A. No claim by the CONTRACTOR for an equitable adjustment hereunder shall be allowed if asserted after final payment under this Contract.

1.2 REGULAR WORKING HOURS

A. Regular working hours are defined as up to forty hours per week with a maximum of 10 hours per day, Monday through Friday, beginning no earlier than 7:00 a.m. and ending no later than 5:00 p.m., excluding holidays. Any work beyond ten hours per day or 40 hours per week shall be considered overtime. The CONTRACTOR shall not work on holidays. The Contract Time shall not be extended due to holidays falling within the Contract Time. Whenever the CONTRACTOR is performing any part of the Work, with the exception of equipment maintenance and cleanup, inspection by OWNER's representative will be required. Requests to perform the Work at times other than during regular working hours must be submitted in writing to the Project Representative, at least 48 hours prior to any proposed weekend work or scheduled extended workweeks, to give the OWNER ample time to arrange for representation and/or inspection during those periods. Periodic unscheduled overtime on weekdays will be permitted provided that two hours notice is provided to and acknowledged in writing by the Project Representative prior to the end of the regular working day. Maintenance of the CONTRACTOR’s equipment and cleanup may be performed during hours other than regular working hours.

B. CONTRACTOR shall reimburse the OWNER for additional engineering and/or inspection costs incurred as a result of overtime work in excess of the regular working hours. At OWNER's option, overtime costs may either be deducted from the CONTRACTOR's monthly payment request or deducted from the CONTRACTOR's retention prior to release of final payment.

C. ENGINEERING/Inspection costs shall be calculated at the following rates:

1.	Field Representative	$95/hour
2.	ENGINEER	$165/hour
3.	Project Manager	$210/hour

1.3 DEFECTIVE WORK

A. The CONTRACTOR shall not be entitled to an extension of the Contract Time or increase in the Contract Price for correcting or removing defective work.

1.4 CORRECTIVE WORK

A. Where defective or nonconforming Work (including damage to other work resulting therefrom) has been corrected, removed or replaced pursuant to the CONTRACTOR's obligations under the Contract Documents including Articles 16.0 and 27.0 of the General Conditions, the correction period set forth in Article 27.0 of the General Conditions with respect to such work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed and accepted by the OWNER.

1.5 STORED EQUIPMENT AND MATERIALS

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

1.6 SUBSTANTIAL COMPLETION

A. In addition to the other terms and conditions set forth in the Contract Documents, the Work will not be considered substantially complete unless and until CONTRACTOR has completed each of the following to the satisfaction of the OWNER:

a. All components of the Work have been installed, tested and approved.
b. All repair and coating systems have been properly cured.
c. All data specified in the Contract Documents have been delivered to the OWNER.
d. All instructions have been provided to the Project Representative in accordance with the Contract Documents.
e. All training to be provided by CONTRACTOR pursuant to the terms of the Contract Documents has been completed.

END OF SECTION 00800

SECTION 00801
SUBMISSION OF WORK SCHEDULE

PART 1 – GENERAL

1.01 CONSTRUCTION SCHEDULE

A. The Construction Schedule is to be submitted by the CONTRACTOR within the timeframe set forth in the Contract Documents.

B. The Construction Schedule shall be developed using the Critical Path Method (CPM) schedule format.

1. The schedule shall be developed in Precedence Diagram Method (PDM) format, consistent with Contract milestones, showing activities for each discrete Contract activity to be accomplished.

2. It shall include activities for deliverables and reviews in the schedule.

3. Sufficient liaison shall be conducted and information provided to indicate coordination with utility owners having facilities within the project limits.

4. The Construction Schedule must reflect the utility requirements included in the Contract Documents, unless changed by mutual AGREEMENT of the utility company, the CONTRACTOR, the OWNER and the PROJECT REPRESENTATIVE. The Construction Schedule shall assign calendar day durations to each activity.

5. Failure to include any element of work or any activity relating to utility relocation will not relieve the CONTRACTOR from completing all Work within the Contract Time at no additional contract time or cost, not withstanding prior acceptance of the schedule.

6. The CONTRACTOR shall prepare a CPM Network Diagram in time-scale logic diagram, by week starting on Monday, grouped (banded) by work areas and sorted by early start days. The CONTRACTOR shall prominently identify the critical path activities, defined as the longest continuous path of work activities and submit the Network Diagram on D size, 22-inch by 34-inch [559 by 864 mm] or E size, 34-inch by 44-inch [864 by 1,118 mm] paper.

C. The CONTRACTOR shall submit one copy of schedule reports containing, as a minimum: identification, activity description, estimated total duration, estimated remaining duration, computed or specified early start date, computed or specified late finish date, and total float. Submit all reports on 8.5-inch by 11-inch [216 by 280 mm] paper, sorted as follows:

1. Activity Report:

   a. Include activities shown on the Contract.

   b. Schedule listed in order of ascending activity number.

D. Float Report:

   1. Include activities shown on the Contract.

   2. Schedule listed in order of the ascending total float values.

E. Early Start Report:

   1. Include activities shown on the Contract.

   2. Schedule in chronological order by early start date.

F. Predecessor/Successor Report:

   1. Include activities shown on the Contract.

   2. Schedule listed in order of ascending activity numbers with the associated predecessor and successor activity numbers.

G. Narrative:

   1. Explain, in narrative form, how durations were determined and describe the proposed approach for meeting interim and final completion milestone dates specified in the Contract. Include assumptions made, restraints, critical path activities, means and methods, crews planned for each operation, equipment requirements, activities requiring overtime, additional shifts, permits, coordination requirements, long lead delivery items, or other significant requirements which would affect the ability to meet the interim and final milestone dates.

   2. Failure to include in the schedule any element of work shall not excuse the Contractor from completing all Work required to achieve completion.

H. The PROJECT REPRESENTATIVE will have 30 days to accept the Construction Schedule or to schedule a meeting with the CONTRACTOR to resolve any problems that prevent acceptance of the schedule.

I. The CONTRACTOR shall attend the meeting scheduled by the PROJECT REPRESENTATIVE, and submit a corrected Construction Schedule to the PROJECT REPRESENTATIVE within 7 days after the meeting. The process will be continued until a Construction Schedule is accepted by the PROJECT REPRESENTATIVE.

J. The Construction Schedule may indicate a completion date in advance of the Contract completion date. However, the OWNER will not be liable in any way for the CONTRACTOR's failure to complete the Project prior to the Contract completion date. Any additional costs, including extended overhead incurred between the CONTRACTOR's schedule completion date and the completion of Contract Time, shall be the responsibility of the CONTRACTOR. The CONTRACTOR shall not be entitled to claim or recover any such cost from the OWNER.

K. On each Monday prior to the monthly estimate cutoff date, The CONTRACTOR shall submit Contract Schedule, updated to reflect actual start dates, actual finish dates, added activities, changes in sequence and days remaining, to the Projective Representative for acceptance. Include an updated Network Diagram and computer-generated reports and a narrative as herein specified. In the narrative, address changes in duration of any activity and changes to logic of activities which were performed in a sequence different from those shown in the latest accepted Construction Schedule. Also, address activities to be added to the schedule, identification of supplemental AGREEMENTs and change orders, and the incorporation of accepted schedule revisions.

L. Any changes to the sequencing must be coordinated with the utility work shown in the plans. If the schedule provided indicates an actual or potential delay to the completion of the Contract include in the narrative a discussion of problems, causes, activities affected and describe the means and methods to be utilized to complete the project in the authorized time. Attend meetings scheduled by the PROJECT REPRESENTATIVE to resolve any problems that prevent acceptance of the updated Construction Schedule, and submit revised schedules as necessary for the PROJECT REPRESENTATIVE's acceptance. By acceptance of the Construction Schedule, the PROJECT REPRESENTATIVE does not endorse or otherwise certify the validity or accuracy of the activity durations or logic utilized.

M. The PROJECT REPRESENTATIVE will withhold monthly payments due for failure of the CONTRACTOR to meet the requirements for submittal and acceptance of the Construction Schedule, including the monthly updates.

1.02 WEEKLY MEETINGS

A. Attend weekly meetings scheduled by the PROJECT REPRESENTATIVE to discuss Contract progress, near-term scheduled activities, including utility relocations, problems and their proposed solutions.

B. Submit a 2-Week Planning Schedule at each weekly meeting, showing the items of work planned for the next 2 weeks.

C. Develop the schedule in Bar Chart format, identifying current and planned activities and related Construction Schedule work activities, including subcontractor work. Designate all activities that are controlling Work items as determined by the currently accepted Construction Schedule.

1.03 FLOAT

A. Float is not for the exclusive use or benefit of either the OWNER or the CONTRACTOR.

B. The PROJECT REPRESENTATIVE will grant time extensions only to the extent that time adjustments to the affected activities exceed the total float along the affected paths of the currently accepted Construction Schedule at the time of delay.

C. Submit a network diagram, total float report, and a narrative report to support any request for additional Contract Time.

1.04 PERFORMANCE OF WORK

A. By submitting a schedule, the CONTRACTOR is making a positive assertion that the Project will be constructed in the order indicated on the Construction Schedule.

B. The CONTRACTOR shall prosecute the Work in accordance with the latest accepted Construction Schedule. Any costs associated with meeting milestones and completing the Project within the authorized Contract Time will be borne solely by the CONTRACTOR.

1.05 AS-BUILT SCHEDULE

A. As a condition for the release of any retainage, submittals of as-built schedules which describes the actual order and start and stop times for all activities by the CONTRACTOR is required.

END OF SECTION OF 00801

SECTION 00802
PREVENTION, CONTROL AND ABATEMENT OF EROSION AND WATER POLLUTION

PART 1 – GENERAL

1.1 PRECONSTRUCTION REQUIREMENTS

At the Preconstruction Conference, the CONTRACTOR shall provide to the PROJECT REPRESENTATIVE an Erosion Control Plan meeting the requirements or special conditions of all permits authorizing project construction and the Contract requirements.

When a Florida Department of Environmental Protection (FDEP) generic permit is issued, the CONTRACTOR's Erosion Control Plan shall be prepared to accompany the Stormwater Pollution Prevention Plan (SWPPP). The CONTRACTOR shall ensure the Erosion Control Plan includes procedures to control off-site tracking of soil by vehicles and construction equipment and a procedure for cleanup and reporting of non-stormwater discharges, such as contaminated groundwater or accidental spills. The CONTRACTOR shall not begin any soil disturbing activities until receipt of PROJECT REPRESENTATIVE's written approval of the CONTRACTOR's Erosion Control Plan, including required signed certification statements.

The CONTRACTOR's failure to sign any required documents or certification statements will be considered a default of the Contract. Any soil disturbing activities performed by the CONTRACTOR or any of its subcontractors without the required signed documents or certification statements may be considered a violation of the FDEP Generic Permit.

When the SWPPP is required, the CONTRACTOR shall prepare the Erosion Control Plan in accordance with the planned sequence of operations and present the Erosion Control Plan in a format acceptable to the PROJECT REPRESENTATIVE. The Erosion Control Plan shall include, but not be limited to, descriptions of the following items or activities:

A. For each phase of construction operations or activities, supply the following information:

   1. Locations of all erosion control devices.
   2. Types of all erosion control devices.
   3. Estimated time erosion control devices will be in operation.
   4. Monitoring schedules for maintenance of erosion control devices.

5. Methods of maintaining erosion control devices.

6. Containment or removal methods for pollutants or hazardous wastes.

B. The name and telephone number of the person responsible for monitoring and maintaining the erosion control devices.

C. The Erosion Control Plan submitted to the PROJECT REPRESENTATIVE for the ENGINEER's approval.

The CONTRACTOR shall not begin construction activities until the Erosion Control Plan receives written approval from the ENGINEER. The CONTRACTOR shall comply with the approved Erosion Control Plan.

1.2 BALES

A. The CONTRACTOR shall provide baled hay or straw having minimum dimensions of 14 inches by 18 inches by 36 inches [350 by 450 by 900 mm] at the time of placement.

B. The CONTRACTOR shall construct baled hay or straw dams according to details shown in the plans or as directed by the PROJECT REPRESENTATIVE to protect against downstream accumulations of sediment.

C. The CONTRACTOR shall use natural baled hay or straw or synthetic hay bales as an alternative to natural baled hay or straw. Synthetic hay bales should be interlocking, have pre-made stake holes, made of synthetic fibers (polypropylene, nylon, polyester) that meet the Environmental Protection Agency's (EPA's) Toxicity Characteristic Leaching Procedure (TCLP) standards, and be produced into a filter medium with needle-punches fibers.

D. The CONTRACTOR shall wash out and remove sediment deposits when the deposits reach ½ the height of the reusable synthetic hay bale or as directed by the PROJECT REPRESENTATIVE.

E. The CONTRACTOR shall dispose of the washout in an area approved by the PROJECT REPRESENTATIVE.

F. Synthetic hay bales that have had sediment deposits removed may be reinstalled on the Project as approved by the PROJECT REPRESENTATIVE.

1.3 ARTIFICIAL COVERINGS

A. General:

The CONTRACTOR shall install artificial coverings in locations where temporary protection from erosion is needed. Two situations occur that require artificial coverings. The two situations have differing material requirements, which are described below.

1. During temporary pauses in construction caused by inclement weather or other circumstances, use artificial coverings composed of natural or synthetic fiber mats, plastic sheeting, or netting as protection against erosion, when directed by the PROJECT REPRESENTATIVE. Remove the material when construction resumes.

2. While permanent grassing is being established, use artificial coverings as erosion control blankets, at locations shown in the plans, to facilitate plant growth, in accordance with the Florida Department of Transportation (FDOT) specification 104-6.4.13.

1.4 MAINTENANCE AND INSPECTION

A. The CONTRACTOR shall provide routine maintenance of permanent and temporary erosion control features, at no additional Contract expense, until the project is complete and accepted.

B. If reconstruction of such erosion control features is necessary due to the CONTRACTOR's negligence or carelessness or, in the case of temporary erosion control features, failure by the CONTRACTOR to install permanent erosion control features as scheduled, the CONTRACTOR shall replace such erosion control features at no additional Contract expense.

C. The CONTRACTOR shall inspect all erosion control features at least once every 7 calendar days and within 24 hours of the end of a storm of 0.50 inches [12 mm] or greater.

D. The CONTRACTOR shall maintain all erosion control features as required in the SWPPP, CONTRACTOR's Erosion Control Plan and as specified in the FDEP Generic Permit for Stormwater Discharge from Large and Small Construction Activities.

1.5 MOWING

A. The PROJECT REPRESENTATIVE may require mowing by the CONTRACTOR of areas within the limits of the Project as deemed necessary by the Project Manager.

B. The CONTRACTOR shall mow these designated areas within 7 days of receiving such order from the PROJECT REPRESENTATIVE.

C. The CONTRACTOR shall remove and properly dispose of all litter and debris prior to the mowing operation.

D. The CONTRACTOR shall use conventional and specialized equipment along with hand labor to mow the entire area including slopes, wet areas, intersections, and around all appurtenances.

E. The CONTRACTOR shall mow all areas to obtain a uniform height of 6 inches [150 mm], unless otherwise directed by the PROJECT REPRESENTATIVE.

END OF SECTION 00802

SECTION 000808

SALES TAX EXEMPTION ADDENDUM

1. Contractor and City entered into a contract dated _____, (the "Contract") for the performance of the WORK described therein, to which an executed copy of this Sales Tax Exemption Addendum ("Addendum") shall be attached thereto and incorporated therein.

2. Contractor and City desire to enter into an arrangement whereby certain purchases under the Contract can be made through the City as a means of taking advantage of the City's status of being exempt from sales and use taxes.

3. The City is exempt from sales and use taxes. As such it is exempt from the payment of sales and use tax on purchases of building materials or equipment necessary for the performance of work under construction contracts, provided the City determines it is to its best interest to do so, and provided the purchase of such building materials and equipment are handled in the manner hereinafter described.

4. The City has determined it is in its best interest to provide the opportunity to eliminate the payments of sales tax for building materials or equipment to be used in the construction of this project, and notifies the Contractor of its intent to do so.

TERMS AND CONDITIONS

1. The parties intend by this Addendum to comply with the procedures and elements described in Florida Department of Revenue Technical Assistance Advisements 01A-003 (January 8, 2001) and 00A-083 (December 21, 2000), and any conflict or ambiguity in this Addendum shall be resolved in favor of meeting the elements necessary to make tax exempt the purchases contemplated by this Addendum.

2. The City shall, at its sole discretion, have the option to purchase directly from the supplier or vendor, any building materials or equipment included in the Contractor's bid for the Contract. Contractor shall, from time to time submit, update and keep current, for consideration by the City, a list of all building materials and equipment to be purchased, organized by supplier or vendor. Such list shall include a brief description of the building materials and equipment and the name and address of the supplier or vendor. Suppliers or vendors reasonably anticipated to furnish building materials and equipment with an aggregate purchase value of less than $10,000 need not be listed. Contractor's initial list is attached hereto and incorporated herein. Building materials and equipment not required for the performance of the Contract shall not be purchased under this Addendum. The City reserves the right to delete or add items from this Addendum when it is in the City's best interest.

3. The City will be liable for the payment of all purchases properly made hereunder.

4. Contractor shall notify all suppliers or vendors not to make sales to the Contractor under this Addendum.

5. For each purchase approved by the City to be made under this Addendum, the Contractor shall furnish the City in writing information sufficient for the City to issue to the supplier its City purchase order for the requested building materials or equipment which shall include as an attachment the City's Certificate of Exemption. Suppliers and vendors will render statements for materials purchased to the City in care of the Contractor. After receiving and inspecting the materials when they arrive at the job site, verifying that all necessary documentation accompanies the delivery and conforms with the purchase order, Contractor will forward the invoices to the City's duly authorized representative for approval, processing and delivery to the City for payment. The City will process the invoices and issue payment directly to the supplier or vendor. Contractor will keep and furnish to the City all such records, summaries, reports of purchase orders and invoices, and reports of the status and use of goods handled under this Addendum, as the City may reasonably require.

6. The Contract provides that Contractor will perform the work under the Contract for the Contract Price in the amount of $[_____], as may be amended from time to time as provided in the Contract. Said amount, as amended, due Contractor under the Contract shall be reduced by the sum of all amounts paid by the City for materials and equipment purchased under this Addendum, including any shipping, handling, insurance or other, similar charges paid by the City, and all of the savings of sales and use tax on the purchase of such items.

7. The Contractor shall submit his proposal for base bid and proposals for each Alternate with the inclusion of all required taxes including applicable sales and use tax, the same as if tax were to be paid in the normal manner. Any sales and use tax savings will be effected during the performance of the Contract.

8. Contractor shall immediately notify all subcontractors and material and equipment suppliers of the City's intent to reduce the construction cost of the Project by the purchase of building materials and equipment in the manner herein described and the Contractor shall not withhold his consent to the arrangement.

9. Administrative costs incurred by the Contractor with this Addendum shall be considered to be included in the Total Lump Sum Bid amount for the Work. No addition shall be added to the Contract Price because of the service provided by the Contractor in the purchase of building materials and equipment by the City.

10. All sales and use tax savings on the purchase of building materials and equipment shall be credited to the City and the amount of the Contract Price shall be reduced by the full amount of savings which result from the omission of payment of sales and use tax.

11. By virtue of its payment of material and equipment invoices, the City further intends to benefit from any discounts offered for timely payment to the extent of one-half of the discount offered, the remaining one-half to accrue to the Contractor as an

incentive for the Contractor to process invoices well within the discount period. The Contractor shall pay any late penalties caused by its failure to facilitate the processing of invoices within the allotted time.

12. The Contractor, notwithstanding the terms and conditions of this Addendum, shall select, describe, obtain approvals, submit samples, coordinate, process, prepare shop drawings, pursue, receive, inspect, store, protect and guarantee the same as would have been the case if the tax saving procedures were not implemented.

13. The Contractor as bailee shall have the obligation of receiving, inspecting, storing and safekeeping all goods and materials purchased on behalf of the City pursuant to this Addendum. Further, the Contractor shall be responsible for the cost of replacing or repairing any goods or materials lost, stolen, damaged or destroyed while in the Contractor's possession or control as bailee, as well as processing all warranty claims for defective goods and materials to the same extent as if such goods had been Contractor-supplied or purchased in the name of the Contractor.

14. Contractor shall maintain separate accounting records for all transactions carried out under the authority granted to it under this Addendum. Such records shall be open to the City or its authorized agent during normal business hours of Contractor.

15. The City will take both legal and equitable title to the building materials and equipment received from the vendor when delivery is made by the vendor at the Project site. Without waiving or releasing Contractor from its obligations under paragraph 13 above, as equitable and legal owner of the materials and equipment purchased under this Addendum, the City shall bear the risk of loss thereto and shall have the insurable interest therein. Therefore, unless already provided for under the terms of the Contract Documents, Contractor shall cause the City to be insured or named as an additional insured as its interest may appear against any loss or damage to such goods to the extent of their full insurable value. All such insurance shall be in such form and through such companies as may be reasonably acceptable to City and Contractor shall provide City certificates thereof requiring each insurer to provide the City ten (10) days written notice in advance of cancellation or modification of coverage. Pursuant to the terms of the Contract Documents, the City will reimburse the Contractor for any additional premium amounts paid solely for such insurances against loss or damage.

16. Contractor shall be fully responsible for all matters relating to the procurement of materials and equipment covered by this Addendum, including but not limited to, overseeing that the correct materials and the correct amounts are received timely with appropriate warranties; for inspecting and receiving the goods; and for unloading, handling and storing the materials until installed. Contractor shall inspect the materials when they arrive at the Project site, verify that all necessary documentation accompanies the delivery and conforms with the City's purchase order, and forward the invoice to the City for payment if the goods are conforming and acceptable. Contractor shall verify that the materials conform to Drawings and Specifications and determine before installation that such materials are not defective. Contractor shall manage and enforce the warranties on all materials and

equipment covered by this Addendum. Contractor shall be responsible to the City for its failure to fully and timely perform its obligations under this paragraph, and this Addendum generally.

17. When title to the materials and equipment covered by this Addendum passes to the City prior to being incorporated into the Work, the Contractor's possession of the goods is a bailment until such time as each of such goods is returned to the City by being incorporated into the Work.

18. The City shall not be liable for delays in the Work caused by delays in delivery of or defects in the goods covered by this Addendum, nor shall such delays or defects excuse Contractor in whole or in part from its obligation to timely perform the Contract.

19. In the event Contractor objects to the payment of any invoice for goods covered by this Addendum, Contractor shall at no additional cost to the City, provide all assistance, records and testimony necessary or convenient for the City to resolve the supplier's claim for payment.

20. This Addendum and the authority granted to Contractor hereunder may be revoked by the City at any time upon verbal or written notice to Contractor at its offices located at _____, during normal business hours.

[END OF SECTION 00808]

February 22, 2022
PREPARED BY: Ricky L. Dodd

SPECIFICATIONS PACKAGE
Contract Number: _____
FINANCIAL PROJECT ID(S).441742-2-58-01 & 441742-2-58-02.
FEDERAL FUNDS
DISTRICT THREE
BAY COUNTY

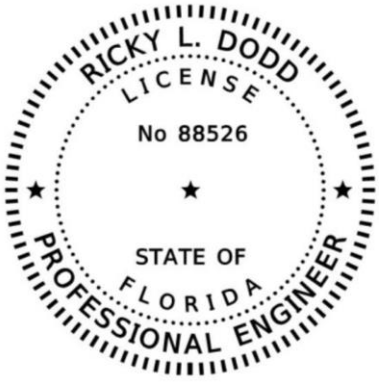
The applicable Articles and Subarticles of the General Requirements & Covenants division (Division I) of the January 2022 edition of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction are added, and all of the Construction Details and Materials divisions (Division II & III) are revised, as follows:

I hereby certify that this specifications package has been properly prepared by me, or under my responsible charge, in accordance with procedures adopted by the Florida Department of Transportation.

This item has been digitally signed and sealed by Ricky L. Dodd on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Date: 02/22/2022

State of Florida,
Professional Engineer, License No.: 88526
Firm/Agency Name: Greenman-Pedersen, Inc.
Firm/Agency Address: 1273 Office Park Dr.
City, State, Zip Code: Chipley, FL 32428
Page(s): 1-175



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LAP DIVISION 1 SPECIFICATIONS.

(REV 3-11-21) (1-22)

Construction Checklist Specifications
from
Department of Transportation
Standard Specifications for Road and Bridge Construction

The following excerpts from the Standard Specifications and Special Provisions are provided for use in LAP Specifications as needed in accordance with the Local Agency Program Checklist for Construction Contracts (Phase 58) – Federal and State Requirements (525-070-44)

FROM SECTION 1 – DEFINITIONS AND TERMS:

Department Name City of Panama City Beach

Engineer
The Professional Engineer, registered in the State of Florida, other than the Engineer of Record or his subcontracted consultant, acting as the project's Construction Engineering Inspection Manager. The Engineer may be the City of Panama City Beach in-house staff or a consultant retained by the City of Panama City Beach.

Note: In order to avoid cumbersome and confusing repetition of expressions in these Specifications, it is provided that whenever anything is, or is to be done, if, as, or, when, or where "acceptable, accepted, approval, approved, authorized, condemned, considered necessary, contemplated, deemed necessary, designated, determined, directed, disapproved, established, given, indicated, insufficient, ordered, permitted, rejected, required, reserved, satisfactory, specified, sufficient, suitable, suspended, unacceptable, or unsatisfactory," it shall be understood as if the expression were followed by the words "by the Engineer," "to the Engineer," or "of the Engineer."

Contractor's Engineer of Record.

A Professional Engineer registered in the State of Florida, other than the Engineer of Record or his subcontracted consultant, who undertakes the design and drawing of components of the permanent structure as part of a redesign or Cost Savings Initiative Proposal, or for repair designs and details of the permanent work. The Contractor's Engineer of Record may also serve as the Specialty Engineer.

The Contractor's Engineer of Record must be an employee of a pre-qualified firm. The firm shall be pre-qualified in accordance with the Rules of the Department of Transportation, Chapter 14-75. Any Corporation or Partnership offering engineering services must hold a Certificate of Authorization from the Florida Department of Business and Professional Regulation.

As an alternate to being an employee of a pre-qualified firm, the Contractor's Engineer of Record may be a pre-qualified Specialty Engineer. For items of the permanent work declared by the State Construction Office to be "major" or "structural", the work performed by a pre-qualified Specialty Engineer must be checked by another pre-qualified Specialty Engineer. An individual Engineer may become pre-qualified in the work groups listed in the Rules of the Department of Transportation, Chapter 14-75, if the requirements for the Professional Engineer are met for the individual work groups. Pre-qualified Specialty Engineers are listed on the State Construction Website. Pre-qualified Specialty Engineers will not be authorized to perform redesigns or Cost Savings Initiative Proposal designs of items fully detailed in the plans.

Specialty Engineer.

A Professional Engineer registered in the State of Florida, other than the Engineer of Record or his subcontracted consultant, who undertakes the design and drawing preparation of components, systems, or installation methods and equipment for specific temporary portions of the project work or for special items of the permanent works not fully detailed in the plans and required to be furnished by the Contractor. The Specialty Engineer may also provide designs and

details, repair designs and details, or perform Engineering Analyses for items of the permanent work declared by the State Construction Office to be "minor" or "non-structural".

For items of work not specifically covered by the Rules of the Department of Transportation, a Specialty Engineer is qualified if he has the following qualifications:

(1) Registration as a Professional Engineer in the State of Florida.

(2) The education and experience necessary to perform the submitted design as required by the Florida Department of Business and Professional Regulation.

FROM SECTION 4 (ALTERATION OF WORK).

4-3 Alteration of Plans or of Character of Work.

4-3.1 General: The Engineer reserves the right to make, at any time prior to or during the progress of the work, such increases or decreases in quantities, whether a significant change or not, and such alterations in the details of construction, whether a substantial change or not, including but not limited to alterations in the grade or alignment of the road or structure or both, as may be found necessary or desirable by the Engineer. Such increases, decreases or alterations shall not constitute a breach of Contract, shall not invalidate the Contract, nor release the Surety from any liability arising out of this Contract or the Surety bond. The Contractor agrees to perform the work, as altered, the same as if it had been a part of the original Contract.

The term "significant change" applies only when:

1. The Engineer determines that the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction, or

2. A major item of work, as defined in 1-3, is increased in excess of 125% or decreased below 75% of the original Contract quantity. The Department will apply any price adjustment for an increase in quantity only to that portion in excess of 125% of the original Contract item quantity in accordance with 4-3.2 below. In the case of a decrease below 75% the Department will only apply a price adjustment for the additional costs that are a direct result of the reduction in quantity.

In (1) above, the determination by the Engineer shall be conclusive. If the determination is challenged by the Contractor in any proceeding, the Contractor must establish by clear and convincing proof that the determination by the Engineer was without any reasonable basis.

4-3.2 Increase, Decrease or Alteration in the Work: The Engineer reserves the right to make alterations in the character of the work which involve a substantial change in the nature of the design or in the type of construction or which materially increases or decreases the cost or time of performance. Such alteration shall not constitute a breach of Contract, shall not invalidate the Contract or release the Surety.

Notwithstanding that the Contractor shall have no formal right whatsoever to any extra compensation or time extension deemed due by the Contractor for any cause unless and until the Contractor follows the procedures set forth in 5-12.2 for preservation, presentation and resolution of the claim, the Contractor may at any time, after having otherwise timely submitted a notice of intent to claim or preliminary time extension request pursuant to 5-12.2 and 8-7.3.2, submit to the Department a request for equitable adjustment of compensation or time or other

dispute resolution proposal. The Contractor shall in any request for equitable adjustment of compensation, time, or other dispute resolution proposal certify under oath and in writing, in accordance with the formalities required by Florida law, that the request is made in good faith, that any supportive data submitted is accurate and complete to the Contractor's best knowledge and belief, and that the amount of the request accurately reflects what the Contractor in good faith believes to be the Department's responsibility. Such certification must be made by an officer or director of the Contractor with the authority to bind the Contractor. Any such certified statements of entitlement and costs shall be subject to the audit provisions set forth in 5-12.14. While the submittal or review of a duly certified request for equitable adjustment shall neither create, modify, nor activate any legal rights or obligations as to the Contractor or the Department, the Department will review the content of any duly certified request for equitable adjustment or other dispute resolution proposal, with any further action or inaction by the Department thereafter being in its sole discretion. Any request for equitable adjustment that fails to fully comply with the certification requirements will not be reviewed by the Department.

The monetary compensation provided for below constitutes full and complete payment for such additional work and the Contractor shall have no right to any additional monetary compensation for any direct or indirect costs or profit for any such additional work beyond that expressly provided below. The Contractor shall be entitled to a time extension only to the extent that the performance of any portion of the additional work is a controlling work item and the performance of such controlling work item actually extends completion of the project due to no fault of the Contractor. All time related costs for actual performance of such additional work are included in the compensation already provided below and any time extension entitlement hereunder will be without additional monetary compensation. The Contractor shall have no right to any monetary compensation or damages whatsoever for any direct or indirect delay to a controlling work item arising out of or in any way related to the circumstances leading up to or resulting from additional work (but not relating to the actual performance of the additional work, which is paid for as otherwise provided herein), except only as provided for under 5-12.6.2.1.

4-3.2.1 Allowable Costs for Extra Work: The Engineer may direct in writing that extra work be done and, at the Engineer's sole discretion, the Contractor will be paid pursuant to an agreed Supplemental Agreement or in the following manner:

1. Labor and Burden: The Contractor will receive payment for actual costs of direct labor and burden for the additional or unforeseen work. Labor includes foremen actually engaged in the work; and will not include project supervisory personnel nor necessary on-site clerical staff, except when the additional or unforeseen work is a controlling work item and the performance of such controlling work item actually extends completion of the project due to no fault of the Contractor. Compensation for project supervisory personnel, but in no case higher than a Project Manager's position, shall only be for the pro-rata time such supervisory personnel spent on the contract. In no case shall an officer or director of the Company, nor those persons who own more than 1% of the Company, be considered as project supervisory personnel, direct labor or foremen hereunder.

Payment for burden shall be limited solely to the following:

Table 4-1	
Item	Rate
FICA	Rate established by Law

Table 4-1	
Item	Rate
FUTA/SUTA	Rate established by Law
Medical Insurance	Actual
Holidays, Sick & Vacation benefits	Actual
Retirement benefits	Actual
Workers Compensation	Rates based on the National Council on Compensation Insurance basic rate tables adjusted by Contractor's actual experience modification factor in effect at the time of the additional work or unforeseen work.
Per Diem	Actual but not to exceed State of Florida's rate
Insurance*	Actual
*Compensation for Insurance is limited solely to General Liability Coverage and does not include any other insurance coverage (such as, but not limited to, Umbrella Coverage, Automobile Insurance, etc.).	

At the Pre-construction conference, certify to the Engineer the following:

a. A listing of on-site clerical staff, supervisory personnel and their pro-rated time assigned to the contract,

b. Actual Rate for items listed in Table 4-1,

c. Existence of employee benefit plan for Holiday, Sick and Vacation benefits and a Retirement Plan, and,

d. Payment of Per Diem is a company practice for instances when compensation for Per Diem is requested.

Such certification must be made by an officer or director of the Contractor with authority to bind the Contractor. Timely certification is a condition precedent to any right of the Contractor to recover compensations for such costs, and failure to timely submit the certification will constitute a full, complete, absolute and irrevocable waiver by the Contractor of any right to recover such costs. Any subsequent changes shall be certified to the Engineer as part of the cost proposal or seven calendar days in advance of performing such extra work.

2. Materials and Supplies: For materials accepted by the Engineer and used on the project, the Contractor will receive the actual cost of such materials incorporated into the work, including Contractor paid transportation charges (exclusive of equipment as hereinafter set forth). For supplies reasonably needed for performing the work, the Contractor will receive the actual cost of such supplies.

3. Equipment: For any machinery or special equipment (other than small tools), including fuel and lubricant, the Contractor will receive 100% of the "Rental Rate Blue Book" for the actual time that such equipment is in operation on the work, and 50% of the "Rental Rate Blue Book" for the time the equipment is directed to standby and remain on the project site, to be calculated as indicated below. The equipment rates will be based on the latest edition (as of the date the work to be performed begins) of the "Rental Rate Blue Book for Construction Equipment" as published by EquipmentWatch, a division of Informa Business Media, Inc., using all instructions and adjustments contained therein and as modified below. On

all projects, the Engineer will adjust the rates using regional adjustments and Rate Adjustment Tables according to the instructions in the "Rental Rate Blue Book."

Allowable Equipment Rates will be established as set out below:

a. Allowable Hourly Equipment Rate = Monthly Rate/176 x Adjustment Factors x 100%.

b. Allowable Hourly Operating Cost = Hourly Operating Cost x 100%.

c. Allowable Rate Per Hour = Allowable Hourly Equipment Rate + Allowable Hourly Operating Cost.

d. Standby Rate = Allowable Hourly Equipment Rate x 50%.

The Monthly Rate is The Basic Machine Rate Plus Any Attachments. Standby rates will apply when equipment is not in operation and is directed by the Engineer to standby at the project site when needed again to complete work and the cost of moving the equipment will exceed the accumulated standby cost. Standby rates will not apply on any day the equipment operates for eight or more hours. Standby payment will be limited to only that number of hours which, when added to the operating time for that day equals eight hours. Standby payment will not be made on days that are not normally considered work days on the project.

The Department will allow for the cost of transporting the equipment to and from the location at which it will be used. If the equipment requires assembly or disassembly for transport, the Department will pay for the time to perform this work at the rate for standby equipment.

Equipment may include vehicles utilized only by Labor, as defined above.

4. Indirect Costs, Expenses, and Profit: Compensation for all indirect costs, expenses, and profit of the Contractor, including but not limited to overhead of any kind, whether jobsite, field office, division office, regional office, home office, or otherwise, is expressly limited to the greater of either (a) or (b) below:

a. Solely a mark-up of 17.5% on the payments in (1) through (3), above.

1. Bond: The Contractor will receive compensation for any premium for acquiring a bond for such additional or unforeseen work at the original Contract bond rate paid by the Contractor. No compensation for bond premium will be allowed for additional or unforeseen work paid by the Department via initial contingency pay item.

2. The Contractor will be allowed a markup of 10% on the first $50,000 and a markup of 5% on any amount over $50,000 on any subcontract directly related to the additional or unforeseen work. Any such subcontractor mark-up will be allowed only by the prime Contractor and a first tier subcontractor, and the Contractor must elect the markup for any eligible first tier subcontractor to do so.

b. Solely the formula set forth below and only as applied solely as to such number of calendar days of entitlement that are in excess of ten cumulative calendar days as defined below.

$$D = \frac{A \times C}{B}$$

Where A = Original Contract Amount
B = Original Contract Time
C = 8%
D = Average Overhead Per Day

Cumulative Calendar Days is defined as the combined total number of calendar days granted as time extensions due to either extra work, excluding overruns to existing contract items, that extend the duration of the project or delay of a controlling work item caused solely by the Department, or the combined total number of calendar days for which a claim of entitlement to a time extension due to delay of a controlling work item caused solely by the Department is otherwise ultimately determined to be in favor of the Contractor.

No compensation, whatsoever, will be paid to the Contractor for any jobsite overhead and other indirect impacts when the total number of calendar days granted for time extension due to delay of a controlling work item caused solely by the Department is, or the total number of calendar days for which entitlement to a time extension due to delay of a controlling work item caused solely by the Department is otherwise ultimately determined in favor of the Contractor to be, equal to or less than ten calendar days and the Contractor also fully assumes all monetary risk of any and all partial or single calendar day delay periods, due to delay of a controlling work item caused solely by the Department, that when combined together are equal to or less than ten calendar days and regardless of whether monetary compensation is otherwise provided for hereunder for one or more calendar days of time extension entitlement for each calendar day exceeding ten calendar days. All calculations under this provision shall exclude weather days, Holidays, and Special Events.

Further, for (a) and (b) above, in the event there are concurrent delays to one or more controlling work items, one or more being caused by the Department and one or more being caused by the Contractor, the Contractor shall be entitled to a time extension for each day that a controlling work item is delayed by the Department but shall have no right to nor receive any monetary compensation for any indirect costs for any days of concurrent delay.

4-3.2.2 Subcontracted Work: Compensation for the additional or unforeseen work performed by a subcontractor shall be limited solely to that provided for in 4-3.2.1 (1), (2), (3) and (4)(a). In addition, the Contractor compensation is expressly limited to the greater of the total provided in either 4-3.2.1(4)(a) or (4)(b), except that the Average Overhead Per-Day calculation is as follows:

$$Ds = \frac{As \times C}{B}$$

Where As = Original Contract Amount minus Original Subcontract amounts(s)*
B = Original Contract Time
C = 8%
Ds = Average Overhead Per-Day

* deduct Original Subcontract Amount(s) of subcontractor(s) performing the work

The subcontractor may receive compensation for any premium for acquiring a bond for the additional or unforeseen work; provided, however, that such payment for additional subcontractor bond will only be paid upon presentment to the Department of clear and convincing proof that the subcontractor has actually submitted and paid for separate bond premiums for such additional or unforeseen work in such amount and that the subcontractor was required by the Contractor to acquire a bond.

The Contractor shall require the subcontractor to submit a certification, in accordance with 4-3.2.1 (1), as part of the cost proposal and submit such to the Engineer. Such certification must be made by an officer or director of the subcontractor with authority to bind the subcontractor. Timely certification is a condition precedent to any right of the Contractor to recover compensation for such subcontractor costs, and failure to timely submit the certification will constitute a full, complete, absolute and irrevocable waiver by the Contractor of any right to recover such subcontractor costs.

4-3.3 No Waiver of Contract: Changes made by the Engineer will not be considered to waive any of the provisions of the Contract, nor may the Contractor make any claim for loss of anticipated profits because of the changes, or by reason of any variation between the approximate quantities and the quantities of work actually performed. All work shall be performed as directed by the Engineer and in accordance with the Contract Documents.

4-3.4 Conditions Requiring a Supplemental Agreement or Unilateral Payment: A Supplemental Agreement or Unilateral Payment will be used to clarify the Plans and Specifications of the Contract; to provide for unforeseen work, grade changes, or alterations in the Plans which could not reasonably have been contemplated or foreseen in the original Plans and Specifications; to change the limits of construction to meet field conditions; to provide a safe and functional connection to an existing pavement; to settle documented Contract claims; to make the project functionally operational in accordance with the intent of the original Contract and subsequent amendments thereto.

A Supplemental Agreement or Unilateral Payment may be used to expand the physical limits of the project only to the extent necessary to make the project functionally operational in accordance with the intent of the original Contract. The cost of any such agreement extending the physical limits of the project shall not exceed $100,000 or 10% of the original Contract price, whichever is greater.

Perform no work to be covered by a Supplemental Agreement or Unilateral Payment before written authorization is received from the Engineer. The Engineer's written authorization will set forth sufficient work information to allow the work to begin. The work activities, terms and conditions will be reduced to written Supplemental Agreement or Unilateral Payment form promptly thereafter. No payment will be made on a Supplemental Agreement or Unilateral Payment prior to the Department's approval of the document.

4-3.5 Extra Work: Extra work authorized in writing by the Engineer will be paid in accordance with the formula in 4-3.2. Such payment will be the full extent of all monetary compensation entitlement due to the Contractor for such extra work. Any entitlement to a time extension due to extra work will be limited solely to that provided for in 4-3.2 for additional work.

4-3.6 Connections to Existing Pavement, Drives and Walks: Generally adhere to the limits of construction at the beginning and end of the project as detailed in the Plans. However, if

the Engineer determines that it is necessary to extend the construction in order to make suitable connections to existing pavement, the Engineer will authorize such a change in writing.

For necessary connections to existing walks and drives that are not indicated in the Plans, the Engineer will submit direction regarding the proper connections in accordance with the Standard Plans.

4-3.7 Differing Site Conditions: During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the Contract, or if unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Contract are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before the Contractor disturbs the conditions or performs the affected work.

Upon receipt of written notification of differing site conditions from the Contractor, the Engineer will investigate the conditions, and if it is determined that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the Contract, an adjustment will be made, excluding loss of anticipated profits, and the Contract will be modified in writing accordingly. The Engineer will notify the Contractor whether or not an adjustment of the Contract is warranted.

The Engineer will not allow a Contract adjustment for a differing site condition unless the Contractor has submitted the required written notice.

The Engineer will not allow a Contract adjustment under this clause for any effects caused to any other Department or non-Department projects on which the Contractor may be working.

4-3.8 Changes Affecting Utilities: The Contractor shall be responsible for identifying and assessing any potential impacts to a utility that may be caused by the changes proposed by the Contractor, and the Contractor shall at the time of making the request for a change notify the Department in writing of any such potential impacts to utilities.

Department approval of a Contractor proposed change does not relieve the Contractor of sole responsibility for all utility impacts, costs, delays or damages, whether direct or indirect, resulting from Contractor initiated changes in the design or construction activities from those in the original Contract Specifications, Design Plans (including Traffic Control Plans) or other Contract Documents and which effect a change in utility work different from that shown in the Utility Plans, joint project agreements or utility relocation schedules.

4-3.9 Cost Savings Initiative Proposal:

4-3.9.1 Intent and Objective:

1. This Subarticle applies to any cost reduction proposal (hereinafter referred to as a Proposal) that the Contractor initiates and develops for the purpose of refining the Contract to increase cost effectiveness or significantly improve the quality of the end result. A mandatory Cost Savings Initiative Workshop will be held prior to Contract Time beginning for the Contractor and Department to discuss potential Proposals. This mandatory workshop can only be eliminated if agreed to in writing by both the Contractor and Department. This Subarticle does not, however, apply to any such proposal unless the Contractor identifies it at the time of its submission to the Department as a proposal submitted pursuant to this Subarticle.

2. The Department will consider Proposals that would result in net savings to the Department by providing a decrease in the cost of the Contract. Proposals must result in savings without impairing essential functions and characteristics such as safety, service, life,

reliability, economy of operation, ease of maintenance, aesthetics and necessary standard design features. The Department will not recognize the Contractor's correction of plan errors that result in a cost reduction, as a Proposal. Deletions of work, approved by the Engineer which are not directly associated with or integral to a Proposal will be handled as full credit to the Department for the work deleted.

3. The Department shall have the right to reject, at its discretion, any Proposal submitted that proposes a change in the design of the pavement system or that would require additional right-of-way. Pending the Department's execution of a formal supplemental agreement implementing an approved Proposal, the Contractor shall remain obligated to perform the work in accordance with the terms of the existing Contract. The Department may grant time extensions to allow for the time required to develop and review a Proposal.

4. For potential Proposals not discussed at the Cost Savings Initiative Workshop, a mandatory concept meeting will be held for the Contractor and Department to discuss the potential Proposal prior to development of the Proposal. This mandatory meeting can only be eliminated if agreed to in writing by both the Contractor and Department.

4-3.9.2 Subcontractors: The Department encourages the Contractor to include the provisions of this Subarticle in Contracts with subcontractors and to encourage submission of Proposals from subcontractors. However, it is not mandatory to submit Proposals to the Department or to accept or transmit subcontractor proposed Proposals to the Department.

4-3.9.3 Data Requirements: As a minimum, submit the following information with each Proposal:

1. a description of the difference between the existing Contract requirement, including any time extension request, and the proposed change, and the comparative advantages and disadvantages.

2. separate detailed cost estimates for both the existing Contract requirement and the proposed change. Break down the cost estimates by pay item numbers indicating quantity increases or decreases and deleted pay items. Identify additional proposed work not covered by pay items within the Contract, by using pay item numbers in the Basis of Estimates Manual. In preparing the estimates, include overhead, profit, and bond within pay items in the Contract. Separate pay item(s) for the cost of overhead, profit, and bond will not be allowed.

3. an itemization of the changes, deletions or additions to plan details, plan sheets, Standard Plans and Specifications that are required to implement the Proposal if the Department adopts it. Submit preliminary plan drawings sufficient to describe the proposed changes.

4. engineering or other analysis in sufficient detail to identify and describe specific features of the Contract that must be changed if the Department accepts the Proposal with a proposal as to how these changes can be accomplished and an assessment of their effect on other project elements. The Department may require that engineering analyses be performed by a prequalified consultant in the applicable class of work. Support all design changes that result from the Proposal with drawings and computations signed and sealed by the Contractor's Engineer of Record. Written documentation or drawings will be submitted clearly delineating the responsibility of the Contractor's Engineer of Record.

5. the date by which the Department must approve the Proposal to obtain the total estimated cost reduction during the remainder of the Contract, noting any effect on the Contract completion time or delivery schedule.

6. a revised project schedule that would be followed upon approval of the Proposal. This schedule would include submittal dates and review time for the Department and Peer reviews.

4-3.9.4 Processing Procedures: Submit Proposals to the Engineer or his duly authorized representative. The Department will process Proposals expeditiously; however, the Department is not liable for any delay in acting upon a Proposal submitted pursuant to this Subarticle. The Contractor may withdraw, in whole or in part, a Proposal not accepted by the Department within the period specified in the Proposal. The Department is not liable for any Proposal development cost in the case where the Department rejects or the Contractor withdraws a Proposal.

The Engineer is the sole judge of the acceptability of a Proposal and of the estimated net savings in construction costs from the adoption of all or any part of such proposal. In determining the estimated net savings, the Department reserves the right to disregard the Contract bid prices if, in the judgment of the Engineer, such prices do not represent a fair measure of the value of work to be performed or to be deleted.

Prior to approval, the Engineer may modify a Proposal, with the concurrence of the Contractor, to make it acceptable. If any modification increases or decreases the net savings resulting from the Proposal, the Department will determine the Contractor's fair share upon the basis of the Proposal as modified and upon the final quantities. The Department will compute the net savings by subtracting the revised total cost of all bid items affected by the Proposal from the total cost of the same bid items as represented in the original Contract.

Prior to approval of the Proposal that initiates the supplemental agreement, submit acceptable Contract-quality plan sheets revised to show all details consistent with the Proposal design.

4-3.9.5 Computations for Change in Contract Cost of Performance: If the Proposal is adopted, the Contractor's share of the net savings as defined hereinafter represents full compensation to the Contractor for the Proposal.

The Department will not include its costs to process and implement a Proposal in the estimate. However, the Department reserves the right, where it deems such action appropriate, to require the Contractor to pay the Department's cost of investigating and implementing a Proposal as a condition of considering such proposal. When the Department imposes such a condition, the Contractor shall accept this condition in writing, authorizing the Department to deduct amounts payable to the Department from any monies due or that may become due to the Contractor under the Contract.

4-3.9.6 Conditions of Acceptance for Major Design Modifications of Category 2 Bridges: A Proposal that proposes major design modifications of a category 2 bridge, as determined by the Engineer, shall have the following conditions of acceptance:

All bridge Plans relating to the Proposal shall undergo an independent peer review conducted by a single independent engineering firm referred to for the purposes of this article as the Independent Review Engineer who is not the originator of the Proposal design, and is pre-qualified by the Department in accordance with Rule 14-75, Florida Administrative Code. The independent peer review is intended to be a comprehensive, thorough verification of the original work, giving assurance that the design is in compliance with all Department requirements. The Independent Review Engineer's comments, along with the resolution of each comment, shall be submitted to the Department. The Independent Review Engineer shall sign and seal the submittal cover letter stating that all comments have been adequately addressed and

the design is in compliance with the Department requirements. If there are any unresolved comments the Independent Review Engineer shall specifically list all unresolved issues in the signed and sealed cover letter.

The Contractor shall designate a primary engineer responsible for the Proposal design and as such will be designated as the Contractors Engineer of Record for the Proposal design. The Department reserves the right to require the Contractor's Engineer of Record to assume responsibility for design of the entire structure.

New designs and independent peer reviews shall be in compliance with all applicable Department, FHWA and AASHTO criteria requirements including bridge load ratings.

4-3.9.7 Sharing Arrangements: If the Department approves a Proposal, the Contractor shall receive 50% of the net reduction in the cost of performance of the Contract as determined by the final negotiated agreement between the Contractor and the Department. The net reduction will be determined by subtracting from the savings of the construction costs the reasonable documented engineering costs incurred by the contractor to design and develop a Proposal. The reasonable documented engineering costs will be paid by the Department. Engineering costs will be based on the consultant's certified invoice and may include the costs of the Independent Review Engineer in 4-3.9.6. The total engineering costs to be subtracted from the savings to determine the net reduction will be limited to 25% of the construction savings and shall not include any markup by the Contractor or the costs for engineering services performed by the Contractor.

4-3.9.8 Notice of Intellectual Property Interests and Department's Future Rights to a Proposal:

4-3.9.8.1 Notice of Intellectual Property Interests: The Contractor's Proposal submittal shall identify with specificity any and all forms of intellectual property rights that either the Contractor or any officer, shareholder, employee, consultant, or affiliate, of the Contractor, or any other entity who contributed in any measure to the substance of the Contractor's Proposal development, have or may have that are in whole or in part implicated in the Proposal. Such required intellectual property rights notice includes, but is not limited to, disclosure of any issued patents, copyrights, or licenses; pending patent, copyright or license applications; and any intellectual property rights that though not yet issued, applied for or intended to be pursued, could nevertheless otherwise be subsequently the subject of patent, copyright or license protection by the Contractor or others in the future. This notice requirement does not extend to intellectual property rights as to stand-alone or integral components of the Proposal that are already on the Department's Approved Product List (APL) or Standard Plans, or are otherwise generally known in the industry as being subject to patent or copyright protection.

4-3.9.8.2 Department's Future Rights to a Proposal: Notwithstanding 7-3 nor any other provision of the Standard Specifications, upon acceptance of a Proposal, the Contractor hereby grants to the Department and its contractors (such grant being expressly limited solely to any and all existing or future Department construction projects and any other Department projects that are partially or wholly funded by or for the Department) a royalty-free and perpetual license under all forms of intellectual property rights to manufacture, to use, to design, to construct, to disclose, to reproduce, to prepare and fully utilize derivative works, to distribute, display and publish, in whole or in part, and to permit others to do any of the above, and to otherwise in any manner and for any purpose whatsoever do anything reasonably

necessary to fully utilize any and all aspects of such Proposal on any and all existing and future construction projects and any other Department projects.

Contractor shall hold harmless, indemnify and defend the Department and its contractors and others in privity therewith from and against any and all claims, liabilities, other obligations or losses, and reasonable expenses related thereto (including reasonable attorneys' fees), which are incurred or are suffered by any breach of the foregoing grants, and regardless of whether such intellectual property rights were or were not disclosed by the Contractor pursuant to 4-3.9.8.1, unless the Department has by express written exception in the Proposal acceptance process specifically released the Contractor from such obligation to hold harmless, indemnify and defend as to one or more disclosed intellectual property rights.

FROM SECTION 5 – CONTROL OF THE WORK (CLAIMS).

5-12 Claims by Contractor.

5-12.1 General: When the Contractor deems that extra compensation or a time extension is due beyond that agreed to by the Engineer, whether due to delay, additional work, altered work, differing site conditions, breach of Contract, or for any other cause, the Contractor shall follow the procedures set forth herein for preservation, presentation and resolution of the claim.

Submission of timely notice of intent to file a claim, preliminary time extension request, time extension request, and the certified written claim, together with full and complete claim documentation, are each a condition precedent to the Contractor bringing any circuit court, arbitration, or other formal claims resolution proceeding against the Department for the items and for the sums or time set forth in the Contractor's certified written claim. The failure to provide such notice of intent, preliminary time extension request, time extension request, certified written claim and full and complete claim documentation within the time required shall constitute a full, complete, absolute and irrevocable waiver by the Contractor of any right to additional compensation or a time extension for such claim.

5-12.2 Notice of Claim:

5-12.2.1 Claims For Extra Work: Where the Contractor deems that additional compensation or a time extension is due for work or materials not expressly provided for in the Contract or which is by written directive expressly ordered by the Engineer pursuant to 4-3, the Contractor shall submit written notification to the Engineer of the intention to make a claim for additional compensation before beginning the work on which the claim is based, and if seeking a time extension, the Contractor shall also submit a preliminary request for time extension pursuant to 8-7.3.2 within ten calendar days after commencement of a delay and a request for Contract Time extension pursuant to 8-7.3.2 within thirty calendar days after the elimination of the delay. If such written notification is not submitted and the Engineer is not afforded the opportunity for keeping strict account of actual labor, material, equipment, and time, the Contractor waives the claim for additional compensation or a time extension. Such notice by the Contractor, and the fact that the Engineer has kept account of the labor, materials and equipment, and time, shall not in any way be construed as establishing the validity of the claim or method for computing any compensation or time extension for such claim. On projects with an original Contract amount of $3,000,000 or less within 90 calendar days after final acceptance of the project and on projects with an original Contract amount greater than $3,000,000 within 180 calendar days after final acceptance of the project the Contractor shall submit full and complete claim documentation as described in 5-12.3 and duly certified pursuant to 5-12.9.

However, for any claim or part of a claim that pertains solely to final estimate quantities disputes the Contractor shall submit full and complete claim documentation as described in 5-12.3 and duly certified pursuant to 5-12.9, as to such final estimate claim dispute issues, within 90 or 180 calendar days, respectively, of the Contractor's receipt of the Department's final estimate.

If the Contractor fails to submit a certificate of claim as described in 5-12.9, the Department will so notify the Contractor in writing. The Contractor shall have ten calendar days from receipt of the notice to resubmit the claim documentation, without change, with a certificate of claim as described in 5-12.9, without regard to whether the resubmission is within the applicable 90 or 180 calendar day deadline for submission of full and complete claim documentation. Failure by the Contractor to comply with the ten calendar day notice shall constitute a waiver of the claim.

5-12.2.2 Claims For Delay: Where the Contractor deems that additional compensation or a time extension is due on account of delay, differing site conditions, breach of Contract, or any other cause other than for work or materials not expressly provided for in the Contract (Extra Work) or which is by written directive of the Engineer expressly ordered by the Engineer pursuant to 4-3, the Contractor shall submit a written notice of intent to the Engineer within ten days after commencement of a delay to a controlling work item expressly notifying the Engineer that the Contractor intends to seek additional compensation, and if seeking a time extension, the Contractor shall also submit a preliminary request for time extension pursuant to 8-7.3.2 within ten calendar days after commencement of a delay to a controlling work item, as to such delay and providing a reasonably complete description as to the cause and nature of the delay and the possible impacts to the Contractor's work by such delay, and a request for Contract Time extension pursuant to 8-7.3.2 within thirty calendar days after the elimination of the delay. On projects with an original Contract amount of $3,000,000 or less within 90 calendar days after final acceptance of the project and on projects with an original Contract amount greater than $3,000,000 within 180 calendar days after final acceptance of the project the Contractor shall submit full and complete documentation as described in 5-12.3 and duly certified pursuant to 5-12.9.

If the Contractor fails to submit a certificate of claim as described in 5-12.9, the Department will so notify the Contractor in writing. The Contractor shall have ten calendar days from receipt of the notice to resubmit the claim documentation, without change, with a certificate of claim as described in 5-12.9, without regard to whether the resubmission is within the applicable 90 or 180 calendar day deadline for submission of full and complete claim documentation. Failure by the Contractor to comply with the ten calendar day notice shall constitute a waiver of the claim.

There shall be no Contractor entitlement to any monetary compensation or time extension for any delays or delay impacts, whatsoever, that are not to a controlling work item, and then as to any such delay to a controlling work item entitlement to any monetary compensation or time extension shall only be to the extent such is otherwise provided for expressly under 4-3 or 5-12, except that in the instance of delay to a non-controlling item of work the Contractor may be compensated for the direct costs of idle labor or equipment only, at the rates set forth in 4-3.2.1(1) and (3), and then only to the extent the Contractor could not reasonably mitigate such idleness.

If the Contractor provides the written notice of intent, the preliminary request for time extension, and the request for Contract Time extension in compliance with the aforementioned time and content requirements, the Contractor's claim for delay to a controlling

work item will be evaluated as of the date of the elimination of the delay even if the Contractor's performance subsequently overcomes the delay. If the claim for delay has not been settled, the Contractor must also comply with 5-12.3 and 5-12.9 to preserve the claim.

5-12.3 Content of Written Claim: As a condition precedent to the Contractor being entitled to additional compensation or a time extension under the Contract, for any claim, the Contractor shall submit a certified written claim to the Department which will include for each individual claim, at a minimum, the following information:

1. A detailed factual statement of the claim providing all necessary dates, locations, and items of work affected and included in each claim;

2. The date or dates on which actions resulting in the claim occurred or conditions resulting in the claim became evident;

3. Identification of all pertinent documents and the substance of any material oral communications relating to such claim and the name of the persons making such material oral communications;

4. Identification of the provisions of the Contract which support the claim and a statement of the reasons why such provisions support the claim, or alternatively, the provisions of the Contract which allegedly have been breached and the actions constituting such breach;

5. A detailed compilation of the amount of additional compensation sought and a breakdown of the amount sought as follows:

a. documented additional job site labor expenses;

b. documented additional cost of materials and supplies;

c. a list of additional equipment costs claimed, including each piece of equipment and the rental rate claimed for each;

d. any other additional direct costs or damages and the documents in support thereof;

e. any additional indirect costs or damages and all documentation in support thereof.

6. A detailed compilation of the specific dates and the exact number of calendar days sought for a time extension, the basis for entitlement to time for each day, all documentation of the delay, and a breakout of the number of days claimed for each identified event, circumstance or occurrence.

Further, the Contractor shall be prohibited from amending either the bases of entitlement or the amount of any compensation or time stated for any and all issues claimed in the Contractor’s written claim submitted hereunder, and any circuit court, arbitration, or other formal claims resolution proceeding shall be limited solely to the bases of entitlement and the amount of any compensation or time stated for any and all issues claimed in the Contractor’s written claim submitted hereunder. This shall not, however, preclude a Contractor from withdrawing or reducing any of the bases of entitlement and the amount of any compensation or time stated for any and all issues claimed in the Contractor’s written claim submitted hereunder at any time.

5-12.4 Action on Claim: The Engineer will respond in writing on projects with an original Contract amount of $3,000,000 or less within 90 calendar days of receipt of a complete claim submitted by a Contractor in compliance with 5-12.3, and on projects with an original Contract amount greater than $3,000,000 within 120 calendar days of receipt of a complete claim submitted by a Contractor in compliance with 5-12.3. Failure by the Engineer to respond to a claim in writing within 90 or 120 days, respectively, after receipt of a complete claim submitted

by the Contractor in compliance with 5-12.3 constitutes a denial of the claim by the Engineer. If the Engineer finds the claim or any part thereof to be valid, such partial or whole claim will be allowed and paid for to the extent deemed valid and any time extension granted, if applicable, as provided in the Contract. No circuit court or arbitration proceedings on any claim, or a part thereof, may be filed until after final acceptance of all Contract work by the Department or denial hereunder, whichever occurs last.

5-12.5 Pre-Settlement and Pre-Judgment Interest: Entitlement to any pre-settlement or pre-judgment interest on any claim amount determined to be valid subsequent to the Department's receipt of a certified written claim in full compliance with 5-12.3, whether determined by a settlement or a final ruling in formal proceedings, the Department shall pay to the Contractor simple interest calculated at the Prime Rate (as reported by the Wall Street Journal as the base rate on corporate loans posted by at least 75% of the nations 30 largest banks) as of the 60th calendar day following the Department's receipt of a certified written claim in full compliance with 5-12.3, such interest to accrue beginning 60 calendar days following the Department's receipt of a certified written claim in full compliance with 5-12.3 and ending on the date of final settlement or formal ruling.

5-12.6 Compensation for Extra Work or Delay:

5-12.6.1 Compensation for Extra Work: Notwithstanding anything to the contrary contained in the Contract Documents, the Contractor shall not be entitled to any compensation beyond that provided for in 4-3.2.

5-12.6.2 Compensation for Delay: Notwithstanding anything to the contrary contained in the Contract Documents, the additional compensation set forth in 5-12.6.2.1 shall be the Contractor's sole monetary remedy for any delay other than to perform extra work caused by the Department unless the delay shall have been caused by acts constituting willful or intentional interference by the Department with the Contractor's performance of the work and then only where such acts continue after Contractor's written notice to the Department of such interference. The parties anticipate that delays may be caused by or arise from any number of events during the term of the Contract, including, but not limited to, work performed, work deleted, supplemental agreements, work orders, disruptions, differing site conditions, utility conflicts, design changes or defects, time extensions, extra work, right-of-way issues, permitting issues, actions of suppliers, subcontractors or other contractors, actions by third parties, suspensions of work by the Engineer shop drawing approval process delays, expansion of the physical limits of the project to make it functional, weather, weekends, holidays, special events, suspension of Contract Time, or other events, forces or factors sometimes experienced in construction work. Such delays or events and their potential impacts on the performance by the Contractor are specifically contemplated and acknowledged by the parties in entering into this Contract, and shall not be deemed to constitute willful or intentional interference with the Contractor's performance of the work without clear and convincing proof that they were the result of a deliberate act, without reasonable and good-faith basis, and specifically intended to disrupt the Contractor's performance.

5-12.6.2.1 Compensation for Direct Costs, Indirect Costs, Expenses, and Profit thereon, of or from Delay: For any delay claim, the Contractor shall be entitled to monetary compensation for the actual idle labor (including supervisory personnel) and equipment, and indirect costs, expenses, and profit thereon, as provided for in 4-3.2.1(4) and solely for costs incurred beyond what reasonable mitigation thereof the Contractor could have undertaken.

5-12.7 Mandatory Claim Records: After submitting to the Engineer a notice of intent to file a claim for extra work or delay, the Contractor must keep daily records of all labor, material and equipment costs incurred for operations affected by the extra work or delay. These daily records must identify each operation affected by the extra work or delay and the specific locations where work is affected by the extra work or delay, as nearly as possible. The Engineer may also keep records of all labor, material and equipment used on the operations affected by the extra work or delay. The Contractor shall, once a notice of intent to claim has been timely filed, and not less than weekly thereafter as long as appropriate, submit the Contractor's daily records to the Engineer and be likewise entitled to receive the Department's daily records. The daily records to be submitted hereunder shall be done at no cost to the recipient.

5-12.8 Claims For Acceleration: The Department shall have no liability for any constructive acceleration of the work, nor shall the Contractor have any right to make any claim for constructive acceleration nor include the same as an element of any claim the Contractor may otherwise submit under this Contract. If the Engineer gives express written direction for the Contractor to accelerate its efforts, such written direction will set forth the prices and other pertinent information and will be reduced to a written Contract Document promptly. No payment will be made on a Supplemental Agreement for acceleration prior to the Department's approval of the documents.

5-12.9 Certificate of Claim: When submitting any claim, the Contractor shall certify under oath and in writing, in accordance with the formalities required by Florida law, that the claim is made in good faith, that the supportive data are accurate and complete to the Contractor's best knowledge and belief, and that the amount of the claim accurately reflects what the Contractor in good faith believes to be the Department's liability. Such certification must be made by an officer or director of the Contractor with the authority to bind the Contractor.

5-12.10 Non-Recoverable Items: The parties agree that for any claim the Department will not have liability for the following items of damages or expense:

1. Loss of profit, incentives or bonuses;
2. Any claim for other than extra work or delay;
3. Consequential damages, including, but not limited to, loss of bonding capacity, loss of bidding opportunities, loss of credit standing, cost of financing, interest paid, loss of other work or insolvency;
4. Acceleration costs and expenses, except where the Department has expressly and specifically directed the Contractor in writing "to accelerate at the Department's expense"; nor
5. Attorney fees, claims preparation expenses and costs of litigation.

5-12.11 Exclusive Remedies: Notwithstanding any other provision of this Contract, the parties agree that the Department shall have no liability to the Contractor for expenses, costs, or items of damages other than those which are specifically identified as payable under 5-12. In the event any legal action for additional compensation, whether on account of delay, acceleration, breach of contract, or otherwise, the Contractor agrees that the Department's liability will be limited to those items which are specifically identified as payable in 5-12.

5-12.12 Settlement Discussions: The content of any discussions or meetings held between the Department and the Contractor to settle or resolve any claims submitted by the Contractor against the Department shall be inadmissible in any legal, equitable, arbitration or administrative proceedings brought by the Contractor against the Department for payment of

such claim. Dispute Resolution Board, State Arbitration Board and Claim Review Committee proceedings are not settlement discussions, for purposes of this provision.

5-12.13 Personal Liability of Public Officials: In carrying out any of the provisions of the Contract or in exercising any power or authority granted to the Secretary of Transportation, Engineer or any of their respective employees or agents, there shall be no liability on behalf of any employee, officer or official of the Department for which such individual is responsible, either personally or as officials or representatives of the Department. It is understood that in all such matters such individuals act solely as agents and representatives of the Department.

5-12.14 Auditing of Claims: All claims filed against the Department shall be subject to audit at any time following the filing of the claim, whether or not such claim is part of a suit pending in the Courts of this State. The audit may be performed, at the Department's sole discretion, by employees of the Department or by any independent auditor appointed by the Department, or both. The audit may begin after ten days written notice to the Contractor, subcontractor, or supplier. The Contractor, subcontractor, or supplier shall make a good faith effort to cooperate with the auditors. As a condition precedent to recovery on any claim, the Contractor, subcontractor, or supplier must retain sufficient records, and provide full and reasonable access to such records, to allow the Department's auditors to verify the claim and failure to retain sufficient records of the claim or failure to provide full and reasonable access to such records shall constitute a waiver of that portion of such claim that cannot be verified and shall bar recovery thereunder. Further, and in addition to such audit access, upon the Contractor submitting a written claim, the Department shall have the right to request and receive, and the Contractor shall have the affirmative obligation to submit to the Department any and all documents in the possession of the Contractor or its subcontractors, materialmen or suppliers as may be deemed relevant by the Department in its review of the basis, validity or value of the Contractor's claim.

Without limiting the generality of the foregoing, the Contractor shall upon written request of the Department make available to the Department's auditors, or upon the Department's written request, submit at the Department's expense, any or all of the following documents:

1. Daily time sheets and foreman's daily reports and diaries;
2. Insurance, welfare and benefits records;
3. Payroll register;
4. Earnings records;
5. Payroll tax return;
6. Material invoices, purchase orders, and all material and supply acquisition contracts;
7. Material cost distribution worksheet;
8. Equipment records (list of company owned, rented or other equipment used);
9. Vendor rental agreements and subcontractor invoices;
10. Subcontractor payment certificates;
11. Canceled checks for the project, including, payroll and vendors;
12. Job cost report;
13. Job payroll ledger;

14. General ledger, general journal, (if used) and all subsidiary ledgers and journals together with all supporting documentation pertinent to entries made in these ledgers and journals;

15. Cash disbursements journal;

16. Financial statements for all years reflecting the operations on this project;

17. Income tax returns for all years reflecting the operations on this project;

18. All documents which reflect the Contractor's actual profit and overhead during the years this Contract was being performed and for each of the five years prior to the commencement of this Contract;

19. All documents related to the preparation of the Contractor's bid including the final calculations on which the bid was based;

20. All documents which relate to each and every claim together with all documents which support the amount of damages as to each claim;

21. Worksheets used to prepare the claim establishing the cost components for items of the claim including, but not limited to, labor, benefits and insurance, materials, equipment, subcontractors, and all documents that establish which time periods and individuals were involved, and the hours and rates for such individuals.

FROM SECTION 6 – CONTROL OF MATERIALS (CONVICT LABOR AND BUY AMERICA).

6-5 Products and Source of Supply.

6-5.1 Source of Supply–Convict Labor (Federal-Aid Contracts Only): Do not use materials that were produced after July 1, 1991, by convict labor for Federal-aid highway construction projects unless the prison facility has been producing convict-made materials for Federal-aid highway construction projects before July 1, 1987.

Use materials that were produced prior to July 2, 1991, by convicts on Federal-aid highway construction projects free from the restrictions placed on the use of these materials by 23 U.S.C. 114. The Department will limit the use of materials produced by convict labor for use in Federal-aid highway construction projects to:

1. Materials produced by convicts on parole, supervised release, or probation from a prison or,

2. Materials produced in a qualified prison facility.

The amount of such materials produced for Federal-aid highway construction during any 12-month period shall not exceed the amount produced in such facility for use in such construction during the 12-month period ending July 1, 1987.

6-5.2 Source of Supply-Steel: Use steel and iron manufactured in the United States, in accordance with the Buy America provisions of 23 CFR 635.410, as amended. Ensure that all manufacturing processes for this material occur in the United States. As used in this specification, a manufacturing process is any process that modifies the chemical content, physical shape or size, or final finish of a product, beginning with the initial melting and continuing through the final shaping and coating. If a steel or iron product is taken outside the United States for any manufacturing process, it becomes foreign source material. When using steel or iron materials as a component of any manufactured product (e.g., concrete pipe,

prestressed beams, corrugated steel pipe, etc.), these same provisions apply. Foreign steel and iron may be used when the total actual cost of such foreign materials does not exceed 0.1% of the total Contract amount or $2,500, whichever is greater. These requirements are applicable to all steel and iron materials incorporated into the finished work, but are not applicable to steel and iron items that the Contractor uses but does not incorporate into the finished work. Submit a certification from the manufacturer of steel or iron, or any product containing steel or iron, stating that all steel or iron furnished or incorporated into the furnished product was produced and manufactured in the United States or a statement that the product was produced within the United States except for minimal quantities of foreign steel and iron valued at $ (actual cost). Submit each such certification to the Engineer prior to incorporating the material or product into the project. Prior to the use of foreign steel or iron materials on a project, submit invoices to document the actual cost of such material, and obtain the Engineer's written approval prior to incorporating the material into the project.

FROM SECTION 7 – LEGAL REQUIREMENTS AND RESPONSIBILITIES TO THE PUBLIC (FHWA 1273, WAGE RATES, E-VERIFY, TITLE VI, DBE, AND ON-THE-JOB TRAINING)

7-1.1Compliance with FHWA 1273: The FHWA-1273 Electronic version, dated May 1, 2012 is posted on the Department's website at the following URL address https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/programmanagement/implemented/urlinspecs/files/deo112468a91904c88e94148b94569982fdff3d2.pdf?sfvrsn=6b78d1d6_2

Take responsibility to obtain this information and comply with all requirements posted on this website up through five calendar days before the opening of bids.

Comply with the provisions contained in FHWA-1273.

If the Department's website cannot be accessed, contact the Department's Specifications Office Web Coordinator at (850) 414-4101.

7-1.4 Compliance with Federal Endangered Species Act and other Wildlife Regulations: The Federal Endangered Species Act requires that the Department investigate the potential impact to a threatened or endangered species prior to initiating an activity performed in conjunction with a highway construction project. If the Department's investigation determines that there is a potential impact to a protected, threatened or an endangered species, the Department will conduct an evaluation to determine what measures may be necessary to mitigate such impact. When mitigation measures and/or special conditions are necessary, these measures and conditions will be addressed in the Contract Documents or permits.

In addition, in cases where certain protected, threatened or endangered species are found or appear within close proximity to the project boundaries, the Department has established guidelines that will apply when interaction with certain species occurs, absent of any special mitigation measures or permit conditions otherwise identified for the project.

These guidelines are posted at the following URL address:https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/programmanagement/implemented/urlinspecs/files/endangeredwildlifeguidelines.pdf?sfvrsn=e27baf3f_2.

Take responsibility to obtain this information and take all actions and precautions necessary to comply with the conditions of these guidelines during all project activities.

Prior to establishing any off-project activity in conjunction with a project, notify the Engineer of the proposed activity. Covered activities include but are not necessarily limited to borrow pits, concrete or asphalt plant sites, disposal sites, field offices, and material or equipment storage sites. Include in the notification the Financial Project ID, a description of the activity, the location of the site by township, range, section, county, and city, a site location map including the access route, the name of the property owner, and a person to contact to arrange a site inspection. Submit this notification at least 30 days in advance of planned commencement of the off-site activity, to allow for the Department to conduct an investigation without delaying job progress.

Do not perform any off-project activity without obtaining written clearance from the Engineer. In the event the Department's investigation determines a potential impact to a protected, threatened or endangered species and mitigation measures or permits are necessary, coordinate with the appropriate resource agencies for clearance, obtain permits and perform mitigation measures as necessary. Immediately notify the Engineer in writing of the results of this coordination with the appropriate resource agencies. Additional compensation or time will not be allowed for permitting or mitigation, associated with Contractor initiated off-project activities.

7-1.8 Compliance with Section 4(f) of the USDOT Act: Section 4(f) of the USDOT Act prohibits the U. S. Secretary of Transportation from approving a project which requires the use of publicly owned land of a public park, recreation area or a wildlife and waterfowl refuge, or of any historic site of national, state, or local significance unless there is no prudent or feasible alternative to using that land and the program or project includes all possible planning to minimize the harm to the site resulting from the use.

Before undertaking any off-project activity associated with any federally assisted undertaking, ensure that the proposed site does not represent a public park, recreation area, wildlife or waterfowl refuge, or a historic site (according to the results of the Cultural Resources Survey discussed in 120-6.2). If such a site is proposed, notify the Engineer and provide a description of the proposed off-site activity, the Financial Project ID, the location of the site by township, range, section, a county or city map showing the site location, including the access route and the name of the property. It is the Contractor's responsibility to submit justification for use of Section 4(f) property that is sufficient for the Florida Department of Transportation and the Federal Highway Administration to make a Section 4(f) determination. Submit this notification sufficiently in advance of planned commencement of the off-site activity to allow a reasonable time for the Engineer to conduct an investigation without delaying job progress. Do not begin any off-project activity without obtaining written clearance from the Engineer.

7-16 Wage Rates for Federal-Aid Projects.

For this Contract, payment of predetermined minimum wages applies.

The U.S. Department of Labor (USDOL) Wage Rates applicable to this Contract are listed in table below, as modified up through ten days prior to the opening of bids.

Wage Rate Decision Number	Associated Work
FL20220158	Highway

Obtain the applicable General Decision(s) (Wage Tables) through the Department's Office of Construction website and ensure that employees receive the minimum compensation applicable. Review the General Decisions for all classifications necessary to complete the project. Request additional classifications through the Engineer's office when needed.

7-24 Disadvantaged Business Enterprise Program.

~~**7-24.1 Disadvantaged Business Enterprise Affirmative Action Plan:** Prior to award of the Contract, have an approved Disadvantaged Business Enterprise (DBE) Affirmative Action Program Plan filed with the Equal Opportunity Office. Update and resubmit the plan every three years. No Contract will be awarded until the Department approves the Plan. The DBE Affirmative Action Program Plan is incorporated into and made a part of the Contract.~~

7-24.2 Required Contract and Subcontract DBE Assurance Language: In accordance with 49 CFR 26.13 (b), the Contract FDOT signs with the Contractor (and each subcontract the prime contractor signs with a subcontractor) must include the following assurance: "The Contractor, sub-recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted Contracts. Failure by the Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to,

1. Withholding monthly progress payments;
2. Assessing sanctions;
3. Liquidated damages; and/or
4. Disqualifying the Contractor from future bidding as non-responsible."

~~**7-24.3 Plan Requirements:** Include the following in the DBE Affirmative Action Program Plan:~~

~~1. A policy statement, signed by an authorized representative (president, chief executive officer, or chairman of the contractor), expressing a commitment to use DBEs in all aspects of contracting to the maximum extent feasible, outlining the various levels of responsibility, and stating the objectives of the program. Circulate the policy statement throughout the Contractor's organization.~~

~~2. The designation of a Liaison Officer within the Contractor's organization, as well as support staff, necessary and proper to administer the program, and a description of the authority, responsibility, and duties of the Liaison Officer and support staff. The Liaison Officer and staff are responsible for developing, managing, and implementing the program on a day-to-day basis for carrying out technical assistance activities for DBEs and for disseminating information on available business opportunities so that DBEs are provided an equitable opportunity to participate in Contracts let by the Department.~~

~~3. Utilization of techniques to facilitate DBE participation in contracting activities which include, but are not limited to:~~

~~a. Soliciting price quotations and arranging a time for the review of Plans, quantities, specifications, and delivery schedules, and for the preparation and presentation of quotations.~~

~~b. Providing assistance to DBEs in overcoming barriers such as the inability to obtain bonding, financing, or technical assistance.~~

~~c. Carrying out information and communication programs or workshops on contracting procedures and specific contracting opportunities in a timely manner, with such programs being bilingual where appropriate.~~

~~d. Encouraging eligible DBEs to apply for certification with the Department.~~

~~e. Contacting Minority Contractor Associations and city and county agencies with programs for disadvantaged individuals for assistance in recruiting and encouraging eligible DBE contractors to apply for certification with the Department.~~

7-24.4 DBE Records and Reports: Submit the following through the Equal Opportunity Compliance System:

1. DBE Commitments - at or before the Pre-Construction Conference.

2. Report monthly, through the Equal Opportunity Compliance System on the Department's Website, actual payments (including retainage) made to DBEs for work performed with their own workforce and equipment in the area in which they are certified. Report payments made to all DBE and Minority Business Enterprise (MBE) subcontractors and DBE and MBE construction material and major suppliers.

The Equal Opportunity Office will provide instructions on accessing this system. Develop a record keeping system to monitor DBE affirmative action efforts which include the following:

1. the procedures adopted to comply with these Specifications;

2. the number of subordinated Contracts on Department projects awarded to DBEs;

3. the dollar value of the Contracts awarded to DBEs;

4. the percentage of the dollar value of all subordinated Contracts awarded to DBEs as a percentage of the total Contract amount;

5. a description of the general categories of Contracts awarded to DBEs; and

6. the specific efforts employed to identify and award Contracts to DBEs.

Upon request, provide the records to the Department for review.

Maintain all such records for a period of five years following acceptance of final payment and have them available for inspection by the Department and the Federal Highway Administration.

7-24.5 Counting DBE Participation and Commercially Useful Functions: 49 CFR Part 26.55 specifies when DBE credit shall be awarded for work performed by a DBE. DBE credit can only be awarded for work actually performed by DBEs themselves for the types of work for which they are certified. When reporting DBE Commitments, only include the dollars that a DBE is expected to earn for work they perform with their own workforce and equipment. Update DBE Commitments to reflect changes to the initial amount that was previously reported or to add DBEs not initially reported.

When a DBE participates in a contract, the value of the work is determined in accordance with 49 CFR Part 26.55, for example:

1. The Department will count only the value of the work performed by the DBE toward DBE goals. The entire amount of the contract that is performed by the DBE's own forces (including the cost of supplies, equipment and materials obtained by the DBE for the contract work) will be counted as DBE credit.

2. The Department will count the entire amount of fees or commissions charged by the DBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services or for providing bonds or insurance specifically required for the performance of a Department-assisted contract, toward DBE goals, provided that the Department determines the fees to be reasonable and not excessive as compared with fees customarily followed for similar services.

3. When the DBE subcontracts part of the work of its contract to another firm, the Department will count the value of the subcontracted work only if the DBE's subcontractor is itself a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward DBE goals.

4. When a DBE performs as a participant in a joint venture, the Department will count the portion of the dollar value of the contract equal to the distinct, clearly defined portion of the work the DBE performs with its own forces toward DBE goals.

5. The Contractors shall ensure that only expenditures to DBEs that perform a commercially useful function (CUF) in the work of a contract may be counted toward the voluntary DBE goal.

6. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself.

7. Contractors wishing to use joint checks involving DBE credit must provide written notice to the District Contract Compliance Office prior to issuance of the joint check. The Contractor must also provide a copy of the notice to the DBE subcontractor and maintain a copy with the project records.

8. To determine whether a DBE is performing a commercially useful function, the Department will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and other relevant factors.

9. A DBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation.

10. If a DBE does not perform or exercise responsibility for at least 30% of the total cost of its contract with its own workforce, or if the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, the DBE has not performed a commercially useful function.

7-24.6 Prompt Payments: Meet the requirements of 9-5 for payments to all DBE subcontractors.

7-25 On-The-Job Training Requirements.

As part of the Contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The Contractor shall provide On-The-Job Training aimed at developing full journeymen in the type of trade or job classification involved in the work. In the event the

Contractor subcontracts a portion of the contract work, it shall determine how many, if any, of the trainees are to be trained by the subcontractor provided, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this Section. Ensure that, when feasible, 25% of trainees in each occupation are in their first year of training. The Contractor shall incorporate the requirements of this Section into such subcontract.

The number of trainees will be estimated on the number of calendar days of the contract, the dollar value, and the scope of work to be performed. The trainee goal will be finalized at a Post-Preconstruction Trainee Evaluation Meeting and the goal will be distributed among the work classifications based on the following criteria:

1. Determine the number of trainees on Federal Aid Contract:

a. No trainees will be required for contracts with a Contract Time allowance of less than 275 calendar days.

b. If the Contract Time allowance is 275 calendar days or more, the number of trainees shall be established in accordance with the following chart:

Estimated Contract Amount	Trainees Required
$2,000,000 or less	0
Over $2,000,000 to $4,000,000	2
Over $4,000,000 to $6,000,000	3
Over $6,000,000 to $12,000,000	5
Over $12,000,000 to $18,000,000	7
Over $18,000,000 to $24,000,000	9
Over $24,000,000 to $31,000,000	12
Over $31,000,000 to $37,000,000	13
Over $37,000,000 to $43,000,000	14
Over $43,000,000 to $49,000,000	15
Over $49,000,000 to $55,000,000	16
Over $55,000,000 to $62,000,000	17
Over $62,000,000 to $68,000,000	18
Over $68,000,000 to $74,000,000	19
Over $74,000,000 to $81,000,000	20
Over $81,000,000 to $87,000,000	21
Over $87,000,000 to $93,000,000	22
Over $93,000,000 to $99,000,000	23
Over $99,000,000 to $105,000,000	24
Over $105,000,000 to $112,000,000	25
Over $112,000,000 to $118,000,000	26
Over $118,000,000 to $124,000,000	27
Over $124,000,000 to $130,000,000	28
Over $130,000,000 to *	
*One additional trainee per $6,000,000 of estimated Construction Contract amount over $130,000,000	

Further, if the Contractor or subcontractor requests to utilize banked trainees as discussed later in this Section, a Banking Certificate will be validated at this meeting allowing credit to the Contractor for previously banked trainees. Banked credits of prime Contractors working as

Subcontractors may be accepted for credit. The Contractor's Project Manager, the Construction Project Engineer and the Department's District Contract Compliance Manager will attend this meeting. Within ten days after the Post-Preconstruction Training Evaluation Meeting, the Contractor shall submit to the Department for approval an On-The-Job Training Schedule indicating the number of trainees to be trained in each selected classification and the portion of the Contract Time during which training of each trainee is to take place. This schedule may be subject to change if any of the following occur:

1. When a start date on the approved On-The-Job Training Schedule has been missed by 14 or more days;

2. When there is a change in previously approved classifications;

3. When replacement trainees are added due to voluntary or involuntary termination

The revised schedule will be resubmitted to and approved by the Department's District Contract Compliance Manager.

The following criteria will be used in determining whether or not the Contractor has complied with this Section as it relates to the number of trainees to be trained:

1. Credit will be allowed for each trainee that is both enrolled and satisfactorily completes training on this Contract. Credit for trainees, over the established number for this Contract, will be carried in a "bank" for the Contractor and credit will be allowed for those surplus trainees in subsequent, applicable projects. A "banked" trainee is described as an employee who has been trained on a project, over and above the established goal, and for which the Contractor desires to preserve credit for utilization on a subsequent project.

2. Credit will be allowed for each trainee that has been previously enrolled in the Department's approved training program on another contract and continues training in the same job classification and completes their training on a different contract.

3. Credit will be allowed for each trainee who, due to the amount of work available in their classification, is given the greatest practical amount of training on the contract regardless of whether or not the trainee completes training.

4. Credit will be allowed for any training position indicated in the approved On-The-Job Training Schedule, if the Contractor can demonstrate that made a good faith effort to provide training in that classification was made.

5. No credit will be allowed for a trainee whose employment by the Contractor is involuntarily terminated unless the Contractor can clearly demonstrate good cause for this action.

Training and upgrading of minorities, women and economically disadvantaged persons toward journeyman status is a primary objective of this Section. Accordingly, the Contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. If a non-minority male is enrolled into the On-The-Job Training Program, the On-The-Job Training Notification of Personnel Action Form notifying the District Contract Compliance Manager of such action shall be accompanied by a disadvantaged certification or a justification for such action acceptable to the Department's District Contract Compliance Manager. The Contractor will be given an opportunity and will be responsible for demonstrating the steps that it has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance with this Section. This training is not intended, and shall not be used, to discriminate against any applicant for training, whether a minority, woman or disadvantaged person.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journeyman status, or have been employed as a journeyman. The Contractor may satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the Contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established at the Post-Preconstruction Trainee Evaluation Meeting and approved by the Department. Graduation to journeyman status will be based upon satisfactory completion of a Proficiency Demonstration set up at the completion of training and established for the specific training classification, completion of the minimum hours in a training classification range, and the employer's satisfaction that the trainee does meet journeyman status in the classification of training. Upon reaching journeyman status, the following documentation must be forwarded to the District Contract Compliance Office:

1. Trainee Enrollment and Personnel Action Form
2. Proficiency Demonstration Verification Form indicating completion of each standard established for the classification signed by representatives of both the Contractor and the Department.

The Department and the Contractor shall establish a program that is tied to the scope of the work in the project and the length of operations providing it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for journeyman status in the classifications concerned, by at least, the minimum hours prescribed for a training classification. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal Aid highway construction contract. Approval or acceptance of a training schedule shall be obtained from the Department prior to commencing work on the classifications covered by the program.

A voluntary On-The-Job Training Program is available to a Contractor which has been awarded a state funded project. Through this program, the Contractor will have the option to train employees on state funded projects for "banked credit" as discussed previously in this provision, to be utilized on subsequent Federal Aid Projects where training is required. Those Contractors availing themselves of this opportunity to train personnel on state funded projects and bank trainee hours for credit shall comply with all training criteria set forth in this Section for Federal Aid Projects; voluntary banking may be denied by the Department if staff is not available to monitor compliance with the training criteria.

It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial type positions. Training is permissible in lower level management positions such as office engineers, estimators, etc., where the training is oriented toward construction applications. Training in the laborer classifications, except Common/General Laborer, may be permitted provided that significant and meaningful training is provided and approved by the District Contract Compliance Office.

When approved in advance by the District Contract Compliance Manager, credit will be given for training of persons in excess of the number specified herein under the current contract or a Contractor will be allowed to bank trainees who have successfully completed a training

program and may apply those trainees to a training requirement in subsequent project(s) upon approval of the Department's District Contract Compliance Manager. This credit will be given even though the Contractor may receive training program funds from other sources, provided such other source do not specifically prohibit the Contractor from receiving other form of compensation. Offsite training is permissible as long as the training is an integral part of an approved training program and does not compromise a significant part of the overall training. Credit for offsite training indicated above may only be made to the Contractor when it does one or more of the following and the trainees are concurrently employed on a Federal Aid Project:

1. Contributes to the cost of the training,
2. Provides the instruction to the trainee,
3. Pays the trainee's wages during the offsite training period.

The Contractor shall compensate the trainee at no less than the laborer rate established in the Contract at the onset of training. The compensation rate will be increased to the journeyman's wage upon graduation from the training program for the remainder of the time the trainee works in the classification in which they were trained.

The Contractor shall furnish the trainee a copy of the program they will follow in providing the training. The Contractor shall provide each trainee with a certification showing the type and length of training satisfactorily completed. The Contractor shall enroll a trainee in one training classification at a time to completion before the trainee can be enrolled in another classification on the same project.

The Contractor shall maintain records to document the actual hours each trainee is engaged in training on work being performed as a part of this Contract.

The Contractor shall submit to the District Contract Compliance Manager a copy of an On-The-Job Training Notification of Personnel Action form no later than seven days after the effective date of the action when the following actions occur: a trainee is transferred on the project, transferred from the project to continue training on another contract, completes training, is upgraded to journeyman status or voluntary terminates or is involuntary terminated from the project.

The Contractor shall furnish to the District Contract Compliance Manager a copy of a Monthly Time Report for each trainee. The Monthly Time Report for each month shall be submitted no later than the tenth day of the subsequent month. The Monthly Time Report shall indicate the phases and sub-phases of the number of hours devoted to each proficiency.

Highway or Bridge Carpenter Helper, Mechanic Helper, Rodman/Chainman, and Timekeeper classifications will not be approved for the On-The-Job Training Program.

The number of trainees may be distributed among the work classifications on the basis of the Contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment.

The Contractor will have fulfilled the responsibilities of this Specification when acceptable training has been provided to the trainee as specified above.

7-26 Cargo Preference Act – Use of United States-Flag Vessels.

Pursuant to Title 46 CFR 381, the Contractor agrees

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to

this Contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph 1 of this Article to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

3. To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this Contract.

7-29 E-Verify.

The Contractor shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the Contractor during the term of the Contract and shall expressly require any subcontractors performing work or providing services pursuant to the Contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the Contract term.

7-31 Title VI Assurance – DOT 1050.2A, Appendix A and Appendix E.

7-31.1 Appendix A: During the performance of this Contract, the Contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Contractor") agrees as follows:

1. Compliance with Regulations: The Contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the US Department of Transportation (hereinafter, "USDOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this Contract.

2. Nondiscrimination: The Contractor, with regard to the work performed by it during the Contract, shall not discriminate on the basis of race, color, national origin or sex in the selection and retention of sub-contractors, including procurements of materials and leases of equipment. The Contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the Contract covers a program set forth in Appendix B of the Regulations.

3. Solicitations for subcontractors, including procurements of materials and equipment: In all solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this contract and the Regulations relative to nondiscrimination on the basis of race, color, national origin, or sex.

4. Information and Reports: The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information and its facilities as may be determined by the Florida Department of Transportation or the Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, and Federal Motor Carrier

Safety Administration to be pertinent to ascertain compliance with such Regulations, order and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information the Contractor shall so certify to the Florida Department of Transportation, or the Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, or Federal Motor Carrier Safety Administration as appropriate, and shall set forth what efforts it has made to obtain the information.

5. Sanctions for Noncompliance: In the event of the Contractor's noncompliance with the nondiscrimination provisions of this Contract, the Florida Department of Transportation shall impose such Contract sanctions as it or the Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, or Federal Motor Carrier Safety Administration may determine to be appropriate, including, but not limited to:

a. withholding of payments to the Contractor under the Contract until the Contractor complies, or

b. cancellation, termination or suspension of the Contract, in whole or in part.

6. Incorporation of Provisions: The Contractor shall include the provisions of this appendix in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The Contractor shall take such action with respect to any subcontract or procurement as the Florida Department of Transportation or the Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, or Federal Motor Carrier Safety Administration may direct as a means of enforcing such provisions including sanctions for noncompliance, provided, however, that, in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request the Florida Department of Transportation to enter into such litigation to protect the interests of the Florida Department of Transportation, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

7-31.2 Appendix E: During the performance of this Contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "Contractor" agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

1. Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21;

2. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired of Federal or Federal-aid programs and projects);

3. Federal-Aid Highway Act of 1973, (23 U.S.C § 324 et seq.), (prohibits discrimination on the basis of sex);

4. Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;

5. The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);

6. Airport and Airway Improvement Act of 1982, (49 U.S.C. 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color national origins or sex);

7. The Civil Rights Restoration Act of 1987 (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);

8. Titles II and III of the Americans with Disabilities Act, which prohibits discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;

9. The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);

10. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;

11. Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);

12. Title IX of the Education Amendments of 1972, as amended, which prohibits discrimination based on sex in education programs, or activities (20 U.S.C. 1681 et seq.).

FROM SECTION 8 (SUBLETTING, CONTRACT TIME EXTENSION, AND LIQUIDATED DAMAGES).

8-1 Subletting or Assigning of Contracts.

Do not, sell, transfer, assign or otherwise dispose of the Contract or Contracts or any portion thereof, or of the right, title, or interest therein, without written consent of the Department. If the Contractor chooses to sublet any portion of the Contract, the Contractor must provide a written request to sublet work on the Certification of Sublet Work form developed by the Department for this purpose. With the Engineer's acceptance of the request, the Contractor may sublet a portion of the work, but shall perform with its own organization work amounting to not less than 40% of the total Contract amount. The Certification of Sublet Work request will be deemed acceptable by the Department, for purposes of the Department's consent, unless the Engineer notifies the Contractor within 5 business days of receipt of the Certification of Sublet Work that the Department is not consenting to the requested subletting.

Include in the total Contract amount the cost of materials and manufactured component products, and their transportation to the project site. For the purpose of meeting this requirement the Department will not consider off-site commercial production of materials and manufactured component products that the Contractor purchases, or their transportation to the project, as subcontracted work.

If the Contractor sublets a part of a Contract item, the Department will use only the sublet proportional cost in determining the percentage of subcontracted normal work.

Execute all agreements to sublet work in writing and include all pertinent provisions and requirements of the Contract. All other agreements must be in writing and reference all applicable Contract provisions. Upon request, furnish the Department with a copy of the subcontract and agreement. The subletting of work does not relieve the Contractor or the surety of their respective liabilities under the Contract.

The Department recognizes a subcontractor only in the capacity of an employee or agent of the Contractor, and the Engineer may require the Contractor to remove the subcontractor as in the case of an employee.

8-7.3.2 Contract Time Extensions: The Department may grant an extension of Contract Time when a controlling item of work is delayed by factors not reasonably anticipated or foreseeable at the time of bid. The Department may allow such extension of time only for delays occurring during the Contract Time period or authorized extensions of the Contract Time period. When failure by the Department to fulfill an obligation under the Contract results in delays to the controlling items of work, the Department will consider such delays as a basis for granting a time extension to the Contract.

Whenever the Engineer suspends the Contractor's operations, as provided in 8-6, for reasons other than the fault of the Contractor, the Engineer will grant a time extension for any delay to a controlling item of work due to such suspension. The Department will not grant time extensions to the Contract for delays due to the fault or negligence of the Contractor.

The Department does not include an allowance for delays caused by the effects of inclement weather or suspension of Contractor's operations in establishing Contract Time. The Engineer will continually monitor the effects of weather and, when found justified, grant time extensions on either a bimonthly or monthly basis. The Engineer will not require the Contractor to submit a request for additional time due to the effects of weather.

The Department will grant time extensions, on a day for day basis, for delays caused by the effects of rains or other inclement weather conditions, related adverse soil conditions or suspension of operations that prevent the Contractor from productively performing controlling items of work resulting in:

1. The Contractor being unable to work at least 50% of the normal work day on pre-determined controlling work items; or

2. The Contractor must make major repairs to work damaged by weather, provided that the damage is not attributable to the Contractor's failure to perform or neglect; and provided that the Contractor was unable to work at least 50% of the normal workday on pre-determined controlling work items.

When the Department grants a time extension due to rains or other inclement weather, the Contractor shall submit any objection to the additional time in writing within ten calendar days from receipt of written notice from the Engineer. Failure to submit a written appeal within ten calendar days from receipt of the written notice shall constitute a waiver of any and all rights to appeal the Department's decision at a later time.

No additional compensation will be made for delays caused by the effects of inclement weather.

The Department will consider the delays in delivery of materials or component equipment that affect progress on a controlling item of work as a basis for granting a time extension if such delays are beyond the control of the Contractor or supplier. Such delays

may include an area-wide shortage, an industry-wide strike, or a natural disaster that affects all feasible sources of supply. In such cases, the Contractor shall furnish substantiating letters from a representative number of manufacturers of such materials or equipment clearly confirming that the delays in delivery were the result of an area-wide shortage, an industry-wide strike, etc. No additional compensation will be made for delays caused by delivery of materials or component equipment.

The Department will not consider requests for time extension due to delay in the delivery of custom manufactured equipment such as traffic signal equipment, highway lighting equipment, etc., unless the Contractor furnishes documentation that he placed the order for such equipment in a timely manner, the delay was caused by factors beyond the manufacturer's control, and the lack of such equipment caused a delay in progress on a controlling item of work. No additional compensation will be paid for delays caused by delivery of custom manufactured equipment.

The Department will consider the affect of utility relocation and adjustment work on job progress as the basis for granting a time extension only if all the following criteria are met:

1. Delays are the result of either utility work that was not detailed in the Plans, or utility work that was detailed in the Plans but was not accomplished in reasonably close accordance with the schedule included in the Contract Documents.

2. Utility work actually affected progress toward completion of controlling work items.

3. The Contractor took all reasonable measures to minimize the effect of utility work on job progress, including cooperative scheduling of the Contractor's operations with the scheduled utility work at the preconstruction conference and providing adequate advance notification to utility companies as to the dates to coordinate their operations with the Contractor's operations to avoid delays.

As a condition precedent to an extension of Contract Time the Contractor must submit to the Engineer:

A preliminary request for an extension of Contract Time must be made in writing to the Engineer within ten calendar days after the commencement of a delay to a controlling item of work. If the Contractor fails to submit this required preliminary request for an extension of Contract Time, the Contractor fully, completely, absolutely and irrevocably waives any entitlement to an extension of Contract Time for that delay. In the case of a continuing delay only a single preliminary request for an extension of Contract Time will be required. Each such preliminary request for an extension of Contract Time shall include as a minimum the commencement date of the delay, the cause of the delay, and the controlling item of work affected by the delay.

Furthermore, the Contractor must submit to the Engineer a request for a Contract Time extension in writing within 30 days after the elimination of the delay to the controlling item of work identified in the preliminary request for an extension of Contract Time. Each request for a Contract Time extension shall include as a minimum all documentation that the Contractor wishes the Department to consider related to the delay, and the exact number of days requested to be added to Contract Time. If the Contractor contends that the delay is compensable, then the Contractor shall also be required to submit with the request for a Contract Time extension a detailed cost analysis of the requested additional compensation. If the Contractor fails to submit this required request for a Contract Time extension, with or without a

detailed cost analysis, depriving the Engineer of the timely opportunity to verify the delay and the costs of the delay, the Contractor waives any entitlement to an extension of Contract Time or additional compensation for the delay.

Upon timely receipt of the preliminary request of Contract Time from the Contractor, the Engineer will investigate the conditions, and if it is determined that a controlling item of work is being delayed for reasons beyond the control of the Contractor the Engineer will take appropriate action to mitigate the delay and the costs of the delay. Upon timely receipt of the request for a Contract Time extension the Engineer will further investigate the conditions, and if it is determined that there was an increase in the time or the cost of performance of the controlling item of work beyond the control of the Contractor, then an adjustment of Contract Time will be made, and a monetary adjustment will be made, excluding loss of anticipated profits, and the Contract will be modified in writing accordingly.

The existence of an accepted schedule, including any required update(s), is a condition precedent to the Contractor having any right to the granting of an extension of Contract Time or any monetary compensation arising out of any delay. Contractor failure to have an accepted schedule, including any required update(s), for the period of potential impact, or in the event the currently accepted schedule and applicable updates do not accurately reflect the actual status of the project or fail to accurately show the true controlling or non-controlling work activities for the period of potential impact, will result in any entitlement determination as to time or money for such period of potential impact being limited solely to the Department's analysis and identification of the actual controlling or non-controlling work activities. Further, in such instances, the Department's determination as to entitlement as to either time or compensability will be final, unless the Contractor can prove by clear and convincing evidence to a Disputes Review Board that the Department's determination was without any reasonable factual basis.

8-10 Liquidated Damages for Failure to Complete the Work.

8-10.2 Amount of Liquidated Damages: Applicable liquidated damages are the amounts established in the following schedule:

Original Contract Amount	Daily Charge Per Calendar Day
$50,000 and under	$868
Over $50,000 but less than $250,000	$882
$250,000 but less than $500,000	$1,197
$500,000 but less than $2,500,000	$1,694
$2,500,000 but less than $5,000,000	$2,592
$5,000,000 but less than $10,000,000	$3,786
$10,000,000 but less than $15,000,000	$4,769
$15,000,000 but less than $20,000,000	$5,855
$20,000,000 and over	$9,214 plus 0.00005 of any amount over $20 million (Round to nearest whole dollar)

The Engineer may approve adjustments to the liquidated damages amounts in accordance with the Construction Project Administration Manual (CPAM) provided all contract work is complete.

FROM SECTION 9 (PARTIAL PAYMENTS).

9-5 Partial Payments.

9-5.1 General: The Engineer will make partial payments on monthly estimates based on the amount of work that the Contractor completes during the month (including delivery of certain materials, as specified herein below). The Engineer will make approximate monthly payments, and the Department will correct all partial estimates and payments in the subsequent estimates and in the final estimate and payment.

The Department will base the amount of such payments on the total value of the work that the Contractor has performed to the date of the estimate, based on the quantities completed and the Contract prices, less payments previously made and less any retainage withheld.

Retainage will not be withheld until the percent of Contract Time used exceeds 75%. From that time forward, the Department will withhold retainage of 10% of the amount due on the current estimate as retainage when the percent of Contract Time used exceeds the percent of Contract amount earned by more than 15%.

Contract amount is defined as the original Contract amount adjusted by approved supplemental agreements.

Retainage will be determined for each job on multiple job Contracts. The Department will not accept Securities, Certificates of Deposit or letters of credit as a replacement for retainage. Amounts withheld will not be released until payment of the final estimate.

9-5.2 Unsatisfactory Payment Record: In accordance with Sections 255.05 and 337.16 of the Florida Statutes, and the rules of the Department, the Department may disqualify the Contractor from bidding on future Department contracts if the Contractor's payment record in connection with contract work becomes unsatisfactory.

9-5.3 Withholding Payment:

9-5.3.1 Withholding Payment for Defective Work: If the Department discovers any defective work or material prior to the final acceptance, or if the Department has a reasonable doubt as to the integrity of any part of the completed work prior to final acceptance, then the Department will not allow payment for such defective or questioned work until the Contractor has remedied the defect and removed any causes of doubt.

9-5.3.2 Withholding Payment for Failure to Comply: The Department will withhold progress payments from the Contractor if he fails to comply with any or all of the following within 60 days after beginning work:

1. comply with and submit required paperwork relating to prevailing wage rate provisions, Equal Employment Opportunity, On-The-Job Training, and Affirmative Action;

2. comply with the requirement to all necessary information, including actual payments to DBEs, all other subcontractors and major suppliers, through the Internet based Equal Opportunity Reporting System;

3. comply with or make a good faith effort to ensure employment opportunity for minorities and females in accordance with the required contract provisions for Federal Aid Construction Contracts, and

4. comply with or make a good faith effort to meet On-The-Job Training goals.

The Department will withhold progress payments until the Contractor has satisfied the above conditions.

9-5.4 Release of Retainage After Acceptance: When the Contractor has furnished the Department with all submittals required by the Contract, such as invoices, EEO reports, materials certifications, certification of materials procured, etc., (excluding Contractor's letter of acceptance of final amount due and Form 21-A release) and the Engineer has determined that the measurement and computation of pay quantities is correct, the Department may reduce the retainage to $1,000 plus any amount that the Department elects to deduct for defective work as provided in 9-5.3.

The Department may deduct from payment estimates any sums that the Contractor owes to the Department on any account. Where more than one project or job (separate job number) is included in the Contract, the Department will distribute the reduced retainage as provided in the first paragraph of this Subarticle to each separate project or job in the ratio that the Contract value of the work for the particular job bears to the total Contract amount.

9-5.5 Partial Payments for Delivery of Certain Materials:

9-5.5.1 General: The Department will allow partial payments for new materials that will be permanently incorporated into the project and are stockpiled in approved locations in the project vicinity. Stockpile materials so that they will not be damaged by the elements and in a manner that identifies the project on which they are to be used.

The following conditions apply to all payments for stockpiled materials:

1. There must be reasonable assurance that the stockpiled material will be incorporated into the specific project on which partial payment is made.
2. The stockpiled material must be approved as meeting applicable specifications.
3. The total quantity for which partial payment is made shall not exceed the estimated total quantity required to complete the project.
4. The Contractor shall furnish the Engineer with copies of certified invoices to document the value of the materials received. The amount of the partial payment will be determined from invoices for the material up to the unit price in the Contract.
5. Delivery charges for materials delivered to the jobsite will be included in partial payments if properly documented.
6. Partial payments will not be made for materials which were stockpiled prior to award of the Contract for a project.

9-5.5.2 Partial Payment Amounts: The following partial payment restrictions apply:

1. Partial payments less than $5,000 for any one month will not be processed.
2. Partial payments for structural steel and precast prestressed items will not exceed 85% of the bid price for the item. Partial payments for all other items will not exceed 75% of the bid price of the item in which the material is to be used.
3. Partial payment will not be made for aggregate and base course material received after paving or base construction operations begin except when a construction sequence designated by the Department requires suspension of paving and base construction after the initial paving operations, partial payments will be reinstated until the paving and base construction resumes.

9-5.5.3 Off Site Storage: If the conditions of 9-5.5.1 are satisfied, partial payments will be allowed for materials stockpiled in approved in-state locations. Additionally,

partial payments for materials stockpiled in approved out-of-state locations will be allowed if the conditions of 9-5.5.1 and the following conditions are met:

1. Furnish the Department a Materials Bond stating the supplier guarantees to furnish the material described in the Contract to the Contractor and Department. Under this bond, the Obligor shall be the material supplier and the Obligees shall be the Contractor and the Florida Department of Transportation. The bond shall be in the full dollar amount of the bid price for the materials described in the contract.

2. The following clauses must be added to the construction Contract between the Contractor and the supplier of the stockpiled materials:

"Notwithstanding anything to the contrary, <supplier> will be liable to the Contractor and the Florida Department of Transportation should <supplier> default in the performance of this agreement."

"Notwithstanding anything to the contrary, this agreement, and the performance bond issued pursuant to this agreement, does not alter, modify, or otherwise change the Contractor's obligation to furnish the materials described in this agreement to the Florida Department of Transportation."

3. The agreement between the Contractor and the supplier of the stockpiled materials must include provisions that the supplier will store the materials and that such materials are the property of the Contractor.

9-5.6 Certification of Payment to Subcontractors: The term "subcontractor," as used herein, includes persons or firms furnishing materials or equipment incorporated into the work or stockpiled for which the Department has made partial payment and firms working under equipment-rental agreements. The Contractor is required to pay all subcontractors for satisfactory performance of their Contracts before the Department will make a further progress (partial) payment. The Contractor shall also return all retainage withheld to the subcontractors within 30 days after the subcontractor's work is satisfactorily complete, as determined by the Department. Prior to receipt of any progress (partial) payment, the prime contractor shall certify that all subcontractors having an interest in the Contract were paid for satisfactory performance of their Contracts and that the retainage is returned to subcontractors within 30 days after satisfactory completion of the subcontractor's work. Provide this certification in the form designated by the Department.

Within 30 days of the Contractor's receipt of the final progress payment or any other payments thereafter, except the final payment, the Contractor shall pay all subcontractors and suppliers having an interest in the Contract for all work completed and materials furnished. The Department will honor an exception to the above when the Contractor demonstrates good cause for not making any required payment and furnishes written notification of any such good cause to both the Department and the affected subcontractors or suppliers within said 30 day period.

The Contractor shall indemnify and provide defense for the Department when called upon to do so for all claims or suits against the Department, by third parties, pertaining to Contractor payment or performance issues arising out of the Contract. It is expressly understood that the monetary limitation on the extent of the indemnification shall be the approved Contract amount, which shall be the original Contract amount as may be increased by subsequent Supplemental Agreements.

120 EARTHWORK AND RELATED OPERATIONS FOR LAP (CLASS - D). (REV 4-20-21) (FA 7-13-21) (1-22)

SECTION 120 is deleted and the following substituted:

SECTION 120
EARTHWORK AND RELATED OPERATIONS FOR LAP (CLASS - D)

120-1 Description.

120-1.1 General: Perform earthwork and related operations based on the type of work specified in the Contract and the Earthwork Categories as defined below. Meet the applicable requirements for materials, equipment and construction as specified.

Earthwork and related operations consist of excavation for the construction of the roadway, excavation for structures and pipe, constructing backfill around structures and pipe, and constructing embankments as required for the roadway, ditches, and channel changes.

120-1.2 Earthwork Categories: Performance of Earthwork Operations will fall into one of the following Earthwork Categories:

120-1.2.1 Earthwork Category 1: Includes the earthwork and related operations associated with the construction of sidewalks and bike paths along with any drainage structures associated with these facilities.

120-1.2.2 Earthwork Category 2: Includes the earthwork and related operations associated with the construction of turn lanes and other non-mainline traffic lanes, widening, roadway shoulders, concrete box culverts, retaining walls, and other drainage structures on the non-mainline pavement.

120-1.2.3 Earthwork Category 3: Includes the earthwork and related operations associated with the construction of new mainline pavement, along with concrete box culverts, retaining walls, and other drainage structures on the mainline pavement.

120-1.3 Unidentified Areas of Contamination: When encountering or exposing any abnormal condition indicating the presence of contaminated materials, cease operations immediately in the vicinity and notify the Engineer. The presence of tanks or barrels; discolored earth, metal, wood, ground water, etc.; visible fumes; abnormal odors; excessively hot earth; smoke; or other conditions that appear abnormal may indicate the presence of contaminated materials and must be treated with extreme caution.

Make every effort to minimize the spread of contamination into uncontaminated areas. Immediately provide for the health and safety of all workers at the job site and make provisions necessary for the health and safety of the public that may be exposed to any potentially hazardous conditions. Ensure provisions adhere to all applicable laws, rules or regulations covering potentially hazardous conditions and will be in a manner commensurate with the gravity of the conditions.

The Engineer will notify the Department of a contamination assessment/remediation process plan to determine the course of action necessary for site security and the steps necessary under applicable laws, rules, and regulations for additional assessment and/or remediation work to resolve the contamination issue.

120-2 Classifications of Excavation.

120-2.1 General: The Engineer may classify excavation specified under this Section for payment as any of the following: regular excavation, subsoil excavation, lateral ditch excavation, and channel excavation.

If the proposal does not show subsoil excavation or lateral ditch excavation as separate items of payment, include such excavation under the item of regular excavation.

If the proposal shows lateral ditch excavation as a separate item of payment but does not show channel excavation as a separate item of payment, include such excavation under the item of lateral ditch excavation. Otherwise, include channel excavation under the item of regular excavation.

120-2.2 Regular Excavation: Regular excavation includes roadway excavation and borrow excavation, as defined below for each.

120-2.2.1 Roadway Excavation: Roadway excavation consists of the excavation and the utilization or disposal of all materials necessary for the construction of the roadway, ditches, channel changes, etc., except as may be specifically shown to be paid for separately and that portion of the lateral ditches within the limits of the roadway right-of-way as shown in the Plans.

120-2.2.2 Borrow Excavation: Borrow excavation consists of the excavation and utilization of material from authorized borrow pits, including only material that is suitable for the construction of roadway embankments or of other embankments covered by the Contract.

A Cost Savings Initiative Proposal (CSIP) submittal based on using borrow material from within the project limits will not be considered.

120-2.3 Subsoil Excavation: Subsoil excavation consists of the excavation and disposal of muck, clay, rock, or any other material that is unsuitable in its original position and that is excavated below the finished grading template. For pond and ditches that identify the placement of a blanket material, consider the finished grading template as the bottom of the blanket material. Subsoil excavation also consists of the excavation of all suitable material within the above limits as necessary to excavate the unsuitable material. Consider the limits of subsoil excavation indicated in the Plans as being particularly variable, in accordance with the field conditions encountered.

The quantity of material required to replace the excavated material and to raise the elevation of the roadway to the bottom of the template will be paid for under embankment or borrow excavation (Truck Measure).

120-2.4 Lateral Ditch Excavation: Lateral ditch excavation consists of all excavation of inlet and outlet ditches to structures and roadway, changes in channels of streams, and ditches parallel to the roadway right-of-way. Dress lateral ditches to the grade and cross-section shown in the Plans.

120-2.5 Channel Excavation: Channel excavation consists of the excavation and satisfactory disposal of all materials from the limits of the channel as shown in the Plans.

120-2.6 Excavation for Structures and Pipe: Excavation for structures consists of the excavation for bridge foundations, box culverts, pipe culverts, storm sewers and all other pipelines, retaining walls, headwalls for pipe culverts and drains, catch basins, drop inlets, manholes, and similar structures.

120-3 Preliminary Soils Investigations.

When the Plans contain the results of a soil survey, do not assume such data is a guarantee of the depth, extent, or character of material present.

120-4 Excavation Requirements.

120-4.1 Removal of Unsuitable Materials and Existing Roads

120-4.1.1 Subsoil Excavation: Where rock, muck, clay, or other material within the limits of the roadway is unsuitable in its original position, excavate such material to the cross-sections shown in the Plans or indicated by the Engineer, and backfill with suitable material. Shape backfill material to the required cross-sections. Where the removal of plastic soils below the finished earthwork grade is required, meet a construction tolerance, from the lines shown in the Plans as the removal limits, of ±0.2 foot in depth and ±6 inches (each side) in width.

120-4.1.2 Construction over Existing Old Road: Where a new roadway is to be constructed over an old one, completely remove the existing pavement for the entire limits of the width and depth. If the Plans provide that paving materials may be incorporated into the fill, distribute such material in a manner so as not to create voids. Recompact the old road meeting the requirements of 120-10.2.

120-4.2 Lateral Ditch Excavation: Excavate inlet and outlet ditches to structures and roadway, changes in channels of streams and ditches parallel to the roadway. Dress lateral ditches to the grade and cross-section shown in the Plans.

120-4.3 Channel Excavation: Excavate and dispose of all materials from the limits of the channel as shown in the Plans. Excavate for bridge foundations, box culverts, pipe culverts, storm sewers and all other pipelines, retaining walls, headwalls for pipe culverts and drains, catch basins, drop inlets, manholes, and similar structures.

120-4.4 Excavation for Structures and Pipe.

120-4.4.1 Requirements for all Excavation: Perform all excavation to foundation materials, satisfactory to the Engineer, regardless of the elevation shown in the Plans. Remove rock, boulders or other hard lumpy or unyielding material to a depth of 12 inches below the bottom of pipes and box culverts elevations. Remove muck or other soft material to the depth indicated in the Plans or as directed by the Engineer.

120-4.4.2 Earth Excavation:

120-4.4.2.1 Foundation Material other than the Rock: When masonry is to rest on an excavated surface other than rock, take special care to avoid disturbing the bottom of the excavation, and do not remove the final foundation material to grade until just before placing the masonry. In case the foundation material is soft or mucky, the Engineer may require excavation to a greater depth and to backfill to grade with approved material.

120-4.4.2.2 Foundation Piles: Where foundation piles are used, complete the excavation of each pit before driving the piles. After the driving is completed, remove all loose and displaced material, leaving a smooth, solid, and level bed to receive the masonry.

120-4.4.2.3 Removal of Obstructions: Remove boulders, logs, or any unforeseen obstacles encountered in excavating.

120-4.4.3 Rock Excavation: Clean all rock and other hard foundation material, remove all loose material, and cut all rock to a firm surface. Either level, step vertically and horizontally, or serrate the rock, as may be directed by the Engineer. Clean out all seams and fill them with concrete or mortar.

120-4.4.4 Pipe Trench Excavation: Excavate trenches for pipes to the elevation of the bottom of the pipe and to a width sufficient to provide adequate working room. Remove soil not meeting the classification specified as suitable backfill material in 120-8.3.2.2 to a depth of 4 inches below the bottom of the pipe elevation. Remove rock, boulders or other hard lumpy or unyielding material to a depth of 12 inches below the bottom of the pipe elevation. Remove muck or other soft material to a depth necessary to establish a firm foundation. Where the soils permit, ensure that the trench sides are vertical up to at least the mid-point of the pipe.

For pipelines placed above the natural ground line, place and compact the embankment, prior to excavation of the trench, to an elevation at least 2 feet above the top of the pipe and to a width equal to four pipe diameters, and then excavate the trench to the required grade.

For pipe trenches utilizing trench boxes, ensure that the trench box used is of sufficient width to permit thorough tamping of bedding material under and around the pipes as specified in 125-8.1.6.

Do not disturb the installed pipe and its embedment when moving trench boxes. Move the trench box carefully to avoid excavated wall displacement or damage. As the trench box is moved, fill any voids left by the trench box and continuously place and compact the backfill material adjacent to and all along the side of the trench box walls to fill any voids created by the trench box.

120-5 Disposal of Surplus and Unsuitable Material.

120-5.1 Ownership of Excavated Materials: Dispose of surplus and excavated materials as shown in the Plans, or if the Plans do not indicate the method of disposal, then take ownership of the materials and dispose them outside the right-of-way.

120-5.2 Disposal of Muck on Side Slopes: As an exception to the provisions of 120-5.1, when approved by the Engineer, in rural undeveloped areas, the Contractor may place muck (A-8 material) on the slopes, or store it alongside the roadway, provided there is a clear distance of at least 6 feet between the roadway grading limits and the muck, and the Contractor dresses the muck to present a neat appearance. In addition, the Contractor may also dispose of this material by placing it on the slopes in developed areas where, in the opinion of the Engineer, this will result in an aesthetically pleasing appearance and will have no detrimental effect on the adjacent developments. Where the Engineer permits the disposal of muck or other unsuitable material inside the right-of-way limits, do not place such material in a manner which will impede the inflow or outfall of any channel or side ditches. The Engineer will determine the limits adjacent to channels within which such materials may be disposed.

120-5.3 Disposal of Paving Materials: Unless otherwise noted, take ownership of paving materials, such as paving brick, asphalt block, concrete slab, sidewalk, curb and gutter, etc., excavated in the removal of existing pavements, and dispose of them outside the right-of-way. If the materials are to remain the property of the Agency, place them in neat piles as directed. Existing limerock base that is removed may be incorporated in the stabilized portion of the subgrade. If the construction sequence will allow, incorporate all existing limerock base into the project as allowed by the Contract Documents.

120-5.4 Disposal Areas: Where the Contract Documents require disposal of excavated materials outside the right-of-way, and the disposal area is not indicated in the Contract Documents, furnish the disposal area without additional compensation.

Provide areas for disposal of removed paving materials out of sight of the project and at least 300 feet from the nearest roadway right-of-way line of any road. If the materials are buried, disregard the 300-foot limitation.

120-6 Materials for Embankment.

120-6.1 General Requirements for Embankment Materials: Construct embankments using suitable materials excavated from the roadway or delivered to the jobsite from authorized borrow pits. Embankment material shall not contain muck, stumps, roots, brush, vegetable matter, rubbish, reinforcement bar or other material that does not compact into a suitable and enduring roadbed.

Remove all waste material designated as undesirable. Use material in embankment construction in accordance with Plan details or as the Engineer directs.

Construct the embankment using maximum particle sizes as follows:

1. In top 12 inches: 3-1/2 inches (in any dimension).
2. 12 to 24 inches: 6 inches (in any dimension).
3. In the depth below 24 inches: not to exceed 12 inches (in any dimension) or the compacted thickness of the layer being placed, whichever is less.

Spread all material so that the larger particles are separated from each other to minimize voids between them during compaction. Compact around these rocks in accordance with 120-9.2.

When and where approved by the Engineer, larger rocks (not to exceed 18 inches in any dimension) may be placed outside the one to two slope and at least 4 feet or more below the bottom of the base. Compact around these rocks to a firmness equal to that of the supporting soil. Where constructing embankments adjacent to bridge end bents or abutments, do not place rock larger than 3-½ inches in diameter within 3 feet of the location of any end-bent piling.

120-6.2 Use of Materials Excavated from the Roadway and Appurtenances: Assume responsibility for determining the suitability of excavated material for use on the project in accordance with the applicable Contract Documents. Consider the sequence of work and maintenance of traffic phasing in the determination of the availability of this material.

120-6.3 Authorization for Use of Borrow: Use borrow pit only when sufficient quantities of suitable material are not available from roadway and drainage excavation, to properly construct the embankment, subgrade, and shoulders, and to complete the backfilling of structures and pipe. Do not use borrow material until so ordered by the Engineer, and then only use material from approved borrow pits.

120-6.3.1 Haul Routes for Borrow Pits: Provide and maintain, at no expense to the Agency, all necessary roads for hauling the borrow material. Where borrow area haul roads or trails are used by others, do not cause such roads or trails to deteriorate in condition.

Arrange for the use of all non-public haul routes crossing the property of any railroad. Incur any expense for the use of such haul routes. Establish haul routes which will direct construction vehicles away from developed areas when feasible and keep noise from hauling operations to a minimum. Advise the Engineer in writing of all proposed haul routes.

120-6.3.2 Borrow Material for Shoulder Build-up: When so indicated in the Plans, furnish borrow material with a specific minimum bearing value, for building up of existing shoulders. Blend materials as necessary to achieve this specified minimum bearing value prior to placing the materials on the shoulders. Take samples of this borrow material at the pit or

blended stockpile. Include all costs of providing a material with the required bearing value in the Contract unit price for borrow material.

120-6.4 Materials Used at Pipes, Culverts, etc.: Construct embankments over and around pipes, culverts, and bridge foundations with selected materials.

120-7 Embankment Construction.

120-7.1 General: Construct embankments in sections of not less than 300 feet in length or for the full length of the embankment. Do not construct another LOT over an untested LOT without the Engineer's approval in writing.

For construction of mainline pavement lanes, turn lanes, ramps, parking lots, concrete box culverts and retaining wall systems, a LOT is defined as a single lift of finished embankment not to exceed 500 feet.

For construction of shoulder-only areas, shared use paths, and sidewalks areas, a LOT is defined as a single lift of finished embankment not to exceed 2000 feet.

Isolated compaction operations will be considered as separate LOTs. For multiple phase construction, a LOT shall not extend beyond the limits of the phase.

120-7.2 Dry Fill Method:

120-7.2.1 General: Construct embankments to meet compaction requirements in 120-7 and in accordance with the acceptance program requirements in 120-10.

As far as practicable, distribute traffic over the work during the construction of embankments to cover the maximum area of the surface of each layer.

Construct embankment in the dry whenever normal dewatering equipment and methods can accomplish the needed dewatering.

120-7.2.1.1 Maximum Compacted Lift Thickness Requirements: Construct the embankment in successive layers with lifts up to a maximum listed in the table below based on the embankment material classification group.

Table 120-1

Group	AASHTO Soil Class	Maximum Lift Thickness	Thick Lift Control Test Section Requirements
1	A-3	12 inches	Not Needed
	A-2-4 (No. 200 Sieve ≤ 15%)		
2	A-1	6 inches without Control Test Section	Maximum of 12 inches
	A-2-4 (No. 200 Sieve > 15%)		
	A-2-5, A-2-6, A-2-7, A-4, A-5, A-6		
	A-7 (Liquid Limit < 50)		

120-7.2.1.2 Thick Lift Requirements: For embankment materials classified as Group 2 in Table 120-1 above, the option to perform thick lift construction in successive layers of not more than 12 inches compacted thickness may be used after meeting the following requirements:

1. Demonstrate the possession and control of compacting equipment sufficient to achieve density required by 120-10.5 for the full depth of a thicker lift.
2. Construct a test section of the length of one full LOT of not less than 500 feet.

3. Perform five tests at random locations within the test section.

a. All five tests must meet the density required by 120-10.5.

b. Identify the test section with the compaction effort and soil classification in the project's records.

4. Obtain Engineer's approval for the compaction effort after completing a successful test section.

In case of a change in compaction effort or soil classification, failing density test, construct a new test section. The Contractor may elect to place material in 6 inches compacted thickness at any time. Construct all layers approximately parallel to the centerline profile of the road.

The Engineer reserves the right to terminate the Contractor's use of thick lift construction. Whenever the Engineer determines that the Contractor is not achieving satisfactory results, revert to the 6-inch compacted lifts.

120-7.2.1.3 Equipment and Methods: Provide normal dewatering equipment including, but not limited to, surface pumps, sump pumps and trenching/digging machinery. Provide normal dewatering methods including, but not limited to, constructing shallow surface drainage trenches/ditches, using sand blankets, sumps, and siphons.

When normal dewatering does not adequately remove the water, the Engineer may require the embankment material to be placed in the water or in low swampy ground in accordance with 120-9.2.4.

120-7.2.2 Placing in Unstable Areas: When depositing the material in water, or in low swampy ground that will not support the weight of hauling equipment, construct the embankment by dumping successive loads in a uniformly distributed layer of a thickness not greater than necessary to support the hauling equipment while placing subsequent layers. Once sufficient material has been placed so that the hauling equipment can be supported, construct the remaining portion of the embankment in layers in accordance with the applicable provisions of 120-9.2.3 and 120-9.2.6.

120-7.2.3 Placing on Steep Slopes: When constructing an embankment on a hillside sloping more than 20 degrees from the horizontal, before starting the fill, deeply plow or cut into steps the surface of the original ground on which the embankment is to be placed.

120-7.2.4 Placing Outside Standard Minimum Slope: The standard minimum slope is defined as the plane described by a one (vertical) to two (horizontal) slope downward from the roadway shoulder point or the gutter line, in accordance with Standard Plans, Index 120-001 and 120-002. Where material that is unsuitable for normal embankment construction is to be used in the embankment outside the standard minimum slope, place such material in layers of not more than 18 inches in thickness, measured loose. The Contractor may also place material, which is suitable for normal embankment, outside such standard minimum slope in 18-inch layers. Maintain a constant thickness for suitable material placed within and outside the standard minimum slope, unless placing in a separate operation.

120-7.3 Hydraulic Method:

120-7.3.1 Method of Placing: When the hydraulic method is used, as far as practicable, place all dredged material in its final position in the embankment by such method. Place and compact any dredged material that is reworked or moved and placed in its final position by any other method, as specified in 120-9.2. Baffles or any other form of construction may be used if the slopes of the embankments are not steeper than indicated in the Plans. Remove all timber used for temporary bulkheads or baffles from the embankment and fill and

thoroughly compact all voids. When placing fill on submerged land, construct dikes prior to beginning of dredging, and maintain the dikes throughout the dredging operation.

120-7.3.2 Excess Material: Do not use excess material placed outside the prescribed slopes, below the normal high-water level, to raise the fill. Remove only the portion of this material required for dressing the slopes.

120-7.3.3 Protection of Openings in Embankment: Leave openings in the embankments at the bridge sites. Remove any material which invades these openings or existing channels without additional compensation to provide the same depth of channel as existed before the construction of the embankment. Do not excavate or dredge any material within 200 feet of the toe of the proposed embankment.

120-8 Backfilling Around Structures and Pipe.

120-8.1 Requirements for Structures and Pipes:

120-8-1.1 General: Backfill around structures and pipe in the dry whenever normal dewatering equipment and methods can accomplish the needed dewatering. A LOT is defined as one lift of backfill material placement, not to exceed 500 feet in length or a single run of pipe connecting two successive structures, whichever is less. Backfill for structures and pipe compacted in one operation will be considered as one LOT within the cover zone. Backfill around structures compacted separately from the pipe will be considered as separate LOTs. Backfill on each side of the pipe for the first lift will be considered a separate LOT. Backfill on opposite sides of the pipe for the remaining lifts will be considered separate LOTs, unless the same compaction effort is applied. Same compaction effort is defined as the same type of equipment (make and model) making the same number of passes on both sides of the pipe. For multiple phases of backfill, a LOT shall not extend beyond the limits of the phase.

When placing backfill within a trench box, each lift of backfill is considered a LOT. Placement of backfill within a trench box limits will be considered a complete operation before trench box is moved for next backfill operation. When the trench box is moved for next backfill operation this will start new LOTs for each lift. Follow the density testing frequency in 125-9.3.1.

129-8.1.2 Equipment and Methods: Provide normal dewatering equipment including, but not limited to, surface pumps, sump pumps, wellpoints and header pipe and trenching/digging machinery. Provide normal dewatering methods including, but not limited to, constructing shallow surface drainage trenches/ditches, using sand blankets, perforated pipe drains, sumps, and siphons.

120-8.1.3 Backfill Materials: Backfill to the original ground surface or subgrade surface of openings made for structures, with a sufficient allowance for settlement. The Engineer may require that the material used for this backfill be obtained from a source entirely apart from the structure.

Do not allow heavy construction equipment to cross over culvert or storm sewer pipes until placing and compacting backfill material to the finished earthwork grade or to an elevation at least 4 feet above the crown of the pipe.

120-8.1.4 Use of A-7 Material: In the backfilling of trenches, A-7 material may be used from a point 12 inches above the top of the pipe up to the elevation shown in the Standard Plans as the elevation for undercutting of A-7 material.

120-8.1.5 Time of Placing Backfill: Do not place backfill against any masonry or concrete abutment, wingwall, or culvert until the Engineer has given permission to do so, and in

no case until the masonry or concrete has been in place seven days or until the specified 28-day compressive strength occurs.

120-8.1.6 Placement and Compaction: Place the material in horizontal layers not exceeding 6 inches compacted thickness in depth above water level, behind abutments, wingwalls and end bents or end rest piers, under the haunches of the pipes, around box culverts, and all structures including pipe culverts. When the backfill material is deposited in water, compact as specified in 125-8.2.5 and 125-8.3.4.

120-8.1.6.1 Thick Lift Requirements: The Contractor may elect to place material in thicker lifts of no more than 12 inches compacted thickness above the Soil Envelope if the embankment material is classified as Group 1 in the table below. If the embankment material is classified as Group 2 in the table below and the Contractor chooses to place material in thicker lifts of no more than 12 inches compacted thickness above the soil envelope, then the Contractor must demonstrate with a successful test section that density can be achieved. Thick lift around structures is only allowed above the soil envelope of the connecting pipe. Notify the Engineer in writing prior to beginning construction of a test section. Construct a test section of the length of one LOT. Perform five quality control tests at random locations within the test section. All five tests must meet the density required by 120-9.2. Identify the test section with the compaction effort and soil classification in the project's records. In case of a change in compaction effort or soil classification, construct a new test section. When a test fails the requirements of 120-9.2, construct a new test section. The Contractor may elect to place material in 6 inches compacted thickness at any time.

Table 120-2

Group	AASHTO Soil Class	Maximum Lift Thickness		Thick Lift Control Test Section Requirements	
		Within Cover Zone	Above Soil Envelope	Within Cover Zone	Above Soil Envelope
1	A-3 A-2-4 (No. 200 Sieve ≤ 15%)	6 inches	12 inches	N/A	Not Needed
2	A-1 A-2-4 (No. 200 Sieve > 15%) A-2-5, A-2-6, A-2-7, A-4, A-5, A-6 A-7 (Liquid Limit < 50)	6 inches without control test section		N/A	Maximum of 12 inches per 120-7.2.1.2

120-8.2 Additional Requirements for Structures Other than Pipe:

120-8.2.1 Density: Where the backfill material is deposited in water, obtain a 12 inch layer of comparatively dry material, thoroughly compacted by tamping, before the Engineer verifies layer and density requirements. Meet the requirements of the density Acceptance Criteria.

120-8.2.2 Box Culverts: For box culverts over which pavement is to be constructed, compact around the structure to an elevation not less than 12 inches above the top of the structure, using rapid-striking mechanical tampers.

120-8.2.3 Other Limited Areas: Compact in other limited areas using mechanical tampers or approved hand tampers, until the cover over the structure is at least 12 inches thick. When hand tampers are used, deposit the materials in layers not more than 4 inches thick using hand tampers suitable for this purpose with a face area of not more than 100 in^2. Take special precautions to prevent any wedging action against the masonry, and step or terrace the slope bounding the excavation for abutments and wingwalls if required by the Engineer.

120-8.2.4 Culverts and Piers: Backfill around culverts and piers on both sides simultaneously to approximately the same elevation.

120-8.2.5 Compaction Under Wet Conditions: Where wet conditions do not permit the use of mechanical tampers, compact using hand tampers. Use only A-3 material for the hand tamped portions of the backfill. When the backfill has reached an elevation and condition such as to make the use of the mechanical tampers practical, perform mechanical tamping in such manner and to such extent as to transfer the compaction force into the sections previously tamped by hand.

120-8.3 Additional Requirements for Pipe Greater than 12 Inches Inside Diameter:

120-8.3.1 General: Trenches for pipe may have up to four zones that must be backfilled.

Lowest Zone: The lowest zone is backfilled for deep undercuts up to within 4 inches of the bottom of the pipe.

Bedding Zone: The zone above the Lowest Zone is the Bedding Zone. Usually, it will be the backfill which is the 4 inches of soil below the bottom of the pipe. When rock or other hard material has been removed to place the pipe, the Bedding Zone will be the 12 inches of soil below the bottom of the pipe.

Cover Zone: The next zone is the backfill that is placed after the pipe has been laid and will be called the Cover Zone. This zone extends to 12 inches above the top of the pipe. The Cover Zone and the Bedding Zone are considered the Soil Envelope for the pipe.

Top Zone: The Top Zone extends from 12 inches above the top of the pipe to the base or final grade.

120-8.3.2 Material:

120-8.3.2.1 Lowest Zone: Backfill areas undercut below the Bedding Zone of a pipe with coarse sand, or other suitable granular material, obtained from the grading operations on the project, or a commercial material if no suitable material is available.

120-8.3.2.2 Soil Envelope: In both the Bedding Zone and the Cover Zone of the pipe, backfill with materials classified as A-1, A-2, or A-3. Material classified as A-4 may be used if the pipe is concrete pipe.

120-8.3.2.3 Top Zone: Backfill the area of the trench above the soil envelope of the pipe with materials allowed on Standard Plans, Index 120-001.

120-8.3.3 Compaction:

120-8.3.3.1 Lowest Zone: Compact the soil in the Lowest Zone to approximately match the density of the soil in which the trench was cut.

120-8.3.3.2 Bedding Zone: If the trench was not undercut below the bottom of the pipe, loosen the soil in the bottom of the trench immediately below the approximate middle third of the outside diameter of the pipe.

If the trench was undercut, place the bedding material and leave it in a loose condition below the middle third of the outside diameter of the pipe. Compact the

outer portions to meet the density requirements of the Acceptance Criteria. Place the material in lifts no greater than 6 inches (compacted thickness).

120-8.3.3.3 Cover Zone: Place the material in 6 inches layers (compacted thickness), evenly deposited on both sides of the pipe, and compact with mechanical tampers suitable for this purpose. Hand tamp material below the pipe haunch that cannot be reached by mechanical tampers. Meet the requirements of the density Acceptance Criteria.

120-8.3.3.4 Top Zone: Place the material in layers not to exceed 12 inches in compacted thickness. Meet the requirements of the density acceptance criteria.

120-8.3.4 Backfill Under Wet Conditions: Where wet conditions are such that dewatering by normal pumping methods would not be effective, the procedure outlined below may be used when specifically authorized by the Engineer in writing.

Granular material may be used below the elevation at which mechanical tampers would be effective, but only material classified as A-3. Place and compact the material using timbers or hand tampers until the backfill reaches an elevation such that its moisture content will permit the use of mechanical tampers. When the backfill has reached such elevation, use normally acceptable backfill material. Compact the material using mechanical tampers in such manner and to such extent as to transfer the compacting force into the material previously tamped by hand.

The Engineer may permit the use of coarse aggregate below the elevation at which mechanical tampers would be effective. Use coarse aggregate from approved sources for Aggregate Size Number 89, 8, 78, 7, 68, 6, or 57. Place the coarse aggregate such that it will be stable and firm. Fully wrap the aggregate with an appropriate geosynthetic filter fabric, as specified by the Engineer. Do not place coarse aggregate within 4 feet of the ends of the trench or ditch. Use normally accepted backfill material at the ends.

120-9 Compaction Requirements.

120-9.1 Moisture Content: Compact the materials at a moisture content such that the specified density can be attained. If necessary, add water to the material, or lower the moisture content by manipulating the material or allowing it to dry, as is appropriate, to attain the specified density.

120-9.2 Compaction of Embankments:

120-9.2.1 Earthwork Category 1 and 2 Density Requirements: The Engineer will accept a minimum density of 95% of the maximum density as determined by FM 1-T099 for all earthwork items requiring densities.

120-9.2.2 Earthwork Category 3 Density Requirements: The Engineer will accept a minimum of 100% of the maximum density as determined by FM 1-T099 for all densities required under category 3. Except for embankments constructed by the hydraulic method as specified in 120-7.3, and for the material placed outside the standard minimum slope as specified in 120-7.2.4, and for other areas specifically excluded herein, compact each layer of the material used in the formation of embankments to the required density stated above. Uniformly compact each layer using equipment that will achieve the required density, and as compaction operations progress, shape and manipulate each layer as necessary to ensure uniform density throughout the embankment.

120-9.2.3 Compaction Over Unstable Foundations: Where the embankment material is deposited in water or on low swampy ground, and in a layer thicker than 12 inches (as

provided in 120-7.2.2), compact the top 6 inches (compacted thickness) of such layer to the density as specified in 120-10.5.

120-9.2.4 Compaction Where Plastic Material Has Been Removed: Where unsuitable material is removed and the remaining surface is of soil classifications A-4, A-5, A-6, or A-7 per AASHTO M145, as determined by the Engineer, compact the surface of the excavated area by rolling with a sheepsfoot roller exerting a compression of at least 250 psi on the tamper feet, for the full width of the roadbed (subgrade and shoulders). Perform rolling before beginning any backfill and continue until the roller feet do not penetrate the surface more than 1 inch. Do not perform such rolling where the remaining surface is below the normal water table and covered with water. Vary the procedure and equipment required for this operation at the discretion of the Engineer.

120-9.2.5 Compaction for Pipes, Culverts, etc.: Compact the backfill of trenches to the densities specified for embankment or subgrade, as applicable, and in accordance with the requirements of this section.

Thoroughly compact embankments over and around pipes, culverts, and bridges in a manner which will not place undue stress on the structures, and in accordance with the requirements of this section.

120-9.2.6 Compaction of Grassed Shoulder Areas: For the upper 6-inch layer of all shoulders which are to be grassed, since no specific density is required, compact only to the extent directed.

120-9.2.7 Compaction of Grassed Embankment Areas: For the outer layer of all embankments where plant growth will be established, do not compact. Leave this layer in a loose condition to a minimum depth of 6 inches for the subsequent seeding or planting operations.

120-9.3 Compaction of Subgrade: If the plans do not provide for stabilizing, compact the subgrade in both cuts and fills to the density specified in 120-10.5. For cut areas, determine Standard Proctor Maximum Density in accordance with FM 1-T099 at a frequency of one per mile or when there is a change in soil type, whichever occurs first. For undisturbed soils, do not apply density requirements where constructing paved shoulders is 5 feet or less in width.

Where trenches for widening strips are not of sufficient width to permit the use of standard compaction equipment, perform compaction using vibratory rollers, trench rollers, or other type compaction equipment approved by the Engineer.

Maintain the required density until the base or pavement is placed on the subgrade.

120-10 Acceptance Program.

120-10.1 Density over 105%: When a computed dry density results in a value greater than 105% of the applicable Proctor maximum dry density, the Engineer will perform a second density test within 5 feet. If the second density results in a value greater than 105%, investigate the compaction methods, examine the applicable Maximum Density and material description. If necessary, the Engineer will test an additional sample for acceptance in accordance with FM 1-T099.

120-10.2 Maximum Density Determination: The Engineer will determine the maximum density and optimum moisture content by sampling and testing the material in accordance with the specified test method listed in 120-10.3.

120-10.3 Density Testing Requirements: Compliance with the requirements of 120-10.5 will be determined in accordance FM 1-T 238. The in-place moisture content will be determined for each density in accordance with FM 5-507 (Determination of Moisture Content by Means of a Calcium Carbide Gas Pressure Moisture Tester), or ASTM D 4643 (Laboratory Determination of Moisture Content of Granular Soils by Use of a Microwave Oven).

120-10.4 Soil Classification and Organic Content: The Engineer will perform soil classification tests in accordance with AASHTO T88, T89, T90, and FM 1-T267. The Engineer will classify soils in accordance with AASHTO M-145 in order to determine compliance with embankment utilization requirements. The Engineer will verify the organic content test with the criteria specified in Standard Plans, Index 120-001.

120-10.5 Acceptance Criteria: The Engineer will accept a minimum density in accordance with 120-9.2 with the following exceptions:

1) embankment constructed by the hydraulic method as specified in 120-7.3;
2) material placed outside the standard minimum slope as specified in 120-7.2.4;
3) other areas specifically excluded herein.

120-10.6 Frequency: The Engineer will conduct sampling and testing at a minimum frequency listed in the table below.

Test Name	Frequency
Proctor Maximum Density	One per soil type
Density	1 per LOT (Alternate Lift)
Soil Classification and Organic Content	One per Maximum Density

120-11 Maintenance and Protection of Work.

While construction is in progress, always maintain adequate drainage for the roadbed. Maintain a shoulder at least 3 feet wide adjacent to all pavement or base construction to provide support for the edges.

Maintain and protect all earthwork construction throughout the life of the Contract and take all reasonable precautions to prevent loss of material from the roadway due to the action of wind or water. Repair any slides, washouts, settlement, subsidence, or other mishap which may occur prior to final acceptance of the work. Maintain all channels excavated as a part of the Contract work against natural shoaling or other encroachments to the lines, grades, and cross-sections shown in the plans, until final acceptance of the project.

120-12 Construction.

120-12.1 Construction Tolerances: Shape the surface of the earthwork to conform to the lines, grades, and cross-sections shown in the plans. In final shaping of the surface of earthwork, maintain a tolerance of 0.3 foot above or below the plan cross-section with the following exceptions:

1. Shape the surface of shoulders to within 0.1 foot of the plan cross-section.
2. Shape the earthwork to match adjacent pavement, curb, sidewalk, structures, etc.
3. Shape the bottom of ditches so that the ditch impounds no water.
4. When the work does not include construction of base or pavement, shape the entire roadbed (shoulder point to shoulder point) to within 0.1 foot above or below the plan cross-section.

Ensure that the shoulder lines do not vary horizontally more than 0.3 foot from the true lines shown in the plans.

120-12.2 Operations Adjacent to Pavement: Carefully dress areas adjacent to pavement areas to avoid damage to such pavement. Complete grassing of shoulder areas prior to placing the final wearing course. Do not manipulate any embankment material on a pavement surface.

When shoulder dressing is underway adjacent to a pavement lane being used to maintain traffic, exercise extreme care to avoid interference with the safe movement of traffic.

120-13 Method of Measurement.

120-13.1 Excavation: Excavation will be paid for by volume, in cubic yards, calculated by the method of average end areas, unless the Engineer determines that another method of calculation will provide a more accurate result. The material will be measured in its original position by field survey or by photogrammetric means as designated by the Engineer. Measurement for payment will include the excavation of unsuitable material, lateral ditch excavation, channel excavation, and excavation for structures and pipe. Payment will not be made for excavation or embankment beyond the limits shown in the plans or authorized by the Engineer.

120-13.2 Embankment: Measurement will be made on a loose volume basis, as measured in trucks or other hauling equipment at the point of dumping on the road. Payment will not be made for embankment beyond the limits shown in the plans or authorized by the Engineer.

120-14 Basis of Payment.

120-14.1 General: Prices and payments for the work items included in this Section will be full compensation for all work described herein, including excavating, dredging, hauling, placing, and compacting; dressing the surface of the earthwork; and maintaining and protecting the complete earthwork.

120-14.2 Excavation: The total quantity of all excavation specified under this Section will be paid for at the Contract unit price for Excavation. No payment will be made for the excavation of any materials which are used for purposes other than those shown in the plans or designated by the Engineer. No payment will be made for materials excavated outside the lines and grades given by the Engineer, unless specifically authorized by the Engineer.

120-14.3 Embankment: The total quantity of embankment specified in this Section will be paid for at the Contract unit price for embankment. No payment will be made for materials which are used for purposes other than those shown in the plans or designated by the Engineer. No payment will be made for materials placed outside the lines and grades given by the Engineer.

334 ASPHALT CONCRETE FOR LAP (CLASS - D). (REV 6-18-21) (FA 7-2-21) (1-22)

SECTION 334 is deleted and the following substituted:

SECTION 334
ASPHALT CONCRETE FOR LAP (OFF-SYSTEM)

334-1 Description.

334-1.1 General: Construct an Asphalt Concrete pavement based on the type of work specified in the Contract and the Asphalt Work Categories as defined below. Meet the applicable requirements for plants, equipment, and construction requirements as defined below. Use an asphalt concrete mix that meets the requirements of this specification.

334-1.2 Asphalt Work Mix Categories: Construction of Asphalt Concrete Pavement will fall into one of the following work categories:

334-1.2.1 Asphalt Work Category 1: Includes the construction of bike paths and miscellaneous asphalt.

334-1.2.2 Asphalt Work Category 2: Includes the construction of new turn lanes, paved shoulders and other non-mainline pavement locations.

334-1.2.3 Asphalt Work Category 3: Includes the construction of new mainline pavement lanes, milling and resurfacing.

334-1.3 Mix Types: Use the appropriate mix type as shown in Table 334-1.

Table 334-1
Mix Types

Asphalt Work Category	Mix Types	Traffic Level	ESALs (millions)
1	Type SP-9.5(1)	A	<0.3
2	Structural Mixes: Types SP-9.5 or SP-12.5(1) Friction Mixes: Types FC-9.5 or FC-12.5(1)	B	0.3 to <3
3	Structural Mixes: Types SP-9.5 or SP-12.5 Friction Mixes: Types FC-9.5 or FC-12.5	C	≥3

(1) Equivalent mixes may be approved as determined by the Engineer. For example, Marshall S-III mixture type is equivalent to Superpave SP-9.5, Marshall S-I is equivalent to Superpave SP-12.5, and Marshall FC-3 is equivalent to Superpave FC-9.5.

For a Traffic Level A mixture, meet the mix design criteria for a Traffic Level B mixture and for a Traffic Level D mixture meet the mix design criteria for a Traffic Level E mixture.

At no additional cost to the Department, for a Type SP mix the following Traffic Level substitutions are allowed:

Traffic Level E can be substituted for Traffic Level D.
Traffic Level D or E can be substituted for Traffic Level C.
Traffic Level C can be substituted for Traffic Level B.

Traffic Level B or C can be substituted for Traffic Level A.

334-1.4 Gradation Classification: Asphalt concrete mixtures are classified as fine and are defined in Standard Specification 334-3.2.2.

The equivalent AASHTO nominal maximum aggregate size Superpave mixes are as follows:

Type SP-9.5, FC-9.5 ..... 9.5 mm
Type SP-12.5, FC-12.5 ..... 12.5 mm

334-1.5 Thickness: The total pavement thickness of the asphalt concrete pavement layers will be the plan thickness as shown in the Contract Documents. Before paving, propose a thickness for each individual layer meeting the requirements of this specification, which when combined with other layers (as applicable) will equal the plan thickness. For construction purposes, the plan thickness and individual layer thickness will be converted to spread rate using the following equation:

$$\text{Spread rate (lbs/yd}^2\text{)} = t \times G_{mm} \times 43.3$$

where: t = Thickness (in.) (Plan thickness or individual layer thickness)
G_{mm} = Maximum specific gravity from the mix design

For target purposes only, spread rate calculations shall be rounded to the nearest whole number.

334-1.5.1 Layer Thicknesses: Unless otherwise called for in the Contract Documents, the allowable layer thicknesses for asphalt concrete mixtures are as follows:

Type SP-9.5, FC-9.5 .....1 to 1-1/2 inches
Type SP-12.5.....1-1/2 to 3 inches
Type FC-12.5 ..... 1-1/2 to 2-1/2 inches

334-1.5.2 Additional Requirements: The following requirements also apply to asphalt Concrete mixtures:

1. When construction includes the paving of adjacent shoulders (less than or equal to 5 feet wide), the layer thickness for the upper pavement layer and shoulder shall be the same and paved in a single pass, unless otherwise called for in the Contract Documents.

2. For overbuild layers, use the minimum and maximum layer thicknesses as specified above unless called for differently in the Contract Documents. On variable thickness overbuild layers, the minimum and maximum allowable thicknesses will be as specified below, unless called for differently in the Contract Documents.

Type SP-9.5..... 3/8 to 2 inches
Type SP-12.5..... 1/2 to 3 inches
Type SP-19.0..... 1-1/2 to 4 inches

3. Variable thickness overbuild layers constructed using a Type SP-9.5 or SP-12.5 mixtures may be tapered to zero thickness provided the contract documents require a minimum of 1-1/2 inches of dense-graded mix placed over the variable thickness overbuild layer.

334-1.6 Weight of Mixture: The weight of the mixture shall be determined as provided in 320-3.2 of the Florida Department of Transportation (FDOT) specifications.

334-2 Materials.

334-2.1 Superpave Asphalt Binder: Unless specified elsewhere in the Contract Documents, use an asphalt binder grade as determined from Table 334-2. If the Contract calls for an alternative binder, meet the requirements of FDOT Specification 916.

334-2.2 Aggregate: Use aggregate capable of producing a quality pavement. Size, grade and combine the aggregate fractions to meet the grading and physical properties of the mix design. Aggregates from various sources may be combined.

For Type FC mixes, use an aggregate blend that consists of approved friction course aggregates that consists of crushed granite, crushed granitic gneiss, crushed limestone, crushed shell rock, or a combination of the above. As an exception, mixes that contain a minimum of 60% of approved friction course aggregates of crushed granite and/or crushed gneiss may either contain: up to 40% fine aggregate from other sources of aggregate not approved for friction courses or a combination of up to 20% RAP and the remaining fine aggregate from other sources of aggregate not approved for friction courses. Mixtures utilizing High Polymer (HP) binder are not allowed to contain RAP.

A list of aggregates approved for use in friction courses may be available on the FDOT's State Materials Office website. The URL for obtaining this information, if available, is: https://mac.fdot.gov/.

334-2.3 Reclaimed Asphalt Pavement (RAP) Material:

334-2.3.1 General requirements: RAP may be used as a component of the asphalt mixture subject to the following requirements:

1. Limit the amount of RAP material used in the mix to a maximum of 50% by weight of total aggregate.

2. Assume full responsibility for the design, production and construction of asphalt mixes which incorporate RAP as a component material.

3. Provide stockpiled RAP material that is reasonably consistent in characteristics and contains no aggregate particles which are soft or conglomerates of fines.

4. Provide RAP material having a minimum average asphalt content of 4.0% by weight of total mix. As an exception, when using fractionated RAP, the minimum average asphalt binder content for the coarse portion of the RAP shall be 2.5% by weight of the coarse portion of the RAP. The coarse portion of the RAP shall be the portion of the RAP retained on the No. 4 sieve. The Engineer may sample the stockpile to verify that this requirement is met.

4. When using RAP as a component material, prevent any oversized RAP from being incorporated into the completed mixture by the use of a grizzly or grid over the RAP bin; in-line roller or impact crusher; screen; or other suitable means. If oversized RAP material appears in the completed recycled mix, take the appropriate corrective action immediately. If the appropriate corrective actions are not immediately taken, stop plant operations.

334-2.3.2 Material Characterization: Assume responsibility for establishing the asphalt binder content, gradation, viscosity and bulk specific gravity (G_{sb}) of the RAP material based on a representative sampling of the material.

334-2.3.3 Asphalt Binder for Mixes with RAP: Select the appropriate asphalt binder grade based on Table 334-2

Table 334-2 Asphalt Binder Grade for Mixes Containing RAP	
Percent RAP	Asphalt Binder Grade
0 - 15	PG 67-22
16 - 30	PG 58-22
≥ 30	PG 52-28

334-3 Composition of Mixture.

334-3.1 General: Compose the asphalt mixture using a combination of aggregate (coarse, fine or mixtures thereof), mineral filler, if required, and asphalt binder material. Size, grade and combine the aggregate fractions to meet the grading and physical properties of the mix design. Aggregates from various sources may be combined.

334-3.2 Mix Design:

334-3.2.1 General: Design the asphalt mixture in accordance with AASHTO R 35-17, except as noted herein. Submit the proposed mix design with supporting test data indicating compliance with all mix design criteria to the Engineer. Prior to the production of any asphalt mixture, obtain the Engineer's conditional approval of the mix design. If required by the Engineer, send representative samples of all component materials, including asphalt binder to a laboratory designated by the Engineer for verification. As an exception to these requirements, use a currently approved FDOT Mix Design.

The Engineer will consider any marked variations from original test data for a mix design or any evidence of inadequate field performance of a mix design as sufficient evidence that the properties of the mix design have changed, and at his/her discretion, the Engineer may no longer allow the use of the mix design.

334-3.2.2 Mixture Gradation Requirements: Combine the coarse and fine aggregate in proportions that will produce an asphalt mixture meeting all of the requirements defined in this specification and conform to the gradation requirements at design as defined in AASHTO M 323-17, Table 4. Aggregates from various sources may be combined.

334-3.2.2.1 Mixture Gradation Classification: Plot the combined mixture gradation on an FHWA 0.45 Power Gradation Chart. Include the Control Points from AASHTO M 323-17, Table 4, as well as the Primary Control Sieve (PCS) Control Point from AASHTO M 323-17, Table 5. Fine mixes are defined as having a gradation that passes above the primary control sieve control point and above the maximum density line for all sieve sizes smaller than the primary control sieve and larger than the No. 30 sieve. Use only fine mixes.

334-3.2.3 Gyratory Compaction: Compact the design mixture in accordance with AASHTO T 312-19, with the following exception: use the number of gyrations at N_{design} as defined in Standard Specification Table 334-4. Measure the inside diameter of gyratory molds in accordance with AASHTO T 312-19.

334-3.2.4 Design Criteria: Meet the requirements for nominal maximum aggregate size as defined in AASHTO M 323-17, as well as for relative density, VMA, VFA, and dust-to-binder ratio as specified in AASHTO M 323-17, Table 7. $N_{initial}$ and $N_{maximum}$ requirements are not applicable.

334-3.2.5 Moisture Susceptibility:

1. For all traffic levels, use a liquid anti-strip agent listed on the APL at the specified dosage rate. Hydrated lime may be used instead of the liquid anti-strip agent.

2. Provide a mixture having a retained tensile strength ratio of at least 0.80 and a minimum tensile strength (unconditioned) of 100 psi in accordance with FM 1-T 283.

334-3.2.6 Additional Information: In addition to the requirements listed above, provide the following information on each mix design:

1. The design traffic level and the design number of gyrations (N_{design}).

2. The source and description of the materials to be used.

3. The Department source number and the FDOT product code of the aggregate components furnished from an FDOT approved source (if required).

4. The gradation and proportions of the raw materials as intended to be combined in the paving mixture. The gradation of the component materials shall be representative of the material at the time of use. Compensate for any change in aggregate gradation caused by handling and processing as necessary.

5. A single percentage of the combined mineral aggregate passing each specified sieve. Degradation of the aggregate due to processing (particularly material passing the No. 200 sieve) should be accounted for and identified.

6. The bulk specific gravity (G_{sb}) value for each individual aggregate and RAP component, as identified in the Department's aggregate control program.

7. A single percentage of asphalt binder by weight of total mix intended to be incorporated in the completed mixture, shown to the nearest 0.1%.

8. A target temperature for the mixture at the plant (mixing temperature) and a target temperature for the mixture at the roadway (compaction temperature). Do not exceed a target temperature of 340°F for High Polymer asphalt binders, 330°F for PG 76-22 asphalt binders, and 315°F for unmodified asphalt binders.

9. Provide the physical properties at the optimum asphalt content, which must conform to all specified requirements.

10. The name of the Construction Training Qualification Program (CTQP) mix designer.

11. The ignition oven and maximum specific gravity (Gmm) calibration factors.

12. The warm mix technology, if used.

334-4 Producer Process Control (PC).

Assume full responsibility for controlling all operations and processes such that the requirements of these Specifications are met at all times. Perform any tests necessary at the plant and roadway for process control purposes.

334-5 General Construction Requirements.

334-5.1 Weather Limitations: Do not transport asphalt mix from the plant to the roadway unless all weather conditions are suitable for the laying operations.

334-5.2 Limitations of Paving Operations:

334-5.2.1 General: Place the mixture only when the surface upon which it is to be placed has been previously prepared, is intact, firm, dry, clean, and the tack or prime coat, with acceptable spread rate, is properly broken or cured. Do not place friction course until the adjacent shoulder area has been dressed and grassed.

334-5.2.2 Ambient Air Temperature: Place the mixture only when the air temperature in the shade and away from artificial heat meets the requirements of Table 334-3.

The minimum ambient temperature requirement may be reduced by 5ºF when using warm mix technology, if mutually agreed to by both the Engineer and the Contractor.

Table 334-3 Ambient Air Temperature Requirements for Paving	
Layer Thickness or Asphalt Binder Type	Minimum Temperature (°F)
≤ 1 inch	50
Any mixture > 1 inch containing a PG asphalt binder with a high temperature designation ≥ 76°C	45
Any mixture > 1 inch containing a PG asphalt binder with a high temperature designation < 76°C	40
FC-5[(1)]	65
[(1)] As an exception, place the mixture at temperatures no lower than 60ºF, only when approved by the Engineer based on the Contractor's demonstrated ability to achieve a satisfactory surface texture and appearance of the finished surface. For mixtures containing PG 76-22 binder, the minimum ambient temperature may be further reduced to 55ºF when using warm mix technology, if agreed to by both the Engineer and the Contractor.	

334-5.3 Mix Temperature: Heat and combine the ingredients of the mix in such a manner as to produce a mixture with a temperature at the plant and at the roadway, within a range of plus or minus 30ºF from the target temperature as shown on the mix design. Reject all loads outside of this range. Reject any load or portion of a load of asphalt mix at the plant or at the roadway with a temperature outside of its respective master range shown in Table 334-4. Notify the Engineer of the rejection immediately.

Table 334-4 Mix Temperature Master Range Tolerance	
Location	Acceptable Temperature Tolerance
Plant	Mixing Temperature ±30 F
Roadway (mix in truck)	Compaction Temperature ±30°F

334-5.4 Transportation of the Mixture: Transport the mixture in trucks of tight construction, which prevents the loss of material and the excessive loss of heat and previously cleaned of all foreign material. After cleaning, thinly coat the inside surface of the truck bodies with soapy water or an asphalt release agent as needed to prevent the mixture from adhering to the beds. Do not allow excess liquid to pond in the truck body. Do not use a release agent that will contaminate, degrade, or alter the characteristics of the asphalt mix or is hazardous or detrimental to the environment. Petroleum derivatives (such as diesel fuel), solvents, and any product that dissolves asphalt are prohibited. Provide each truck with a tarpaulin or other waterproof cover mounted in such a manner that it can cover the entire load when required. When in place, overlap the waterproof cover on all sides so that it can be tied down. Cover each load during cool and cloudy weather and at any time it appears rain is likely during transit with a tarpaulin or waterproof cover. Cover and tie down all loads of friction course mixtures.

334-5.5 Surface Preparation:

334-5.5.1 Cleaning: Before placing the mixture, clean the surface of the base or underlying pavement of all loose and deleterious material by the use of power brooms or blowers, supplemented by hand brooming where necessary.

334-5.5.2 Patching and Leveling Courses: As shown in the plans, bring the existing surface to proper grade and cross-section by the application of patching or leveling courses.

334-5.5.3 Application over Surface Treatment: Where an asphalt mix is to be placed over a surface treatment, sweep and dispose of all loose material from the paving area.

334-5.5.4 Tack Coat: Use a rate of application as defined in Table 334-5. Control application rate within plus or minus 0.01 gallon per square yard of the target application rate. The target application rate may be adjusted by the Engineer to meet specific field conditions. Determine the rate of application as needed to control the operation. When using PG 52-28, multiply the target rate of application by 0.6.

Table 334-5
Tack Coat Application Rates

Asphalt Mixture Type	Underlying Pavement Surface	Target Tack Rate (gal/yd^2)
Base Course, Structural Course, Dense Graded Friction Course	Newly Constructed Asphalt Layers	0.05 minimum
	Milled Surface or Oxidized and Cracked Pavement	0.07
	Concrete Pavement	0.09
Open Graded Friction Course	Newly Constructed Asphalt Layers	0.06
	Milled Surface	0.08

When using a meter to control the tack or prime application rate, manually measure the volume in the tank at the beginning and end of the application area for a specific target application rate. Perform this operation at a minimum frequency of once per production shift. Resolve any differences between the manually measured method and the meter to ensure the target application rate is met in accordance with this Section. Adjust the application rate if the manually measured application rate is greater than plus or minus 0.01 gallons per square yard when compared to the target application rate.

334-5.5.5 Curing and Time of Application: Apply tack coat sufficiently in advance of placing bituminous mix to permit drying, but do not apply tack coat so far in advance that it might lose its adhesiveness as a result of being covered with dust or other foreign material.

334-5.5.6 Protection: Keep the tack coat surface free from traffic until the subsequent layer of bituminous hot mix has been laid.

334-6 Placing Mixture:

334-6.1 Alignment of Edges: Place all asphalt mixtures by the stringline method to obtain an accurate, uniform alignment of the pavement edge. As an exception, pavement edges adjacent to curb and gutter or other true edges do not require a stringline. Control the unsupported pavement edge to ensure that it will not deviate from the stringline more than plus or minus 1.5 inches.

334-6.2 Rain and Surface Conditions: Immediately cease transportation of asphalt mixtures from the plant when rain begins at the roadway. Do not place asphalt mixtures while rain is falling, or when there is water on the surface to be covered. Once the rain has stopped, standing water has been removed from the tacked surface to the satisfaction of the Engineer, and

the temperature of the mixture caught in transit still meets the requirements as specified in 334-5.3, the Contractor may then place the mixture caught in transit.

334-6.3 Checking Depth of Layer: Check the depth of each layer at frequent intervals to ensure a uniform spread rate that will meet the requirements of the Contract.

334-6.4 Hand Work: In limited areas where the use of the paver is impossible or impracticable, the Contractor may place the mixture by hand.

334-6.5 Spreading and Finishing: Upon arrival, dump the mixture in the approved paver, and immediately spread and strike-off the mixture to the full width required, and to such loose depth for each course that, when the work is completed, the required weight of mixture per square yard, or the specified thickness, is secured. Carry a uniform amount of mixture ahead of the screed at all times.

334-6.6 Thickness Control: Ensure the spread rate is within 5% of the target spread rate, as indicated in the Contract. When determining the spread rate, use, at a minimum, an average of five truckloads of mix and at a maximum, an average of 10 truckloads of mix. When the average spread rate is beyond plus or minus 5% of the target spread rate, monitor the thickness of the pavement layer closely and adjust the construction operations.

When the average spread rate for two consecutive days is beyond plus or minus 5% of the target spread, stop the construction operation at any time until the issue is resolved.

The Engineer will allow a maximum deficiency from the specified spread rate for the total thickness as follows:

1. For pavement of a specified thickness of 2-1/2 inches or more: 50 pounds per square yard.
2. For pavement of a specified thickness of less than 2-1/2 inches: 25 pounds per square yard.

Address the unacceptable pavement in accordance with 334-5.10.4, unless an alternative approach is agreed upon by the Engineer.

334-6.7 Leveling Courses:

334-6.7.1 Patching Depressions: Before spreading any leveling course, fill all depressions in the existing surface as shown in the plans.

334-6.7.2 Spreading Leveling Courses: Place all courses of leveling with an asphalt paver or by the use of two motor graders, one being equipped with a spreader box. Other types of leveling devices may be used upon approval by the Engineer.

334-6.7.3 Rate of Application: When using Type SP-9.5 (fine graded) for leveling, do not allow the average spread of a layer to be less than 50 pounds per square yard or more than 75 pounds per square yard. The quantity of mix for leveling shown in the plans represents the average for the entire project; however, the Contractor may vary the rate of application throughout the project as directed by the Engineer. When leveling in connection with base widening, the Engineer may require placing all the leveling mix prior to the widening operation.

334-6.8 Compaction: For each paving or leveling train in operation, furnish a separate set of rollers, with their operators.

When density testing for acceptance is required, select equipment, sequence, and coverages of rolling to meet the specified density requirement. Regardless of the rolling procedure used, complete the final rolling before the surface temperature of the pavement drops

to the extent that effective compaction may not be achieved or the rollers begin to damage the pavement.

No vibratory compaction in the vertical direction will be allowed for layers one inch or less in thickness or, if the Engineer or Contract Documents limit compaction to the static mode only. Compact these layers in the static mode only. Other non-vertical vibratory modes of compaction will be allowed, if approved by the Engineer; however, no additional compensation, cost or time, will be made.

When density testing for acceptance is not required, use a rolling pattern approved by the Engineer.

Use hand tamps or other satisfactory means to compact areas which are inaccessible to a roller, such as areas adjacent to curbs, headers, gutters, bridges, manholes, etc.

334-6.9 Joints.

334-6.9.1 Transverse Joints: Construct smooth transverse joints, which are within 3/16 inch of a true longitudinal profile when measured with a 15 foot manual straightedge. The Engineer may waive straightedge requirements for transverse joints at the beginning and end of the project, at the beginning and end of bridge structures, at manholes, and at utility structures if the deficiencies are caused by factors beyond the control of the Contractor such as no milling requirement, as determined by the Engineer. When smoothness requirements are waived, construct a reasonably smooth transitional joint.

334-6.9.2 Longitudinal Joints:. Place each layer of pavement so all longitudinal construction joints are offset 6 to 12 inches laterally between successive layers. Plan offsets in advance so the longitudinal joints of the friction course are not in wheel path areas. The longitudinal joints for friction course layers should be within 6 inches of the lane edge or at the center of the lane. The Engineer may waive these requirements where offsetting is not feasible due to the sequence of construction.

334-6.10 Surface Requirements: Construct a smooth pavement with good surface texture and the proper cross-slope.

334-6.10.1 Texture of the Finished Surface of Paving Layers: Produce a finished surface of uniform texture and compaction with no pulled, torn, raveled, crushed or loosened portions and free of segregation, bleeding, flushing, sand streaks, sand spots, or ripples. Correct any area of the surface that does not meet the foregoing requirements in accordance with 334-6.10.4.

334-6.10.2 Cross Slope: Construct a pavement surface with cross slopes in compliance with the requirements of the Contract Documents. Furnish a four-foot-long electronic level accurate to 0.1 degree, approved by the Engineer for the control of cross slope. Make this electronic level available at the jobsite at all times during paving operations.

334-6.10.3 Pavement Smoothness: Construct a smooth pavement meeting the requirements of this Specification. Furnish a 15 foot manual and a 15 foot rolling straightedge meeting the requirements of FM 5-509. Obtain a smooth surface on all pavement courses placed, and then straightedge all layers as required by this Specification.

334-6.10.3.1 Straightedge Testing:

334-6.10.3.1.1 Acceptance Testing: Using a rolling straightedge, test the final (top) layer of the pavement. Test all pavement lanes where the width is constant using a rolling straightedge and document all deficiencies on a form approved by the Engineer. Notify the Engineer of the location and time of all straightedge testing a minimum of 48 hours before beginning testing.

334-6.10.3.1.2 Final (Top) Pavement Layer: At the completion of all paving operations, straightedge the final (top) layer either behind the final roller of the paving train or as a separate operation. Address all deficiencies in excess of 3/16 inch in accordance with 334-5.10.4, unless waived by the Engineer. Retest all corrected areas.

334-6.10.3.1.3 Straightedge Exceptions: Straightedge testing will not be required in the following areas: shoulders, intersections, tapers, crossovers, sidewalks, bicycle/shared use paths, parking lots and similar areas, or in the following areas when they are less than 250 feet in length: turn lanes, acceleration/deceleration lanes and side streets. The limits of the intersection will be from stop bar to stop bar for both the mainline and side streets.

As an exception, in the event the Engineer identifies an objectional surface irregularity in the above areas, straightedge and address all deficiencies in excess of 3/8 inch in accordance with 334-5.10.4.

334-6.10.4 Correcting Unacceptable Pavement: Correct deficiencies in the pavement layer by removing and replacing the full depth of the layer, extending a minimum of 50 feet on both sides (where possible) of the defective area for the full width of the paving lane, at no additional cost.

334-7 Acceptance of the Mixture.

334-7.1 General: The asphalt mixture will be accepted based on the Asphalt Work Category as defined below:

1. Asphalt Work Category 1 – Certification by the Contractor as defined in 334-7.2.
2. Asphalt Work Category 2 – Certification and process control testing by the Contractor as defined in 334-7.3
3. Asphalt Work Category 3 – Process control testing by the Contractor and acceptance testing by the Engineer as defined in 334-7.4.

334-7.2 Certification by the Contractor: On Asphalt Work Category 1 construction, the Engineer will accept the mix on the basis of visual inspection. Submit a Notarized Certification of Specification Compliance letter on company letterhead to the Engineer stating that all material produced and placed on the project meets the requirements of the Specifications. The Engineer may run independent tests to determine the acceptability of the material.

334-7.3 Certification and Process Control Testing by the Contractor: On Asphalt Work Category 2 construction, submit a Notarized Certification of Specification Compliance letter on company letterhead to the Engineer stating that all material produced and placed on the project meets the requirements of the Specifications, along with supporting test data documenting all process control testing as described in 334-6.3.1. If required by the Contract, utilize an Independent Laboratory as approved by the Engineer for the process control testing. The mix will also require visual acceptance by the Engineer. In addition, the Engineer may run independent tests to determine the acceptability of the material. Material failing to meet these acceptance criteria will be addressed as directed by the Engineer such as but not limited to acceptance at reduced pay, delineation testing to determine the limits of the questionable material, removal and replacement at no cost to the agency, or performing an Engineering analysis to determine the final disposition of the material.

334-7.3.1 Process Control Sampling and Testing Requirements: Perform process control testing at a frequency of once per day. Obtain the samples in accordance with FDOT Method FM 1-T 168. Test the mixture at the plant for gradation (P_{-8} and P_{-200}) and asphalt

binder content (P_b). Measure the roadway density with 6 inch diameter roadway cores at a minimum frequency of once per 1,500 feet of pavement with a minimum of three cores per day.

Determine the asphalt binder content of the mixture in accordance with FM 5-563. Determine the gradation of the recovered aggregate in accordance with FM 1-T 030. Determine the roadway density in accordance with FM 1-T 166. The minimum roadway density will be based on the percent of the maximum specific gravity (Gmm) from the approved mix design. If the Contractor or Engineer suspects that the mix design Gmm is no longer representative of the asphalt mixture being produced, then a new Gmm value will be determined from plant-produced mix with the approval of the Engineer. Roadway density testing will not be required in certain situations as described in 334-7.4.1. Assure that the asphalt binder content, gradation and density test results meet the criteria in Table 334-6.

Table 334-6
Process Control and Acceptance Values

Characteristic	Tolerance
Asphalt Binder Content (percent)	Target ± 0.55
Passing No. 8 Sieve (percent)	Target ± 6.00
Passing No. 200 Sieve (percent)	Target ± 1.50
Roadway Density (daily average)	Minimum 91.5% of Gmm
Roadway Density (any single core)	Minimum 88.0 % of Gmm

334-7.4 Process Control Testing by the Contractor and Acceptance Testing by the Engineer: On Asphalt Work Category 3, perform process control testing as described in 334-6.3.1. In addition, the Engineer will accept the mixture at the plant with respect to gradation (P_{-8} and P_{-200}) and asphalt binder content (P_b). The mixture will be accepted on the roadway with respect to density. The Engineer will sample and test the material as described in 334-7.3.1. The Engineer will randomly obtain at least one set of samples per day. Assure that the asphalt content, gradation and density test results meet the criteria in Table 334-6. Material failing to meet these acceptance criteria will be addressed as directed by the Engineer such as but not limited to acceptance at reduced pay, delineation testing to determine the limits of the questionable material, removal and replacement at no cost to the agency, or performing an Engineering analysis to determine the final disposition of the material.

334-7.4.1 Acceptance Testing Exceptions: When the total quantity of any mix type in the project is less than 500 tons, the Engineer will accept the mix on the basis of visual inspection. The Engineer may run independent tests to determine the acceptability of the material.

Density testing for acceptance will not be performed on widening strips or shoulders with a width of 5 feet or less, open-graded friction courses, variable thickness overbuild courses, leveling courses, any asphalt layer placed on subgrade (regardless of type), miscellaneous asphalt pavement, bike/shared use paths, crossovers, gore areas, or any course with a specified thickness less than 1 inch or a specified spread rate less than 100 lb per square yard. Density testing for acceptance will not be performed on asphalt courses placed on bridge decks or approach slabs; compact these courses in static mode only. In addition, density testing for acceptance will not be performed on the following areas when they are less than 500 feet (continuous) in length: turning lanes, acceleration lanes, deceleration lanes, shoulders, parallel parking lanes, or ramps. Do not perform density testing for acceptance in situations where the

area requiring density testing is less than 50 tons. Density testing for acceptance will not be performed in intersections. The limits of the intersection will be from stop bar to stop bar for both the mainline and side streets. A random core location that occurs within the intersection shall be moved forward or backward from the intersection at the direction of the Engineer. Compact these courses in accordance with a standard rolling procedure approved by the Engineer. In the event that the rolling procedure deviates from the approved procedure, placement of the mix will be stopped.

334-8 Method of Measurement.

For the work specified under this Section, the quantity to be paid for will be the weight of the mixture, in tons.

The bid price for the asphalt mix will include the cost of the liquid asphalt and the tack coat application as specified in 334-5.5.4. There will be no separate payment or unit price adjustment for the asphalt binder material in the asphalt mix.

334-9 Basis of Payment.

334-.1 General: Price and payment will be full compensation for all the work specified under this Section.

344 CONCRETE FOR LOCAL AGENCY PROGRAM (LAP) (CLASS - D). (REV 6-9-2021) (FA 7-2-21) (1-22)

SECTION 344 is deleted and the following substituted:

SECTION 344
CONCRETE FOR LAP (OFF-SYSTEM)

344-1 Description.

344-1 General: Construct concrete structures and other concrete members, based on the type of work as described in the Contract Documents and the concrete work categories as defined below.

344-1.2 Work Categories: Construction will fall into one of the following concrete work categories:

344-1.2.1 Concrete Work Category 1: Includes the construction of cast-in-place nonstructural concrete; including sidewalks, curb and gutter, ditch and slope pavement, or other non-reinforced cast-in- place elements.

344-1.2.2 Concrete Work Category 2: Includes the construction of precast and prestressed concrete products.

344-1.2.2.1 Precast Concrete Drainage Structures: Includes but are not limited to reinforced and non-reinforced concrete pipes, french drains, underdrains, inlets, manholes, junction boxes, endwalls, pipe culverts, storm sewers, and box culverts.

344-1.2.2.1 Incidental Precast/Prestressed Concrete Structures: Includes the fabrication, storage, transportation, and erection of prestressed concrete poles, concrete bases for light poles, highway sign foundations, retaining wall systems, traffic separators, sound barriers or other structural precast elements.

344-1.2.3 Concrete Work Category 3: Includes the work associated with the placement and/or construction of structural cast-in-place concrete meeting the requirements of this section.

344-2 Materials.

344-2.1 General: Use concrete composed of a mixture of portland cement, aggregates, and water, with or without chemical or mineral admixtures and supplementary cementitious materials that meet the following requirements:

344-2.1.1 Portland Cement: Portland cements meeting the requirements of AASHTO M 85 or ASTM C150 is required. Different brands of cement, cement of the same brand from different facilities or different types of cement shall be stored separately and shall not be mixed.

344-2.1.2 Coarse and Fine Aggregates: Aggregates shall meet ASTM C33.

344-2.1.3 Water: Water shall meet the requirements of ASTM C 1602.

344-2.1.4 Chemical Admixtures: Use chemical admixtures shall be listed on the FDOT Approved Products List (APL). Admixtures may be added at the dosage rates recommended by the manufacturer.

344-2.1.5 Types of Cement: Unless a specific type of cement is designated in the Contract Documents, use Type I, Type IL, Type IP, Type IS, Type II, Type II (MH) or Type III cement in all classes of concrete. Use Type IL or Type II (MH) for all mass concrete elements.

344-2.1.6 Supplementary Cementitious Materials: Supplementary Cementitious Materials shall meet the requirements of ASTM C618 and ASTM C 989, respectively. Fly ash shall not include the residue resulting from the burning of municipal garbage or any other refuse with coal, or the burning of industrial or municipal garbage in incinerators.

344-3 Production, Mixing and Delivery of Concrete.

344-3.1 Concrete Production Requirements:

344-3.1.1 Category 1: Use a concrete production facility that is certified by the National Ready Mixed Concrete Association (NRMCA) or listed on the FDOT list of non-structural concrete producers. Concrete production facilities listed on the FDOT Producers with Accepted QC Programs list for structural concrete may also be used for Category 1.

344-3.1.2 Category 2: Obtain precast concrete products from plants that are currently on the FDOT's Production Facility Listing for the types of products that they are producing.

344-3.1.3 Category 3: Obtain structural concrete from a plant that is currently on the FDOT's Production Facility Listing for structural concrete.

344-3.2 Classes of Concrete: Meet the requirements of Table 344-1.

Table 344-1 Master Proportion Table [7]				
Class of Concrete	28-day Specified Minimum Compressive Strength (f_c') (psi)	Maximum Water to Cementitious Materials Ratio (pounds per pounds)	Minimum Total Cementitious Materials Content (lb/yd^3)	Target Slump Value (inches) [3]
Category 1				
Class NS	2,500	N/A	N/A	N/A
Category 3				
I [1]	3,000	0.53	470	3 [2]
I (Pavement)	3,000	0.50	470	1.5 or 3 [5]
II [1]	3,400	0.53	470	3 [2]
II (Bridge Deck)	4,500	0.44	600 [8]	3 [2]
III [4]	5,000	0.44	600 [8]	3 [2]
III (Seal)	3,000	0.53	600 [8]	8
IV	5,500	0.41[6]	600 [8]	3 [2]
IV (Drilled Shaft)	4,000	0.41	600 [8]	8.5
V (Special)	6,000	0.37 [6]	600 [8]	3 [2]
V	6,500	0.37 [6]	600 [8]	3 [2
VI	8,500	0.37 [6]	600 [8]	3 [2]
VII	10,000	0.37 [6]	600 [8]	3 [2]

Notes:
(1) For precast three-sided culverts, box culverts, endwalls, inlets, manholes and junction boxes, the target slump value and air content will not apply. The maximum allowable slump is 6 inches, except as noted in (2). The Contractor is permitted to use concrete meeting the requirements of ASTM C478 (4,000 psi) in lieu of the specified Class I or Class II concrete for precast endwalls, inlets, manholes and junction boxes.
(2) The Engineer may allow a maximum target slump of 7 inches when a Type F, G, I or II admixture is used. When flowing concrete is used, meet the requirements of Section 8.6 of the FDOT Materials Manual.
(3) For a reduction in the target slump for slip-form operations, submit a revision to the mix design to the Engineer. The target slump for slip-form mix is 1.50 inches.
(4) When precast three-sided culverts, box culverts, endwalls, inlets, manholes or junction boxes require a Class III concrete, the minimum cementitious materials content is 470 pounds per cubic yard. Do not apply the air content range and the maximum target slump shall be 6 inches, except as allowed in (2).
(5) Meet the requirements of Section 350 of FDOT Specifications.
(6) When silica fume or metakaolin is required, the maximum water to cementitious material ratio will be 0.35. When ultrafine fly ash is used, the maximum water to cementitious material ratio will be 0.30.
(7) Tolerance for slump is ± 1.5 inches and Air Content range is 0.0% to 6.0%.
(8) The minimum total amount of cementitious materials content of 600 pounds per cubic yard is required for extremely aggressive environment. For moderately and slightly aggressive environments, the required amounts are 550 lb/yd^3 and 510 lb/yd^3, respectively.

344-3.3 Contractors Quality Control: For Categories 1 and 2, assume full responsibility for controlling all operations and processes such that the requirements of these Specifications are always met.

For Category 3, furnish a Quality Control (QC) plan to identify to the Engineer how quality will be ensured at the project site. During random inspections, the Engineer will use this document to verify that the construction of the project agrees with the QC plan.

344-3.4 Concrete Mix Design: Before producing any Category 1 or Category 2 concrete, submit the proposed mix designs to the Engineer. For Category 3, submit to the Engineer for

approval, FDOT approved mix designs. Do not use concrete mix designs without prior approval of the Engineer.

Materials may be adjusted provided that the theoretical yield requirement of the approved mix design is met. Show all required original approved design mix data and batch adjustments on an Engineer approved concrete delivery ticket.

344-3.5 Delivery: For Category 3, the maximum allowable transit time of concrete is 90 minutes. For critical placements, with the Engineer's approval, the transit time may be extended to the allowable mixing time shown in the mix design.

Furnish a delivery ticket on a form approved by the Engineer with each batch of concrete before unloading at the placement site. Record material quantities incorporated into the mix on the delivery ticket. Ensure that the Batcher responsible for producing the concrete signs the delivery ticket certifying that the batch was produced and delivered in accordance with these requirements. Sign the delivery ticket certifying that the concrete was placed in accordance with these requirements.

344-3.6 Placing Concrete:

344-3.6.1 Concreting in Cold Weather: Do not mix or place concrete when the air temperature at placement is below 40°F.

During the curing period, if the National Oceanic and Atmospheric Administration (NOAA) predicts the ambient temperature to fall below 35°F for 12 hours or more or to fall below 30°F for more than 4 hours, enclose the structure in such a way that the air temperature within the enclosure can be kept above 50°F for a period of 3 days after placing the concrete or until the concrete reaches a minimum compressive strength of 1,500 psi.

Assume all risks connected with the placing and curing of concrete. Although the Engineer may give permission to place concrete, the Contractor is responsible for satisfactory results. If the placed concrete is determined to be unsatisfactory, remove, dispose of, and replace the concrete at no expense to the Agency.

344-3.6.2 Concreting in Hot Weather: For Category 3, hot weather concreting is defined as the production, placing and curing of concrete when the concrete temperature at placing exceeds 86ºF but is less than 100ºF.

Spray reinforcing bars and metal forms with cool fresh water just prior to placing the concrete in a method approved by the Engineer.

Assume all risks associated with the placing and curing of concrete. Although the Engineer may give permission to place concrete, the Contractor is responsible for satisfactory results. If the placed concrete is determined to be unsatisfactory, remove, dispose of, and replace the concrete at no expense to the Agency.

Unless the specified hot weather concreting measures are in effect, reject concrete exceeding 85ºF at the time of placement. Regardless of special measures taken, reject concrete exceeding 100ºF. Predict the concrete temperatures at placement time and implement hot weather measures to avoid production shutdown.

344-3.7 Mixers: For Category 3 concrete, do not place concrete from a truck mixer that does not have a current FDOT mixer identification card.

344-3.8 Small Quantities of Concrete: With approval of the Engineer, small quantities of concrete, less than 3 cubic yards placed in one day and less than 0.5 cubic yards placed in a single placement may be accepted using a pre-bagged mixture. The Engineer may verify that the pre-bagged mixture is prepared in accordance with the manufacturer's recommendations and will meet the requirements of this Specification.

344-3.9 Sampling and Testing:

344-3.9.1 Category 1: The Engineer may sample and test the concrete to verify its quality. The minimum 28 day compressive strength requirement for this concrete is 2,500 psi.

344-3.9.2: Category 2: No sampling and testing is required by the Engineer for category 2.

344-3.9.3 Category 3: The Engineer will randomly select a sample from each LOT to determine its plastic properties and to make three 4 x 8 inch cylinders for testing by the Engineer at 28 days to ensure that the design compressive strength has been met for the class of concrete as specified in Table 344-1. A LOT is defined as the concrete placement of 200 cubic yards or one day's production, whichever is less.

344-3.10 Records: Ensure the following records are available for review for at least 3 years after final acceptance of the project:

1. Accepted concrete Plant QC Plan.
2. Approved concrete mix designs.
3. Materials source (delivery tickets, certifications, certified mill test reports).
4. A copy of the scale company or testing agency report showing the signature of the scale company representative, date of inspection, observed deviations from quantities checked during calibration of the scales and meters.
5. A copy of the documentation certifying the admixture weighing/measuring devices.
6. Aggregate moisture control records including date and time of test.
7. Manufacturer's mixer information.
8. Certification documents for admixture weighing and measuring dispensers.
9. A daily record of all concrete batched for delivery to the projects, including respective mix design numbers and quantities of batched concrete.

344-4 Acceptance of the Work.

344-4.1 Category 1 Work: Category 1 work will be accepted based on certification by the batcher and contractor on the delivery ticket.

344-4.2 Category 2 Work: Certify that the precast elements were produced by production facilities that are currently on the FDOT's Production Facility Listing for the types of products that they are producing. In addition, the producer's logo shall be stamped on the element. The producer shall not use the Florida Department of Transportation QC stamp on elements used on this project. Provide a statement of certification from the manufacturer of the precast element that the element meets the requirements of this Specification.

344-4.3 Category 3 Work: Category 3 concrete will be accepted based on the Engineer's test results for plastic properties and compressive strength requirements for the class of concrete as defined in Table 344-2. In addition, a Delivery Ticket as described in 344-3.5 will be required for acceptance of the material at the project site.

344-4.4 Small Quantities of Concrete: Category 3 concrete meeting the definition of 344-3.8 will be accepted in accordance with 344-4.3 based on test results for plastic properties and compressive strength.

344-5 Method of Measurement.

The quantities to be paid for will be the items shown in the plans, completed and accepted.

344-6 Basis of Payment.

Prices and payments will be full compensation for all work and materials specified in this Section.

STABILIZING (LOCAL AGENCY USE – FDOT ARCHIVE SPECIFICATION). (REV 01-00) (1-13)

SECTION 160
STABILIZING

160-1 Description.

Stabilize designated portions of the roadbed to provide a firm and unyielding subgrade, having the required bearing value specified in the plans. When specified in the plans, provide additional strengthening of the subbase by additional stabilizing of the upper portion of the previously stabilized subgrade, within the limits specified.

160-2 Stabilized Subgrade.

For stabilized subgrade, the Contractor may choose the type of material, Commercial or Local.

When the stabilizing is designated as Type B, the Engineer will determine compliance with the bearing value requirements by the Limerock Bearing Ratio (LBR) Method. If approved by the Engineer and only for materials requiring an LBR value of 40, the Engineer may omit Sections 6.0 and 6.1 of Florida Method of Test for Limerock Bearing Ratio (FM 5-515) and perform an Unsoaked LBR Test. The Engineer or the Contractor may request to use this method. If the Unsoaked LBR Test results in a failing test, then the Engineer will perform a standard Soaked LBR Test. When the stabilizing is designated as Type C, the Engineer will determine compliance by the Florida Soil Bearing Test.

The Contractor is responsible to make the finished roadbed section meet the bearing value requirements, regardless of the quantity of stabilizing materials necessary to be added. Also, the Department will make full payment for any areas where the existing subgrade materials meet the design bearing value requirements without the addition of stabilizing additives, as well as areas where the Contractor may elect to place select high-bearing materials from other sources within the limits of the stabilizing.

After substantially completing the roadbed grading operations, determine the type and quantity (if any) of stabilizing material necessary for compliance with the bearing value requirements. Notify the Engineer of the approximate quantity to be added. Obtain the Engineer's approval for spreading and mixing-in of such quantity of materials to achieve uniformity and effectiveness.

The Engineer may allow, at no additional cost to the Department, the substitution of 6 inches [150 mm] of Granular Subbase meeting the requirements of Section 290, when 12 inches [300 mm] of Type B Stabilization requiring an LBR value of 40 is specified.

160-3 Stabilized Subbase.

When Stabilized Subbase is required, after the mixing operations for the stabilization of the entire subgrade limits, strengthen the upper portion of the subgrade, within the limits shown, by adding and mixing-in a loose depth of commercial stabilizing material as designated in the plans or as may be otherwise designated by the Engineer. Provide a minimum depth of spread 3 inches [75 mm] (loose measurement).

160-4 Materials.

160-4.1 Commercial and Local Materials: Meet the requirements of Section 914 for the particular type of stabilizing material to be used.

160-4.2 Use of Materials from Existing Base: When the use of materials from an existing base is required as all, or a portion, of the stabilizing additives, the Engineer will direct the location, placement,

and distribution of such materials. Perform this work prior to the spreading of any additional commercial or local materials. Do not remove any section of existing base until the need for it in maintaining traffic is fulfilled.

The Engineer may direct the Contractor to use materials from an existing base in combination with either of the designated types of stabilizing.

160-5 Construction Methods.

160-5.1 General: Prior to the beginning of stabilizing operations, construct the area to be stabilized to an elevation such that, upon completion of stabilizing operations, the completed stabilized subgrade will conform to the lines, grades, and cross-section shown in the plans. Prior to spreading any additive stabilizing material, bring the surface of the roadbed to a plane approximately parallel to the plane of the proposed finished surface.

The Contractor may process the subgrade to be stabilized in one course, unless the equipment and methods being used do not provide the required uniformity, particle size limitation, compaction, and other desired results, in which case, the Engineer will direct that the processing be done in more than one course.

160-5.2 Application of Stabilizing Material: When additive stabilizing materials are required, spread the designated quantity uniformly over the area to be stabilized.

When materials from an existing base are to be used in the stabilizing at a particular location, place and spread all of such materials prior to the addition of other stabilizing additives.

Spread commercial stabilizing material by the use of mechanical material spreaders, except that where use of such equipment is not practicable, use other means of spreading, but only upon written approval of the proposed alternate method.

160-5.3 Mixing: Perform mixing using rotary tillers or other equipment meeting the approval of the Engineer. The Contractor may mix the materials in a plant of an approved type suitable for this work. Thoroughly mix the area to be stabilized throughout the entire depth and width of the stabilizing limits.

Perform the mixing operations, as specified, (either in place or in a plant) regardless of whether the existing soil, or any select soils placed within the limits of the stabilized sections, have the required bearing value without the addition of stabilizing materials.

As an exception to the above mixing requirements, where the subgrade is of rock, the Engineer may waive the mixing operations (and the work of stabilizing), and the Department will not pay for stabilization for such sections of the roadway.

160-5.4 Maximum Particle Size of Mixed Materials: At the completion of the mixing, ensure that the gradation of the material within the limits of the area being stabilized is such that 97% will pass a 3 inch [90 mm] sieve and that the material does not have a plasticity index greater than eight or liquid limit greater than 30. Note that clay balls or lumps of clay size particles (2 microns or less) [(2 μm or less)] and therefore cannot be considered as individual particle sizes. Remove any materials not meeting the plasticity requirements from the stabilized area. The Contractor may break down or remove from the stabilized area materials not meeting the gradation requirements.

160-5.5 Compaction: Except where a stabilized subbase is also to be constructed (as specified in 160-6), after completing the mixing operations and satisfying the requirements for bearing value, uniformity, and particle size, compact the stabilized area in accordance with 160-8. Compact the materials at a moisture content permitting the specified compaction. If the moisture content of the material is improper for attaining the specified density, either add water or allow the material to dry until reaching the proper moisture content for the specified compaction.

160-5.6 Finish Grading: Shape the completed stabilized subgrade to conform with the finished lines, grades, and cross-section indicated in the plans. Check the subgrade using elevation stakes or other means approved by the Engineer.

160-5.7 Requirements for Condition of Completed Subgrade: After completing the stabilizing and compacting operations, ensure that the subgrade is firm and substantially unyielding to the extent that it will support construction equipment and will have the bearing value required by the plans.

Remove all soft and yielding material, and any other portions of the subgrade which will not compact readily, and replace it with suitable material so that the whole subgrade is brought to line and grade, with proper allowance for subsequent compaction.

160-5.8 Maintenance of Completed Subgrade: After completing the subgrade as specified above, maintain it free from ruts, depressions, and any damage resulting from the hauling or handling of materials, equipment, tools, etc. The Contractor is responsible for maintaining the required density until the subsequent base or pavement is in place including any repairs, replacement, etc., of curb and gutter, sidewalk, etc., which might become necessary in order to recompact the subgrade in the event of underwash or other damage occurring to the previously compacted subgrade. Perform any such recompaction at no expense to the Department. Construct and maintain ditches and drains along the completed subgrade section.

160-6 Stabilized Subbase (Additional Strengthening of Upper Portion).

When a stabilized subbase is to be constructed in conjunction with the stabilization operations, after the mixing of the stabilization area as specified in 160-5.3, and determination that the bearing value requirements specified in 160-7 have been met, shape the area over which the stabilized subbase is to be constructed as provided in 160-5.1, and compact it sufficiently to provide a firm surface for the operations to follow. Spread the amount of commercial stabilizing material specified in 160-3 for this operation, in accordance with 160-5.2, and mix it to the depth indicated in the plans, in accordance with 160-5.3. Allow a tolerance of 1 inch [25 mm] in excess of the plan depth in this mixing. The Engineer will not perform any additional tests for bearing value after the mixing of materials for the Stabilized Subbase.

Compact and finish grading, as specified in 160-5.5 and 160-5.6, and meet the provisions of 160-5.4, 160-5.7, and 160-5.8 for this work.

When commercial materials are used as the stabilizing additives for the initial subgrade stabilization, the Engineer may eliminate the work of Stabilized Subbase, either entirely or in designated sections of the overall limits for this work as may be specified in the plans.

160-7 Bearing Value Requirements.

160-7.1 General: The Engineer will obtain and test bearing value samples at completion of satisfactory mixing of the stabilized area. For any area where the bearing value obtained is deficient from the value indicated in the plans, in excess of the tolerances established herein, spread and mix additional stabilizing material in accordance with 160-5.3. Perform this reprocessing for the full width of the roadway being stabilized and longitudinally for a distance of 50 feet [15 m] beyond the limits of the area in which the bearing value is deficient.

The Contractor shall make his own determination of the quantity of additional stabilizing material to be used in reprocessing.

160-7.2 Tolerances in Bearing Value Requirements: Use the following undertolerances from the specified bearing value, as based on tests performed on samples obtained after completing mixing operations:

Specified Bearing Value	Undertolerance
LBR 40	5.0
LBR 35	4.0
LBR 30 (and under)	2.5
All Florida Bearing Values	5.0

The following unsoaked bearing value requirement is based on tests performed on samples obtained after completing mixing operations:

Specified Bearing Value	Unsoaked Bearing Value	Undertolerance

	Required	
LBR 40	LBR 43	0.0

160-8 Density Requirements.

160-8.1 General: Within the entire limits of the width and depth of the areas to be stabilized, other than as provided in 160-8.2, obtain a minimum density at any location of 98% of the maximum density as determined by AASHTO T 180. When bearing value determinations are made by the Florida Soil Bearing Test, the Engineer will use Test Method C of AASHTO T 180, and, when bearing value determinations are made by the Limerock Bearing Ratio Method, the Engineer will use Test Method D of AASHTO T 180 (as modified by the Department's Research Bulletin 22-B, Revised April, 1972).

160-8.2 Exceptions to Density Requirements: The Contractor need not obtain the minimum density specified in 160-8.1 if within the following limits:

(a) The width and depth of areas which are to be subsequently incorporated into a base course under the same contract.

(b) The upper 6 inches [150 mm] of areas to be grassed under the same contract.

Compact these areas to a reasonably firm condition as directed by the Engineer.

160-9 Method of Measurement.

160-9.1 Type B Stabilization and Type C Stabilization: The quantity to be paid for will be the plan quantity, in square yards [square meters], completed and accepted.

160-9.2 Stabilized Subbase: The quantity to be paid for will be the area, in square yards [square meters], completed and accepted.

160-9.3 Commercial Stabilizing Material: The quantity to be paid for separately will be determined by measurement, loose volumes, in truck bodies, at the point of unloading.

160-10 Basis of Payment.

160-10.1 Type B Stabilization and Type C Stabilization: Price and payment will constitute full compensation for all work specified in this Section applicable to these types of Stabilization, including furnishing and spreading of all stabilizing material required and any reprocessing of stabilization areas necessary to attain the specified bearing value.

160-10.2 Stabilized Subbase: Price and payment will constitute full compensation for the work of incorporating the additional commercial stabilizing material into the designated subbase area.

160-10.3 Commercial Stabilizing Material: Price and payment will be full compensation for furnishing and spreading commercial stabilizing material.

No separate payment will be made for any commercial stabilizing material which the Contractor may elect to use in Type B or Type C Stabilization.

No separate payment will be made for the work of using materials from an existing base, in the stabilizing section.

160-10.4 General: The above prices and payments will constitute full compensation for all work and materials specified in this Section, specifically including all costs of the processing and incorporation of existing base materials into the proposed stabilization area when such work is required by the plans.

If the item of Borrow Excavation is included in the Contract, any stabilizing materials obtained from designated borrow areas will be included in the pay quantity for Borrow Excavation.

160-10.5 Payment Items: Payment will be made under:

Item No. 160- 3- Commercial Stabilizing Material - per cubic yard.
Item No. 2160- 3- Commercial Stabilizing Material - per cubic meter.
Item No. 160- 4- Type B Stabilization - per square yard.
Item No. 2160- 4- Type B Stabilization - per square meter.
Item No. 160- 5- Type C Stabilization - per square yard.
Item No. 2160- 5- Type C Stabilization - per square meter.

Item No. 160- 6- Stabilized Subbase - per square yard.
Item No. 2160- 6- Stabilized Subbase - per square meter.

LIMEROCK BASE (FOR LOCAL AGENCY USE – FDOT ARCHIVE SPECIFICATION).

(REV 01-00) (1-13)

SECTION 200
LIMEROCK BASE

200-1 Description.

Construct a base composed of limerock.

200-2 Materials.

Meet the requirements of Section 911. The Contractor may use more than one source of limerock on a single Contract provided that a single source is used throughout the entire width and depth of a section of base. Obtain approval from the Engineer before placing material from more than one source. Place material to ensure total thickness single source integrity at any station location of the base. Intermittent placement or ✌Blending✍ of sources is not permitted. Limerock may be referred to hereinafter as "rock".

Do not use any of the existing limerock base that is removed to construct the new limerock base.

200-3 Equipment.

Use mechanical rock spreaders, equipped with a device that strikes off the rock uniformly to laying thickness, capable of producing even distribution. For crossovers, intersections and ramp areas; roadway widths of 20 feet [6 m] or less; the main roadway area when forms are used and any other areas where the use of a mechanical spreader is not practicable; the Contractor may spread the rock using bulldozers or blade graders.

200-4 Transporting Limerock.

Transport the limerock to its point of use, over rock previously placed, if practicable, and dump it on the end of the preceding spread. Hauling and dumping on the subgrade will be permitted only when, in the Engineer's opinion, these operations will not be detrimental to the subgrade.

200-5 Spreading Limerock.

200-5.1 Method of Spreading: Spread the rock uniformly. Remove all segregated areas of fine or coarse rock and replace them with properly graded rock.

200-5.2 Number of Courses: When the specified compacted thickness of the base is greater than 6 inches [150 mm], construct the base in multiple courses of equal thickness. Individual courses shall not be less than 3 inches [75 mm]. The thickness of the first course may be increased to bear the weight of the construction equipment without disturbing the subgrade.

If, through field tests, the Contractor can demonstrate that the compaction equipment can achieve density for the full depth of a thicker lift, and if approved by the Engineer, the base may be constructed in successive courses of not more than 8 inches [200 mm] compacted thickness.

The Engineer's approval will be based on results of a test section constructed using the Contractor's specified compactive effort. Approval requires the compactive effort pass a minimum of five density tests with no failing tests. Construct a test section between 300 feet [90 m] and 1,000 feet [300 m] in length, full width. At each test site, the bottom 6 inches [150 mm] must be tested and pass. Remove the materials above the bottom 6 inches [150 mm], at no expense to the Department. The minimum density required on the thicker lift will be the average of the five results obtained on the thick lift in the passing test section. Maintain the exposed surface as close to ✌undisturbed✍ as possible; no further compaction will

be permitted during the test preparation. If unable to achieve the required density, remove and replace or repair the test section to comply with the specifications at no additional expense to the Department.

Once approved, a change in the source of base material will require the construction of a new test section. The compactive effort will not be allowed to change once the test section is approved. The Engineer will periodically verify the density of the bottom 6 inches [150 mm] during thick lift operations.

The Department may terminate the use of thick lift construction and have the Contractor revert to the 6 inch [150 mm] maximum lift thickness if satisfactory results are not being achieved.

200-5.3 Limerock Base for Shoulder Pavement: Unless otherwise permitted, complete all limerock base shoulder construction at any particular location before placing the final course of pavement on the traveled roadway. When dumping material for the construction of a limerock base on the shoulders, do not allow material capable of scarring or contaminating the pavement surface on the adjacent pavement. Immediately sweep off any limerock material that is deposited on the surface course.

200-6 Compacting and Finishing Base.

200-6.1 General:

200-6.1.1 Single Course Base: After spreading, scarify the entire surface, then shape the base to produce the required grade and cross-section after compaction.

200-6.1.2 Multiple Course Base: Clean the first course of foreign material, then blade and bring it to a surface cross-section approximately parallel to the finished base. Before spreading any material for the upper courses, allow the Engineer to make density tests for the lower courses to determine that the required compaction has been obtained. After spreading the material for the top course, finish and shape its surface to produce the required grade and cross-section, free of scabs and laminations, after compaction.

200-6.2 Moisture Content: When the material does not have the proper moisture content to ensure the required density, wet or dry it as required. When adding water, uniformly mix it in by disking to the full depth of the course that is being compacted. During wetting or drying operations, manipulate, as a unit, the entire width and depth of the course that is being compacted.

200-6.3 Density Requirements: When proper moisture conditions are attained, compact the material to not less than 98% of maximum density determined by AASHTO T 180.

Compact the limerock base for shoulder pavement to not less than 95% of the maximum density determined under AASHTO T 180.

200-6.4 Density Tests: The Engineer will perform at least three density determinations on each day's final compaction operations on each course, and at more frequent intervals, if deemed necessary.

During final compacting operations, blade any areas necessary to obtain the true grade and cross-section before making the Engineer the density tests on the finished base.

200-6.5 Correction of Defects:

200-6.5.1 Contamination of Base Material: If, at any time, the subgrade material becomes mixed with the base course material, dig out and remove the mixture, and reshape and compact the subgrade. Then replace the materials removed with clean base material, and shape and compact as specified above. Perform this work at no expense to the Department.

200-6.5.2 Cracks and Checks: If cracks or checks appear in the base, either before or after priming, which, in the opinion of the Engineer, would impair the structural efficiency of the base, remove the cracks or checks by rescarifying, reshaping, adding base material where necessary, and recompacting.

200-6.6 Compaction of Widening Strips: Where base construction consists of widening strips and the trench width is not sufficient to permit use of standard base compaction equipment, compact the base using vibratory compactors, trench rollers or other special equipment which will achieve the density requirements specified herein.

When multiple course base construction is required, compact each course prior to spreading material for the overlaying course.

200-7 Testing Surface.

Check the finished surface of the base course with a template cut to the required crown and with a 15 foot [4.572 m] straightedge laid parallel to the centerline of the road. Correct all irregularities greater than ▯ inch [6 mm] to the satisfaction of the Engineer by scarifying and removing or adding rock as required, and recompact the entire area as specified hereinbefore.

200-8 Priming and Maintaining.

200-8.1 Priming: Apply the prime coat only when the base meets the specified density requirements and when the moisture content in the top half of the base does not exceed 90% of the optimum moisture of the base material. At the time of priming, ensure that the base is firm, unyielding and in such condition that no undue distortion will occur.

200-8.2 Maintaining: Maintain the true crown and template, with no rutting or other distortion, while applying the surface course.

200-9 Thickness Requirements.

Meet the requirements of 285-6.

200-10 Calculations for Average Thickness of Base.

Calculations for determining the average thickness of base will be made in accordance with 285-7.

200-11 Method of Measurement.

200-11.1 General: The quantity to be paid for will be the plan quantity, adjusted as specified below.

200-11.2 Authorized Normal Thickness Base: The surface area of authorized normal thickness base to be adjusted will be the plan quantity as specified above, omitting any areas not allowed for payment under the provisions of 200-9 and omitting areas which are to be included for payment under 200-11.3. The adjustment shall be made by adding or deducting, as appropriate, the area of base represented by the difference between the calculated average thickness, determined as provided in 200-10, and the specified normal thickness, converted to equivalent square yards [square meters] of normal thickness base.

200-11.3 Authorized Variable Thickness Base: Where the base is constructed to a compacted thickness other than the normal thickness as shown on the typical section in the plans, as specified on the plans or ordered by the Engineer for providing additional depths at culverts or bridges, or for providing transitions to connecting pavements, the volume of such authorized variable thickness compacted base will be calculated from authorized lines and grades, or by other methods selected by the Engineer, converted to equivalent square yards [square meters] of normal thickness base for payment.

200-12 Basis of Payment.

Price and payment will be full compensation for all the work specified in this Section, including correcting all defective surface and deficient thickness, removing cracks and checks as provided in 200-6.5.2, and the additional limerock required for crack elimination.

Prime coat will be paid for under Section 300.

Payment shall be made under:

Item No.	285-7-	Optional Base - per square yard.
Item No.	2285-7-	Optional Base - per square meter.

ASPHALT CONCRETE FRICTION COURSES (FOR LOCAL AGENCY USE – FDOT ARCHIVE SPECIFICATION).
(REV 1-1-00) (1-13)

SECTION 337
ASPHALT CONCRETE FRICTION COURSES

337-1 Description.

Construct an asphalt concrete friction course. This Section specifies mixes designated as Friction Course 2 (FC-2), Friction Course 3 (FC-3), Friction Course 5 (FC-5) and Friction Course 6 (FC-6).

Meet the plant and equipment requirements of Section 320, as modified herein. Meet the general construction requirements of Section 330, as modified herein.

337-2 Materials.

337-2.1 General Requirements: Meet the requirements specified in Division III as modified herein. The Engineer will base continuing approval of material sources on field performance.

337-2.2 Asphalt Rubber Binder: Meet the requirements of Section 336, and any additional requirements or modifications specified herein for the various mixtures. For projects with a total quantity of FC-2, FC-3, FC-5 or FC-6 less than 500 tons [450 metric tons], the Contractor may elect to substitute a PG 76-22 or PG 70-22 for the ARB-12 or ARB-5, respectively, meeting the requirements of AASHTO MP-1.

337-2.3 Coarse Aggregate: Meet the requirements of Section 901, and any additional requirements or modifications specified herein for the various mixtures.

337-2.4 Fine Aggregate: Meet the requirements of Section 902, and any additional requirements or modifications specified herein for the various mixtures.

337-2.5 Hydrated Lime: Meet the requirements of AASHTO M303 Type 1. Provide certified test results for each shipment of hydrated lime indicating compliance with the specifications.

337-2.6 Fiber Stabilizing Additive (Required for FC-5 only): Use either a mineral or cellulose fiber stabilizing additive. Meet the following requirements:

337-2.6.1 Mineral Fibers: Use mineral fibers made from virgin basalt, diabase, or slag treated with a cationic sizing agent to enhance the disbursement of the fiber, as well as to increase adhesion of the fiber surface to the bitumen. Meet the following requirements for physical properties:

1. Size Analysis
   - Average fiber length .....0.25 inch [6.0 mm] (maximum)
   - Average fiber thickness0.0002 inch [0.005 mm] (maximum)
2. Shot Content (ASTM C612)
   - Percent passing No. 60 [250 μm] Sieve..... 90 - 100
   - Percent passing No.230 [63 μm] Sieve..... 65 - 100

Provide certified test results for each batch of fiber material indicating compliance with the above tests.

337-2.6.1.1 Notice of Patented Process: Take notice that the use of mineral fibers treated with cationic sizing agent and the size analysis range for average fiber thickness are subject to U.S. Patent No. 4,613,376, held by Fiberand Corporation, 7150 Southwest 62nd Avenue, South Miami, Fl. 33143. Obtain all mineral fibers required to meet the FC-5 requirements of this Contract only from Fiberand Corporation or a duly authorized licensee of Fiberand. Assume responsibility, pursuant to 7-3, for obtaining any and all necessary rights to use such processes and pay any and all royalties, license fees or other costs incurred in order to meet the FC-5 requirements of this Contract. Include any and all royalties, license fees and other costs arising due to the existence of U.S. Patent No. 4,613,376 in the bid unit price for friction course FC-5.

337-2.6.2 Cellulose Fibers: Use cellulose fibers meeting the following requirements:

1. Fiber length .....0.25 inch [6.0 mm] (maximum)
2. Sieve Analysis
    a. Alpine Sieve Method
        Percent passing No. 100 [150 μm] sieve 60-80
    b. Ro-Tap Sieve Method
        Percent passing No. 20 [850μm] sieve..... 80-95
        Percent passing No. 40 [425μm] sieve..... 45-85
        Percent passing No. 100 [150μm sieve..... 5-40
3. Ash Content: ..... 18% non-volatiles (±5%)
4. pH:.....7.5 (±1.0)
5. Oil Absorption: .....5.0 (±1.0) (times fiber weight)
6. Moisture Content: .....5.0 (maximum)

Provide certified test results for each batch of fiber material indicating compliance with the above tests.

337-3 General Composition of Mixes.

337-3.1 General: Use a bituminous mixture composed of aggregate (coarse, fine, or a mixture thereof), asphalt rubber binder, and in some cases, fibers and/or hydrated lime. Size, uniformly grade and combine the aggregate fractions in such proportions that the resulting mix meets the requirements of this Section. The use of RAP material will not be permitted.

337-3.2 Specific Component Requirements by Mix:

337-3.2.1 FC-2:

337-3.2.1.1 Aggregates: In addition to the requirements of Section 901, meet the following coarse aggregate requirements. Use either crushed granite, crushed slag, or lightweight aggregates approved by the Engineer. Crushed limestone from the Oolitic formation may be used if it contains a minimum of 12% non-carbonate material as determined by FM 5-510 and the Engineer grants approval of the source prior to its use. Aggregates other than those listed above may be used if approved by the Engineer.

337-3.2.1.1.2 Asphalt Rubber: Use an ARB-12 asphalt rubber.

337-3.2.2 FC-3:

337-3.2.2.1 Aggregates: In addition to the requirements of Section 901, meet the following coarse aggregate requirements. Use either crushed gravel, crushed granite, crushed slag, or crushed limestone from the Oolitic formation as specified for use in FC-2. Aggregates other than those listed above may be used if approved by the Engineer.

In addition to the requirements of Section 902, meet the following fine aggregate requirements. Use crushed screenings or a combination of crushed screenings and local materials. Use crushed screenings composed of hard, durable particles resulting from crushing or processing the coarse aggregate as specified above. Screenings from other approved sources may be used provided that the total of these screenings along with silica sand or local materials does not exceed 40%. Ensure that not more than 20% by weight of the total aggregate used is silica sand or local materials defined in Section 902.

337-3.2.2.2 Asphalt Rubber: Use an ARB-5 asphalt rubber.

337-3.2.3 FC-5:

337-3.2.3.1 Aggregates: Use an aggregate blend which consists of either 100% crushed granite or 100% crushed Oolitic limestone.

In addition to the requirements of Section 901, meet the following coarse aggregate requirements. Use either crushed granite or crushed limestone. Use crushed limestone from the Oolitic formation, which contains a minimum of 12% non-carbonate material (as determined by FM 5-510), and has been approved for this use.

In addition to the requirements of Section 902, meet the following fine aggregate requirements. Use either crushed granite screenings, or crushed Oolitic limestone screenings for the fine aggregate.

337-3.2.3.2 Asphalt Rubber: Use an ARB-12 asphalt rubber.

337-3.2.3.3 Hydrated Lime: Add the lime at a dosage rate of 1.0% by weight of the total dry aggregate to mixes containing granite.

337-3.2.3.4 Fiber Stabilizing Additive: Add either mineral fibers at a dosage rate of 0.4% by weight of the total mix, or cellulose fibers at a dosage rate of 0.3% by weight of total mix.

337-3.2.4 FC-6:

337-3.2.4.1: Aggregates: Use coarse and fine aggregate components which also meet the aggregate requirements for an SP-9.5 or SP-12.5 Superpave mix as specified in Section 334.

In addition to the requirements of Section 901, meet the following coarse aggregate requirements. Use either crushed granite, crushed slag, crushed river gravel, lightweight aggregate (that has been approved for this use), or crushed limestone for the coarse aggregate component. Use crushed limestone from the Oolitic formation, which contains a minimum of 12% non-carbonate material (as determined by FM 5-510), and is approved for this use. In addition, other types of aggregates may be used if approved for this use by the Engineer.

In addition to the requirements of Section 902, meet the following fine aggregate requirements. Use crushed screenings or a combination of crushed screenings and local materials for the fine aggregate components. Use crushed screenings composed of hard,

durable particles resulting from the crushing or processing of coarse aggregate as specified above. In addition, screenings from other approved sources may be used provided that the total of these screenings (along with silica sand or local materials) does not exceed 40%.

337-3.2.4.2: Asphalt Rubber: Use an ARB-5 asphalt rubber.

337-3.3 Grading Requirements:

337-3.3.1 FC-2 and FC-3: Use a mixture with a gradation within the design range specified in Table 331-1.

337-3.3.2 FC-5: Use a mixture having a gradation at design within the ranges shown in Table 337-1.

Table 337-1
FC-5 Gradation Design Range

3/4 inch [19.00 mm]	1/2 inch [12.50 mm]	3/8 inch [9.50 mm]	No.4 [4.75 mm]	No.10 [2.00 mm]	No. 40 [425 µm]	No. 80 [180µm]	No. 200 [75 µm]
100	85-100	55-75	15-25	5-10	-	-	2-4

337-3.3.3 FC-6: Meet the design gradation requirements for a SP-9.5 Superpave mix passing below the restricted zone, or the design gradation requirements for a SP-12.5 Superpave mix passing above the restricted zone, as specified in Section 334.

337-4 Mix Design.

337-4.1 FC-2 and FC-5: The Department will design the FC-2 and FC-5 mixtures. Furnish materials and the appropriate information (source, gradation, etc.) as specified in 331-4.3. The Department will have two weeks to design the mix.

The Department will establish the design binder content for FC-2 within the following ranges based on aggregate type:

Aggregate Type	Binder Content % by weight of total mix
Crushed Granite	5.5-7.0
Crushed Slag	6.0-8.0
Crushed Limestone (Oolitic)	6.5-7.5
Lightweight	12.5-15.0

The Department will establish the design binder content for FC-5 within the following ranges based on aggregate type:

Aggregate Type	Binder Content
Crushed Granite	5.5 - 7.0
Crushed Limestone (Oolitic)	6.5 - 7.5

337-4.2 FC-3: Provide a mix design conforming to the requirements of 331-4.3. Submit data showing that the mix design meets the requirements of Table 331-2 using an ARB-5 meeting the requirements of Section 336.

337-4.3 FC-6: Provide a mix design conforming to the requirements of 334-4.2 for Traffic Level C unless otherwise designated in the plans. Develop the mix design using an ARB-5 meeting the requirements of Section 336.

337-5 Contractor's Quality Control.

Provide the necessary quality control of the friction course mix and construction in accordance with the applicable provisions of 331-5.2 for FC-2, FC-3 and FC-5, and 334-4.4 for FC-6. After the mix design has been approved, furnish the material to meet the approved mix design in accordance with the provisions of 331-4.4.2 and Table 331-3 for FC-2, FC-3 and FC-5, and 334-4.4 for FC-6. Calibrate the plant in accordance with 331-4.4.3 and Table 331-3.

The Engineer will monitor the spread rate periodically to ensure uniform thickness. Provide quality control procedures for daily monitoring and control of spread rate variability. If the spread rate varies by more than 5% of the spread rate set by the Engineer in accordance with 337-8, immediately make all corrections necessary to bring the spread rate into the acceptable range.

337-6 Acceptance of Mix.

337-6.1 Acceptance at the Plant: The bituminous mix will be accepted at the plant with respect to gradation and asphalt content in accordance with the applicable requirements of 331-6 for FC-2, FC-3 and FC-5, and 334-5 for FC-6, with the exception that the asphalt content of the mixture will be determined in accordance with FM 5-563, and the gradation will be determined in accordance with FM 1-T 030.

337-6.2 Acceptance on the Roadway: The FC-3 mix will be accepted on the roadway with respect to density in accordance with the applicable provisions of 330-10. There will be no density requirements for FC-2 and FC-5.

The FC-2, FC-3 and FC-5 mixtures will be accepted on the roadway with respect to surface tolerance in accordance with the applicable provisions of 330-12.

The FC-6 mix will be accepted on the roadway with respect to density and surface tolerance in accordance with the applicable provisions of 334-5.4.

337-6.3 Additional Tests: The provisions of 331-5.5 will apply to FC-2, FC-3 and FC-5. The provisions of 334-5.5 will apply to FC-6.

337-7 Special Construction Requirements

337-7.1 Hot Storage of FC-2 and FC-5 Mixtures: When using surge or storage bins in the normal production of FC-2 and FC-5, do not leave the mixture in the surge or storage bin for more than one hour.

337-7.2 Longitudinal Grade Controls for Open-Graded Friction Courses: On FC-2, do not use a longitudinal grade control (skid, ski, or traveling stringline). Use a joint matcher. On FC-5, use either longitudinal grade control (skid, ski or traveling stringline) or a joint matcher.

337-7.3 Temperature Requirements for FC-2:

337-7.3.1 Air Temperature at Laydown: Spread the mixture only when the air temperature, taken as the temperature in the shade away from artificial heat, is at or above 60ºF [15ºC].

337-7.3.2 Temperature of the Mixture: Heat and combine the asphalt rubber binder and aggregate in a manner which will produce a mixture having a temperature, when discharged from the plant, meeting the requirements of 330-6.3. Meet all the requirements of 330-9.1.2 at the roadway.

337-7.4 Compaction of FC-2: Perform only seal rolling using a tandem steel-wheel roller. Do not allow the weight of the steel-wheel roller to exceed 135 lb/in (PLI) [2.4 kg/mm] of drum width.

Non SI Units

$$\text{PLI} = \frac{\text{Total Weight of Roller (pounds)}}{\text{Total Width of Drums (inches)}}$$

SI Units

$$\text{kg}/\text{mm} = \frac{\text{Total Weight of Roller (kilograms)}}{\text{Total Width of Drums (millimeters)}}$$

Perform seal rolling with a single coverage and with a nominal amount of overlap. Where the lane being placed is adjacent to a previously laid mat, do not pinch the longitudinal joint with the roller on the cold mat. Pinch the longitudinal joint with the roller on the mat being rolled, overlapping onto the cold mat by no more than 3 inches [75 mm]. Never allow a roller on the mat after completing the seal rolling.

337-7.5 Temperature Requirements for FC-3:

337-7.5.1 Air Temperature at Laydown: Spread the mixture only when the air temperature, taken in the shade away from artificial heat, is at or above 45ºF [7ºC].

337-7.5.2 Temperature of the Mixture: Heat and combine the asphalt rubber binder and aggregate in a manner which will produce a mixture having a temperature, when discharged from the plant, meeting the requirements of 330-6.3. Meet all requirements of 330-9.1.2 at the roadway.

337-7.6 Temperature Requirements for FC-5:

337-7.6.1 Air Temperature at Laydown: Spread the mixture only when the air temperature (the temperature in the shade away from artificial heat) is at or above 65ºF [18ºC].

337-7.6.2 Temperature of the mix: Heat and combine the asphalt rubber binder and aggregate in a manner to produce a mix having a temperature, when discharged from the plant, meeting the requirements of 330-6.3. Meet all the requirements of 330-9.1.2 at the roadway.

337-7.7 Compaction of FC-5: Provide 2, 8-10 ton static steel-wheeled rollers. (Any variation of this equipment requirement must be approved by the Engineer.) The Engineer will

establish the appropriate rolling pattern for the pavement. If the rollers crush the aggregate, use a tandem steel-wheel roller weighing not more than 135 lb/in (PLI) [2.4 kg/mm] of drum width as determined in accordance with 337-7.4.

337-7.8. Temperature Requirements for FC-6:

337-7.8.1 Air Temperature at Laydown: Spread the mixture only when the air temperature (the temperature in the shade away from artificial heat) is at or above 45ºF [7ºC].

337-7.8.2 Temperature of the mix: Heat and combine the asphalt rubber binder and aggregate in a manner to produce a mix having a temperature, when discharged from the plant, meeting the requirements of 330-6.3. Meet all the requirements of 330-9.1.2 at the roadway.

337-7.9 Prevention of Adhesion: To minimize adhesion to the drum during the rolling operations, the Contractor may add a small amount of liquid detergent to the water in the roller.

At intersections and in other areas where the pavement may be subjected to cross-traffic before it has cooled, spray the approaches with water to wet the tires of the approaching vehicles before they cross the pavement.

337-7.10 Transportation Requirements of Friction Course Mixtures: Cover all loads of friction course mixtures with a tarpaulin.

337-8 Thickness of Friction Courses.

The thickness of the friction courses will be based on the spread rate set by the Engineer. Plan quantities are based on the maximum spread rate within the ranges shown below. Pay quantities may be less, based on the spread rate set by the Engineer.

337-8.1 Spread Rate for FC-2: For FC-2 with granite, oolitic limestone, or other conventional aggregate, the Engineer will set the spread rate within the range of 50 - 60 lb/yd^2 [27 - 34 kg/m^2]. For FC-2 with lightweight aggregate, the Engineer will set the spread rate within the range of 28 - 35 lb/yd^2 [15 - 19 kg/m^2].

337-8.2 Spread rate for FC-3: The Engineer will set the spread rate within the range of 100 - 110 lb/yd^2 [54 - 60 kg/m^2].

337-8.3 Spread Rate of FC-5: The Engineer will set the spread rate within the range of 70 - 80 lb/yd^2 [38 - 44 kg/m^2].

337-8.4 Spread Rate of FC-6: The Engineer will set the spread rate within the range of 150 - 160 lb/yd^2 [80 - 88 kg/m^2].

337-9 Special Equipment Requirements for FC-5.

337-9.1 Fiber Supply System: Use a separate feed system to accurately proportion the required quantity of mineral fibers into the mixture in such a manner that uniform distribution is obtained. Interlock the proportioning device with the aggregate feed or weigh system to maintain the correct proportions for all rates of production and batch sizes. Control the proportion of fibers to within plus or minus 10% of the amount of fibers required. Provide flow indicators or sensing devices for the fiber system, interlocked with plant controls so that the mixture production will be interrupted if introduction of the fiber fails.

When a batch plant is used, add the fiber to the aggregate in the weigh hopper or as approved and directed by the Engineer. Increase the batch dry mixing time by 8 to 12 seconds, or as directed by the Engineer, from the time the aggregate is completely emptied into the

pugmill. Ensure that the fibers are uniformly distributed prior to the addition of asphalt rubber into the pugmill.

When a drum-mix plant is used, add and uniformly disperse the fiber with the aggregate prior to the addition of the asphalt rubber. Add the fiber in such a manner that it will not become entrained in the exhaust system of the drier or plant.

337-9.2 Hydrated Lime Supply System: For FC-5 mixes containing granite, use a separate feed system to accurately proportion the required quantity of hydrated lime into the mixture in such a manner that uniform coating of the aggregate is obtained prior to the addition of the asphalt rubber. Add the hydrated lime in such a manner that it will not become entrained in the exhaust system of the drier or plant. Interlock the proportioning device with the aggregate feed or weigh system to maintain the correct proportions for all rates of production and batch sizes and to ensure that all mixture produced is properly treated with hydrated lime. Control the proportion of hydrated lime to within plus or minus 10% of the amount of hydrated lime required. Provide and interlock flow indicators or sensing devices for the hydrated lime system with plant controls so that the mixture production will be interrupted if introduction of the hydrated lime fails. The addition of the hydrated lime to the aggregate may be accomplished by Method (A) or (B) as follows:

337-9.2.1 Method (A) - Dry Form: Add hydrated lime in a dry form to the mixture according to the type of asphalt plant being used.

When a batch plant is used, add the hydrated lime to the aggregate in the weigh hopper or as approved and directed by the Engineer. Increase the batch dry mixing time by eight to twelve seconds, or as directed by the Engineer, from the time the aggregate is completely emptied into the pugmill. Uniformly distribute the hydrated lime prior to the addition of asphalt rubber into the pugmill.

When a drum-mix plant is used, add and uniformly disperse the hydrated lime to the aggregate prior to the addition of the asphalt rubber. Add the hydrated lime in such a manner that it will not become entrained in the exhaust system of the drier or plant.

337-9.2.2 Method (B) - Hydrated Lime/Water Slurry: Add the required quantity of hydrated lime (based on dry weight) in a hydrated lime/water slurry form to the aggregate. Provide a solution consisting of hydrated lime and water in concentrations as directed by the Engineer. Use a plant equipped to blend and maintain the hydrated lime in suspension and to mix it with the aggregates uniformly in the proportions specified.

337-10 Method of Measurement.

The quantity to be paid for will be the weight, in tons [metric tons], as determined in accordance with 320-2 (including provisions for the automatic recordation system). The pay quantity will be based on the average spread rate for the project, limited to a maximum of 105% of the spread rate set by the Engineer in accordance with 337-8.

337-11 Basis of Payment.

Price and payment will be full compensation for all the work specified under this Section, including the cost of the asphalt rubber (asphalt cement, ground tire rubber, anti-stripping agent, blending, and handling), as well as fiber stabilizing additive and hydrated lime (if required).

Payment will be made under:

Item No. 337- 7- Asphaltic Concrete Friction Course -per ton.
Item No. 2337- 7- Asphaltic Concrete Friction Course -per metric ton.

SPECIAL PROVISIONS

SCOPE OF WORK – INTENT OF CONTRACT.
(REV 8-19-09) (FA 8-24-09) (1-22)

ARTICLE 4-1 is expanded by the following:

The Improvements under this Contract consist of sidewalk construction, utility relocation, safety improvements, and raising the profile of Alf Coleman road with associated grading and drainage improvements.

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The summary of pay items for this project is listed in the Plans.

APPENDICES

TECHNICAL SPECIAL PROVISIONS

The following Technical Special Provisions are included as part of this Specifications Package.

- POLYVINYL CHLORIDE (PVC) GRAVITY SEWER PIPE
- POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS/FIXTURES
- HDPE PIPE
- UTILITY STRUCTURES
- CONCRETE PROTECTIVE COATING – SPECTRASHIELD
- VALVES AND ACCESSORIES
- PIPING SPECIALTIES

SECTION T1050.1
POLYVINYL CHLORIDE (PVC) GRAVITY SEWER PIPE

T1050.1-1 - GENERAL

T1050.1-1.1 Scope of Work

A. The CONTRACTOR shall furnish all labor, materials, equipment and incidentals required, and install polyvinyl chloride ASTM D3034 (PVC) gravity sewer pipe and appurtenances as shown on the Drawings and as specified herein.

T1050.1-1.2 Submittals

A. Submittals during construction shall be made in accordance with Section 01300.

B. The CONTRACTOR shall submit to the ENGINEER not less than twenty (20) calendar days after the date of the Notice to Proceed, a list of materials to be furnished, the names of suppliers and an expected schedule of delivery of materials to the site.

C. At least 3 days prior to beginning construction of any gravity sewer section or any portion of the system the CONTRACTOR must submit to the ENGINEER for review "cut-sheets" for that portion to be constructed. The type of the "cut sheets" required shall be presented to the CONTRACTOR by the ENGINEER at the preconstruction meeting. The CONTRACTOR shall supply all "cut sheets".

D. Furnish in duplicate to the ENGINEER, prior to each shipment of pipe, sworn certificates that all tests and inspections required by the Specifications under which the pipe is manufactured have been satisfied.

E. The pipe MANUFACTURER shall inspect all pipe joints for out-of-roundness and pipe ends for squareness. The MANUFACTURER shall furnish to the ENGINEER a notarized affidavit stating all pipe meets the requirements of ASTM, ASCE, ANSI, etc., these Specifications, and the joint design with respect to square ends and out-of-round joint surfaces.

T1050.1-1.3 Reference Standards

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

1. ASTM D1784 - Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
2. ASTM D2321 - Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe.
3. ASTM D3034 - Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
4. ASTM D3189 - Method for Rubber - Evaluation of Solution BR (Polybutadiene Rubber).
5. ASTM D3212 - Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
6. ASTM F477 - Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
7. ASTM F679 - Specification for Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings.
8. ASTM F758 - Specification for Smooth-Wall Poly (Vinyl Chloride) (PVC) Plastic Underdrain Systems for Highway, Airport, and Similar Drainage.

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

T1050.1-1.4 Quality Assurance

A. All PVC pipe shall be from a single MANUFACTURER. The supplier shall be responsible for the provisions of all test requirements specified in ASTM D3034. All tests, hydrostatic and material, if not performed by the MANUFACTURER as part of the MANUFACTURER standard quality control procedures, are to be performed by an independent laboratory at the expenses of the MANUFACTURER. In addition, all PVC pipe to be installed under this Contract may be inspected at the plant for compliance with these specifications by an independent testing laboratory provided by the OWNER. The CONTRACTOR shall require the MANUFACTURER's cooperation in these inspections. The cost of plant inspection of all pipe approved for this contract shall be borne by the OWNER.

B. Inspections of the pipe may also be made by the ENGINEER or other representatives of the OWNER after delivery. The pipe shall be subject to rejection at any time on account of failure to meet any of the Specification requirements, even though sample pipes may have been accepted as satisfactory at the place of manufacture. Pipe rejected after delivery shall be marked for identification and shall be removed from the job at once.

T1050.1-1.5 Delivery, Storage and Handling

A. Care shall be taken in shipping, handling and laying to avoid damaging the pipe and fittings. Extra care will be necessary during cold weather construction. Any pipe damaged in shipment shall be replaced as directed by the ENGINEER.

B. Any pipe or fitting showing a crack or which has received a blow that may have caused an incipient fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work.

C. While stored, pipe shall be adequately supported from below at not more than 3-ft intervals to prevent deformation. Pipe shall not be stacked higher than 6-ft. Pipe and fittings shall be stored in a manner which will keep them at ambient outdoor temperatures and out of the sunlight (or delivered to the site so that no pipe is exposed to the sunlight for more than (60) days). Temporary shading as required to meet this requirement shall be provided. Simple covering of the pipe and fittings which allows temperature buildup when exposed to direct sunlight will not be permitted. Pipe shall be protected from sunlight or weather conditions in accordance with the MANUFACTURER's recommendations.

T1050.1-1.6 Inspection, Test Reports, Markings and Submittals

A. All pipe and accessories to be installed under this Contract shall be inspected and tested at the place of manufacture by the MANUFACTURER as required by the Standard Specifications to which the material is manufactured.

B. Each length of pipe shall be subject to inspection and approval at the factory, point of delivery, and site of work. Sample of pipe to be tested shall be selected at random by the ENGINEER or the testing laboratory and shall be delivered by the CONTRACTOR to the testing laboratory approved by the ENGINEER.

C. When the specimens tested conform to applicable standards, all pipe represented by such specimens shall be considered acceptable based on the test parameters measured. Copies of test reports shall be submitted to the ENGINEER before the pipe is installed in the project. Acceptable pipe will be stamped with an appropriate monogram under the supervision of the testing laboratory.

D. In the event that any of the test specimens fail to meet the applicable standards, all pipe represented by such tests shall be subject to rejection. The CONTRACTOR may furnish two additional test specimens from the same shipment or delivery for each specimen that failed and the pipe will be considered acceptable if all of these additional specimens meet the requirements of the applicable standards.

E. Pipe that has been rejected by the ENGINEER shall be removed from the site of the work by the CONTRACTOR and replaced with pipe which meets these specifications.

F. Other testing requirements specific to the type of pipe are included under the appropriate paragraph in Part 2, below.

G. All 6-inch through 12-inch pipe and fittings shall be marked per Section No. 12 "Marking" of ASTM D3034. All 18-inch and 27-inch pipe and fittings shall be marked per Section 11 "Marking" of ASTM F679. For all pipe (6-inch through 12-inch), the MANUFACTURER's code including year, month, day, shift, plant and extruder of manufacture shall be clearly marked on each pipe section.

H. Prior to shipment of the pipe and fittings to the project site, the CONTRACTOR shall submit to the ENGINEER, test reports and certifications as described below duly certified by the MANUFACTURER's testing facility or an independent certified testing laboratory demonstrating full compliance with the applicable ASTM specifications described above. Certification from the supplier is NOT acceptable.

An original plus two (2) copies of the following shall be submitted to the ENGINEER:

1. The name, address and phone number of the pipe and fittings MANUFACTURER and the location of the plant at which they will be manufactured.
2. Certification and Certified Test Reports that each LOT of pipe has been manufactured, sampled and tested per Section 8 "Test Methods" of ASTM D3034 for 6-inch through 15-inch diameter and Section 11 "Marking" of ASTM F679 for 18-inch through 27-inch diameter pipe. The OWNER shall be provided in writing with the means to cross reference the markings with the certification and test reports (i.e., date of manufacture, lot number and shift number, etc.). If this information is marked on the pipe in a code, the markings shall be decoded in writing. A letter of certification from the fittings MANUFACTURER shall be provided for fittings stating compliance with ASTM D3034 for 6-inch through 15-inch diameter and with ASTM F679 for 18-inch through 27-inch.

T1050-2 - PRODUCTS

T1050.1-2.1 Polyvinyl Chloride (PVC) Pipe and Fittings

A. PVC gravity pipe and fittings 6-inches through 12-inches nominal diameter, shall be solid wall and shall be type PSM, PVC SDR 35 with full diameter dimensions and shall conform to ASTM D3034, for sizes 4-inch through 15-inch and shall conform to ASTM F679 for sizes 18-inch through 27-inch. Straight pipe shall be furnished in lengths of not more than 13-feet. Saddle wyes will not be allowed. All PVC shall have a cell classification of 12454 B or C.

B. **For depths of cover through 15 feet, a minimum wall thickness of SDR-35 is required. For depths of cover greater than 15-feet, a minimum wall thickness of SDR-26 is required**. Fittings shall be either integrally cast (factory molded) or factory solvent welded and a separate section from the mainline pipe. SDR 26 fittings shall be

used with SDR 26 pipe and SDR 35 fittings shall be used with SDR 35 pipe. At any time in a manhole run the depth of cover **exceeds 15-ft, SDR 26 shall be used**.

C. The supplier shall be responsible for the performance of all inspection and testing requirements specified in ASTM D-3034, ASTM D-3212, D3189, F679 and F789, as applicable. Complete records of inspections, examinations and tests shall be kept and submitted to the ENGINEER. The ENGINEER reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure that materials and services conform to the prescribed requirements.

D. The pipe shall be joined with an integral bell and spigot push-on type gasketed joints. Each integral bell joint shall consist of a formed bell with an integral wall section of a solid cross-section elastomeric gasket securely locked in place to prevent displacement during assembly. Gaskets shall conform to ASTM F-477. Joints shall permit contraction, expansion and settlement, and yet maintain a watertight connection. Joints shall be tested in accordance with ASTM F477, D3139 or D3212.

E. PVC sewer fittings shall conform to the requirements of ASTM D 3034 specification. Fittings in sizes through 8 inches shall be molded in one piece with elastomeric joints and minimum socket depths as specified in Sections 6.2 and 7.3.2 of the ASTM D 3034 specification. Gaskets for elastomeric joints shall be molded and shall conform to ASTM F 477 specification. Fittings 10 inches and larger shall be molded or fabricated from pipe meeting ASTM D 3034 with MANUFACTURER's standard pipe bells and gaskets.

F. All fittings and accessories shall be furnished by one pipe supplier and shall have bell and/or spigot configurations compatible with the pipe.

T1050.1-2.2 Identification

A. Each length of pipe and each fitting shall be marked with the name of the MANUFACTURER, size, and class. All gaskets shall be marked with the name of the MANUFACTURER, size, and proper insertion directions. A color sample of the PVC pipe and fittings shall be submitted to the ENGINEER for approval prior to fabrication of any pipe and accessories

B. All below ground polyvinyl chloride pipe and fittings shall have an identification color code.

1. Gravity sewer pipe and service laterals - Green, similar to Kop Coat No. 0336.

C. All polyvinyl chloride pipe shall have identification marking tape similar to the color listed above.

T1050.1-3 EXECUTION

T1050.1-3.1 Laying Polyvinyl Chloride (PVC) Pipe and Fittings

A. Polyvinyl Chloride (PVC) gravity sewer pipe shall be laid in accordance with the instructions of the MANUFACTURER and as specified herein. As soon as the excavation is completed to normal grade, as indicated on the Drawings, the CONTRACTOR shall immediately bed the pipe as specified in FDOT Standard Specification section 125 in the trench, to conform accurately to the line and grade indicated on the Drawings. Embedment of pipe shall conform to the details shown on the Drawings and ASTM D-2321, "Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe." Bell holes shall be excavated so that after installation only the pipe barrel shall bear upon the trench bottom. Proper

selection and placement of bedding and backfill materials are necessary to minimize deflection of the pipe diameter. No blocking under the pipe will be permitted.

B. No single piece of pipe shall be laid unless it is generally straight. The centerline of the pipe shall not deviate from a straight line drawn between the centers of the openings at the ends of the pipe by more than 1/4-inch per foot of length. If a piece of pipe fails to meet this requirement check for straightness, it shall be rejected and removed from the site. Laying instructions of the MANUFACTURER shall be explicitly followed

C. The CONTRACTOR shall use care in handling and installing pipe and fittings. Storage of pipe on the job site shall be done in accordance with the pipe MANUFACTURER's recommendation and with approval of the ENGINEER. Under no circumstances shall pipe or fittings be dropped either into the trench or during unloading. The interior of the pipe shall be kept clean of oil, dirt and foreign matter, and the machined ends and couplings shall be wiped clean immediately prior to jointing

D. The CONTRACTOR shall use a PVC pipe cutter where necessary to cut and machine all PVC pipe in the field. A "full insertion mark" shall be provided on each field cut pipe end. Field-cut pipe shall be beveled with a beveling tool made especially for plastic pipe. Bevels shall be in accordance with the MANUFACTURER's requirements.

E. Each length of pipe and each fitting shall be marked with the nominal size, the SDR designation, the name of the MANUFACTURER or his trademark, and the date of manufacture.

F. Rubber gaskets shall be marked with MANUFACTURERs identification sizes and proper insertion direction.

G. Pipe stubs for all future connections shall be not less than 26-ft. in length unless otherwise shown on the Drawings. Install watertight plugs where required.

H. The laying of the pipe in finished trenches shall begin at the lowest point, with the spigot ends pointing in the direction of flow. The interior of the pipe and the jointing seal shall be free from sand, dirt, and trash before installing in the line. Extreme care must be taken to keep the bells of the pipe free from dirt and rocks so joints may be properly assembled without overstressing the bells. The jointing of the pipe shall be done in strict accordance with the pipe MANUFACTURER's instructions and shall be done entirely in the trench. Tolerances are 1-inch on grade or 5 percent of the design slope, whichever is smaller, and 6-inches on line in any section between manholes. Deviations exceeding these tolerances shall be grounds for rejection of the line.

I. All pipe shall be sound and clean before installation. When installation is not in progress, including lunchtime, the open ends of the pipe shall be closed by watertight plug or other approved means to prevent foreign material from entering the pipe. Good alignment shall be preserved during installation. The deflection of joints shall not exceed that recommended by MANUFACTURER. Fittings for service laterals, in addition to those shown on the plans, shall be provided, if required, in crossing utilities which may be encountered upon opening the trench.

J. The ENGINEER may examine each bell and spigot end to determine whether any preformed joint has been damaged prior to installation. Any pipe having defective joint surfaces shall be rejected, marked as such, and immediately removed from the job site.

K. Each length of the pipe shall be shoved home against the pipe previously laid and held securely until enough backfill has been placed to hold the pipe in place. Joints shall not be "pulled" or "cramped".

L. Before any joint is made, the pipe shall be checked to assure that a close joint with the next adjoining pipe has been maintained and that the inverts are matched and conform

to the required grade. The pipe shall not be driven down to grade by striking it.

M. Precautions shall be taken to prevent flotation of the pipe in the trench.

N. When moveable trench bracing such as trench boxes, moveable sheeting, shoring or plates are used to support the sides of the trench, care shall be taken in placing and moving the boxes or supporting bracing to prevent movement of the pipe, or disturbance of the pipe bedding and the screened gravel backfill. Trench boxes, moveable sheeting, shoring or plates shall not be allowed to extend below mid-diameter of the pipe. As trench boxes, moveable sheeting, shoring or plates are moved, screened gravel shall be placed to fill any voids created and the screened gravel and backfill shall be re-compacted to provide uniform side support for the pipe.

O. Laser shall be used for maintaining pipe alignment.

T1050.1-3.2 Jointing Polyvinyl Chloride (PVC) Sewer Pipe and Fittings

A. PVC push-on sewer pipe and fittings shall be jointed in accordance with the recommendations of the latest ASTM Standards and detailed instructions of the MANUFACTURER. The pipe MANUFACTURER shall furnish information and approve the installation of at least the first ten (10) joints of each pipe laying crew. The pipe MANUFACTURER shall visit the site on a quarterly basis to supervise and inspect and certify installation.

B. All manhole connections shall be as shown on the Drawings except that concrete and mortared connections shall be equipped with an integral O-ring or other sealant such that a positive watertight seal is established.

T1050.1-3.3 Existing Pipe Removal

Do not proceed with the removal of any existing piping, fittings, valves, hydrants or appurtenances without specific written approval of the Engineer. Any piping, fittings, valves, hydrants or appurtenances removed without proper authorization, which are necessary for the operation of the existing facilities or of the new facilities, shall be immediately replaced to the satisfaction of the Engineer at the Contractor's expense. All existing facilities not required to be reused or retained (Salvaged) shall become the property of the Contractor immediately upon removal from their present locations. Remove such material from the site at his own expense and do not reuse.

T1050.1-3.4 Existing Pipes Place Out of Service

Cap open ends of out of service underground utilities which are indicated to remain in place. Provide sufficiently strong closures to withstand hydrostatic or earth pressure which may result after ends of out of service utilities have been closed. Cap open ends of concrete or masonry utilities with not less than eight inch thick brick masonry bulkheads. Cap open ends of conduit with plastic plugs, or other acceptable methods suitable for size and type material being closed. Wood plugs are not acceptable.

T1050.1-3.5 Test for Gravity Sewer - General

A. Gravity sewers shall be required to pass a leakage test before acceptance. Leakage tests may be by the infiltration test or exfiltration test, depending on the level of the groundwater table or by the low-pressure air test all as described below.

B. Water infiltration or exfiltration or air loss, as applicable, rates will be measured by the ENGINEER. The tests shall be performed by the CONTRACTOR under the observation of the ENGINEER.

C. The groundwater height above the installed pipe shall be determined by a system of monitoring wells. CONTRACTOR shall submit his method of establishing the groundwater height to the ENGINEER for approval prior to commencing testing.

D. Sewers will be checked by the ENGINEER prior to final restoration or the placing of asphalt to determine if pipe displacement has occurred. The CONTRACTOR shall give a minimum of 48 hours notice to the ENGINEER and furnish all necessary test equipment and labor required to allow the ENGINEER to perform this check. The CONTRACTOR shall also be responsible for pumping the system down and maintaining the pumped down condition for all pump station service areas. The equipment shall include but not be limited to the following:

1. Hand held spotlight minimum 300,000 candle power and a power source for the light.
2. Appropriate ladders necessary to allow access to all manholes.
3. Mirrors
4. All equipment and manpower necessary to comply with confined space entry requirements (gas sensors, blowers, safety harness, etc.)

   On pipelines under 12-inch in diameter the light shall be flashed down the center of the pipe from the upstream manhole and viewed from the downstream manhole. Measurements shall be taken at the top, each side and the bottom to determine the moon designation of the pipeline (example 8-inches - 1-inches out of alignment 7/8 moon, 2-inches out of alignment 3/4 moon, etc.). On pipelines 12-inches in diameter and larger the light shall be held at the upstream manhole and will be placed at the top, each side and bottom to allow for measurements to be taken in the same manner as for the pipelines under 12-inches in diameter. Pipelines under 12-inches in diameter or greater which have a 7/8 moon or less shall be televised and recorded on video tape (as required in other sections of this specification) to verify the extent of the misalignment to determine in the opinion of the ENGINEER/OWNER if a point repair or relaying of the pipeline is necessary prior to any further restoration work being performed. The cost to maintain all traffic and roadways until a determination as to the acceptability of the pipeline is made shall be at the expense of the CONTRACTOR in addition to the actual cost of the repair.

E. **Allowable Deflection Test**

1. Deflection shall be measured with a rigid mandrel (Go/No-Go) device cylindrical in shape and constructed with a minimum of 9 or 10 evenly spaced arms or prongs. Drawings of the mandrel with complete dimensions shall be submitted to the ENGINEER for each diameter of pipe to be tested.
2. Pipe deflection shall be measured not less than 90 days after the backfill or permanent pavement base has been completed as specified and shall not exceed 5 percent of the base inside diameter of the pipe as listed in the following table.

	SDR-35		SDR-26	
Nominal Size (Inches)	Base Inside Diameter (Inches)	5% Deflection Mandrel (Inches)	Base Inside Diameter (Inches)	5% Deflection Mandrel (Inches)

8	7.665	7.28	7.488	7.11
10	9.563	9.08	9.342	8.87
12	11.361	10.79	11.102	10.55
15	13.898	13.20	13.575	12.90
	Type T-1		Type T-2	
18	16.976	16.13	17.054	16.20
21	20.004	19.01	20.098	19.09
24	22.480	21.36	22.586	21.46
27	25.327	24.06	25.446	24.17

3. If the CONTRACTOR performs the deflection testing rather than employing an approved test lab, the following shall apply:

   The CONTRACTOR shall furnish the rigid mandrel, labor, materials and equipment necessary to perform the tests as approved by the ENGINEER. The mandrel shall be pulled through by Hand or a Hand operated reel through all sewer lines in the presence of the ENGINEER. Prior to performing the deflection tests, the CONTRACTOR shall submit to the ENGINEER certification that the minimum 9-arm mandrels are preset as stated above. Each mandrel shall be engraved with the following:

   Serial Number
   Nominal pipe diameter
   Either "ASTM D3034", year and either "SDR-35" or "SDR-26"
   or "ASTM F679", year and either "Type T-1" or "Type T-2"
   % deflection as stated above.

4. If the mandrel fails to pass any section of pipe, the CONTRACTOR shall excavate to the point of excess deflection and carefully compact around the point where excess deflection was found at no additional cost to the OWNER. After the permanent pavement base has been re-compacted and resealed, the line shall be retested. If the mandrel fails to pass a second time, the section shall be replaced and retested. Re-rounding is NOT permitted.

F. The CONTRACTOR shall repair all visible leaks in manholes even though the leakage test requirements are met.

G. The ends of branches, laterals, tees, wyes, and stubs to be included in a test section shall be plugged to prevent water or air leakage. All plugs shall be secured to prevent blowout due to internal pressure. A test section is defined as the length of sewer between manholes.

T1050.1-3.6 Leakage Test – Infiltration Method

A. The water infiltration test shall not be considered a valid leakage test unless the top surface of the groundwater level is at least 4-feet or more above the pipe crown during the test measurement. The rate of infiltration of water into the sewers, including manholes and appurtenances, shall not exceed 200 gallons per day per inch diameter per mile of sewer. In the event groundwater does not submerge the pipe as specified,

the CONTRACTOR shall conduct an exfiltration test described hereinafter.

B. A visual inspection and an infiltration test will be conducted on all completed sewers 30-inches or more when they are submerged by groundwater as specified above. The CONTRACTOR shall provide facilities to stop inflow from adjacent sections of sewer and to provide pondage to permit measurement of infiltration. Visible leaks, defective joints, and defective pipe shall be satisfactorily replaced.

T1050.1-3.7 Leakage Test – Exfiltration Method

A. Sewers not submerged by groundwater shall be tested for exfiltration or, if approved, by low-pressure air method. The ENGINEER reserves the right to waive the exfiltration test on any section of sewer based on his evaluation of the results of previous tests.

B. The hydrostatic head for test purposes shall be 4-feet or more above the sewer crown at the upstream end. Any arrangement of testing equipment which will provide observable and accurate measurement of water leakage under the specified conditions will be permitted. The rate of exfiltration of water out of the sewers, including manholes and appurtenances, shall not exceed 200 gallons per day per inch diameter per mile of sewer. Visible leaks, defective joints, and defective pipe shall be satisfactorily replaced.

C. The sewer test section may be filled 24 hours prior to time of exfiltration testing, if desired, to permit normal absorption into the sewers walls to take place.

T1050.1-3.8 Leakage Test – Low Pressure Air Method (Preferred Method)

A. **Test Procedure.** The following test procedures shall be used in making each test:

1. The section of sewer line to be tested shall be flushed and cleaned prior to conducting the low-pressure air test to clean out any debris, wet the pipe, and produce more consistent results.
2. Isolate the section of sewer line to be tested by means of inflatable stoppers or other suitable test plugs. One of the plugs shall have an inlet tap, or other provision for connecting a hose to a portable air source.
3. If the test section is below the groundwater level, determine the height of the groundwater above the spring-line of the pipe at each end of the test section and compute the average. For every foot of groundwater above the pipe spring-line, increase the gauge test pressure by 0.43 pounds per square inch.
4. Connect the air hose to the inlet tap and a portable air source. The air equipment shall consist of necessary valves and pressure gauges to control the rate at which air flows into the test section and to enable monitoring of the air pressure within the test relief device to prevent the possibility of loading the test section with the full capacity of the compressor.
5. Add air slowly to the test section until the pressure inside the pipe is raised to 4.0 psig greater than the average back pressure of any groundwater that may be over the pipe.
6. After a pressure of 4.0 psig is obtained, regulate the air supply so that the pressure is maintained between 3.5 and 4.0 psig (above the average groundwater back pressure) for a period of two-minutes to allow the air temperature to stabilize in equilibrium with the temperature of the pipe walls.

7. Determine the rate of air loss by the time pressure-drop method. After the two-minute air stabilization period, disconnect the air supply and adjust the pressure to 3.5 psig above the average to drop from 3.5 psig to 2.5 psig shall be determined by means of a stopwatch and this time interval will be compared to the required time in the tables to determine if the rate of air loss is within the allowable time limit. If the time is equal to or greater than the times indicated in the tables, the pipeline shall be deemed acceptable.
8. Defective joints, fittings and pipe shall be satisfactorily replaced.

B. The pipe shall be tested between adjacent manholes. The test time for the air pressure to drop the specified one pound shall be as listed below:

Pipe Diameter "D" in Inches

Length of Test Sec. "L" (ft.)	8	10	12	15	18	21	24
25	0.18	0.28	0.40	1.02	1.29	2.01	2.38
50	0.35	0.55	1.19	2.04	2.58	4.03	5.17
75	0.53	1.23	1.59	3.06	4.27	6.04	7.55
100	1.11	1.50	2.38	4.08	5.56	8.05	10.39
125	1.28	2.18	3.18	5.09	7.26	9.55	11.20
150	1.46	2.45	3.58	6.11	8.30	9.55	11.20
175	2.03	3.13	4.37	7.05	8.30	9.55	11.20
200	2.21	3.40	5.17	7.05	8.30	9.55	11.20
225	2.38	4.08	5.40	7.05	8.30	9.55	11.20
250	2.56	4.35	5.40	7.05	8.30	9.55	11.20
275	3.14	4.43	5.40	7.05	8.30	9.55	11.20
300	3.31	4.43	5.40	7.05	8.30	9.55	11.20
325	3.47	4.43	5.40	7.05	8.30	9.55	11.20
350	3.47	4.43	5.40	7.05	8.30	9.55	11.20
400	3.47	4.43	5.40	7.05	8.30	9.55	11.20
425	3.47	4.43	5.40	7.05	8.30	9.55	11.20
450	3.47	4.43	5.40	7.05	8.30	9.55	11.20
475	3.47	4.43	5.40	7.05	8.30	9.55	11.20
500	3.47	4.43	5.40	7.05	8.30	9.55	11.20

C. For sewer diameter between 27-inches and 36-inches inclusive, the pipeline may be tested between adjacent manholes, or segmentally. The test time shall be in accordance with the following formula.

$$T = .00493 (D \times D) L$$

where:

T= Test Time, Seconds.
D = Diameter, Inches, L = Length of test Section, Feet.

T1050.1-3.9 Final Sewer Cleaning

A. Prior to final acceptance and final manhole-to-manhole inspection of the sewer system by the ENGINEER, flush and clean all parts of the system. Remove all accumulated construction debris, rocks, gravel, sand, silt, and other foreign material from the sewer system at or near the closest downstream manhole. If necessary, use mechanical rodding or bucketing equipment.

B. Upon the ENGINEER's final manhole-to-manhole inspection of the sewer system, if any foreign matter is still present in the system, re-flush and clean the section and portions of the lines as required.

T1050.1-3.10 Vacuum Test of Manhole/Wetwells

A. Pretest manhole/wetwells after connections have been completed but before backfilling. Results derived from this test will allow time for necessary repairs to be completed before further construction proceeds and hinders such repairs.

B. Plug all manhole/wetwells inverts and lift holes. Inverts shall be plugged using suitably-sized pneumatic or mechanical pipeline plugs. The plugs shall be placed a minimum of 6-inches beyond the manhole/wetwells wall to prevent temporary sealing of the inverts. Follow all MANUFACTURER'S recommendations and warnings for proper and safe installation of such plugs. Make sure such plugs are properly rated for the pressures required for the test. The standard test of 10-inch Hg. (mercury) is equivalent to approximately 5 psig (0.3 bar) back pressure. Unless such plugs are mechanically restrained, it is recommended that the plugs used have a two-times (2X) safety factor or a minimum 10 psig (0.7 bar) back pressure usage rating. Brace inverts if lines entering if lines entering the manhole/wetwells have not been backfilled to prevent pipe from being dislodged and pulled into the manhole/wetwells.

C. Install the vacuum tester head assembly at the top access point of the manhole, preferably the ring area (Figures A and B). Adjust the cross brace to insure that the inflatable sealing element inflates and seals against the straight top section of the manhole/wetwells structure.

D. Attach the vacuum pump assembly to the proper connection on the test head assembly. Make sure the vacuum inlet/outlet valve is in the closed position.

E. Following all safety precautions and MANUFACTURER'S instructions, inflate sealing element to the recommended maximum inflation pressure.

F. Start the vacuum pump assembly engine and allow preset RPM to stabilize.

G. Open the inlet/outlet ball valve and evacuate the manhole to 10-inch Hg. (0.3 bar).

H. Close vacuum inlet/outlet ball valve, disconnect vacuum pump, and monitor vacuum for the specified time period (see table below). If the vacuum does not drop in excess of 1-inch Hg. over the specified time period, the manhole is considered acceptable and passes the test. If the manhole fails the test, identify the leaking areas by removing the head assembly, coating the interior surfaces of the manhole with a soap and water solution, and repeating the vacuum test for approximately thirty seconds. Leaking areas will have soapy bubbles. Once the leaks have been identified, complete all necessary repairs and repeat test procedures until satisfactory results are obtained.

I. Repeat the test procedure after backfilling for final acceptance test.

VACUUM TEST TIMETABLE			
	DIAMETER - INCHES		
Depth - Feet	48"	60"	72"
4'	10 sec.	13 sec.	16 sec.
8'	20 sec.	26 sec.	32 sec.
12'	30 sec.	39 sec.	48 sec.
16'	40 sec.	52 sec.	64 sec.
20'	50 sec.	65 sec.	80 sec.
24'	60 sec.	78 sec.	96 sec.
*	05 sec.	6.5 sec.	8.0 sec.
*Add "T" times for each additional 2' depth. (The values listed above have been extrapolated from ASTM designation C924-85.)			

T1050.1-4 BASIS OF PAYMENT

Separate payment shall be made only for the items of work described herein. Any related work not specifically listed, but required for satisfactory completion of the work, shall be considered to be included in the scope of the appropriate listed work items.

T1050.1-4.1 Sewer and Water Pipe

Payment shall be made at the contract unit price per linear foot based on pipe diameter measured along centerline of pipe. The unit price shall be full compensation for all materials, equipment and labor, including but not limited to: excavation, dewatering, backfilling, compaction, shoring, poly-wrap, marker tape, detector wire, testing, sample taps, and all items necessary to complete installation of the pipe as shown in the plans. Fittings included but not limited to: couplings (unions), bends, tees, reducers, adapters, blow off less than 8 inch in diameter shall be included in the price of the pipe.

Payment Items: Payment shall be made under

Item No. 1050-31-206 Utility Pipe-Poly Vinyl Chloride, F&I, Water/Sewer, 6”

Item No. 1050-31-208 Utility Pipe-Poly Vinyl Chloride, F&I, Water/Sewer, 8”

Item No. 1050-31-212 Utility Pipe-Poly Vinyl Chloride, F&I, Water/Sewer, 12”

T1050.1-4.2 Existing Pipe Removal

Payment shall be made at the contract unit price per linear foot measured along centerline of the pipe. The unit price shall be full compensation for all materials, equipment and

labor, including but not limited to: excavation, dewatering, backfill compaction, shoring, restoration and cleanup, removal of old pipe from work zone, capping pipe to remain, disposal of all items necessary to complete removal of the pipe as shown in the plans. The removal of fittings, hydrants, valves, service lines and appurtenances are included in the cost of the existing pipe removal.

Payment Items: Payment shall be made under
Item No. 1050-16-004 Utility Pipe, Remove & Dispose , 8 – 19.9”

T1050.1-4.3 Existing Pipes to Be Place Out of Service

Payment shall be made at the contract unit price per lineal foot measured along centerline of the pipe. The unit price shall be full compensation for all materials, equipment and labor, including but not limited to: bypass pumping, non-shrink grouting, plugging, excavation, dewatering, backfill compaction, shoring, restoration and cleanup, placing out of service of old pipe from work zone, capping pipe to remain, disposal and all items necessary to complete the abandonment of the pipe as shown in the plans.

Payment Items: Payment shall be made under
Item No. 1050-18-004 Utility Pipe, Plug & Place Out of Service, 8-19.9”

END OF SECTION

SECTION T1050.2
POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS/FIXTURES

T1050.2-1 GENERAL

T1050.2-1.1 Scope of Work

A. The CONTRACTOR shall furnish all labor, materials, equipment and incidentals required and install in the locations as shown on the Drawings.
B. The CONTRACTOR shall install the plastic piping, fittings and appurtenances (as specified herein) as shown on the Drawings.
C. The CONTRACTOR shall furnish all labor, materials, equipment and incidentals required and install complete and ready for operation and test all buried and non-buried valves as shown on the Drawings and as specified herein.

T1050.2-1.2 Submittals

A. The CONTRACTOR shall submit Shop Drawings that include dimensions and technical specifications for all piping to the ENGINEER.
B. The CONTRACTOR shall submit samples of all materials specified herein to the ENGINEER.
C. The CONTRACTOR shall submit and shall comply with pipe Manufacturer's recommendation for handling, storing, and installing pipe and fittings.
D. The CONTRACTOR shall submit pipe Manufacturer's certification of compliance with these Specifications.
E. Submit materials required to establish compliance with these Specifications in accordance with Section 01300. Submittals shall include the following:
    1. Certified drawings showing all important details of construction and dimensions.
    2. Descriptive literature, bulletins and/or catalogs of the equipment.
    3. The total weight of each item.
    4. A complete bill of materials.
    5. Additional submittal data, where noted with individual pieces of equipment.
F. Test Reports: Provide certified hydrostatic test data, per Manufacturers standard procedure or MSS-SP-61 for all valves.
G. Certificates: For each valve specified to be manufactured, tested and/or installed in accordance with AWWA and other standards, submit an affidavit of compliance with the appropriate standards, including certified results of required tests and certification of proper installation.
H. Manufacturer's Installation and Application Data
I. Operating and Maintenance Data: Operating and maintenance instructions shall be furnished to the ENGINEER. The instructions shall be prepared specifically for this installation and shall include all required cuts, drawings, equipment lists, descriptions and other information required to instruct operating and maintenance personnel unfamiliar with such equipment.

T1050.2-1.3 Tools

The CONTRACTOR shall furnish special tools, solvents, lubricants, and caulking compounds required for normal installation with the pipe.

T1050.2-1.4 Reference Standards

A. **American Society for Testing and Materials (ASTM):**
   1. ASTM A48 - Specification for Gray Iron Castings.
   2. ASTM A126 - Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings.
   3. ASTM A159 - Specification for Automotive Gray Iron Castings.
   4. ASTM A240 - Standard Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels.
   5. ASTM A276 - Standard Specification for Stainless and Heat-Resisting Steel Bars and Shapes.
   6. ASTM A436 - Specification for Austenitic Gray Iron Castings.
   7. ASTM A536 - Specification for Ductile Iron Castings.
   8. ASTM B30 - Specification for Copper-Base Alloys in Ingot Form.
   9. ASTM B62 - Standard Specification for Composition Bronze or Ounce Metal Castings

B. **American Water Works Association (AWWA):**
   1. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings.
   2. AWWA C500 - Gate Valves, 3-in Through 48-in NPS, for Water and Sewage Systems
   3. AWWA C504 - Rubber-Seated Butterfly Valves
   4. AWWA C507 - Ball Valves 6-in Through 48-in
   5. AWWA C508 - Swing-Check Valves for Waterworks Service, 2-in Through 24-in NPS
   6. AWWA C509 - Resilient-Seated Gate Valves, 3-in Through 12-in NPS, for Water and Sewage Systems
   7. AWWA C511 - Reduced Pressure Principle Backflow Prevention Assembly
   8. AWWA C540 - Power-Actuating Devices for Valves and Sluice Gates
   9. AWWA C550 - Protective Interior Coatings for Valves and Hydrants
   10. AWWA C800 - Underground Service Line Valves and Fittings
   11. AWWA C515 – Resilient Seated Valves for 14” and Larger

C. **American National Standards Institute (ANSI):**
   1. ANSI B2.1 - Specifications, Dimensions, Gauging for Taper and Straight Pipe Threads (except dry seals).
   2. ANSI B16.1 - Cast Iron Pipe Flange and Flanged Fittings Class 25, 125, 250 and 800
   3. ANSI B16.10 - Face-to-Face and End-to-End Dimensions of Valves
   4. ANSI B16.104 - Butterfly Valves

D. **American Iron and Steel Institute (AISI).**

E. **Manufacturer’s Standardization Society of the Valve and Fittings Industry (MSS):**
   1. MSS-SP-61 - Pressure Testing of Steel Valves.

2. MSS-SP-67 - Butterfly Valves.
3. MSS-SP-70 - Cast Iron Gate Valves, Flanged and Threaded Ends.
4. MSS-SP-71 - Cast Iron Swing Check Valves, Flanged and Threaded Ends.
5. MSS-SP-72 - Ball Valves with Flanged or Butt-Welding Ends for General Services.
6. MSS-SP-78 - Cast Iron Plug Valves, Flanged and Threaded Ends.
7. MSS-SP-80 - Bronze Gate, Globe, Angle and Check Valves.
8. MSS-SP-82 - Valve Pressure Testing Methods
9. MSS-SP-98 - Protective Epoxy Coatings for Interior of Valves and Hydrants.

F. **National Electrical Manufacturers Association (NEMA).**

G. **Underwriters Laboratories (UL).**

H. **Factory Mutual Insurance (FM).**

I. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

T1050.2-1.5 Quality Assurance

A. **Qualifications:**
1. Valves and appurtenances shall be products of well established firms who are fully experienced, minimum 10 years, reputable and qualified in the manufacture of the particular equipment to be furnished.
2. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications as applicable.
3. All units of the same type shall be the product of one Manufacturer.

B. **Certifications:**
1. The Manufacturer's shall furnish an affidavit of compliance with Standards referred to herein as specified in paragraph 1.03C.
2. Refer to Part 3 for testing required for certain items in addition to that required by referenced standards.

C. Provide the services of a qualified and factory-trained service representative of the Manufacturer to provide operational and maintenance instruction, for a one-day, eight hour period for:
1. Valve motor operators.
2. Valve hydraulic operators.
3. Valve pneumatic operators.
4. Pressure regulating valves.
5. Air release, air and vacuum valves.

D. Inspection of the units may also be made by the ENGINEER or other representative of the OWNER after delivery. The equipment shall be subject to rejection at any due to failure to meet any of the Specification requirements, even though submittal data may have been accepted previously. Equipment rejected after delivery shall be marked for identification and shall be removed from the job site at once.

T1050.2-1.6 System Description

A. Care shall be taken in loading, transporting and unloading to prevent injury to the valves, appurtenances, or coatings. Equipment shall not be dropped. All valves and

appurtenances shall be examined before installation and no piece shall be installed which is found to be defective. Any damage to the coatings shall be repaired as acceptable to the ENGINEER.

B. Prior to shipping, the ends of all valves shall be acceptably covered to prevent entry of foreign material. Covers shall remain in place until after installation and connecting piping is completed.
   1. All valves 3-in and larger shall be shipped and stored on site until time of use with wood or plywood covers on each valve end.
   2. Valves smaller than 3-in shall be shipped and stored as above except that heavy cardboard covers may be used on the openings.
   3. Rising stems and exposed stem valves shall be coated with a protective oil film which shall be maintained until the valve is installed and put into use.
   4. Any corrosion in evidence at the time of acceptance by the OWNER shall be removed, or the valve shall be removed and replaced.

C. Storage and Protection:

Special care shall be taken to prevent plastic and similar brittle items from being directly exposed to the sun, or exposed to extremes in temperature, to prevent deformation. See the individual piping specifications and Manufacturer's information for further requirements.

T1050.2-1.7 Maintenance

A. Special tools and the Manufacturer's standard spare parts, if required for normal operation and maintenance, shall be supplied with equipment.
B. Provide all special tools required for normal maintenance.
C. Tools shall be packaged in a steel case, clearly and indelibly marked on the exterior to indicate equipment for which tools are intended.
D. Provide to the OWNER a list of all spare and replacement parts with individual prices and location where they are available.

Prices shall remain in effect for a period of not less than one year after start-up and final acceptance.

T1050.2-2 PRODUCTS

T105.2-2.1 Polyvinyl Chloride (PVC) Pipe

A. Pressure PVC pipe and accessories 3 inches and smaller in diameter, where shown or as specified in the Drawings, shall meet the requirements of American Society for Testing and Materials (ASTM) D2241 "Polyvinyl Chloride (PVC) Pressure Pipe," and shall be SDR 21, rated pressure of 200 pounds per square inch.
B. PVC Pipe 4 to 8 inches in diameter shall meet the requirements of American Water Works Association (AWWA) Specifications C900 "Polyvinyl Chloride (PVC) Pressure Pipe," and shall be DR18 (Pressure Class 235).
C. PVC Pipe 10 and 12 inches shall meet the requirements of AWWA C900 and shall be DR25 (Pressure Class 165).
D. AWWA C900 DR18 (Pressure Class 235) pipe shall be required for all PVC fire lines

downstream of any check valve.

E. PVC Pipe greater than 12 inches shall meet the requirements of AWWA C905 and shall be DR25 (Pressure Class 165).
F. Provisions shall be made for expansion and contraction at each joint with an elastomeric ring and shall have an integral thickened bell as part of each joint.
G. PVC pipe shall be installed as recommended by the Manufacturer.
H. Pipe shall be furnished in nominal lengths of approximately 20 feet, unless otherwise directed by the ENGINEER.
I. Pipe and accessories shall bear the NSF mark indicating pipe size, Manufacturer's name(s), AWWA and/or ASTM Specification Number, working pressure, and production code.
J. Pipe shall be blue for potable water service, green for sewage force main service, and purple for reclaimed water mains (Pantone 522C).
K. All potable water pipe shall be NSF certified and copies of lab certification shall be submitted to the ENGINEER.

T1050.2-2.2 Joints

A. The PVC joints for pipe shall be of the push-on type unless otherwise directed by the ENGINEER so that the pipe and fittings may be connected on the job without the use of solvent cement or any special equipment.
B. The push-on joint shall be a single rubber gasket joint designed to be assembled by the positioning of a continuous, molded rubber ring gasket in annular recess in the pipe or fitting socket and the forcing of the plain end of the entering pipe into the socket; thereby, compressing the gasket radially to the pipe to form a positive seal.
C. The gasket and annular recess shall be designed and shaped so that the gasket is locked in place against displacement as the joint is assembled.
D. The rubber ring joint shall be designed for thermal expansion or contraction with a total temperature change of at least 750 degrees Fahrenheit (F) in each joint per length of pipe.
E. The bell shall consist of an integral wall section with a solid cross section elastomeric ring which shall meet requirements of ASTM F-477.
F. The thickened bell section shall be designed to be at least as strong as the pipe wall.
G. Lubricant furnished for lubricating joints shall be nontoxic, shall not support the growth of bacteria, shall not have deteriorating effects on the gasket or pipe material, and shall not impart color, taste, or odor to the water.

T1050.2-2.3 Fittings and Specials

A. All fittings for PVC pipe shall be cast iron/ductile iron with mechanical joints and shall conform to the specifications for cast iron/ductile iron fittings, unless otherwise directed by the ENGINEER. PVC C-900 fittings are allowable upon approval by the ENGINEER and required for sewage force main applications. DR ratio shall be the same as the pipe.
B. Fittings for Schedule 80 PVC pipe less than 3 inches in diameter shall be threaded and be PVC as shown on the Drawings, or as directed by the ENGINEER. Threaded PVC fittings shall conform to ASTM Specification D2464-69.

C. The Manufacturer of the pipe shall supply all PVC accessories as well as any adaptors and/or specials required to perform the Work as shown on the Drawings and specified herein.
D. Standard double bell couplings will not be accepted where the pipe will slip completely through the coupling.

T1050.2-2.4 Copper Location Wire

A. The CONTRACTOR shall install all piping (including service lines) with underground 12-gauge thermoplastic high heat-resistant nylon (THHN) insulated traceable copper wire.
B. The CONTRACTOR shall lay the insulated copper wire in the pipe trench 3 to 6 inches above the sewer force mains and shall be a continuous strand from valve box to valve box, wrapped two times around each valve and extended 24 inches inside each valve box to enable location devices to be attached without digging up the valve box.
C. The CONTRACTOR shall insulate all wire splices.
D. The CONTRACTOR shall backfill the trench following placement of the traceable wire with due caution to prevent displacement or damage to wire.
E. The CONTRACTOR shall perform a detection test after insulation and backfill have been completed in the ENGINEER's presence using a commercially available pipe detector furnished by the CONTRACTOR.
F. The CONTRACTOR shall replace any undetectable wire to the satisfaction of the ENGINEER at no additional expense to the OWNER.

T1050.2-2.5 Fixture Materials and Equipment - General

A. Reference is made to Division 1 for additional requirements, including nameplates, provisions for temporary pressure gages, protection against electrolysis and anchor bolts.
B. The use of a Manufacturer's name and/or model or catalog number is for the purpose of establishing the standard of quality and general configuration desired.
C. Valves and appurtenances shall be of the size shown on the Drawings or as noted and as far as possible equipment of the same type shall be identical and from one Manufacturer.
D. Valves and appurtenances shall have the name of the maker, nominal size, flow directional arrows, working pressure for which they are designed and standard referenced, cast in raised letters or indelibly marked upon some appropriate part of the body.
E. Unless otherwise noted, items shall have a minimum working pressure of 150 psi or be of the same working pressure as the pipe they connect to, whichever is higher and suitable for the pressures noted where they are installed.
F. Joints, size and material - unless otherwise noted or required by the ENGINEER:
    1. Except where noted, all joints referred to herein shall be of the same type, nominal diameter, material and with a minimum rating equal to the pipe or fittings they are connected to.
    2. Valves and appurtenances shall be of the same nominal diameter as the pipe or fittings they are connected to.
    3. All valves exposed to view, or in vaults.
        a. 3-in and smaller - threaded ends

G. Provide all special adaptors as required to ensure compatibility between valves, appurtenances and adjacent pipe.
H. Valves and actuators located outdoors but not within a building; within maximum 2-ft above liquid; in vaults; or where otherwise noted shall be especially designed for submerged service where water may completely submerge the valve and operator. All other units shall be as a minimum weather tight.

T1050.2-2.6 Gate Valves (2-1/2-In and Smaller)

A. Gate valves 2-1/2-in diameter and smaller shall have flanged, screwed, or solder ends as required and shall be brass, or bronze, or Type 304 stainless steel solid wedge, union bonnet, rising-stem gate valves such as Figures 47 and 48 as manufactured by Jenkins Brothers or equal products as manufactured by Crane; Fairbanks; Lukenhiemer or equal.
B. All water valves 2-1/2-in and 3-in unless noted otherwise, shall be brass body gates and shall be Jenkins No. 1240, or Hammond 1B-647.
C. Tapping Valves and Sleeves:
   A. Tapping valves shall comply with the same requirements as resilient seated gate valves or double revolving disc gate valves except they shall have the flanged end and port opening modified for tapping service. Valves shall be capable of passing a full nominal sized cutter without damage to the valve. The tapping sleeve shall be gray cast iron or ductile iron mechanical joint type with the outlet flange conforming to MSS-SP-60.

T1050.2-2.7 Valve Boxes

A. Valve boxes shall be provided for all buried valves.
B. Valve boxes shall consist of cast iron base and adjustable top section with cover, which shall be marked "Water, Sewer, or Reuse."
C. Cast iron extensions shall be provided as required to meet grade.

T1050.2-3 EXECUTION

T1050.2-3.1 Storage/Installation

A. The CONTRACTOR shall be in strict accordance with the Manufacturer's technical data and printed instruction for the storage and installation of plastic pipe.
B. The CONTRACTOR shall cover all plastic pipe to prevent fading.
C. The OWNER reserves the right to reject any pipe not properly stored or pipe that has faded.

T1050.2-3.2 Inspection and Testing

A. The CONTRACTOR shall not disturb all pipelines for 24 hours to develop complete strength at all joints.
B. **General:**
   1. Provide temporary equipment for testing, including pump and gauges.

2. Test piping system before insulation is installed (wherever feasible) and remove control devices before testing.
3. Expel air from the pipe before applying the specified test pressure.
4. Make taps (if necessary) at points of highest elevation, and afterwards tightly plugged.
5. Test each natural section of each piping system independently but do not use piping system valves to isolate sections where test pressure exceeds valve pressure rating.
6. Fill each section with water and subject to a hydrostatic pressure equal to the pressure rating of the pipe being tested.

C. The CONTRACTOR shall test for the required 2-hour period.

D. The CONTRACTOR shall test pipe at 150 pounds per square inch (psi), except where fittings are lower class or pressure rating.

1 . Pressure Sewer Permissible leakage (2.2 gallons/1,000 feet/24 hours/inch diameter):

Inches	gallons/1,000 feet/24 Hours	gallons/1,000 feet/1 Hours
2”	4.4 gal.	0.19 gal.
3”	6.6 gal.	0.28 gal.
4”	8.8 gal.	0.37 gal.
6”	13.2 gal.	0.55 gal.
8”	17.8 gal.	0.74 gal.
10”	22.0 gal.	0.92 gal.
12”	26.4 gal.	1.10 gal.
14”	30.8 gal.	1.29 gal.
16”	35.2 gal.	1.47 gal.
18”	39.6 gal.	1.66 gal.

2 . Water System Permissible Leakage:

Inches	gallons/1,000 feet/24 Hours	gallons/1,000 feet/1 Hours
2”	3.6 gal.	0.15 gal.
3”	5.4 gal.	0.23 gal.
4”	7.2 gal.	0.30 gal.
6”	10.8 gal.	0.45 gal.
8”	14.4 gal.	0.60 gal.
10”	18.0 gal.	0.75 gal.
12”	21.6 gal.	1.90 gal.
14”	25.2 gal.	1.05 gal.

16”	28.8 gal.	1.66 gal.
18”	32.4 gal.	1.66 gal.

E. The CONTRACTOR shall repair piping systems sections which fail required piping tests by disassembly and re-installation using new materials to the extent required to overcome leakage. Do not use chemicals, stop-leak compounds, mastics, or other temporary repair methods.
F. The CONTRACTOR shall, at his own expense, locate and repair the defective joints should any test of combined sections of pipe laid disclose leakage greater than the specified limit, until the leakage is within the specified allowance.
G. The CONTRACTOR shall provide water for testing.
H. The CONTRACTOR may subject pipe to hydrostatic pressure, inspect and test for leakage at any convenient time after partial completion of backfill.
I. The CONTRACTOR may test the system with joints exposed or backfilling complete at his/her option. The ENGINEER shall be notified at least 48 hours before beginning testing.
J. The CONTRACTOR shall drain test water from piping systems after testing and repair work has been completed.

T1050.2-3.3 Cleaning, Flushing, and Inspecting

A. **General:**
   1. Clean installed piping systems’ exterior surfaces of superfluous materials and prepare for application of specified coatings (if any).
   2. Flush out piping systems with clean water before proceeding with required tests.
   3. Inspect each run of each system for completion of joints, supports, and accessory items.
B. The CONTRACTOR shall thoroughly flush each run of pipe after the mains have been laid and pressure tested so as to remove all debris and foreign matter from the lines.
   1. Flushing will ordinarily be done by opening fire hydrants or blowoffs along the pipe line.
   2. Where fire hydrants or blowoffs are not available or are of insufficient capacity to permit adequate flushing, the pipe line shall be opened and flumes or piping shall be provided by the CONTRACTOR to waste the water to the nearest approved disposal point.
   3. A minimum volume of water equal to six times the volume of the main shall be used to flush the mains.
   4. The water shall be introduced into the mains to produce a velocity of not less than 3 feet per second, and this rate of flow shall be continued until the discharge is clear and no evidence of silt or foreign matter is visible.
C. The CONTRACTOR shall inspect pressure piping in accordance with American Society of Mechanical Engineers (ASME) B31 procedures.
D. The CONTRACTOR shall disinfect water mains and water service piping in accordance with AWWA C601 and the Florida Department of Environmental

Protection (FDEP), Chapter 17-22 requirements.

E. The CONTRACTOR is responsible for costs (including sampling and analysis) associated with disinfecting the potable water lines.
F. The CONTRACTOR shall submit sample results documenting compliance with disinfection testing requirements to the FDEP with a duplicate copy sent to the ENGINEER.

T105.2-3.4 Fixture Installation – General

A. All valves and appurtenances shall be installed per the Manufacturer's instructions in the locations shown, true to alignment and rigidly supported.
B. Any damage to the above items shall be repaired to the satisfaction of the ENGINEER before they are installed.
C. Install all brackets, extension rods, guides, the various types of operators and appurtenances as shown on the Drawings, or otherwise required.
D. Before setting these items, the CONTRACTOR shall check all Drawings and figures which have a direct bearing on their location.
E. The CONTRACTOR shall be responsible for the proper location of valves and appurtenances during the construction of the Work.
F. All materials shall be carefully inspected for defects in construction and materials. All debris and foreign material shall be cleaned out of openings, etc.
G. All valve flange covers shall remain in place until connected piping is in place.
H. All operating mechanisms shall be operated to check their proper functioning and all nuts and bolts checked for tightness.
I. Valves and other equipment which do not operate easily, or are otherwise defective, shall be repaired or replaced at no additional cost to the OWNER.
J. Where installation is covered by a Referenced Standard, installation shall be in accordance with that Standard, except as herein modified, and the CONTRACTOR shall certify such. Also note additional requirements in other parts of this Specification.
K. Unless otherwise noted, joints for valves and appurtenances shall be made up utilizing the same procedures as specified under the applicable type connecting pipe joint and all valves and other items shall be installed in the proper position as recommended by the Manufacturer.
L. CONTRACTOR shall be responsible for verifying Manufacturer's torqueing requirements for all valves.

T1050.2-3.5 Installation of Manual Operational Devices

A. Unless otherwise noted, all operational devices shall be installed with the units of the factory, as shown on the Drawings or as acceptable to the ENGINEER to allow accessibility to operate and maintain the item and to prevent interference with other piping, valves and appurtenances.
B. For manually operated valves 3-inch in diameter and smaller, valve operators and indicators shall be rotated to display toward normal operation locations.
C. Floor boxes, valve boxes, extension stems and low floor stands shall be installed vertically centered over the operating nut, with couplings as required and the

elevation of the box top shall be adjusted to conform with the elevation of the finished floor surface or grade at the completion of the Contract.

D. Boxes and stem guides shall be adequately supported during concrete pouring to maintain vertical alignment.

T1050.2-3.6 Identification of Valves

A. All valves shall be designated by distinguishing numbers and/or letters on required chart(s) and/or diagram(s).
B. The CONTRACTOR shall install approved brass tags for all designated items with numbers and/or letters on the tags corresponding to those on the chart(s) and/or diagram(s).
C. Each valve identification tag to be minimum 19 gauge polished brass: 2-inch diameter.
D. Each tag to designate appropriate service (1/4 inch stamped black-filled letters) and appropriate valve number (1/2 inch stamped black-filled number).
E. Tags shall be securely fastened to valves with approved stainless steel screws or rivets, or brass jack chain, in a manner to permit easy reading.
F. CONTRACTOR shall prepare piping flow diagrams (or re-use those on the contract plans) indicating valve numbers, service, normal position, etc., of each valve.
G. Diagrams shall be mounted on an ornamental iron frame with hinged plexiglass face for wall mounting. Four (4) frames with plexiglass are required.
H. The requirements for valve identification specified above applies equally to all valves installed under this and under other sections of these specifications.

T1050.2-3.7 Cleaning

All items (including valve interiors) shall be cleaned prior to installation, testing, disinfection and final acceptance.

T1050.2-3.8 Disinfection

Disinfection of valves and appurtenances shall be in accordance with AWWA Requirements.

T1050.2-3.9 Setting Valves and Boxes

A. Valves and valve boxes as specified in the preceding paragraphs shall be installed where shown on the drawings unless otherwise directed.
B. Valves shall be set plumb with the base of the valve box centered over the valve and resting on compacted backfill.
C. The top section of the box shall be set to allow equal movement above and below finished grade.
D. After being correctly positioned, fill shall be carefully tamped around the valve box for a distance of 4-feet on all sides of the box.
E. In paved areas, top of the cover shall be flush with the finished paving.
F. In off-street areas, the cover shall be set 1-inch above existing grade unless otherwise directed by the ENGINEER and a concrete pad shall be poured around the tope of the

box as shown in the standard details.

T1050.2-3.10 Setting Valves and Boxes

G. Valves and valve boxes as specified in the preceding paragraphs shall be installed where shown on the drawings unless otherwise directed.
H. Valves shall be set plumb with the base of the valve box centered over the valve and resting on compacted backfill.
I. The top section of the box shall be set to allow equal movement above and below finished grade.
J. After being correctly positioned, fill shall be carefully tamped around the valve box for a distance of 4-feet on all sides of the box.
K. In paved areas, top of the cover shall be flush with the finished paving.
L. In off-street areas, the cover shall be set 1-inch above existing grade unless otherwise directed by the ENGINEER and a concrete pad shall be poured around the tope of the box as shown in the standard details.

T1050.2-4 BASIS OF PAYMENT

Separate payment shall be made only for the items of work described herein. Any related work not specifically listed, but required for satisfactory completion of the work, shall be considered to be included in the scope of the appropriate listed work items.

T1050.2-4.1

Water Pipe

Payment shall be made at the contract unit price per linear foot based on pipe diameter measured along centerline of pipe. The unit price shall be full compensation for all materials, equipment and labor, including but not limited to: excavation, dewatering, backfilling, compaction, shoring, poly-wrap, marker tape, detector wire, testing, sample taps, and all items necessary to complete installation of the pipe as shown in the plans. Fittings included but not limited to: couplings (unions), bends, tees, reducers, adapters, blow off less than 8 inch in diameter shall be included in the price of the pipe. Fixtures included but not limited to: backflow assembly, tapping saddle/sleeve, valve assembly less than 8 inch in diameter shall be included in the price of the pipe.

Payment Items: Payment shall be made under
Item No. 1050-31-212 Utility Pipe-Poly Vinyl Chloride, Furnish & Install, 12”

T1050.2-4.2

Water Pipe Fittings

Payment shall be made at the contract unit price for each fitting. The unit price shall be full compensation for all materials, equipment and labor, including but not limited to: couplings (unions), bends, tees, reducers, adapters, blow off, and all items necessary to complete installation of the fittings as shown in the plans. Fittings included but not

limited to: couplings (unions), bends, tees, reducers, adapters, blow off. Fixtures included but not limited to: backflow assembly, tapping saddle/sleeve, valve assembly.

Payment Items: Payment shall be made under

Item No. 1050-31-201 Utility Fitting for PVC Pipe, F&I, Cap/Plug, 1”

Item No. 1050-31-212 Utility Pipe-Poly Vinyl Chloride, Furnish & Install, 12”

Item No. 1055-31-112 Utility Fitting for PVC Pipe, F&I, Elbow, 12”

Item No. 1055-31-212 Utility Fitting for PVC Pipe, F&I, Tee, 12”

Item No. 1055-31-512 Utility Fitting for PVC Pipe, F&I, Cap/Plug, 12”

END OF SECTION

SECTION T1050.3
HDPE PIPE

T1050.3-1 GENERAL

T1050.3-1.1 Scope of Work

A. This section includes material and installation requirements necessary for furnishing and installing high-density polyethylene (HDPE) pipe, fittings, and specials in the locations and quantities as shown on the drawings.
B. Quantities shown on the plans may not be the exact length needed for directional bores.
C. The CONTRACTOR shall investigate this before the Bid and shall inform the ENGINEER prior to the Bid if additional HDPE pipe will be needed.
D. The CONTRACTOR will be responsible for any additional HDPE pipe needed after the Bid and additional costs incurred for the pipe shall not be required from the OWNER.

T1050.3-1.2 Quality Criteria

A. Reference to industry standards as contained herein shall be construed as to be in reference to the latest revision or edition. All HDPE pipe shall meet all American Water Works Association (AWWA) Standards.
B. The pipe fittings and specials shall be made by a Manufacturer experienced in producing pipe, fittings, and specials of the type, size, configuration, and quality specified herein. The manufacturer shall have produced pipe, fittings and specials having a record of at least 5 years successful performance.

T1050.3-1.3 Submittals

A. The CONTRACTOR shall submit Shop Drawings showing the pipe lengths, design details, joint details, specials, etc., for the ENGINEER's approval. Pipe shall be fabricated in accordance with these plans.
B. The CONTRACTOR shall submit a notarized statement of certification from the pipe Manufacturer as to conformance with the specified American National Standards Institute (ANSI)/AWWA Specifications listed herein, and modifications thereto, at the time of submitting Shop Drawing data on the pipe and fittings.

T1050.3-1.4 Delivery, Storage, and Handling

A. The CONTRACTOR shall be responsible for the acceptability of all material furnished by him/her and shall assume responsibility for the replacement of all such material found damaged in shipping or defective in manufacture. This shall include furnishing all material and labor required for the replacement of installed material discovered to be defective prior to the final acceptance of the Work.
B. The CONTRACTOR shall keep the interior and all sealing surfaces of all pipe, fittings, and other accessories free from dirt and foreign matter. Consult the Manufacturer for specific storage recommendations.
C. The CONTRACTOR shall properly handle materials at all times to prevent damage in accordance with Manufacturer's recommendations. Pipe and fittings shall not be thrown, dropped, or dragged.

T1050.3-2 PRODUCTS

T105.3-2.1 HDPE Pipe: 3-Inch Diameter and Larger

A. The HDPE pipe shall be manufactured in accordance with American Society for Testing and Materials (ASTM) F714 and comply with AWWA C906 specifications. All HDPE pipe used for force mains shall have an embedded green stripe on each side symbolizing wastewater and all HDPE pipe used for water mains shall have an embedded blue stripe on each side symbolizing water.

B. The HDPE pipe shall be rated for use with water at 73.4 degrees Fahrenheit (F) at a hydrostatic design stress of 800 psi and a minimum working pressure of 160 psi.

C. All HDPE pipe 3-inch diameter and larger shall be ductile iron pipe size (DIPS). Dimension Ratio (DR) shall be DR11 for the HDPE pipe shown on the drawings. Dimensions and workmanship shall be as specified by ASTM F714.

D. Polyethylene extrusion compound from which the HDPE pipe is extruded shall comply with application requirements for PE-3408 high molecular weight polyethylene plastic material. Material shall be as described in ASTM D3350 and shall comply with the following:

   a. Pipe resin shall have a minimum inherent viscosity of 2.5 when run according to ASTM D1601.
   b. Exceed 5,000 hours on ESC as determined by ASTM D-1248-345434C.
   c. Have a specific gravity of between 0.9141 and 0.955.
   d. Contain a minimum of 2% and a maximum of 3% of carbon black and shall produce a finish product that is uniformly black.

E. Marking on the HDPE pipe shall include:

   a. The nominal pipe or tubing size.
   b. The type of plastic material (i.e., PE-3408).
   c. The standard thermoplastic pipe dimension ratio or the pressure rating in psi for water at 73.4°F. (160 psi).
   d. The ASTM designation with which the pipe complies.
   e. The Manufacturer's name or trade mark and code.

T105.3-2.2 HDPE Pipe: 2-Inch Diameter and Smaller

A. The HDPE tubing shall be manufactured in accordance with American Society for Testing and Materials (ASTM) D2737 and comply with AWWA C901 specifications. All HDPE PE-4710 tubing used for force mains shall be green symbolizing wastewater and all HDPE PE-4710 tubing used for water mains shall be blue symbolizing water.

B. The HDPE tubing shall be rated for use with water at 73.4 degrees Fahrenheit (F) at a hydrostatic design stress of 800 psi and a minimum working pressure of 160 psi.

C. All HDPE tubing 2-inch diameter and smaller shall be copper tube size (CTS). Standard Dimension Ratio (SDR) shall be SDR9 for the HDPE pipe shown on the drawings. Dimensions and workmanship shall be as specified by ASTM D2737.

D. Polyethylene extrusion compound from which the HDPE pipe is extruded shall comply with application requirements for PE-4710 high molecular weight polyethylene plastic

material.

T1050.3-2.3 Fittings and Joints

A. Fittings shall be fabricated to the same standards as the pipe from the same raw materials by thermal fusion.
B. Jointing shall be by the thermal butt fusion method as recommended by the Manufacturer.
C. Fittings and joints shall have a pressure rating equal to the pipe and shall have machined fusion ends matched to pipe wall.
D. The CONTRACTOR shall use mechanical joint fusion welded adapters with ductile iron mechanical joint sleeves for transition connections as shown on the plans.

T1050.3-3 EXECUTION

T1050.3-3.1 General Requirements

A. The CONTRACTOR shall install of all HDPE pipe, fittings, specials, and appurtenances in accordance with the Manufacturer's instructions.
B. The CONTRACTOR shall securely close openings such as stubs, tees and other services along the lines with an approved stopper that fits into the pipe and is recommended by the pipe Manufacturer. This stopper shall be jointed in such a manner that it may be removed at some future time without injury to the pipe itself.
C. The CONTRACTOR shall temporarily close the end of the pipe with a close-fitting stopper at the close of each day's work and at other times when the pipe is not being laid.
D. **Cleaning:**
    a. All necessary precautions shall be taken to prevent the entrance of mud, sand or other obstructing material into the pipelines.
    b. As the work progresses, the interior of the main shall be cleaned of all dirt, jointing material, and superfluous materials of every description.
E. Experienced fusion technicians with a minimum of 5 years or more experience in field application involving large diameter (over 12 inches) HDPE pipe shall join piping. Experience record shall be submitted for review 15 days prior to directional boring activities.
F. If the CONTRACTOR feels that the length of HDPE pipe shown on the plans is not adequate, then the CONTRACTOR shall notify the ENGINEER prior to the Bid. The CONTRACTOR shall not ask for additional directional boring cost after the Bid.
G. **Handling:**
    a. Pipe must be handled in a way to ensure that it is not gouged or scratched to a depth of more than 10% of the wall thickness.
    b. Pipe shall not be bent to a radius of less than the Manufacturer's recommendation at any time during installation.
H. Pipe shall be handled at all times with strapping that a combined width at each load area of at least half the pipe diameter to prevent point damage to the pipe. No wire rope slings shall be used.

T1050.3-4 TESTING

T1050.3-4.1 Testing in the Trench

A. The CONTRACTOR shall fill the pipeline with water after it has been laid; bleed off any trapped air.

B. The CONTRACTOR shall subject the lowest element in the system to a test pressure that is 1.5 times the design pressure and check for any leakage.

C. The CONTRACTOR shall apply the pressure test after backfilling has been completed but not sooner that a time which will allow sufficient curing of any concrete that may have been used, when in the opinion of the ENGINEER, local conditions require that the trenches be backfilled immediately after the pipe has been laid. Typical minimum concrete curing times are 36 hours for early strengths and 7 days for normal strengths.

   a. The test procedures consist of two steps: the initial expansion and the test phase.
   b. When test pressure is applied to a water-filled pipe, the pipe expands. During the initial expansion of the pipe under test sufficient make-up water must be added to the system at hourly intervals for 3 hours to maintain the test pressure.
   c. After about 4 hours, initial expansion should be complete and the actual test can start.
   d. When the test is to begin, the pipe is full of water and is subjected to a constant test pressure of 1.5 times the system design pressure.
   e. The test phase should not exceed 3 hours, after which time any water deficiency must be replaced and measured. Add and measure the amount of make-up water required to return to the test pressure and compare this to the maximum allowance in Figure 4.1.
   f. An alternate leakage test consists of maintaining the test pressure (described above) over a period of 4 hours, and then dropping the pressure by 10 psi (0.069 Mpa). If the pressure that remains is within 5% of the target value for 1 hour, then that is an indication that there is no leakage in the system.

NOTE: *Under no circumstances shall the total time under test exceed 8 hours at 1 ½ times the system pressure rating. If the test is not complete within this time limit (due to leakage, equipment failure, etc.), the test section shall be permitted to "relax" for 8 hours prior to the next test sequence. Air testing is not recommended. Additional safety precautions may be required.*

FIGURE 4.1
ALLOWANCE FOR EXPANSION UNDER TEST PRESSURE

Nominal Pipe Size Inches (1)	U.S. Gals/100 feet of Pipe (2)		
	1-Hour	2-Hour	3-Hour
2	0.08	0.12	0.15
3	0.10	0.15	0.25
4	0.13	0.25	0.40
5	0.21	0.41	0.63
6	0.30	0.60	0.90
8	0.50	1.00	1.50
10	0.75	1.30	2.10
12	1.10	2.30	3.40
14	1.40	2.80	4.20
16	1.70	3.30	5.00
18	2.20	4.30	6.50

Nominal Pipe Size Inches (1)	U.S. Gals/100 feet of Pipe (2)		
	1-Hour	2-Hour	3-Hour
20	2.80	5.50	8.00
22	3.50	7.00	10.50
24	4.50	8.90	13.30
28	5.50	11.10	16.80
30	6.20	12.60	19.10
32	7.00	14.30	21.50
36	9.00	18.00	27.00
42	12.00	24.00	36.00
48	15.00	27.00	43.00
54	18.00	30.00	50.00

(1) mm* 0.03937
(2) multiply by 11.53 to convert to liter/100 meters of pipe

T1050.3-5 BASIS OF PAYMENT

Separate payment shall be made only for the items of work described herein. Any related work not specifically listed, but required for satisfactory completion of the work, shall be considered to be included in the scope of the appropriate listed work items.

T1050.3-5.1 Water Pipe

Payment shall be made at the contract unit price per linear foot based on pipe diameter measured along centerline of pipe. The unit price shall be full compensation for all materials, equipment and labor, including but not limited to: excavation, dewatering, backfilling, compaction, shoring, poly-wrap, marker tape, detector wire, testing, sample taps, and all items necessary to complete installation of the pipe as shown in the plans. Fittings included but not limited to: couplings (unions), bends, tees, reducers, adapters, blow off less than 8 inch in diameter shall be included in the price of the pipe.

Payment Items: Payment shall be made under
Item No. 1050-42-202 Utility Pipe-High Density Polyethylene, F&I, Water/Sewer, 2”

END OF SECTION

SECTION T1060.1
UTILITY STRUCTURES

T1060.1-1 DESCRIPTION

Provide all labor, materials, tools and equipment necessary to furnish and install manholes, wet wells and valve chambers as indicated on the Plans, Construction Details and as herein specified. Throughout this specification section where the word "manhole" is used it shall mean "manholes, wet wells, and valve vaults."
Manholes shall be made up of precast concrete sections; bottom section shall also be precast concrete or a single piece fiberglass with ballast ring unless otherwise shown in the plans and details.

T1060.1-2 MATERIALS

T1060.1-2.1 General

Composition of mortar shall conform to "Standard Specification for Mortar for Unit Masonry", ASTM C270, Type N and shall be a silica cement mortar only.

A. **Grout –** Grout shall be capable of meeting test requirements of ASTM C827.

B. **Manhole Steps -** There shall be no steps in manholes.

T1060.1-2.2 Manhole Frames and Covers

Frame and Cover shall be watertight type with stainless steel bolts, machined bearing surfaces and flat gasket. Castings shall be traffic rated ductile iron, meeting ASTM A48, designed for H-20 loading as designated by AASHTO. A hinged lid with lock shall be used. Castings shall be free from cracks, holes, swells and cold shuts. All manhole castings shall be made accurately to the pattern and to the dimensions as specified, and shall be machined to secure perfectly flat and true to surfaces. All lids which "rock" and do not lie solid will not be accepted and must be replaced. No plugging, burning in or filling will be allowed. Covers must fit the frames in any position. The covers shall have non-penetrating pick holes.

A. **Standard Type Manhole Frames and Covers**

Standard manhole frame and covers shall have a minimum load rating of AASHTO H.20 with non-penetrating pick holes and a minimum weight of 375 lbs. with 24" clear opening as shown in the Plans. A label saying "SANITARY SEWER" shall be cast on the cover.

B. **Watertight Covers**

Manholes at specific locations, subject to periodic flooding, as indicated on the Plans, to be water tight, shall be equipped with a watertight frame and cover. A label saying "SANITARY SEWER" shall be cast on the cover. Lids will be bolted down against a rubber o-ring.

T1060.1-2.3 Precast Concrete Manhole and Components

A. **Concrete**

Provide all sanitary manholes constructed with Portland ASTM C150, Type II cement with a tricalcium aluminate content not to exceed 8%. Mixed aggregate shall be a minimum of 50% crushed limestone. Provide 3000 psi non-shrink grout.

ctions

The sections for manholes shall be a minimum of 4 feet in diameter for pipe sizes up to, and including 24 inches internal diameter. For pipes with an internal diameter between 24 and 36 inches, the manhole shall be 5 feet in diameter, unless otherwise noted. The Sections shall conform to the requirements of "Standard Specification for Precast Reinforced Concrete Manhole Sections" (ASTM C478), except that the joints shall be of the tongue and groove joint type and sealed with a preformed flexible plastic gasket. No other type of manhole joint will be accepted. Face of tongue and groove shall be sloped and not perpendicular to manhole wall.

sers and Top Sections

The top of base walls, the ends of reinforced concrete risers and the bottom ends of precast tops shall be so formed that when risers and tops are assemble with the base, they will make a continuous manhole. The tongue and groove joints shall be of such design as will permit effective joining and placement without irregularities in the interior wall surface of the manhole. Precast barrels shall consist of riser and top sections. The top section of manholes 6 feet or greater in depth shall be an eccentric conical top section with thickened upper walls with the smallest inside diameter equal to 24 inches, to receive the manhole frame and cover. Top sections of manholes less than 6 feet in depth shall be flat concrete slabs. No more than two lift holes shall be cast in each riser or top section. Lift holes shall be non-penetrating. Precast riser and top sections shall be designed, manufactured, tested, finished and marked in accordance with this specification and "Standard Specification for Precast Reinforced Concrete Manhole Sections" (ASTM C478).

ecast Manhole Bases

The bases shall be integrally cast and shall consist of a manhole bottom and a wall which shall extend a minimum of 6 inches above the top of the highest inflowing sewer. The top of the base section shall be carefully formed to receive the tongue of the barrel section. There shall be a minimum distance of 4 inches between the invert of the lowest outflowing sewer and floor of the precast base to provide for construction of a formed invert and bench wall within the manhole. No more than two lift holes shall be cast in the bases. Lift holes shall be non-penetrating.

1. Manholes 4 feet in diameter shall have a bottom at least 8 inches thick and a wall at least 5 inches thick.

2. Manholes 5 feet in diameter shall have a bottom at least 8 inches thick and a wall at least 6 inches thick.

int Material

The joint material shall consist of hydrocarbon plastic and vulcanized rubber and shall be capable of meeting the following conditions:

1. Hydrocarbon plastic content 50%-70% by weight per ASTM D297.
2. Volatile matter 2.0% max. by weight per ASTM D6.
3. Specific gravity @ 77°F: 1.20 to 1.35 per ASTM D71.
4. Ductility@ 77°F: 5.0 cm min. per ASTM D113.
5. Softening Point, ring and ball: 320°F min. per ASTM D36.
6. Penetration, cone 77°F, 150 gm, 5 sec.: 50-120 per ASTM D217.
7. Flash point, C.O.C.: 600°F min. per ASTM D92.
8. Fire point, C.O.C.: 625°F min. per ASTM D92.
9. Inert mineral filler: 30%-50% by weight.
10. Material, when in place, shall not leak at joints while being subjected to 10 psig test for a 24-hr. period.
11. No sagging of vertical and overhead 1 inch wide joints shall be detected while being subjected to temperature of 135°F for period of 5 days.

No visible deterioration of compound when immersed separately in solution of acid, alkalis and saturated hydrogen sulfide, for a period of 30 days. Sealing compound shall be supplied in extruded rope-form of suitable cross-section and of such sizes as to seal the joint space when the sections are set in place. The sealing compound shall be protected by a suitable removable two-piece wrapper. The two-piece wrapper shall be so designed that one-half may be removed longitudinally without disturbing the other half to facilitate application of the sealing compound. Joints of manholes shall not be sealed with grout.

on-Penetrating Lifting Holes

Lifting holes shall be constructed using plastic inserts cast into the manhole, stopping short of extending all the way through the wall. Plastic inserts and lifting eyes shall be as manufactured by Press-Seal Gasket Corporation or approved equal.

pe Connections to Precast Manhole Bases or Sections

A flexible pipe-to-manhole connector shall be provided with the manhole. The connector shall provide a water tight seal and accommodate ground movement to prevent pipe shear. All clamps and miscellaneous metal shall be type 304 stainless steel. Connectors shall be installed in accordance with manufacturers' recommendations. No inlet or outlet piping in manholes, valve chambers or wet wells shall be at a manhole section joint. A minimum space of 6 inches from the joint shall be provided.

T1060.1-2.4 Rectangular Precast Manholes

Rectangular precast manholes shall be constructed to the sizes detailed on the Plans.

Manholes shall be designed in accordance with the Building Code requirements of ACI 318 and AASHTO H-20 traffic loading. The materials shall conform to the following standards:

1. Concrete shall be 4000 psi using ASTM C150 Type II cement.
2. Wire mesh shall conform to ASTM A185.
3. Reinforcing rods shall be ASTM A615 grade 60.

Cover shall be cast with the access hatch in place. Access hatch shall be as specified on the Plans.

T1060.1-3.0 CONSTRUCTION REQUIREMENTS

T1060.1-3.1 Installation of Utility Structures Below Ground (Manholes)

All ground water shall be kept away from newly poured concrete until concrete has properly set, and a watertight job is obtained. Manholes which admit ground water after completion, must be repaired to the satisfaction of the Engineer. Where manholes occur in pavement, set top of frame and covers flush with finished surface. Where manholes occur in dirt roads, set top of frame and cover 6 inches below finished surface. Elsewhere set top of frame and cover 3 inches above final grade, unless otherwise indicated. Care shall be taken to have all pipes to and from manholes laid to correct lines and grades as established for the project. Where shown, drop manholes shall be constructed in accordance with the details shown on the Plans.

T1060.1-3.2 Precast Manholes

A. **Handling**

All precast manhole components shall be lifted and moved by use of lifting eyes that are slipped into the insert which are cast into the manhole. The lift system shall not damage the precast manhole. All damage to precast sections shall be thoroughly repaired in the presence of the Engineer. Repair and patching of minor breaks shall be done by chipping and scarifying the defective area before application of grout. Sufficient time shall be allowed for curing before the precast sections are joined. Cast-in-place concrete bases shall be specially formed and keyed to accommodate the bottom precast section.

B. **Site Inspection of Precast Sections**

Precast sections not conforming to any of the specification requirements shall be rejected. In addition, individual manhole sections may be rejected due to any of the following:

1. Fractures or cracks passing through the wall, except for a single end crack that does not exceed the depth of the joint.
2. Defects that indicate imperfect proportioning, mixing, and molding.
3. Surface defects indicating honey-combed or open texture.
4. Damaged or cracked end, where such damage would prevent making a satisfactory joint.

5. Any continuous crack having a surface width of 0.01 inch (0.25 mm) or more and extending for a length of 12 inches (305 mm) or more, regardless of position in the section wall.

C. **Bitumastic Coating**

Prior to setting the precast sections in place each section shall have the exterior concrete surface blown free of all dirt and debris and brushed clean and then coated with bitumastic. As an alternative, the bitumastic coating may be applied at the manufacturer's plant in accordance with this Specification. At least three coats shall be applied giving a total minimum dry film thickness (DFT) of 32.0 mils. After installation, damaged surfaces including plugged lifting holes, shall be recoated in accordance with the coating manufacturer's recommendation to give the required minimum 32.0 mils DFT. Provide a certification to the Engineer stating that he has installed the exterior manhole, wetwell and valve chamber coatings in accordance with the manufacturer's recommendations, and that there is a minimum 32.0 mils DFT of material on all component structures.

D. **Placement**

Manhole sections shall not be set by wedging or placing shims to secure proper level and manholes shall not be backfilled without the approval from the Engineer.

E. **Masonry Work**

The top of all precast manholes may be brought to proper grade for receiving manhole frames after paving has been replaced on paved streets by using HDPE plastic rings, traffic rated. In lieu of the HDPE plastic rings, precast manholes may be brought to grade by the use of no more than two precast concrete extension rings. Precast extension rings shall be in accordance with ASTM C478. The total depth of the rings shall not exceed 6 inches. The construction shall be performed by experienced and qualified laborers only. All work shall be laid plumb, straight, square and true. Where manholes are installed in areas with sloped pavement, the manhole ring and cover shall be set flush and in the same plane as the finished surface (not level). Rings shall be laid in full beds of mortar necessary to ensure cover is flush with finished pavement surface. All joints shall be full and not more than 1/2 inch in thickness. Set in place and bond in the masonry all necessary steps and miscellaneous items specified elsewhere. The masonry walls shall be parged on the outside with a one-half inch coat of Portland cement mortar. All mortar shall be a mixture of non-shrink grout. Masonry shall not be constructed during cold weather (air temperature below 40°F) unless necessary precautions are observed as permitted by the Engineer. Concrete collar, to be constructed around frame and cover after adjustment. Concrete strength shall be 3,000 psi.

T1060.1-3.3 Flow Channels and Bench Walls

The method of constructing flow channels and bench walls is dependent on which manhole base (i.e. manhole, wetwell, or valve chamber) has been installed. In precast bases, the flow channels and bench walls in each manhole shall be carefully formed of mortar and concrete. Precast inverts will not be accepted unless specifically approved by the Engineer. The minimum depth of flow channel shall be equal to 3/4 the diameter of the largest sewer in the manhole to which it connects. The channel shall be graded to give a smooth, uninterrupted flow through the manhole. Bench walls shall be pitched a minimum of 1 inch but not more than 2 inches per foot from the inside periphery of the manhole to the edge of the flow channel.

T1060.1-3.4 Testing

Manholes shall be constructed to be completely watertight. The contractor shall test the manhole by one of the following methods:

A. **Infiltration Test**

If the manhole is located below the groundwater table, the inverts shall be plugged and the infiltration into the manhole shall be measured after a 24-hour period. If any visible infiltration has occurred into the manhole, visible by wet walls or any accumulation on the bench, the infiltration shall be considered excessive.

B. **Exfiltration Test**

If the manhole is above the current groundwater table, an exfiltration test will be conducted. All incoming sewer lines shall be plugged and the manhole filled with water to a level above the highest section joint and allowed to stand for three hours to compensate for potential absorption by dry concrete. After the soaking period, water shall be added as required to raise the water to a level that is above the highest joint section. If the water level drop exceeds 1/8 inch per vertical foot of manhole depth in 24 hours, the manhole shall have failed the test. As an alternative to infiltration and exfiltration test, concrete sewer manholes could be tested in accordance with test procedure described in ASTM C1244.

T1060.1-3.5 Existing Pipe Removal

Do not proceed with the removal of any existing manhole, piping, fittings, valves, hydrants or appurtenances without specific written approval of the Engineer. Any manhole, piping, fittings, valves, hydrants or appurtenances removed without proper authorization, which are necessary for the operation of the existing facilities or of the new facilities, shall be immediately replaced to the satisfaction of the Engineer at the Contractor's expense. All existing facilities not required to be reused or retained (Salvaged) shall become the property of the Contractor immediately upon removal from their present locations. Remove such material from the site at his own expense and do not reuse. Wherever piping is removed for disposition, adjacent pipe and headers that are to remain in service shall be blanked off or plugged and then anchored in an approved manner.

T1060.1-4 BASIS OF PAYMENT

Separate payment shall be made only for the items of work described herein. Any related work not specifically listed, but required for satisfactory completion of the work, shall be considered to be included in the scope of the appropriate listed work items.

T1060.1-4.1 Manholes

Payment shall be made at the contract unit prices per each, irrespective of type, angle, or size. The unit price shall be full compensation for all materials, equipment and labor, including but not limited to, excavation, dewatering, backfill, compaction, shoring, marker tape, detector wire, poly-wrap, testing, and all items necessary for a complete installation as shown in the Plans. Mechanical joint restraints for pipes less than 8-inch in diameter shall be included in the price of the pipe. Reverse deadman shall be paid for under this line item.

Payment Items: Payment shall be made under

Item No. 1060-11-222 Utility Structure, Below Ground, F & I, Water/Sewer, >80 CF, 6.1' – 12' – EA

Item No. 1060-11-223 Utility Structure, Below Ground, F & I, Water/Sewer, > 80 CF, >12' – EA

Item No. 1060-16 Utility Structure, Below Ground, Remove and Dispose, Contractor Takes Ownership

END OF SECTION

SECTION T1060.2
CONCRETE PROTECTIVE COATING – SPECTRASHIELD

T1060.2-1 GENERAL

T1060.2-1.1 Product Description

A. The chemical resistant lining system shall be a spray-applied multi-component surfacing system for use in both new construction and rehabilitation of sanitary sewer structures such as headworks, lift stations, wet wells, etc. THE COATING SHALL BE SPECIFICALLY RESIST THE EFFECTS OF HYDROGEN SULFIDE AND BYPRODUCTS. The lining system shall be the following product:
   1. SPECTRASHIELD, by CCI Spectrum, Inc., nominal 500 mil total thickness or pre-approved equal

B. Equal products must be approved a minimum of four weeks prior to initial application. This specification is for a multi-component Primer Modified Polymer moisture barrier, Polyurethane Polymeric blend foam surfacer and final Modified Polymer topcoat.

C. Prior pre-approved is required to determine if the prospective product may be bid for this project. Without prior pre-approval within the specified timeframe a product may be rejected as unacceptable. This timeframe allows the Owner's Representative ample time to determine if the proposed product is an acceptable alternative.

T1060.2-1.2 Interior Surface System

A. This specification covers work materials, equipment and tools including specially developed application equipment as required for installation and testing of a field applied unique monolithic chemical resistant surfacing system.

B. The use of specialized application equipment combined with rigorous surface preparation requirements shall be used to apply the products without the use of solvents. The equipment adds high heat and pressure to the monolithic surfacing system resulting in a high build and quick set of the completed system.

C. Product application requirements and procedures described include surface preparation, mixing, application, material handling and storage, qualification of the applicator and application quality control.

T1060.2-1.3 Quality Assurance

A. **Requirements**
   1. Do not use or retain contaminated, outdated, or diluted materials for resurfacing. Do not use materials from previously opened containers.
   2. Use only products of the approved Manufacturer. Use products of one manufacturer in any one resurfacing system with compatible materials. Provide same material product for touch-up as for original material. If any requirements of this specification conflict with a referenced standard, the more stringent requirement shall apply.
   3. Make available all locations and phases of the work for access by the Engineer or other personnel designated by the Engineer. The Contractor shall provide

ventilation and egress to safely access the coating work areas for inspection.

4. Conduct work so that the lining system is installed as specified herein. Inspect work continually to ensure that the surfacing system is installed as specified herein. The Contractor shall inspect the work to determine conformance with the specifications and referenced documents. The Contractor shall inform the Engineer of the progress and the quality of the work through daily reports as specified below. Any nonconforming coating system work shall be corrected as specified herein or as recommended by the Manufacturer.
5. Summarize test data, work progress, areas covered, ambient conditions, quality control inspection test findings, and other information pertinent to the resurfacing system installation in daily reports to be submitted to the Engineer or the Engineer's Representative.
6. The methods of construction shall be in accordance with all requirements of this specification.
7. Employ only trades people who have at least three years of experience performing resurfacing work of similar size and complexity as the work specified in this Section. Submittals to verify these qualifications are to be made within thirty (30) days of the Notice-to-Proceed and are subject to approval by the Engineer.
8. Specified System is the minimum standard of quality for this project. Submissions of alternative manufacturers shall be approved by the Engineer and owner in writing ten days prior to bid date.

B. **Contractor Qualifications**

1. Applicator: The applicator shall be trained and certified by the manufacturer for the handling, mixing, application and inspection of the liner system.
2. Contractor Experience: Contractor shall have a minimum 5 years experience lining concrete sewer collection system components such as manholes, lift stations, headworks and piping. Contractor shall provide documentation verifying that they meet the experience requirements.

T1060.2-1.4 Submittals

A. Submit the following prior to commencing with any phase of the work covered by this Section:

1. Manufacturer's current printed recommendations and product data sheets for all coating system products supplied under this section including performance criteria, surface preparation and applications, volatile organic compound (VOC) data, and safety requirements.
2. Material Safety Data Sheets (MSDS) for any materials brought on-site including all resurfacing system materials, solvents, and abrasive blast media.
3. Storage requirements including temperature, humidity, and ventilation for resurfacing system materials.
4. Manufacturer's requirements, including application procedures for resurfacing materials, shall be in writing and shall be followed in detail. All safety precautions recommended by the Manufacturer shall be strictly adhered to at all times when work is in progress.
5. Color samples for all surfaces to be surfaced that have been field-matched to

existing colors.

6. Submit applicator's certification that resurfacing materials comply with Federal, State, and Local regulations for VOC (Volatile Organic Compounds).
7. Submit daily reports that contain the following information: substrate conditions, ambient conditions, application procedures, work completed and location thereof. Mark-up drawings that show location of work.
8. Submit letter(s) with associated product data signed by Manufacturer certifying that submitted products are suitable for application on the surfaces to be surfaced and for the service conditions.

T1060.2-1.5 Delivery and Storage

A. Materials shall be stored in accordance with Manufacturer's recommendations in enclosed structures and shall be protected from weather and adverse temperature conditions. Flammable materials shall be stored in accordance with state and local codes. Materials exceeding storage life recommended by the manufacturer shall be removed from the site.

B. Store all materials only in area or areas designated by the Engineer solely for this purpose. Confine mixing, thinning, clean-up and associated operations, and storage of materials-related debris before authorized disposal, to these areas. All materials are to be stored on pallets or similar storage/handling skids off the ground in sheltered areas in which the temperature is maintained between 50oF and 90oF.

C. Mix all surfacing materials in an enclosed mixing area designated by the Engineer. This enclosed area must protect the mixing operation and materials from direct sunlight, inclement weather, freezing, or other means of damage or contamination. Protect all other concrete and metallic surfaces and finishes from any spillage of material(s) within the mixing area.

D. Do not use floor drains, dikes or storm drains for disposal of surfacing system materials.

E. The Contractor shall take all precautions and implement all measures necessary to avert potential hazards associated with the resurfacing system materials as described on the pertinent Material Safety Data Sheets or container labels.

F. Deliver all materials to the jobsite in their original, unopened containers. Each container shall bear the Manufacturer's name and label.
   1. Labels on all material containers must show the following information:
      a. Name or title of product.
      b. Federal Specification Number if applicable.
      c. Manufacturer's batch number and date of manufacture.
      d. Manufacturer's name.
      e. Generic type of material.
      f. Application and mixing instructions.
      g. Hazardous material identification label.
      h. Shelf life date.
      i. Storage requirements.
   2. All containers shall be clearly marked indicating any personnel safety hazards associated with the use of or exposure to the materials.
   3. All materials shall be handled and stored to prevent damage or loss of label.

4. Surfacing material storage and mixing areas shall be designated by the Engineer.
5. Do not use or retain contaminated, outdated, prematurely opened, diluted materials, or materials which have exceeded their shelf life.

T1060.2-1.6 Coordination of Work

A. Work Areas: The work areas on the jobsite will be designated by the Engineer. The Contractor's personnel shall not be permitted in any area other than those expressly designated by the Engineer.
B. Coordination: The contractor shall coordinate with the Engineer regarding availability of work areas, completion times, safety, access and other factors which can impact plant operations.

T1060.2-1.7 Safety

A. The Contractor's work forces should comply with the provisions outlined in the following documents:
   1. SSPC-PA-3 "A Guide to Safety in Paint Application"
   2. NACE Pub. "A Manual for Painter Safety"
B. The Contractor shall provide personnel with all safety equipment necessary to protect them during any phase of the work. This shall include, but not be limited to, safety glasses, goggles, earplugs, hard hats, steel toed work shoes, appropriate personal protective clothing, gloves, and plant approved escape respirators (where required).
C. No work shall be performed until the appropriate Work Requests and Lockouts are approved by the Engineer. The Work Request system provides a mechanism to advise plant staff of a contractor's work activities. The Lockout system is a safety procedure to prevent unintended equipment activation.
D. Keep any flammable materials such as cleaning solvents, thinners, or resurfacing materials away from open flames, sparks or temperatures higher than 120ºF. Drums containing flammable materials will be grounded. No solvent in any quantity shall be allowed inside containment enclosures or permitted confined spaces at any time during resurfacing work.
E. Power tools are to be in good working order to avoid open sparking. No spark producing tools shall be utilized in restricted areas as indicated herein.
F. The Contractor shall fireproof all work areas by maintaining a clean work area and having Underwriter's Laboratories approved fire extinguishers on-hand. The Contractor shall furnish these fire extinguishers.
G. Workers doing abrasive blasting operations shall wear a fresh air supplied protective helmet and hood and personal protective clothing acceptable to industry standards and all government regulations.
H. Dispose of rags used for wiping up resurfacing materials, solvents, and thinners by drenching them with water and placing in a metal container with a tight fitting metal cover. Complete this disposal process at the end of each day. Final disposal of these materials is the Contractor's responsibility.
I. Matches, smoking, flames, or sparks resulting from any source including welding, must be remote from the work area during coating work. Smoking is permitted only in designated areas of the plant.

T1060.2-2 COATING SYSTEM

T1060.2-2.1 Concrete Coating Protective System

A. Components of Concrete Tankage to receive protective coatings are indicated on the Drawings.
B. Sanitary Sewer Manholes/Wetwell structures, new and those existing so designated, are to receive the SpectraShield Coating System.

T1060.2-3 EXECUTION

T1060.2-3.1 Pre-Coating Inspection

A. Joints, lift holes and walls shall be made smooth and suitable for application of the interior surfacing system.
B. Installation of the protective coating shall not commence until the concrete substrate has properly cured. New Concrete is to be cured a minimum of 28 days.
C. The cured surfacing shall be monolithic with proper sealing connections to all unsurfaced areas and shall be placed and cured in conformance with the recommendations of the monolithic surfacing system manufacturer.
D. When cured, the system shall form a continuous, tight-fitting, hard, impermeable surfacing that is suitable for sewer system service and chemically resistant to any chemicals, bacteria or vapors normally found in domestic sewage.
E. The system shall be compatible with the thermal conditions of the existing sanitary sewer surfaces.
F. The Contractor shall submit construction procedures, technical specifications, manufacturer’s recommendations and quality control procedures to the Engineer prior to approval.

T1060.2-3.2 General

A. **Hoisting, Scaffolding, staging, and Planking:**
   1. Provide, set-up, and maintain all required hoists, scaffolds, and staging and planking, and perform all access related hoisting work required to complete the work of this section as indicated and specified.
   2. Scaffolds shall have solid backs and floors to prevent dropping materials from there to the floors or ground below.
B. **Environmental Requirements:**
   1. Comply with the Manufacturer's recommendations as to environmental conditions including external dewatering to eliminate hydrostatic pressure/moisture under which resurfacing system materials can be applied.
   2. Do not apply resurfacing system materials when dust is in work site.
   3. The Contractor shall provide all temporary lighting during the work.

C. **Protection:**
   1. Cover or otherwise protect finish work or other surfaces not being surfaced.
   2. Erect and maintain protective tarps, enclosures and/or maskings to contain debris (such as dust or airborne particles resulting from surface preparation) generated during any and all work activities. This includes, but is not limited to, the use of dust/debris collection apparatus as required.

D. **Initial Inspection of Surfaces to be Coated:**
   1. It is the responsibility of the Contractor to inspect and report unacceptable concrete substrate surface conditions to the Engineer prior to the commencement of surface preparation activities. Unacceptable surface conditions are defined as the presence of cracked surfaces or concrete deteriorated to a depth of greater than 1" or otherwise unable to withstand surface preparation as specified herein.

E. **Thinners and Solvents:**
   1. The Contractor shall use only solvents and thinners as recommended by the Manufacturer.

T1060.2-3.3 Surface Preparation Requirements

A. **General:**
   1. All specified surface preparation shall be performed in accordance with the latest version of the SSPC, NACE, ICRI and other standards referenced in this section.
   2. Active water infiltration shall be stopped by using a cementitious water plug or hydroactive grout that is compatible and suitable for topcoating with the specified monolithic surfacing system.
   3. Oil and grease shall be removed before mechanical cleaning is started via an alkaline-based emulsifying detergent as recommended by the resurfacing material manufacturer. Where mechanical cleaning is accomplished by blast cleaning, the abrasive used shall be washed, graded and free of contaminants that might interfere with the adhesion of the resurfacing materials (Reference SSPC-SP13/NACE No. 6).
   4. Verify that the pH of the cleaned concrete surfaces to be coated is within the range of to 8 to 11. Application of coating materials outside this range will not be permitted without written approval from the Engineer.
   5. Concrete surfaces shall be abraded to produce a minimum surface profile of a CSP-5 as noted in ICRI Guideline 03732. This preparation will be followed by vacuum cleaning to remove all dust, dirt or friable substances leaving clean, dust free surfaces for resurfacing as detailed in SSPC-SP 13/NACE No. 6).
      a. Used or spent blast abrasive shall not be reused on work covered by this section.
      b. The compressed air used for blast cleaning will be filtered free of condensed water or oil. Moisture traps will be cleaned at least once every four hours or more frequently as is appropriate.
      c. Oil separators shall be installed just downstream of compressor discharge valves and at the discharge of the blast pot discharges. Oil separators shall be cleaned at least once every four hours or more frequently as is appropriate.
      d. A paper blotter test shall be performed by the Contractor when requested by the Engineer or the Engineer's representative to determine if the air is sufficiently

free of oil and moisture (Reference ASTM D4285).

e. Regulators, gauges, filters, and separators will be in good working order for all of the compressor air lines to blasting nozzles at all times during this work.
f. An air dryer or drying unit shall be installed which dries the compressed air prior to blast connections. This dryer shall be used and maintained for the duration of surface preparation work.
g. The quality, volume, and velocity of life support and ventilation air used during surface preparation shall be in accordance with applicable safety standards and as required to ensure adequate visibility and proper dissipation of volatiles without impacting the prepared surface or the health of the public or personnel working for the Contractor, Subcontractors, Engineer, Engineer's representatives, or anyone who may be affected by on-site maintenance coating work activities.
h. The abrasive blast nozzles used shall be the venturi or other high velocity type supplied with the minimum air pressure and the necessary volume to obtain the required specified degree of cleanliness.
i. The Contractor must provide adequate ventilation for airborne particulate evacuation and lighting (meeting all pertinent safety standards) to optimize visibility for both blast cleaning and observation of the substrate during surface preparation work.
j. All phases of surface preparation work specified herein must be inspected by the Engineer before the Contractor proceeds with the subsequent phase of surface preparation.

T1060.2-3.4 Application Requirements

A. **General**

1. Areas not to be surfaced shall be masked using duct tape or other protection materials to prevent these surfaces from being surfaced.
2. Ensure straight, even termination of resurfacing/topcoat materials on wall edges and flush with embedded steel.
3. The Contractor must follow the minimum and maximum recoat limitation times and related temperature range restrictions between successive lifts for all products specified herein per Manufacturer's stated requirements.
4. All equipment and procedures used for resurfacing system application shall be as recommended by the Manufacturer.
5. Unless specified elsewhere herein, the Contractor shall comply with the Manufacturer's most recent written instructions with respect to the following:
   a. Mixing of All Materials.
   b. Protection and Handling of All Materials.
   c. Recoat Limitation and Cure Times.
   d. Minimum Ambient and Substrate Temperatures, Substrate's Degree of Dryness, Relative Humidity, and Dew Point of Air.
   e. Application.
   f. Final Curing.
   g. Use of Proper Application Equipment.

6. Curing of Chemical Resistant System: The applied resurfacing system shall be protected from damage during curing and shall be cured as recommended by the Manufacturer. Ambient conditions shall be controlled by the Contractor during curing to ensure the minimum air temperature and minimum relative humidity as required by the Manufacturer is maintained.

T1060.2-3.5 Field Quality Control and Inspection

A. Inspection by the Engineer or others does not limit the Contractor's responsibilities for quality control inspection and testing as specified herein or as required by the Manufacturer's instructions.

B. Perform the quality control procedures listed below in conjunction with the requirements of this Section.
   1. Inspect all materials upon receipt to ensure that all are supplied by the Manufacturer.
   2. Provide specified storage conditions for the resurfacing system materials, solvents, and abrasives.
   3. Inspect and record findings for the degree of cleanliness of substrates used. The pH of the concrete substrate will be measured using pH indicating papers. pH testing is to be performed once every 50 sq. ft. Acceptable pH values shall be between 8.0 and 11.0 as measured by a full-range (1-12) color indicating pH paper with readable color calibrations and a scale at whole numbers (minimum). Use Hydrion Insta-Check Jumbo 0-13 or 1-12 or equal. The paper shall be touched to the surface once using moderate gloved finger pressure. The surface shall not be wiped or moved laterally to disturb the surface during pH testing. Following the one touch, lift the paper vertically to not "wipe" the surface. Compare the color indicated with the scale provided and record the pH.
   4. Inspect and record substrate profile (anchor pattern). Surfaces shall be abraded, as a minimum, equal to the roughness of CSP-5 ICRI Guideline 03732.
   5. Measure and record ambient air temperature once every two hours of each shift using a thermometer and measure and record substrate temperature once every two hours using a surface thermometer.
   6. Measure and record relative humidity every two hours of each shift using a sling psychrometer in accordance with ASTM E337.
   7. Provide correct mixing of resurfacing materials in accordance with the Manufacturer’s instructions.
   8. Inspect and record that the "pot life" of resurfacing materials is not exceeded during installation.
   9. Verify curing of the resurfacing materials in accordance with the Manufacturer's instructions.
   10. Upon full cure, the installed lining system shall be checked for discontinuities by high voltage holiday detection in accordance with NACE RP0188-90, and the manufacturer’s printed application guide to verify a pinhole-free surface. Areas which do not pass the holiday detection test shall be corrected at no cost to the Owner and rechecked
   11. Upon completion of the lining system installation, the lined area shall be cleaned

and prepared to permit close visual inspection by the Engineer or the Engineer's representative. Any and all deficiencies or defective work (not in compliance with this section or related sections) will be marked for repair or removal/replacement by the Contractor at no additional cost to the Owner.

C. As each coating is completed, Contractor shall, in cooperation with the Owner's Testing Laboratory, perform destructive thickness testing in accordance with the following test procedure at no additional cost:
   1. Contractor shall advise the Owner's Testing Laboratory of the readiness for each tank to be tested.
   2. The Owner's Testing Laboratory shall mark and number sample locations at a rate of one test per 2,000 square feet of coated surface.
   3. Contractor shall, utilizing a coring bit, remove the coating from the indicated spot mark the sample with the corresponding sample location number and deliver it to the Owner's Testing Laboratory.
   4. Owner's Testing Laboratory shall measure the sample thickness at representative points around the sample perimeter to determine specification compliance. If a sample is found to be deficient in thickness, then it shall be considered as a failing sample. The entire area between the failing sample and the next adjacent passing samples either side of the failed sample shall be considered to have failed. In that case, Contractor shall recoat all failed areas and additional sampling will be performed at a frequency directed by the Owner's Testing Laboratory.
   5. Recoating and associated surface preparation shall be in accordance with coating manufacturer's recommendations.
   6. At contractor's request prior to recoating of a failed area, additional core samples will be marked by the Owner's Testing Laboratory for testing with the intent to more precisely define the extent of the coatings thickness failure. Such samples shall be no closer than 50% of the distance between the outermost failed test and the adjacent passing test.
   7. The location of test cores shall not be repaired prior to examination of the cores by the Owner's Testing Laboratory. Upon the Owner's Testing Laboratory approval, all test core locations shall be patched in accordance with coating manufacturer's recommendations.
   8. All areas required to be recoated shall be retested and additional sampling will be performed at a frequency directed by the Owner's Testing Laboratory to include at least two core samples.
   9. If more than 30% of the original core samples indicate insufficient coatings thickness, then the entire structure shall be considered to have failed and the entire structure shall be recoated.
   10. All testing, coring, repairs and recoating shall be at no additional cost to the Owner.

T1060.2-3.6 Final Inspection

Perform a final inspection to determine whether the resurfacing system work meets the requirements of the specifications. The Engineer and the Owner's Testing Laboratory representative will conduct final inspection with the Contractor.

T1060.2-3.7 Clean-up

Upon completion of work, the Contractor shall remove surplus materials, equipment, protective coverings, and accumulated rubbish, and thoroughly clean all surfaces and repair any work-related damage. The surrounding surface areas including roadways and all other surfaces shall be restored to their pre-project condition.

T1060.2-3.8 Basis of Payment

Prices and payments will be full compensation for all work and materials specified in this section.

Payment Item: Payment shall be made under

Item No. 1060-11-222 Utility Structure, Below Ground, F & I, Water/Sewer, >80 CF, 6.1' – 12' – EA

Item No. 1060-11-223 Utility Structure, Below Ground, F & I, Water/Sewer, > 80 CF, >12' – EA

END OF SECTION

SECTION T1080
VALVES AND ACCESSORIES

T1080-1 GENERAL

T1080-1.1 Scope of Work

The CONTRACTOR shall furnish all labor, materials, equipment and incidentals required and install complete and ready for operation and test all buried and non-buried valves as shown on the Drawings and as specified herein.

T1080-1.2 Submittals

J. Submit materials required to establish compliance with these Specifications in accordance with Section 01300. Submittals shall include the following:
   6. Certified drawings showing all important details of construction and dimensions.
   7. Descriptive literature, bulletins and/or catalogs of the equipment.
   8. The total weight of each item.
   9. A complete bill of materials.
   10. Additional submittal data, where noted with individual pieces of equipment.

K. Test Reports: Provide certified hydrostatic test data, per Manufacturers standard procedure or MSS-SP-61 for all valves.

L. Certificates: For each valve specified to be manufactured, tested and/or installed in accordance with AWWA and other standards, submit an affidavit of compliance with the appropriate standards, including certified results of required tests and certification of proper installation.

M. Manufacturer's Installation and Application Data

N. Operating and Maintenance Data: Operating and maintenance instructions shall be furnished to the ENGINEER. The instructions shall be prepared specifically for this installation and shall include all required cuts, drawings, equipment lists, descriptions and other information required to instruct operating and maintenance personnel unfamiliar with such equipment.

T1080-1.3 Reference Standards

J. **American Society for Testing and Materials (ASTM):**
   10. ASTM A48 - Specification for Gray Iron Castings.
   11. ASTM A126 - Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings.
   12. ASTM A159 - Specification for Automotive Gray Iron Castings.
   13. ASTM A240 - Standard Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels.
   14. ASTM A276 - Standard Specification for Stainless and Heat-Resisting Steel Bars and Shapes.
   15. ASTM A436 - Specification for Austenitic Gray Iron Castings.
   16. ASTM A536 - Specification for Ductile Iron Castings.
   17. ASTM B30 - Specification for Copper-Base Alloys in Ingot Form.

18. ASTM B62 - Standard Specification for Composition Bronze or Ounce Metal Castings

K. **American Water Works Association (AWWA):**

12. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings.
13. AWWA C500 - Gate Valves, 3-in Through 48-in NPS, for Water and Sewage Systems
14. AWWA C504 - Rubber-Seated Butterfly Valves
15. AWWA C507 - Ball Valves 6-in Through 48-in
16. AWWA C508 - Swing-Check Valves for Waterworks Service, 2-in Through 24-in NPS
17. AWWA C509 - Resilient-Seated Gate Valves, 3-in Through 12-in NPS, for Water and Sewage Systems
18. AWWA C511 - Reduced Pressure Principle Backflow Prevention Assembly
19. AWWA C540 - Power-Actuating Devices for Valves and Sluice Gates
20. AWWA C550 - Protective Interior Coatings for Valves and Hydrants
21. AWWA C800 - Underground Service Line Valves and Fittings
22. AWWA C515 – Resilient Seated Valves for 14" and Larger

L. **American National Standards Institute (ANSI):**

5. ANSI B2.1 - Specifications, Dimensions, Gauging for Taper and Straight Pipe Threads (except dry seals).
6. ANSI B16.1 - Cast Iron Pipe Flange and Flanged Fittings Class 25, 125, 250 and 800
7. ANSI B16.10 - Face-to-Face and End-to-End Dimensions of Valves
8. ANSI B16.104 - Butterfly Valves

M. **American Iron and Steel Institute (AISI).**

N. **Manufacturer's Standardization Society of the Valve and Fittings Industry (MSS):**

10. MSS-SP-61 - Pressure Testing of Steel Valves.
11. MSS-SP-67 - Butterfly Valves.
12. MSS-SP-70 - Cast Iron Gate Valves, Flanged and Threaded Ends.
13. MSS-SP-71 - Cast Iron Swing Check Valves, Flanged and Threaded Ends.
14. MSS-SP-72 - Ball Valves with Flanged or Butt-Welding Ends for General Services.
15. MSS-SP-78 - Cast Iron Plug Valves, Flanged and Threaded Ends.
16. MSS-SP-80 - Bronze Gate, Globe, Angle and Check Valves.
17. MSS-SP-82 - Valve Pressure Testing Methods
18. MSS-SP-98 - Protective Epoxy Coatings for Interior of Valves and Hydrants.

O. **National Electrical Manufacturers Association (NEMA).**

P. **Underwriters Laboratories (UL).**

Q. **Factory Mutual Insurance (FM).**

R. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

T1080-1.4 Quality Assurance

C. **Qualifications:**

1. Valves and appurtenances shall be products of well established firms who are fully experienced, minimum 10 years, reputable and qualified in the manufacture of the particular equipment to be furnished.
2. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications as applicable.
3. All units of the same type shall be the product of one Manufacturer.

D. **Certifications:**
1. The Manufacturer's shall furnish an affidavit of compliance with Standards referred to herein as specified in paragraph 1.03C.
2. Refer to Part 3 for testing required for certain items in addition to that required by referenced standards.

E. Provide the services of a qualified and factory-trained service representative of the Manufacturer to provide operational and maintenance instruction, for a one-day, eight hour period for:
1. Valve motor operators.
2. Valve hydraulic operators.
3. Valve pneumatic operators.
4. Pressure regulating valves.
5. Air release, air and vacuum valves.

F. Inspection of the units may also be made by the ENGINEER or other representative of the OWNER after delivery. The equipment shall be subject to rejection at any due to failure to meet any of the Specification requirements, even though submittal data may have been accepted previously. Equipment rejected after delivery shall be marked for identification and shall be removed from the job site at once.

T1080-1.5 System Description

A. Care shall be taken in loading, transporting and unloading to prevent injury to the valves, appurtenances, or coatings. Equipment shall not be dropped. All valves and appurtenances shall be examined before installation and no piece shall be installed which is found to be defective. Any damage to the coatings shall be repaired as acceptable to the ENGINEER.

B. Prior to shipping, the ends of all valves shall be acceptably covered to prevent entry of foreign material. Covers shall remain in place until after installation and connecting piping is completed.
1. All valves 3-in and larger shall be shipped and stored on site until time of use with wood or plywood covers on each valve end.
2. Valves smaller than 3-in shall be shipped and stored as above except that heavy cardboard covers may be used on the openings.
3. Rising stems and exposed stem valves shall be coated with a protective oil film which shall be maintained until the valve is installed and put into use.
4. Any corrosion in evidence at the time of acceptance by the OWNER shall be removed, or the valve shall be removed and replaced.

C. Storage and Protection:

Special care shall be taken to prevent plastic and similar brittle items from being directly

exposed to the sun, or exposed to extremes in temperature, to prevent deformation. See the individual piping specifications and Manufacturer's information for further requirements.

T1080-1.6 Maintenance

A. Special tools and the Manufacturer's standard spare parts, if required for normal operation and maintenance, shall be supplied with equipment.
B. Provide all special tools required for normal maintenance.
C. Tools shall be packaged in a steel case, clearly and indelibly marked on the exterior to indicate equipment for which tools are intended.
D. Provide to the OWNER a list of all spare and replacement parts with individual prices and location where they are available.
E. Prices shall remain in effect for a period of not less than one year after start-up and final acceptance.

T1080-2 PRODUCTS

T1080-2.1 Materials and Equipment – General

A. Reference is made to Division 1 for additional requirements, including nameplates, provisions for temporary pressure gages, protection against electrolysis and anchor bolts.
B. The use of a Manufacturer's name and/or model or catalog number is for the purpose of establishing the standard of quality and general configuration desired.
C. Valves and appurtenances shall be of the size shown on the Drawings or as noted and as far as possible equipment of the same type shall be identical and from one Manufacturer.
D. Valves and appurtenances shall have the name of the maker, nominal size, flow directional arrows, working pressure for which they are designed and standard referenced, cast in raised letters or indelibly marked upon some appropriate part of the body.
E. Unless otherwise noted, items shall have a minimum working pressure of 150 psi or be of the same working pressure as the pipe they connect to, whichever is higher and suitable for the pressures noted where they are installed.
F. Joints, size and material - unless otherwise noted or required by the ENGINEER:
    1. Except where noted, all joints referred to herein shall be of the same type, nominal diameter, material and with a minimum rating equal to the pipe or fittings they are connected to.
    2. Valves and appurtenances shall be of the same nominal diameter as the pipe or fittings they are connected to.
    3. All valves exposed to view, or in vaults.
        b. 3-in and smaller - threaded ends
        c. 4-in and larger flanged ends.
G. Provide all special adaptors as required to ensure compatibility between valves, appurtenances and adjacent pipe.
H. Valves and actuators located outdoors but not within a building; within maximum 2-ft above liquid; in vaults; or where otherwise noted shall be especially designed for submerged service where water may completely submerge the valve and operator. All

other units shall be as a minimum weather tight.

T1080-2.2 Valve Actuators – General

A. The valve Manufacturer shall supply and integrally, rigidly mount all actuators, including any type of manual or powered actuators, on valves at the factory. The valves and their individual actuators shall be shipped as a unit.
B. Unless otherwise noted, valves shall be manually actuated; nonburied valves shall have an operating wheel, handle or lever mounted on the operator; buried valves and those with operating nuts shall have a non-rising stem with an AWWA 2-in nut. At least two tee handles shall be provided for all operating nuts.
C. Except as otherwise shown on the Drawings or specified herein, all valves 3-in diameter or larger, with the valve center line located 7-ft or more above the operating floor, shall be provided with chain wheel operators complete with chain guides and hot dipped galvanized steel chain, which loop within 4-ft of the operating floor.
D. All actuators shall be capable of moving the valve from the full open to full close position and in reverse and holding the valve at any position part way between full open or closed.
E. Each operating device shall have cast on it the word "OPEN" and an arrow indicating the direction of operation.
F. Floor boxes for operating nuts recessed in concrete shall be standard cast iron type, cast-in-place, with fastening top by Clow or equal.
G. Stem guides shall be of the adjustable wall bracket type, bronze bushed, with maximum spacing of 10-ft as manufactured by Clow; Rodney Hunt or equal. Extended operating nuts and/or stems shall have universal joints and pin couplings, if longer than 10-ft and a rating of at least five times the maximum operating torque. Stem adaptors shall be provided.
H. Where required by the installation, or as specified, provide the following: extended stem; floor stand and handwheel; position indicator and etched or cast arrow to show direction of rotation to open the valve; resilient seal around stem penetration of slab.

T1080-2.3 Butterfly Valves for Fluid Service (Metal Body)

A. Butterfly valves and operators up to 72 inches diameter shall conform to AWWA C504, Class 150B, except as hereinafter specified. The Manufacturer shall submit an affidavit of compliance stating that the valves have been manufactured and tested in accordance with AWWA C504 and specifically listing all exceptions. Valves shall have a minimum 150 psi pressure rating or higher as noted on the Drawings or in the Specifications and be manufactured by Val-Matic Pratt, Dezurik or equal.
B. Butterfly valves for above grade shall be flanged end with face to face dimensions in accordance with Table 2 of AWWA C504 Standard for short-body valve. All valves for dead end shut off service shall be flanged type. Butterfly valves for buried service shall be mechanical joint ends conforming to ANSI/AWWA C111/A21.11 and shall be mechanically restrained with Megalug Series 1100 or ENGINEER approved equal.
C. Valve seats shall be full resilient seats retained in the body or on the disc edge in accordance with AWWA C504. Valve discs shall be constructed of cast iron, ASTM A48, Class 40; Ni-resist, ASTM A126, Class B; or ductile iron, ASTM A536, Grade 65-45-12.

1. For valves 24-inch in diameter and larger, when the resilient seats are attached to the body, discs shall have Type 316 stainless steel seating edges. When the resilient seat is attached to the disc, it shall be fastened with a one piece Type 316 stainless steel retaining ring, Type 316 stainless steel Nylock set screws and a mating Type 316 stainless steel ring shall be installed in the valve body.
2. Resilient seats shall be Hycar or equal. Seats shall be fully adjustable and replaceable with the valves in place for all valves.

D. The valve body shall be constructed of close grain cast iron per ASTM A126, Class B with integrally cast hubs for shaft bearing housings of the through boss-type. Permanently self-lubricating body bushings shall be provided and shall be sized to withstand bearing loads. Stuffing box of liberal dimensions shall be provided at the operator end of the vane shaft.
   1. Packing shall be of the self compensating v-type. A sealing element utilizing O-rings shall also be acceptable for up to and including 24-in valves. Over 24-in, pull down seals using a square braid of graphited asbestos is an acceptable alternate.
   2. Packing shall be held in place by a bolted corrosion resistant retainer plate or gland; retainer clips are not acceptable. For 30-in or larger, use a stuffing box with follower gland.
   3. Replacement of seals, for all size butterfly valves, shall not require removal of the valve from the line. In addition adjustment or replacement of seals on valves of 30-in or larger shall not require disturbing any part of the valve or operator assembly, except any packing follower gland.

E. The valve shaft shall be of Type 316 stainless steel and designed for both torsional and shearing stresses when the valve is operated under its greatest dynamic or seating torque. No reductions of shaft diameter will be allowed except at the operator connection. Any reduction shall have a full radius fillet.

F. In general, the butterfly valve actuator shall conform to the requirements of AWWA C504, insofar as applicable and as herein specified.

G. Gearing for the actuators where required shall be totally enclosed in a gear case in accordance with AWWA C504.

H. The manual actuators shall conform to AWWA C504, insofar as applicable. Actuators shall have permanent indicators with raised or engraved marks to show position of the valve disc.

T1080-2.4 Gate Valves (2-1/2-In and Smaller)

D. Gate valves 2-1/2-in diameter and smaller shall have flanged, screwed, or solder ends as required and shall be brass, or bronze, or Type 304 stainless steel solid wedge, union bonnet, rising-stem gate valves such as Figures 47 and 48 as manufactured by Jenkins Brothers or equal products as manufactured by Crane; Fairbanks; Lukenhiemer or equal.

E. All water valves 2-1/2-in and 3-in unless noted otherwise, shall be brass body gates and shall be Jenkins No. 1240, or Hammond 1B-647.

T1080-2.5 Gate Valves (3-In and Larger)

A. **General Requirements:**
   1. Unless otherwise specified below, these requirements shall apply to all gate valves.

2. Gate valves shall meet the requirements of AWWA C500 and AWWA C509 as applicable to the type of valve specified.
3. Buried and submerged valves shall be furnished with mechanical joints and stainless steel hardware; non-rising stem design.
4. Exposed valves shall be furnished with Class 125 flanged ends and hand wheel; provide valves with outside screw and yoke.
5. All-metal valves shall be manufactured of ASTM A536, Ductile Iron, with bronze mounting design.
6. Rising stem valves shall be sealed with adjustable and replaceable packing; valve design must permit packing replacement under operating system pressures with only moderate leakage.
7. Non-rising stem valves shall use a double O-ring stem seal, except that packing shall be used where geared operators are required.
8. Except as otherwise specified, valves shall be rated for the following working water pressures:

Valve Size	Pressure (psig)
3-in to 12-in	250
14-in to 20-in	250
24-in and greater	250

   All valve bodies shall be hydrostatically tested to at least twice the rated working water pressure. In addition, valves shall be seat-tested, bi-directional at the rated working pressure, with seat leakage not to exceed one fluid ounce per inch of valve diameter per hour. Provide certificates of testing.
9. Flanged valves to have face-to-face dimensions per ANSI B16.1 and flanges per ANAI B16.10.
10. Exposed valves 16-in and larger to have valve by-pass.
11. All bonnet and packing gland bolts shall be zinc or cadmium electroplated steel; packing gland bolts shall have bronze nuts.
12. Exposed valves 16-in and greater indicated for horizontal stem installation shall be furnished with rollers, tracks and scrapers and enclosed bevel gear grease case.
13. Provide geared operator and chain wheel, chain and chain guides for valves with handwheel centerline more than 7-ft above operating level.
14. All valves shall be marked per AWWA Standards, including name of Manufacturer, valve size and working pressure and year of manufacture.
15. Unless otherwise indicated, valves 12-in and smaller shall be capable of installation in the vertical or horizontal position, sealing in both directions at the rated pressure.
16. Valve operation shall be counterclockwise for potable water; clockwise for wastewater and other non-potable waters. Provide permanent label showing "OPEN" and arrows.
17. Metal-seated valves shall be coated internally and externally with an asphaltic varnish, per AWWA C500. Resilient seated valves shall be coated, interior and exterior, with fusion bonded epoxy per AWWA C550.

B. **Valve Applications:**

1. Valves for Non-Potable Water Service:
    a. Resilient seat gate valves shall be ductile iron bodied, bronze mounted, with wedge type disk, hand wheel and rubber seat. Valves shall be manufactured in accordance with AWWA C509. Valves shall be suitable for above ground service, be designed for 150 psi working pressure, shall be of O-ring type, with non-rising stem, and opening counterclockwise. Valves shall have flanged ends. Valves shall be coated in accordance with AWWA C550.
    b. Resilient seated design manufactured by American R-B Clow, Mueller, M&H Valve Company or equal.
2. Valves for Wastewater Service (NOT USED)
3. At the CONTRACTOR's option and unless otherwise indicated, any of the listed valve styles may be used, at no additional cost to the OWNER.

C. **Valve Requirements:**
1. Double Disc (NOT USED)
2. Double Revolving Disc (NOT USED)
3. Solid Wedge (NOT USED)
4. Resilient Seated:
    a. Conform to AWWA C509. Also UL and FM approved.
    b. Internal and external epoxy coating of valve body, including bonnet, per AWWA C550.
    c. Gate shall be encapsulated with synthetic rubber. It shall be bonded and vulcanized in accordance with ASTM B429 Method B.
    d. No recesses in valve body.

D. **Buried Valves:**
1. Conform to the requirements above, except mechanical joint bell ends per AWWA C111. The valve shall be mechanically restrained with Megalug Series 1100 or ENGINEER approved equal. All exposed valve hardware (nuts, bolts, washers, etc.) including bonnet, bonnet cover, stuffing box, gear adaptor and joints shall be Type 304 stainless steel.
2. Non-rising stem design, double o-ring seals for non-geared valves and shall incorporate packing for geared valves.
3. Provide valve box, 2-in operating nut and extension stem and stem cover.

E. **Tapping Valves and Sleeves:**
M. Tapping valves shall comply with the same requirements as resilient seated gate valves or double revolving disc gate valves except they shall have the flanged end and port opening modified for tapping service. Valves shall be capable of passing a full nominal sized cutter without damage to the valve. The tapping sleeve shall be gray cast iron or ductile iron mechanical joint type with the outlet flange conforming to MSS-SP-60.
N. All water valves, 4-in and larger, shall be iron body gates, bronze trim, flanged ends, O.S. & Y. pattern, solid wedge, rising spindle, Jenkins No. 651, or Hammond 1R-1140.

T1080-2.6 Plug Valves

A. Plug valves shall be of the offset disc type, ¼ turn, non-lubricated, serviceable (able to be

repacked) under full line pressure and capable of sealing in both directions at the rated pressure. The disc shall be completely out of the flow path when open. Plug valves specified herein shall be by DeZurik, Clow, M&H, Val-Matic, or equal. All Manufacturers, named or otherwise, must comply completely with the specification.

1. For clean liquid or screened sewage, all size plug valves shall have a minimum port area of 80 percent.
2. On sludge and scum lines, all valves 24-in and larger shall have a minimum 100 percent open port area; for all other valves, a minimum port area shall be 80 percent when measured by the percent cross-sectional area of equivalent size (nominal same diameter) pipe.
3. All plug valves for what ever service, shall be capable of passing "pigging" cleaning equipment (using a Girard or similar cleaning pig of full nominal pipeline diameter) in either direction and Manufacturer shall so certify that this may be done without the use of special equipment.

B. Valves shall be rated at minimum 175 psi W.O.G. (Water, Oil, and Gas) working pressure for sizes 4-in to 12-in inclusive and at minimum 150 psi W.O.G. working pressure for sizes 14-in and larger.
   1. All plug valves under this paragraph shall be performance, leakage and hydrostatically tested in accordance with AWW A C504, except as herein modified. '
   2. At the above rated minimum working pressures, the valves shall be certified by the Manufacturer as permitting zero leakage for a period of at least one-half hour with pressure applied to the seating face.
   3. At the request of the ENGINEER, the valve Manufacturer may have to perform a valve seat leakage test, witnessed by the ENGINEER to prove compliance with these Specifications.

C. Valve bodies shall be of cast iron, 30,000 psi tensile strength, ASTM A 126, Grade B, or of ductile iron, ASTM A536 and of the top entry, bolted bonnet design, cast with integral flanges conforming to the connecting piping. All exposed bolts, nuts and washers shall be zinc or cadmium-plated, except for buried or submerged valves, which shall have Type 316 stainless steel hardware.

   The valve disc shall:
   1. Be cast iron ASTM A 126, Grade B, or ductile iron, ASTM A536, Grade 65-45-12.
   2. Be removable without removing the valve from the line.
   3. Have an integral upper and lower shaft which shall have seals on the upper and lower journals to prevent entrance of solids into the journals.
   4. Be one piece for valves up to 14-in and maximum two piece for larger valves.

D. Shaft bearings shall be permanently lubricated, rigidly backed TFE, stainless steel or bronze at both upper and lower stem journals. The operator shaft shall have easily replaceable seals, which shall be externally adjustable and repackable without removing the bonnet from the valve, or shall have self adjusting packing.

E. The valve seating surface shall provide full 360 degree seating by contact of a resilient seating material on the disc mating with welded-in high nickel content overlay seating surface in the body.
   1. The seating design shall be resilient and of the continuous interface type having

consistent opening and closing torques and shall be non-jamming in the closed position. Screw-in seats shall not be acceptable.

2. Discs shall have a full resilient facing of neoprene or Buna-N.

F. The methods of mounting the actuator to the valve shall provide an air gap between the two. Actuator shall clearly indicate valve position and an adjustable stop shall be provided. Construction of actuator housing shall be semi-steel. Hardware on actuators shall be of the same materials as the valves.

G. Unless otherwise required, due to location or operation, each valve 6-in and smaller shall be provided with its own securely attached lever. Provide adjustable limit stops for both opening and closing and a clearly marked position indicator.

H. Plug valves shall be installed so that the direction of flow through the valve and the shaft orientation is in accordance with the Manufacturer's recommendations. Unless otherwise noted, shaft shall be horizontal, with plug opening up.

T1080-2.7 Ball Valves

A. **Ferrous Ball Valves:**

1. Ball valves for mainline or water service shall be either ductile iron or carbon steel body, full bore, fire-safe, rated for a line pressure of 150 psig. Except as noted, ball valves shall comply with AWWA C507.
2. The design of the valve shall be such that it shall provide suitable seating in both directions. In order to determine the position of the ball within the valve (open or closed), there shall be an easily visible, permanent, indicator located conspicuously on the valve. Ball valves shall have Type 316 stainless steel seating surfaces. Seats shall be Type 304 stainless steel. The fully open port area shall be approximately 100 percent of the nominal pipe area.
3. Valve shafts shall be ground and polished and shall be Type 304 stainless steel. Teflon-lined bearings shall be supplied in both trunnions of the valve body.
4. The valves shall be constructed so that the seals, seats and balls are accessible for replacement without dismantling the piping. The valves shall not require lubrication but shall have stuffing boxes which can be packed with the valve in service without undue leakage. Ball valves shall be as manufactured by Henry Pratt Co., Aurora, IL; Williamette, Portland, or equal.
5. Valve actuators shall conform to AWWA C507 and as specified herein.

B. Ball valves for water piping shall be manual or electric actuated (as shown on the Drawings), bronze, resilient seated, regular port, threaded two piece bolted body type valves. The body and cap shall be of brass, ASTM B30, the ball and stem of Type 316 stainless steel and the seats and seals of TFE. The valves shall have full floating ball and shall be non lubricated. Valve seats shall be easily accessible and replaceable. Valves shall be rated to 250 psi and shall be as manufactured by Neles-Jamesbury; WKM or equal.

T1080-2.8 Check Valves

A. Swing check valves, sizes 2-1/2 inches through 12 inches shall be spring and lever operated with bronze disc facing and flanged ends with a maximum working pressure of 175 psig and test pressure of 350 psig.

B. Swing check valves, sizes 14 inches through 24 inches shall be spring and lever operated with bronze disc facing and flanged ends with a maximum working pressure of 150 psig and test pressure of 300 psig.
C. Swing check valves, sizes 4 inches and smaller shall use bronze disc ASTM B584.
D. Valves shall meet all applicable parts of ANSI/AWWA C508 Standard.
E. Valves for above grade shall be flanged end. Flanged end dimensions and drilling shall comply with ANSI B16.1, Class 125. Swing check valves for buried service shall be mechanical joint ends.
F. The valve body shall be constructed of ductile or cast iron per ASTM A126, Class B, or ASTM A536, bronze mounted (IBBM).
G. Valves shall be located above grade unless otherwise noted in the Drawings and Specifications.
H. Valves shall have an O-ring sealed stuffing box.
I. Valves shall have adjustable spring tension to control opening and closing of the clapper.
J. Valves shall be installed so that the direction of flow through the valve and the shaft orientation is in accordance with the Manufacturer's recommendations.
K. Swing check valves specified herein shall be by Mueller Company, Model No. 2600 for above grade installations, or ENGINEER approved equal. All Manufacturers, named or otherwise, must comply completely with the specification.

T1080-2.9 Air Release Valves

A. Air release valve assembly shall be furnished and installed on the reuse water transmission main as shown on the drawings.
B. Air release or valve assembly shall consist of a combination short body, air release-vacuum breaker valves, installed in a manhole with vented manhole cover, gate valve, fittings, tapping saddle and connecting piping to the main.
C. Air release valves shall be installed to release any small accumulations of air, which may collect while pipe is in operation and under pressure.
D. Air release valves on a HDPE pipe shall utilize an electrofusion corp saddle with stainless steel outlet as manufactured by Central Plastics or equal.
E. The air release valves shall be Val-Matic Model 42 or engineer approved equal.
F. The small orifice assembly air release valve shall automatically release air accumulations from the pipe while under positive pressure.
G. When the valve body fills with air, the float ball shall fall to open the small orifice and exhaust the air to atmosphere.
H. When the air has been exhausted, the float ball shall be buoyed up and tightly close the small orifice.
I. The small orifice assembly shall be furnished with cast iron body and cover (ASTM A126-B).
J. The float ball shall be constructed of stainless steel and attached to a stainless steel lever mechanism.
K. A resilient, Buna-N seat shall be attached to the lever mechanism for drop-tight closure.
L. Valves shall be corrosion resistant, suitable for reuse water transmission main application, and shall automatically function to release to the atmosphere both large and small amounts of air that accumulate in the pipeline.

M. Once the air has been exhausted, both valves shall seal tightly to prevent liquid leakage.
N. The valve shall also function to admit air into a line, tank, or chamber under emergency conditions or when it is being drained.
O. The capacity and pressure rating of the valve is dependent on the diameter of the precision orifice in the cover.
P. The Orifice Size shall be 5/32-inch. A large inlet connection is required for proper air and water exchange.
Q. The reuse water air release valves inlet size shall be 2-inch NPT for reuse water mains.
R. The reuse water air release valves outlet size shall be 1/2-inch NPT for reuse water mains.
S. The Air Release Valves shall be automatic float operated valves designed to release accumulated air from a piping system while the system is in operation and under pressure and installed in a concrete box as shown on the drawings.
T. Box and like shall be of the necessary size to the valve.
U. To connect the air valve, a corporation stop shall be tapped into the main using the procedures as recommended by the ductile iron pipe manufacturer.
V. The corporation stop shall be Mueller H-10045 or approved equal.
W. The valve body shall be threaded with NPT inlets and outlets.
X. The body inlet connection shall be hexagonal for a wrench connection.
Y. The valve shall have two additional NPT connections for the addition of gauges, testing and draining.
Z. The valve body and cover shall be constructed of ASTM A126 Class B cast iron working pressures of 300 psig, with resilient seats, rubber covered floats and no levers.
AA. The cover shall be bolted to the valve body and sealed with a flat gasket.
BB. Resilient seats shall be replaceable and provide drop tight shut off to the full valve pressure rating.
CC. Floats shall be unconditionally guaranteed against failure including pressure surges.
DD. Mechanical linkage shall provide sufficient mechanical advantage so that the valve will open under full operating pressure.
EE. The orifice, float and linkage mechanisms shall be constructed of Type 304 stainless steel.
FF. Non-metallic floats or linkage mechanisms are not acceptable.
GG. The manufacturer shall demonstrate a minimum of five (5) years experience in the manufacture of air valves.
HH. The valves shall be manufactured and tested in accordance with American Water Works Association Standard (AWWA) C512.
II. The manufacturer shall provide test certificates, dimensional drawings; parts list drawings, and operation and maintenance manuals.
JJ. The exterior of the valve shall be coated with a universal alkyd primer.
KK. Air Release Valves shall be as manufactured by Val-Matic Valve & Mfg. Corporation Model No. 38.6, Elmhurst, IL. USA or approved equal.

T1080-2.10 Air/Vacuum Valves (Normal Operation)

A. The large orifice assembly air and vacuum valve shall automatically exhaust air from a

pipeline during the initial filling of the pipeline.

B. The large orifice assembly shall not blow shut while exhausting air, even while venting air at sonic velocity.
C. When all air has been exhausted from the pipeline, the large orifice float ball shall be buoyed up to seat tightly against a resilient seat ring.
D. The large orifice float ball shall remain tightly closed while the pipeline is under positive pressure.
E. Should the pipeline pressure fall below atmospheric pressure (such as during draining or a line break), the large orifice float ball shall automatically fall away from the seat ring and permit air to enter the pipeline.
F. The large orifice assembly shall be furnished with cast iron body and cover (ASTM A126-B).
G. A resilient, Buna-N seat ring shall be affixed to the valve cover.
H. The float ball shall be constructed of stainless steel with a minimum pressure rating of 1,000 psi. [The float ball shall be free floating within the valve body; guide stems, linkages or levers attached to the float are not acceptable.]
I. Unit shall be manufactured by GA; APCO; Val-Matic or equal. Special type for use with non-clean fluids shall be provided.

T1080-2.11 Combination Air and Air/Vacuum or Vacuum Relief Valves

A. Valves shall be corrosion resistant, suitable for reuse water application. Combination air valve assembly shall be furnished and installed on the reuse water transmission main as shown on the drawings.
B. Combination air valve assembly shall consist of a single body, combination air release and air/vacuum valves, installed in a manhole with vented manhole cover, gate valve, fittings, tapping saddle and connecting piping to the reuse water main. Manhole and like shall be of the necessary size to the valve.
C. Combination air valves shall be automatic float operated valves and installed to release large accumulations of air during the filing of the piping system and close upon liquid entry.
D. The valve shall open during draining or if a negative pressure occurs.
E. The valve shall also release accumulated from a piping system while the system is in operation and under pressure.
F. The capacity and pressure rating of the valve is dependent on the diameter of the precision orifice in the cover.
G. The large orifice diameter shall be 2-inch and the air release orifice shall be 3/32."
H. A large inlet connection is required for proper air and water exchange.
I. The reuse water combination air valves inlet and outlet size shall be 2-inch NPT.
J. To connect the air valve, a corporation stop shall be tapped into the main using the procedures as recommended by the ductile iron pipe manufacturer.
K. The corporation stop shall be Mueller H-10045 or approved equal.
L. The single body valve shall be threaded with NPT inlets and outlets. The NPT inlets and outlets shall be equal to the nominal valve size.
M. The body inlet connection shall be hexagonal for a wrench connection.
N. The valve shall have two additional NPT connections for the addition of gauges, testing

and draining.

O. The combination air valve shall be furnished with cast iron body and cover (ASTM A126-B).
P. The float ball, guide shafts, and bushings shall be constructed of type 304 stainless steel and attached to a stainless-steel lever mechanism.
Q. A resilient, Buna-N seat shall be attached to the lever mechanism for drop-tight closure. Non-metallic floats or linkage mechanisms are not acceptable.
R. Single body combination valves shall have an expanded outlet to provide full are around the guide mechanism.
S. The valve shall have a double guided plug and an adjustable threaded orifice.
T. The plug shall be protected against direct water impact by an internal baffle.
U. The plug shall have a precision orifice drilled through the center stem.
V. The cover shall be bolted to the valve body and sealed with a flat gasket.
W. Resilient seats shall be replaceable and provide drop tight shut off to the full valve pressure rating.
X. Floats shall be unconditionally guaranteed against failure including pressure surges.
Y. Mechanical linkage shall provide sufficient mechanical advantage so that the valve will open under full operating pressure.
Z. The exterior of the valve shall be coated with a universal alkyd primer.
AA. The manufacturer shall demonstrate a minimum of five- (5) years experience in the manufacture of air valves.
BB. The valves shall be manufactured and tested in accordance with American Water Works Association Standard (AWWA) C512.
CC. The manufacturer shall provide test certificates, dimensional drawings; parts list drawings, and operation and maintenance manuals.
DD. Air Valves shall be as manufactured by Val-Matic Valve & Mfg. Corporation engineer approved equal.

T1080-2.12 Pressure Relief Valves for Air

A. Pressure relief valves shall be designed for air and built to ASME standards and shall be National Board Certified.
B. The Valve shall have a one-piece brass body, chrome steel ball on brass seat, silicone rubber seal, and stainless steel spring.
C. The Preset pressure limit of 100 psi shall be tested and sealed by the manufacturer.
D. The pressure relief valve shall have a bubble tight seal within 10% of set pressure.
E. The pressure relief valve shall be manufactured by Control Devices, Inc. or ENGINEER-approved equal.

T1080-2.13 Insulating Fittings

Fittings shall be of type to provide control of electrolysis and equal to “Dielectric” as manufactured by Watts Regulator Co., or equal.

T1080-2.14 Surface Preparation and Shop Coatings

A. Not withstanding any of these Specifications, all coatings and lubricants in contact with non-potable water shall be certified as acceptable for use with that fluid.

B. In case of a conflict, the requirements of this Section govern.
C. If the Manufacturer's requirement is not to require finished coating on any interior surfaces, then Manufacturer shall so state and no interior finish coating will be required, if acceptable to the ENGINEER.
D. The exterior surface of various parts of valves, operators, floor-stands and miscellaneous piping shall be thoroughly cleaned of all scale, dirt, grease or other foreign matter and thereafter one shop coat of an approved rust-inhibitive primer such as Inertol Primer No. 621 shall be applied in accordance with the instructions of the paint Manufacturer or other primer compatible with the finish coat provided.
E. Unless otherwise noted, interior ferrous surfaces of all valves shall be given a shop finish of an asphalt varnish conforming to AWWA C509, (except mounting faces/surfaces) or epoxy AWWA C550 with a minimum thickness of 4 mil.
F. Ferrous surfaces obviously not to be painted shall be given a shop coat of grease or other suitable rust-resistant coating.
G. Mounting surfaces shall be especially coated with a rust preventative.
H. Special care shall be taken to protect uncoated items and plastic items, especially from environmental damage.

T1080-2.15 Factory Inspection, Testing and Correction Of Deficiencies

A. Factory inspection, testing and correction of deficiencies shall be done in accordance with the referenced Standards and as noted herein.
B. See Division 1 for additional requirements. Also refer to Part 1 of this Section, especially for required submission of test data to the ENGINEER.
C. In addition to all tests required by the referenced Standards, the following shall also be factory tested:
    1. Pressure regulating valves shall be factory tested at the specified pressures and flows.
    2. The non-cavitating butterfly valves, to demonstrate its non-cavitating capabilities.
    3. All types of air and vacuum valves.

T1080-2.16 Valve Boxes

A. Valve boxes shall be provided for all buried valves.
B. Valve boxes shall consist of cast iron base and adjustable top section with cover, which shall be marked "Water, Sewer, or Reuse."
C. Cast iron extensions shall be provided as required to meet grade.

T1080-3 EXECUTION

T1080-3.1 Installation – General

A. All valves and appurtenances shall be installed per the Manufacturer's instructions in the locations shown, true to alignment and rigidly supported.
B. Any damage to the above items shall be repaired to the satisfaction of the ENGINEER before they are installed.
C. Install all brackets, extension rods, guides, the various types of operators and

appurtenances as shown on the Drawings, or otherwise required.

D. Before setting these items, the CONTRACTOR shall check all Drawings and figures which have a direct bearing on their location.
E. The CONTRACTOR shall be responsible for the proper location of valves and appurtenances during the construction of the Work.
F. All materials shall be carefully inspected for defects in construction and materials. All debris and foreign material shall be cleaned out of openings, etc.
G. All valve flange covers shall remain in place until connected piping is in place.
H. All operating mechanisms shall be operated to check their proper functioning and all nuts and bolts checked for tightness.
I. Valves and other equipment which do not operate easily, or are otherwise defective, shall be repaired or replaced at no additional cost to the OWNER.
J. Where installation is covered by a Referenced Standard, installation shall be in accordance with that Standard, except as herein modified, and the CONTRACTOR shall certify such. Also note additional requirements in other parts of this Specification.
K. Unless otherwise noted, joints for valves and appurtenances shall be made up utilizing the same procedures as specified under the applicable type connecting pipe joint and all valves and other items shall be installed in the proper position as recommended by the Manufacturer.
L. CONTRACTOR shall be responsible for verifying Manufacturer's torqueing requirements for all valves.

T1080-3.2 Installation of Manual Operational Devices

A. Unless otherwise noted, all operational devices shall be installed with the units of the factory, as shown on the Drawings or as acceptable to the ENGINEER to allow accessibility to operate and maintain the item and to prevent interference with other piping, valves and appurtenances.
B. For manually operated valves 3-inch in diameter and smaller, valve operators and indicators shall be rotated to display toward normal operation locations.
C. Floor boxes, valve boxes, extension stems and low floor stands shall be installed vertically centered over the operating nut, with couplings as required and the elevation of the box top shall be adjusted to conform with the elevation of the finished floor surface or grade at the completion of the Contract.
D. Boxes and stem guides shall be adequately supported during concrete pouring to maintain vertical alignment.

T1080-3.3 Inspection, Testing, and Correction of Deficiencies

A. See also Division 1. Take care not to over pressure valves or appurtenances during pipe testing.
B. If any unit proves to be defective, it shall be replaced or repaired to the satisfaction of the ENGINEER.
C. Functional Test:
    1. Prior to plant start-up, all items shall be inspected for proper alignment, quite operation, proper connection and satisfactory performance.
    2. All units shall be operated continuously while connected to the attached piping for at

least 8 hours, without vibration, jamming, leakage, or overheating and perform the specified function.

D. The various pipe lines in which the valves and appurtenances are to be installed are specified to be field tested.
E. During these tests any defective valve or appurtenance shall be adjusted, removed and replaced, or otherwise made acceptable to the ENGINEER.
F. Various regulating valves, strainers, or other appurtenances shall be tested to demonstrate their conformance with the specified operational capabilities and any deficiencies shall be corrected or the device replaced or otherwise made acceptable to the ENGINEER.

T1080-3.4 Identification of Valves

A. All valves shall be designated by distinguishing numbers and/or letters on required chart(s) and/or diagram(s).
B. The CONTRACTOR shall install approved brass tags for all designated items with numbers and/or letters on the tags corresponding to those on the chart(s) and/or diagram(s).
C. Each valve identification tag to be minimum 19 gauge polished brass: 2-inch diameter.
D. Each tag to designate appropriate service (1/4 inch stamped black-filled letters) and appropriate valve number (1/2 inch stamped black-filled number).
E. Tags shall be securely fastened to valves with approved stainless steel screws or rivets, or brass jack chain, in a manner to permit easy reading.
F. CONTRACTOR shall prepare piping flow diagrams (or re-use those on the contract plans) indicating valve numbers, service, normal position, etc., of each valve.
G. Diagrams shall be mounted on an ornamental iron frame with hinged plexiglass face for wall mounting. Four (4) frames with plexiglass are required.
H. The requirements for valve identification specified above applies equally to all valves installed under this and under other sections of these specifications.

T1080-3.5 Cleaning

All items (including valve interiors) shall be cleaned prior to installation, testing, disinfection and final acceptance.

T1080-3.6 Disinfection

Disinfection of valves and appurtenances shall be in accordance with AWWA Requirements.

T1080-3.7 Setting Valves and Boxes

A. Valves and valve boxes as specified in the preceding paragraphs shall be installed where shown on the drawings unless otherwise directed.
B. Valves shall be set plumb with the base of the valve box centered over the valve and resting on compacted backfill.
C. The top section of the box shall be set to allow equal movement above and below finished grade.
D. After being correctly positioned, fill shall be carefully tamped around the valve box for a distance of 4-feet on all sides of the box.

E. In paved areas, top of the cover shall be flush with the finished paving.
F. In off-street areas, the cover shall be set 1-inch above existing grade unless otherwise directed by the ENGINEER and a concrete pad shall be poured around the tope of the box as shown in the standard details.

T1080-4 BASIS OF PAYMENT

Separate payment shall be made only for the items of work described herein. Any related work not specifically listed, but required for satisfactory completion of the work, shall be considered to be included in the scope of the appropriate listed work items.

T1050.1-4.1 Water Pipe Fixtures

Payment shall be made at the contract unit price per each based on pipe diameter and type of fixture. The unit price shall be full compensation for all materials, equipment and labor, including but not limited to: excavation, dewatering, backfilling, compaction, shoring, poly-wrap, marker tape, detector wire, testing, sample taps, and all items necessary to complete installation of the fixture as shown in the plans.

Payment Items: Payment shall be made under

Item No. 1080-21-600 Utility Fixture, Valve/Meter Box, Remove
Item No. 1080-23-112 Utility Fixture, Tapping Saddle/Sleeve, F&I, 12”
Item No. 1080-24-106 Utility Fixture, Valve Assembly, F&I, 6”
Item No. 1080-24-112 Utility Fixture, Valve Assembly, F&I, 12”
Item No. 1080-27-112 Utility Fixture – Line Stop Assembly, F&I, 12”

END OF SECTION

SECTION T1644
PIPING SPECIALTIES

T1644-1 GENERAL

T1644-1.1 Related Documents

Drawings and general provisions of Contract, including General and Special Conditions, apply to work of this section.

T1664-1.2 Quality Assurance

Manufacturer's Qualifications: Firms regularly engaged in manufacture of piping specialties, of types and sizes required, whose products have been in satisfactory use in similar service for not less than 3 years.

T1644-2 PRODUCTS

T1644-2.1 Fire Hydrants

A. All fire hydrants shall be 5-1/4 inch hydrants with two 2-1/2 inch connection and one pumper connection designed for 150 psi working pressure, and shall conform to the requirements of AWWA C-502-73 (Latest Revision).
B. Hydrants shall have mechanical joint inlets, shall be for a 3-foot bury, and shall have a compression type main valve which opens against pressures.
C. The hydrant main valve operating parts, including valve seal, valve seal insert, cross arm, and upper valve washer shall be all bronze, meeting either of the following ASTM B-61, or B-150 per C-502.
D. The inside of hydrants shall be coated in accordance with AWWA standards except for bronze and threaded machine parts.
E. Hydrant upper barrel shall be provided with an e-coat primer and top coated with a Hydrant Red 2-component polyurethane finish or fusion bonded epoxy coated and Fire Hydrant Red in color.
F. The barrel section of the hydrant shall be made in two or more sections, with a flange located at least two inches above the finished grade line, and provided with a break flange, flange clips or lugs at ground line.
G. Undercut bolts for the break connection are not acceptable.
H. The hydrants shall open left (counterclockwise).
I. The hydrants shall have pentagon shaped operating nuts and cap nuts measuring 1-1/2 inch from pint to flat.
J. The bonnet shall be of dry type top design, shall be weather proof and utilize a cast or ductile iron weather shield integral with the external wrench operating nut.
K. The weather shield nut shall be pentagon in shape.
L. The hydrants stem shall have "O" ring seals, and stem threads and bearing shall be protected with automatic self-oiling or grease case lubricant systems.
M. The nozzle threads shall be coated with anti-seize compound to facilitate removal of caps.
N. Hydrants having stem thread (upper or lower) that are constantly exposed or immersed in

water are not acceptable.

O. All exposed or external nuts and bolts (bonnet, break flange, and shoe bolts and nuts) shall be stainless steel, no exceptions.
P. All fire hydrants shall be American Darling, AVK, or approved equal.
Q. The external color shall be red and the primer color shall not be yellow.
R. After installation the fire hydrants shall be free of scratches and paint chipping.
S. All fire hydrants shall be painted after installation if in the opinion of the ENGINEER the coating is not satisfactory.
T. Two fire hydrant wrench shall be supplied for this project.
U. All fire hydrants shall be covered with plastic when installed and removed when the line is placed into service.

T1644-2.2 Corporation Stops

A. Corporation stops 1 inch and smaller shall be Ford Model No. F-1000 or approved equal.
B. Inlets shall have iron pipe threads and outlets shall have compression connections.

T1644-2.3 Curb Stops

A. Curb stops/meter coupling shall be Ford Model B43-342W-G, B43-444W-G, or approved equal.
B. Inlets shall have compression connection and outlets shall have iron pipe threads.

T1644-2.4 Service Saddles

All service saddles shall be Ford F202 double strap saddle or approved equal.

T1644-2.5 Hose Bibbs And Sample Taps

Hose bibbs and sample taps shall be Crane No. 58 or approved equal.

T1644-3 EXECUTION (Not Applicable)

T1644-4 BASIS OF PAYMENT

Separate payment shall be made only for the items of work described herein. Any related work not specifically listed, but required for satisfactory completion of the work, shall be considered to be included in the scope of the appropriate listed work items.

T1644-4.1 Fire Hydrant

Payment shall be made at the contract unit price per each. The unit price shall be full compensation for all materials, equipment and labor, including but not limited to: excavation, dewatering, backfilling, compaction, shoring, poly-wrap, marker tape, detector wire, testing, sample taps, and all items necessary to complete installation or removal of the hydrant as shown in the plans.

Payment Items: Payment shall be made under

Item No. 1644-113-08 Fire Hydrant, F&I, Standard, 2 Hose, 1 Pumper, 6”

Item No. 1644-900- Fire Hydrant, Remove

END OF SECTION

SECTION T2623
FUSIBLE POLYVINYLCHLORIDE PIPE INSTALLATION BY HORIZONTAL DIRECTIONAL DRILL (HDD)

T2623-1 GENERAL

T2623-1.1 Description

A. **Scope**

1. This section specifies fusible polyvinylchloride pipe, including standards for dimensionality, testing, quality, acceptable fusion practice, safe handling, storage and installation of the pipe by horizontal directional drilling, directional boring, or guided boring.

B. **Requirements:**

1. Contractor shall provide fusible polyvinylchloride pipe conforming to all standards and procedures, and meeting all testing and material properties as described in this specification for installation by horizontal directional drilling.
2. Contractor shall be responsible for all installation processes and procedures associated with the installation by horizontal directional drilling in accordance with this specification.

C. **Pipe Description**

3. Pipe Supplier shall furnish fusible polyvinylchloride pipe conforming to all standards and procedures, and meeting all testing and material properties as described in this specification.
4. Pipe shall conform to the following dimensionality and general characteristics table:

Pipe Description	Nominal Diameter (in)	DR	Pressure Class (psig)	Required Inner Diameter (in.)
12” Water Main	12	18	235	11.65

T2623-1.2 Quality Assurance

A. **References:**

1. This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those other standards are included as references under this section as if referenced directly. In the event of a conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.
2. Unless otherwise specified, references to documents shall mean the documents in effect at the time of construction. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement

documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued.

3. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ANSI/AWWA C110/A21.10	American National Standard for Ductile-Iron and Gray-Iron Fittings, 3-inch through 48-inch, for Water and Other Liquids
ANSI/AWWA C111/A21.11	American National Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
AWWA C605	Standard for Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water
AWWA C651	Standard for Disinfecting Water Mains
AWWA C900	Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in. (100mm through 300mm), for Water Distribution
AWWA C905	Standard for Polyvinyl Chloride (PVC Pressure Pipe and Fabricated Fittings, 14 in. through 48 in. (350mm-1200mm), for Water Distribution
AWWA M23	AWWA Manual of Supply Practices PVC Pipe—Design and Installation, Second Edition
ASTM C923	Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals
ASTM D1784	Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
ASTM D1785	Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
ASTM D2152	Test Method for Degree of Fusion of Extruded Poly(Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion
ASTM D2241	Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)
ASTM D2665	Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
ASTM D3034	Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings
ASTM F477	Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F679	Standard Specification for Poly(Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings
ASTM F1057	Standard Practice for Estimating the Quality of Extruded Poly (Vinyl Chloride) (PVC) Pipe by the Heat Reversion Technique
ASTM F1417	Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
UNI-PUB-6	Recommended Practice for Low-Pressure Air Testing of Installed Sewer Pipe
UNI-PUB-8	Recommended Practice for the Direct Tapping of Polyvinyl Chloride (PVC) Pressure Water Pipe (Nominal Diameters 6-12 Inch)
NSF-14	Plastics Piping System Components and Related Materials

NSF-61	Drinking Water System Components--Health Effects
PPI TR-2	PVC Range Composition Listing of Qualified Ingredients
FAC 61G15-30	"Delegated Engineer" requirements in Florida Administrative Code

B. **Manufacturer Requirements**
   1. Fusible polyvinylchloride pipe shall be tested at the extrusion facility for properties required to meet all applicable parameters as outlined in either AWWA C900, AWWA C905, applicable sections of ASTM D2241, ASTM D3034, or ASTM F679. Testing priority shall be in conformance with AWWA C900 and AWWA C905, except for pipe made to the ASTM D3034 or ASTM F679 standards, which shall be tested to those standards. All piping shall be made from a PVC compound conforming to cell classification 12454 per ASTM D1784.
   2. All fusible polyvinylchloride pipe provided for project shall be stamped with a manufacturing date not earlier than one year from the date of delivery to the job site.

C. **Fusion Technician Requirements**
   1. Fusion Technician shall be fully qualified by the pipe supplier to install fusible polyvinylchloride pipe of the type(s) and size(s) being used. Qualification shall be current as of the actual date of fusion performance on the project.

D. **Specified Pipe Suppliers**
   1. Fusible polyvinylchloride pipe shall be used as manufactured under the trade names Fusible C-900®, Fusible C-905®, and FPVC™, for Underground Solutions, Inc., Poway, CA, (858) 679-9551. Fusion process shall be as patented by Underground Solutions, Inc., Poway, CA, Patent No. 6,982,051. Owner and Engineer are aware of no other supplier or fusible polyvinylchloride pipe that is an equal to this specified pipe supplier and product.

E. **Warranty**
   1. The pipe shall be warranted for one year per the pipe supplier's standard terms.
   2. In addition to the standard pipe warranty, the fusion services shall be warranted for one year per the fusion service provider's standard terms.

F. **Pre-Construction Submittals**
   1. Photographs or Videotape: Show existing conditions of adjacent construction and site improvements that might be misconstrued as damage caused by the installation of the force main within the area of encroachment as noted on the plans. Submit before Work begins.
   2. Record Drawings and/or Site Survey: Identifying and locating utilities and other subsurface structural, electrical, or mechanical improvements and conditions within the area of encroachment as noted on the plans.
   3. The following product data is required from the pipe supplier and/or fusion provider:
      a. Dimensionality
      b. Pressure Class per applicable standard
      c. Color
      d. Recommended Minimum Bending Radius
      e. Recommended Maximum Safe Pull Force

f. Pipe and fusion services warranty information.
g. Written procedural documentation for piping products including proper handling and storage, installation, tapping, and testing.
h. Fusion technician qualification indicating conformance with this specification.

4. The following work plan and information is required from the contractor and/or horizontal directional drilling Contractor. This work plan and information shall also be supplied to the pipe supplier, should it be requested:
   a. Work plan shall include for each HDD installation any excavation locations and dimensions with all sheeting and shoring to be used in supporting embankments and trench walls, interfering utilities, bore dimensions and locations including bend radii used, and traffic control schematics.
   b. A project safety and contingency plan which shall include but shall not be limited to drilling fluid containment and cleanup procedures, equipment and plan for compromised utility installations including electrical and power lines, water, wastewater and any other subsurface utility in the area, and protection of existing improvements on or near the utility installation corridor.
   c. An HDD schedule identifying daily work hours and working dates for each installation.

G. **Post-Construction Submittals**

1. The following as-recorded data is required from the contractor and/or fusion provider to the Owner or pipe supplier upon request:
   a. Fusion report for each fusion joint performed on the project, including joints that were rejected. Specific requirements of the Fusion Technician's joint report shall include:
      i. Pipe Size and Thickness
      ii. Machine Size
      iii. Fusion Technician Identification
      iv. Job Identification
      v. Fusion Joint Number
      vi. Fusion, Heating, and Drag Pressure Settings
      vii. Heat Plate Temperature
      viii. Time Stamp
      ix. Heating and Cool Down Time of Fusion
      x. Ambient Temperature
   b. As-recorded Information
      i. The as-recorded plan and profile will reflect the actual installed alignment and reflect the horizontal offset from the baseline and depth of cover.
      ii. All fittings, valves, or other appurtenances will also be referenced and shown.
      iii. A daily project log, along with tracking log sheets, should they be used, shall be provided. Tracking log sheet data, should it be employed, shall include any and all that apply, including inclination, depth, azimuth, and hydraulic pull-back and rotational force measured.

T2623-2 PRODUCTS

T2623-2.1 Fusible Polyvinylchloride Pressure Pipe for Non-Potable Water

A. Fusible polyvinylchloride pipe shall conform to AWWA C900 or AWWA C905, and/or ASTM D2241 or ASTM D1785 for IPS standard dimensionality, if applicable. Testing shall be in accordance with AWWA standards for all pipe types.
B. Rework material shall be allowed per AWWA C900 and AWWA C905 standards.
C. Fusible polyvinylchloride pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.
D. Fusible polyvinylchloride pipe shall be manufactured in a standard 20', 30' or 40' nominal length.
E. Fusible polyvinylchloride pipe shall be purple in color for reclaim, reuse, or other non-potable distribution or conveyance. Fusible polyvinylchloride pipe shall be white in color for raw water collection and transmission, or other non-potable resource or irrigation water uses.
F. Pipe generally shall be marked per AWWA C900 or AWWA C905, and shall include as a minimum:
    1. Nominal pipe size
    2. PVC
    3. Dimension Ratio, Standard Dimension Ratio or Schedule
    4. AWWA pressure class or standard pressure rating for non-AWWA pipe
    5. AWWA Standard designation number or pipe type for non-AWWA pipe
    6. Extrusion production-record code
    7. Trademark or trade name
    8. Cell Classification 12454 and/or PVC material code 1120 may also be included.
    9. For reclaim water service, the wording: "Reclaimed Water, NOT for Potable Use"
G. Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.

T2623-2.2 Fusible Polyvinylchloride Pressure Pipe for Wastewater

A. Fusible polyvinylchloride pipe shall conform to AWWA C900 or AWWA C905, and/or ASTM D2241 or ASTM D1785 for IPS standard dimensionality, if applicable. Testing shall be in accordance with AWWA standards for all pipe types.
B. Rework material shall be allowed per AWWA C900 and AWWA C905 standards.
C. Fusible polyvinylchloride pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.
D. Fusible polyvinylchloride pipe shall be manufactured in a standard 20', 30' or 40' nominal length.
E. Fusible polyvinylchloride pipe shall be green in color for wastewater use.
F. Pipe generally shall be marked per AWWA C900 or AWWA C905, and shall include as a minimum:
    1. Nominal pipe size

2. PVC
3. Dimension Ratio, Standard Dimension Ratio or Schedule
4. AWWA pressure class or standard pressure rating for non-AWWA pipe
5. AWWA Standard designation number or pipe type for non-AWWA pipe
6. Extrusion production-record code
7. Trademark or trade name
8. Cell Classification 12454 and/or PVC material code 1120 may also be included.

G. Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.

T2623-2.3 Fusion Joints

A. Unless otherwise specified, fusible polyvinylchloride pipe lengths shall be assembled in the field with butt-fused joints. The Contractor shall follow the pipe supplier's guidelines for this procedure. All fusion joints shall be completed as described in this specification.

T2623-2.4 Connections and Fittings for Pressure Applications

A. Connections shall be defined in conjunction with the coupling of project piping, as well as the tie-ins to other piping systems.

B. Ductile iron mechanical and flanged fittings acceptable fittings for use with fusible polyvinylchloride pipe shall include standard ductile iron fittings conforming to AWWA/ANSI C110/A21.10 and AWWA/ANSI C111/A21.11.
   1. Connections to fusible polyvinylchloride pipe may be made using a restrained or non-restrained retainer gland product for PVC pipe, as well as for MJ or flanged fittings.
   2. Bends, tees and other ductile iron fittings shall be restrained with the use of thrust blocking or other means as indicated in the construction documents.
   3. Ductile iron fittings and glands must be installed per the manufacturer's guidelines.

C. **PVC Gasketed, Push-On Fittings**
   Acceptable fittings for use with fusible polyvinylchloride pipe shall include standard PVC pressure fittings conforming to AWWA C900 or AWWA C905.
   1. Acceptable fittings for use joining fusible polyvinylchloride pipe other sections of fusible polyvinylchloride pipe or other sections of PVC pipe shall include gasketed PVC, push-on type couplings and fittings, including bends, tees, and couplings as shown in the drawings.
   2. Bends, tees and other PVC fittings shall be restrained with the use of thrust blocking or other restraint products as indicated in the construction documents.
   3. PVC gasketed, push-on fittings and mechanical restraints, if used, must be installed per the manufacturer's guidelines.

D. **Fusible Polyvinyl Chloride Sweeps or Bends**
   1. Fusible polyvinyl chloride sweeps or bends shall conform to the same sizing convention, diameter, dimensional tolerances and pressure class of the pipe that they are joining together.
   2. Fusible polyvinyl chloride sweeps or bends shall be manufactured from the same fusible polyvinyl chloride pipe being used for the installation, and shall have at least 2 feet of straight section on either end of the sweep or bend to allow for fusion of the sweep to the pipe installation.

3. Standard fusible polyvinyl chloride sweep or bend angles shall not be greater than 22.5 degrees and shall be used in nominal diameters ranging from 4 inch through 20 inch.

E. **Sleeve-Type Couplings**
   1. Sleeve-type mechanical couplings shall be manufactured for use with PVC pressure pipe and may be restrained or unrestrained as indicated in the construction documents.
   2. Sleeve-type couplings shall be rated at the same or greater pressure carrying capacity as the pipe itself.

F. **Expansion And Flexible Couplings**
   1. Expansion-type mechanical couplings shall be manufactured for use with PVC pipe, and may be restrained or unrestrained as indicated in the construction documents.
   2. Expansion-type mechanical couplings shall be rated at the same or greater pressure carrying capacity as the pipe itself.

G. **Connection Hardware**
   Bolts and nuts for buried service shall be made of non-corrosive, highstrength, low-alloy steel having the characteristics specified in ANSI/AWWA C111/A21.11, regardless of any other protective coating.

T2623-2.5 Drilling System Equipment

A. **General**
   1. The directional drilling equipment, as a minimum, shall consist of a directional drilling rig of sufficient capacity to perform the bore(s) and pull-back of the pipe(s), a drilling fluid mixing & delivery system of sufficient capacity to successfully complete the crossing, a guidance system to accurately guide boring operations, and trained and competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this project. All required equipment shall be included in the emergency and contingency plan as submitted per these specifications.

B. **Drilling Rig**
   1. The directional drilling machine shall consist of a hydraulically powered system to rotate, push and pull drill pipe while delivering a pressurized fluid mixture to a drill head. The machine shall be anchored to withstand the pulling, pushing and rotating forces required to complete the project.
   2. The drilling rig hydraulic system shall be of sufficient pressure and volume to power drilling operations. The hydraulic system shall be free from leaks.
   3. The drilling rig shall have a system to monitor pull-back hydraulic pressure during pull-back operations.

C. **Drill Head**
   1. The horizontal directional drilling equipment shall produce a stable fluid lined tunnel with the use of a steer-able drill head and any subsequent pre-reaming heads.
   2. The system must be able to control the depth and direction of the drilling operation.
   3. Drill head shall contain all necessary cutters and fluid jets for the operation and shall be of the appropriate design for the ground medium being drilled.

D. **Drilling Fluid System**

1. Drilling Fluid (Drilling Mud)
    a. Drilling fluid shall be composed of clean water and the appropriate additive(s) for the fluid to be used. Water shall be from a clean source and shall meet the mixing requirements of the mixture manufacturer(s).
    b. The water and additives shall be mixed thoroughly to assure the absence of any clumps or clods. No hazardous additives may be used.
    c. Drilling fluid shall be maintained at a viscosity sufficient to suspend cuttings and maintain the integrity of bore wall(s).
    d. Drilling fluid shall be disposed of off-site in accordance with local, state and federal requirements and/or permit conditions.
    e. No additional chemicals or polymer surfactants shall be allowed to be added to the drilling fluid unless they have been submitted per this specification.
2. Mixing System
    a. A drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid for the project.
    b. The mixing system shall be able to ensure thorough mixing of the drilling fluid. The drilling fluid reservoir tank shall be sized for adequate storage of the fluid.
    c. The mixing system shall continually agitate the drilling fluid during drilling operations.
3. Drilling Fluid Delivery and Recovery System
    a. The drilling fluid pumping system shall have a minimum capacity to supply drilling fluid in accordance with the drilling equipment pullback rating at a constant required pressure.
    b. The delivery system shall have filters or other appropriate in-line equipment to prevent solids from being pumped into the drill pipe.
    c. Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and properly disposed of. The use of spill containment measures shall be maintained around drill rigs, drilling fluid mixing system, entry and exit pits and drilling fluid recycling system (if used) to prevent spills into the surrounding environment. Pumps, vacuum truck(s), and/or storage of sufficient size shall be in place to contain excess drilling fluid.
    d. A closed loop drilling fluid system and a drilling fluid cleaning system should be used to whatever extent practical, depending upon project size and conditions. Under no circumstances shall drilling fluid that has escaped containment be reused in the drilling system.

E. **Drilling Control System**

1. Calibration of the electronic detection and control system shall be verified prior to the start of the bore.
2. The drilling head shall be remotely steer-able by means of an electronic or magnetic detection system. The drilling head location shall be monitored in three dimensions:
    a. Offset from the baseline,
    b. Distance along the baseline, and
    c. Depth of cover.

3. Point of rotation of the head shall also be monitored.
4. For gravity application and on-grade drilling, sonde/beacon or approved equipment applicable for grade increments of 1/10th of one percent shall be used.

T2623-2.6 Pipe Pull Heads

A. Pipe pull heads shall be utilized that employ a positive through-bolt design assuring a smooth wall against the pipe cross-section at all times.
B. Pipe pull heads shall be specifically designed for use with fusible polyvinylchloride pipe and shall be as recommended by the pipe supplier.

T2623-2.7 Pipe Rollers

A. Pipe rollers, if required, shall be of sufficient size to fully support the weight of the pipe during handling and pullback operations.
B. A sufficient quantity of rollers and spacing, per the pipe supplier's guidelines shall be used to assure adequate support and excessive sagging of the product pipe.

T2623-3 EXECUTION

A. All pipe shall be bundled or packaged in such a manner as to provide adequate protection of the ends during transportation to the site. Any pipe damaged in shipment shall be replaced as directed by the Owner or Engineer.
B. Each pipe shipment should be inspected prior to unloading to see if the load has shifted or otherwise been damaged. Notify Owner or Engineer immediately if more than immaterial damage is found. Each pipe shipment should be checked for quantity and proper pipe size, color and type.
C. Pipe should be loaded, off-loaded, and otherwise handled in accordance with AWWA M23, and all of the pipe supplier's guidelines shall be followed.
D. Off-loading devices such as chains, wire rope, chokers, or other pipe handling implements that may scratch, nick, cut, or gouge the pipe are strictly prohibited.
E. During removal and handling, be sure that the pipe does not strike anything. Significant impact could cause damage, particularly during cold weather.
F. If appropriate unloading equipment is not available, pipe may be unloaded by removing individual pieces. Care should be taken to insure that pipe is not dropped or damaged. Pipe should be carefully lowered, not dropped, from trucks.

T2623-3.2 Handling and Storage

A. Any length of pipe showing a crack or which has received a blow that may have caused an incident fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work. Damaged areas, or possible areas of damage may be removed by cutting out and removing the suspected incident fracture area. Limits of the acceptable length of pipe shall be determined by the Owner or Engineer.
B. Any scratch or gouge greater than 10% of the wall thickness will be considered significant and can be rejected unless determined acceptable by the Owner or Engineer.
C. Pipe lengths should be stored and placed on level ground. Pipe should be stored at the job

site in the unit packaging provided by the manufacturer. Caution should be exercised to avoid compression, damage, or deformation to the ends of the pipe. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.

D. Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way.

E. If pipe is to be stored for periods of 1 year or longer, the pipe should be shaded or otherwise shielded from direct sunlight. Covering of the pipe which allows for temperature build-up is strictly prohibited. Pipe should be covered with an opaque material while permitting adequate air circulation above and around the pipe as required to prevent excess heat accumulation.

F. Pipe shall be stored and stacked per the pipe supplier's guidelines.

T2623-3.3 Fusion Process

A. **General**

1. Fusible polyvinylchloride pipe will be handled in a safe and nondestructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier's guidelines.
2. Fusible polyvinylchloride pipe will be fused by qualified fusion technicians, as documented by the pipe supplier.
3. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) affixed to the fusion machine.
4. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process. Fusion machines must incorporate the following properties, including the following elements:
    a. HEAT PLATE - Heat plates shall be in good condition with no deep gouges or scratches. Plates shall be clean and free of any debris or contamination. Heater controls shall function properly, cord and plug shall be in good condition. The appropriately sized heat plate shall be capable of maintaining a uniform and consistent heat profile and temperature for the size of pipe being fused, per the pipe supplier's guidelines.
    b. CARRIAGE – Carriage shall travel smoothly with no binding at less than 50 psi. Jaws shall be in good condition with proper inserts for the pipe size being fused. Insert pins shall be installed with no interference to carriage travel.
    c. GENERAL MACHINE - Overview of machine body shall yield no obvious defects, missing parts, or potential safety issues during fusion.
    d. DATA LOGGING DEVICE - The current version of the pipe supplier's recommended and compatible software shall be used. Datalogging device operations and maintenance manual shall be with the unit at all times. If fusing for extended periods of time, an independent 110V power source shall be available to extend battery life.
5. Other equipment specifically required for the fusion process shall include the following:
    a. Pipe rollers shall be used for support of pipe to either side of the machine
    b. A weather protection canopy that allows full machine motion of the heat plate,

fusion assembly and carriage shall be provided for fusion in inclement and /or windy weather.

c. Fusion machine operations and maintenance manual shall be kept with the fusion machine at all times.

d. Facing blades specifically designed for cutting fusible polyvinylchloride pipe shall be used.

B. **Joint Recording**

1. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine. The fusion data logging and joint report shall be generated by software developed specifically for the butt-fusion of thermoplastic pipe. The software shall register and/or record the parameters required by the pipe supplier and these specifications. Data not logged by the data logger shall be logged manually and be included in the Fusion Technician's joint report.

T2623-3.4 Drilling Operations

A. **General**

1. General bore path and alignment are as indicated in the contract documents. The path of the bore may be modified based on field and equipment conditions. Entry and exit locations and control-point elevations shall be maintained as indicated in the contract documents.
2. Bend radii shown in the contract documents are minimum allowable radii and shall not be reduced.
3. Directional drill planning and operations shall be coordinated with the findings and recommendations of the geotechnical reports included in project specifications. A geotechnical consultant shall be utilized by the contractor to provide analysis and recommendations for the best means and methods for pipe installation by directional drill with the purpose of avoiding or minimizing damage or disruption to existing improvements within the utility corridor as shown on the plans.

B. **Location And Protection Of Underground Utilities**

1. Correct location of all underground utilities that may impact the HDD installation is the responsibility of the Contractor, regardless of any locations shown on the drawings or previous surveys completed.
2. Utility location and notification services shall be contacted by the Contractor prior to the start of construction.
3. All existing lines and underground utilities shall be positively identified, including exposing those facilities that are located within an envelope of possible impact of HDD installation as determined for the project specific site conditions. It is the Contractor and HDD system operator's responsibility to determine this envelope of safe offset from existing utilities. This will include, but is not limited to, soil conditions and layering, utility proximity and material, HDD system and equipment, and foreign subsurface material.

C. **Site Location Preparation**

1. Work site as indicated on drawings shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made
2. Contractor shall confine all activities to designated work areas.

D. **Drilling Layout And Tolerances**
   1. The drill path shall be accurately surveyed with entry and exit areas placed in the appropriate locations within the areas indicated on drawings. If using a magnetic guidance system, drill path will be surveyed for any surface geomagnetic variations or anomalies.
   2. Instrumentation shall be provided and maintained at all times that accurately locates the pilot hole, measures drill-string axial and torsional loads and measures drilling fluid discharge rate and pressure.
   3. Entry and exit areas shall be drilled so as not to exceed the bending limitations of the pipe as recommended by the pipe supplier.

E. **Pilot Hole Bore**
   1. Pilot hole shall be drilled along bore path. In the event that the pilot bore does deviate from the bore path, it may require contractor to pullback and re-drill from the location along bore path before the deviation.
   2. The Contractor shall limit curvature in any direction to reduce force on the pipe during pull-back. The minimum radius of curvature shall be no less than that specified by the pipe supplier and as indicated on the drawings.

F. **Reaming**
   1. After successfully completing the pilot hole, the bore hole shall be reamed to a diameter which meets the requirements of the pipe being installed. The following table is offered as an estimated guide:

Nominal Pipe Diameter	Bore Hole Diameter
< 8 inches	Pipe Dia. + 4 inches
8 inches to 24 inches	Pipe Dia. X 1.5
>24 inches	Pipe Dia + 12 inches

   2. Multiple reaming passes shall be used at the discretion of the Contractor and shall conform to this specification.
   3. In the event of a drilling fluid fracture, returns loss or other loss of drilling fluid, the Contractor shall be responsible for restoring any damaged property to original condition and cleaning up the area in the vicinity of the damage or loss.

T2623-3.5 Pipe Pull-Back and Insertion

A. Pipe shall be fused prior to insertion, if the site and conditions allow, into one continuous length.
B. Contractor shall handle the pipe in a manner that will not over-stress the pipe prior to insertion. Vertical and horizontal curves shall be limited so that the pipe does not bend past the pipe supplier's minimum allowable bend radius, buckle, or otherwise become damaged. Damaged portions of the pipe shall be removed and replaced.
C. The pipe entry area shall be graded as needed to provide support for the pipe and to allow free movement into the bore hole.
   1. The pipe shall be guided into the bore hole to avoid deformation of, or damage to, the pipe.
   2. The fusible polyvinylchloride pipe may be continuously or partially supported on

rollers or other Owner and Engineer approved friction decreasing implement during joining and insertion, as long as the pipe is not over-stressed or critically abraded prior to, or during installation.

3. A swivel shall be used between the reaming head and the fusible polyvinylchloride pipe to minimize torsion stress on the pipe assembly.

D. The pipe shall be water-filled for a "wet pull" during pullback to reduce frictional drag due to buoyancy within the bore hole. Buoyancy modification shall be at the sole discretion of the Contractor and shall not exceed the pipe supplier's guidelines in regard to maximum pull force or minimum bend radius of the pipe. Damage caused by buoyancy modifications shall be the responsibility of the Contractor.

E. Once pull-back operations have commenced, the operation shall continue without interruption until the pipe is completely pulled through the bore hole.

F. The pipe shall be installed in a manner that does not cause upheaval, settlement, cracking, or movement and distortion of surface features. Any damages caused by the Contractor's operations shall be corrected by the Contractor.

G. All force mains (including service lines) shall be installed with underground 6-gauge THHN insulated traceable copper wire. Tracer wire insulation shall be the same color as the pipe. The insulated copper wire shall be installed on the pipe crown with the pipe during pullback and shall be a continuous strand from valve box to valve box, wrapped two times around each valve and extended 24 inches inside each valve box to enable location devices to be attached without digging up the valve box. All wire splices shall be insulated. After installation, the contractor shall perform a detection test in the Engineer's presence using a commercially available pipe detector furnished by the Contractor. Any undetectable wire shall be replaced by the Contractor to the satisfaction of the Engineer at no additional expense to the Owner.

T2623-3.6 Installation Cleanup

A. Following the installation, the project site shall be returned to a condition equal to or better than the pre-construction condition of the site. All excavations will be backfilled and compacted per the construction documents and jurisdictional standards. All pavement and hardscape shall be repaired per applicable jurisdictional standards, excess materials shall be removed from the site, and disturbed areas shall be relandscaped. All drilling fluid shall be properly disposed of per these specifications and all applicable jurisdictional laws.

B. Contractor shall verify that all utilities, structures, and surface features in the project area are sound.

T2623-3.7 Preparation Prior to Making Connections Into Existing Piping Systems

A. Approximate locations for existing piping systems are shown in the construction documents. Prior to making connections into existing piping systems, the Contractor shall:

1. Field verify location, size, piping material and piping system of the existing pipe.
2. Obtain all required fittings, which may include saddles, sleeve type couplings, flanges, tees, or others as shown in the construction documents.
3. Have installed all temporary pumps and/or pipes in accordance with established

connection plans.

B. Unless otherwise approved, new piping systems shall be completely assembled and successfully tested prior to making connections into existing pipe systems.

T2623-3.8 Pipe System Connections

A. All Pipe connections shall be installed per applicable standards and regulations, as well as per the connection manufacturer's guidelines and as indicated in the construction documents. Pipe connections to structures shall be installed per applicable standards and regulations, as well as per the connection manufacturer's guidelines.

T2623-3.9 Testing

Testing shall comply with all applicable jurisdictional building codes, statutes, standards, regulations and laws.

A. **Hydrostatic Testing and Leakage Testing for Pressure Piping**

1. Hydrostatic and leakage testing for piping systems that contain mechanical jointing as well as fused PVC jointing shall comply with AWWA C605.
2. Unless agreed to or otherwise designated by the owner or engineer, for a simultaneous hydrostatic and leakage test following installation, a pressure equal to 150% of working pressure at point of test, but not less than 125% of normal working pressure at highest elevation shall be applied. The duration of the pressure test shall be for two (2) hours.
3. If hydrostatic testing and leakage testing are performed at separate times, follow procedures as outlined in AWWA C605.
4. In preparation for pressure testing the following parameters must be followed:
    a. All air must be vented from the pipeline prior to pressurization. This may be accomplished with the use of the air relief valves or corporation stop valves, vent piping in the testing hardware or end caps, or any other method which adequately allows air to escape the pipeline at all high points. Venting may also be accomplished by 'flushing' the pipeline in accordance with the parameters and procedures as described in AWWA C605.
    b. The pipeline must be fully restrained prior to pressurization. This includes complete installation of all mechanical restraints per the restraint manufacturer's guidelines, whether permanent or temporary to the final installation. This also includes the installation and curing of any and all required thrust blocking. All appurtenances included in the pressure test, including valves, blowoffs, and air-relief valves shall be checked for proper installation and restraint prior to the beginning of the test.
    c. Temporary pipeline alignments that are being tested, such as those that are partially installed in their permanent location shall be configured to minimize the amount of potentially trapped air in the pipeline.

B. **Partial Testing**

1. Segments of the pipe may be tested separately in accordance with standard testing procedure, as approved by the Owner and Engineer.

T2623-4 BASIS OF PAYMENT

Separate payment shall be made only for the items of work described herein. Any related work not specifically listed, but required for satisfactory completion of the work, shall be considered to be included in the scope of the appropriate listed work items.

T2623-4.1 Water Pipe

Payment shall be made at the contract unit price per linear foot based on pipe diameter measured along centerline of pipe. The unit price shall be full compensation for all materials, equipment and labor, including but not limited to: excavation, dewatering, fusing, backfilling, compaction, shoring, poly-wrap, marker tape, detector wire, testing, sample taps, and all items necessary to complete installation of the pipe as shown in the plans.

Payment Items: Payment shall be made under
Item No. 1050-42-212 Utility Pipe-High Density Polyethylene, F&I, Water/Sewer, 12”

END OF SECTION

THIS COMPLETES THIS SPECIFICATIONS PACKAGE

LAP CERTIFICATION OF CURRENT CAPACITY

CONFIDENTIAL

For bids to be received on _____
(Letting Date)

Fill in your FDOT Vendor Number

VF __ __ __ __ __ __ __ __ __ __ __ __ __ __

(Only applicable to FDOT pre-qualified contractors)

CERTIFICATE

I hereby certify that the amount of any proposal submitted by this bidder for the above letting does not exceed the amount of the Firm's CURRENT CAPACITY (maximum capacity rating less total uncompleted work).

The total uncompleted work as shown on
the "Status of Contracts on Hand" report (page 2) $ _____

I further certify that the "Status of Contracts on Hand" report (page 2) was prepared as follows:

1. If the letting is before the 25th day of the month, the certificate and report reflect the uncompleted work as of the 15th day of the month, last preceding the month of the letting.

2. If the letting is after the 25th day of the month, the certificate and report reflects the uncompleted work in progress as of the 15th day of the month of the letting.

3. All new contracts (and subcontracts) awarded earlier than five days before the letting date are included in the report and charged against our total rating.

I certify that the information above is correct.

_____
NAME OF FIRM

Sworn to and subscribed this _____ day

of _____, 20 _____

By: _____

_____
Title

STATUS OF CONTRACTS ON HAND

(Furnish complete information about all your contracts, whether prime or subcontracts; whether in progress or awarded, but not yet begun; and regardless of whom contracted with.)

1	2	3	4	5	6
PROJECTS OWNER, LOCATION AND DESCRIPTION	CONTRACT (OR SUBCONTRACT) AMOUNT	AMOUNT SUBLET TO OTHERS	BALANCE OF CONTRACT AMOUNT	UNCOMPLETED AMOUNT TO BE DONE BY YOU	
				AS PRIME CONTRACTOR	AS SUBCONTRACTOR
NOTE: Columns 2 and 3 to show total contract (or subcontract) amounts. Column 4 to be difference between columns 2 and 3. Amount in columns 5 or 6 to be uncompleted portion of amount in column 4. All amounts to be shown to nearest $100. The Contractor may consolidate and list as a single item all contracts which, individually, do not exceed 3% of total, and which, in the aggregate, amount to less than 20% of the total.			TOTALS	$0.00	$0.00
			TOTAL UNCOMPLETED WORK ON HAND TO BE DONE BY YOU (TOTAL COLUMNS 5 AND 6)	$0.00	

DBE BID PACKAGE INFORMATION

DBE Utilization

The Department began its DBE race neutral program January 1, 2000. **Contract specific goals are not placed on Federal/State contracts;** however, the Department has an overall 10.65% DBE goal it must achieve. In order to assist contractors in determining their DBE commitment level, the Department has reviewed the estimates for this letting.

As you prepare your bid, please monitor potential or anticipated DBE utilization for contracts. When the low bidder executes the contract with the Department, information will be requested of the contractor's DBE participation for the project. While the utilization is not mandatory in order to be awarded the project, continuing utilization of DBE firms on contracts supports the success of Florida's DBE Program, and supports contractors' Equal Employment Opportunity and DBE Affirmative Action Programs.

Any project listed as 0% DBE availability does not mean that a DBE may not be used on that project. A 0% DBE availability may have been established due to any of the following reasons: limited identified subcontracting opportunities, minimal contract days, and/or small contract dollar amount. Contractors are encouraged to identify any opportunities to subcontract to DBE's.

Please contact the Equal Opportunity Office at (850) 414-4747 if you have any questions regarding this information.

DBE Reporting

If you are the prime contractor on a project, enter your DBE participation in the Equal Opportunity Compliance system prior to the pre-construction or pre-work conference for all federal and state funded projects. This **will not** become a mandatory part of the contract. It will assist the Department in tracking and reporting planned or estimated DBE utilization. During the contract, the prime contractor is required to report actual payments to DBE and MBE subcontractors through the web-based Equal Opportunity Compliance (EOC) system.

All DBE payments must be reported whether or not you initially planned to utilize the company. In order for our race neutral DBE Program to be successful, your cooperation is imperative. If you have any questions, please contact EOOHelp@dot.state.fl.us.

Bid Opportunity List

The Federal DBE Program requires States to maintain a database of all firms that are participating or attempting to participate on FDOT-assisted contracts. The list must include all firms that bid on prime contracts or bid or quote subcontracts on FDOT-assisted projects, including both **DBE's and non-DBEs.**

Please complete the Bidders Opportunity List through the Equal Opportunity Compliance system within 3 business days of submission of the bid or proposal for ALL subcontractors or sub-consultants who quoted to you for specific project for this letting. The web address to the Equal Opportunity Compliance system is: https://www.fdot.gov/equalopportunity/eoc.shtm.

DBE/AA Plans

Contractors bidding on FDOT contracts are to have an approved DBE Affirmative Action Plan (FDOT Form 275-030-11B) on file with the FDOT Equal Opportunity Office before execution of a contract. DBE/AA Plans must be received with the contractors bid or received by the Equal Opportunity Office prior to the award of the contract.

Plans are approved by the Equal Opportunity Office in accordance with Ch. 14-78, Florida Administrative Code. Plans that do not meet these mandatory requirements may not be approved. Approvals are for a (3) three year period and should be updated at anytime there is a change in the company's DBE Liaison Officer and/or President. Contractors may evidence adoption of the DBE/AA Policy and Plan and/or a change in the designated DBE Liaison officer as follows:

- Print the first page of the document on company stationery ("letterhead") that indicates the company's name, mailing address, phone number, etc.
- Print the company's name in the "___" space; next to "Date" print the month/day/year the policy is being signed; record the signature of the company's Chief Executive Officer, President or Chairperson in the space next to "by" and print the full first and last name and position title of the official signing the policy.
- Print the DBE Liaison's full name, email address, business mailing address and phone number the bottom of email.

E-mail the completed and signed DBE AA Plan to: **eeoforms@dot.state.fl.us.**

The Department will review the policy, update department records and issue a notification of approval or disapproval; a copy of the submitted plan will not be returned to the contractor.

_____ hereafter referred to as "the Company" or "this Company" has adopted this policy and plan.

Date: _____ **By:** _____ **Signature**

Corporate FEID No.: _____ _____ **Printed name & title**

DISADVANTAGED BUSINESS ENTERPRISE ('DBE') AFFIRMATIVE ACTION PLAN

POLICY STATEMENT

It is the policy of this Company that disadvantaged businesses, as defined by 49 CFR Part 26, Subpart D and implemented under Rule Chapter 14-78, F.A.C., shall have the opportunity to participate as subcontractors and suppliers on all contracts awarded by the Florida Department of Transportation (FDOT).

The requirements of Rule Chapter 14-78, F.A.C., shall apply to all contracts entered into between FDOT and the Company. Subcontractors and/or suppliers to the Company will also be bound by the requirements of Rule Chapter 14-78 F.A.C. and its subcontractors shall take all necessary and reasonable steps in accordance with Chapter 14-78, F.A.C., to ensure that disadvantaged businesses have the opportunity to compete and perform work contracted with FDOT. The Company and its subcontractors shall not discriminate on the basis of race, color, religion, national origin, disability, sex, or age in the administration of contracts with FDOT. The Company has designated and appointed a Liaison Officer to develop, maintain, and monitor the DBE Affirmative Action Plan implementation. The Liaison Officer will be responsible for disseminating this policy statement throughout the Company and to disadvantaged controlled businesses. This statement is posted on notice boards of the Company.

I. DESIGNATION OF LIAISON OFFICER

The Company will aggressively recruit disadvantaged businesses as subcontractors and suppliers for all contracts with FDOT. The Company has appointed a Liaison Officer to develop and maintain this Affirmative Action Plan in accordance with the requirements of Rule Chapter 14-78, F.A.C. The Liaison Officer will have primary responsibility for developing, maintaining, and monitoring the Company's utilization of disadvantaged subcontractors in addition to the following specific duties:

(1) The Liaison Officer shall aggressively solicit bids from disadvantaged business subcontractors for all FDOT contracts;
(2) The Liaison Officer will submit all records, reports, and documents required by FDOT, and shall maintain such records for a period of not less than three years, or as directed by any specific contractual requirements of FDOT.

The following individual has been designated Liaison Officer with responsibility for implementing the Company's affirmative action program in accordance with the requirements of FDOT.

DBE LIAISON OFFICER:

NAME:

TITLE:

EMAIL:

ADDRESS:

II. AFFIRMATIVE ACTION METHODS

In order to formulate a realistic Affirmative Action Plan, the Company has identified the following known barriers to participation by disadvantaged subcontractors, before describing its proposed affirmative action methods:

1. Lack of qualified disadvantaged subcontractors in our specific geographical areas of work;
2. Lack of certified disadvantaged subcontractors who seek to perform FDOT work;
3. Lack of interest in performing on FDOT contracts;
4. Lack of response when requested to bid;
5. Limited knowledge of FDOT plans and specifications to prepare a responsible bid.

In view of the barriers to disadvantaged businesses stated above, it shall be the policy of the Company to provide opportunity by utilizing the following affirmative action methods to ensure participation on the contracts with FDOT will:

1. Provide written notice to all certified DBE subcontractors in the geographical area where the work is to be subcontracted by the Company;
2. Advertise in minority focused media concerning subcontract opportunities with the Company;
3. Select portions of work to be performed by DBEs in order to increase the likelihood of meeting the state's goals (including, where appropriate, breaking down contracts into economically feasible units to facilitate DBE participation);
4. Provide adequate information about the plans, specifications, and requirements of the contract, notrejecting subcontractors without sound reasons based on a thorough investigation of their capabilities;
5. Waive requirements of performance bonds where it is practical to do so;
6. Attend pre-bid meetings held by FDOT to apprise disadvantaged subcontractors of opportunities with the Company;
7. Follow up on initial solicitations of interest to DBE subcontractors to determine with certainty whether the DBE company is interested in the subcontract opportunity.
8. Utilize FDOT's DBE Supportive Services providers for assistance in identifying and notifying DBE's of contracting opportunities.

The Company understands that this list of affirmative action methods is not exhaustive and will include additional approaches after having established familiarity with the disadvantaged subcontracting community and/or determined the stated approaches to be ineffective.

III. IMPLEMENTATION

The Company will make every effort to

1. Meet state goals by utilizing its affirmative action methods.
2. Express good faith by seeking to utilize DBE subcontractors where work is to be subcontracted.
3. Ensuring that contracted DBE's perform a commercially useful function as evidenced by their execution of a distinct element of work with its own workforce and the carrying out responsibilities by actually performing, managing and supervising the work involved.

IV. REPORTING

The Company shall keep and maintain such records as are necessary to determine the Company's compliance with its DBE Affirmative Action Plan. The Company will design its record keeping system to indicate:

1. The number of DBE subcontractors and suppliers used by the Company, identifying the items of work, materials and services provided;
2. The efforts and progress being made in obtaining DBE subcontractors through local and community sources;
3. Documentation of all contracts, to include correspondence, telephone calls, newspaper advertisements, etc., to obtain DBE participation on all FDOT projects;
4. The Company shall comply with FDOT's requirements regarding payments to subcontractors including DBEs for each month (estimate period) in which the companies have worked.

V. DBE DIRECTORY

The Company will utilize the DBE Directory published by the FDOT.

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Nonsegregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Compliance with Governmentwide Suspension and Debarment Requirements
XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

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

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

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

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

CERTIFICATION FOR DISCLOSURE OF LOBBYING ACTIVITIES ON FEDERAL-AID CONTRACTS (Compliance with 49CFR, Section 20.100 (b))

The prospective participant certifies, by signing this certification, that to the best of his or her knowledge and belief:

(1) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities", in accordance with its instructions. (Standard Form-LLL can be obtained from the Florida Department of Transportation's Professional Services Administrator or Procurement Office.)

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

The prospective participant also agrees by submitting his or her proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such subrecipients shall certify and disclose accordingly.

Name of Consultant: _____

By: _____ Date: _____

Authorized Signature: _____

Title: _____

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

DISCLOSURE OF LOBBYING ACTIVITIES

375-030-34
PROCUREMENT
02/16

Is this form applicable to your firm?
YES ☐ NO ☐
If *no*, then please complete section 4 below for "Prime"

1. Type of Federal Action: a. contract b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	**2. Status of Federal Action:** a. bid/offer/application b. initial award c. post-award	**3. Report Type:** a. initial filing b. material change **For Material Change Only:** Year: _____ Quarter: _____ Date of last report: _____ (mm/dd/yyyy)

4. Name and Address of Reporting Entity: ☐ Prime ☐ Subawardee Tier _____, *if known*: _____ _____ _____ Congressional District, *if known*: 4c _____	5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime: _____ _____ _____ Congressional District, *if known*: _____
6. Federal Department/Agency: _____ _____	**7. Federal Program Name/Description:** _____ _____ CFDA Number, *if applicable*: _____
8. Federal Action Number, *if known*: _____	**9. Award Amount,** *if known*: $ _____
10. a. Name and Address of Lobbying Registrant (*if individual, last name, first name, MI*): _____ _____ _____	**b. Individuals Performing Services** (*including address if different from No. 10a*) (*last name, first name, MI*): _____ _____ _____
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	Signature: _____ Print Name: _____ Title: _____ Telephone No.: _____ Date (mm/dd/yyyy): _____
Federal Use Only:	Authorized for Local Reproduction Standard Form LLL (Rev. 7-97)

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the fullname, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).

11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

NON-COLLUSION DECLARATION AND COMPLIANCE WITH 49 CFR § 29

ITEM/SEGMENT NO.: _____
F.A.P. NO.: _____
MANAGING DISTRICT: _____
PARCEL NO.: _____
COUNTY OF: _____
BID LETTING OF: _____

I, _____, hereby declare that I am
(NAME)

_____ of _____
(TITLE) (FIRM)

of _____
(CITY AND STATE)

and that I am the person responsible within my firm for the final decision as to the price(s) and amount of this Bid on this State Project.

I further declare that:

1. The prices(s) and amount of this bid have been arrived at independently, without consultation, communication or agreement, for the purpose of restricting competition with any other contractor, bidder or potential bidder.

2. Neither the price(s) nor the amount of this bid have been disclosed to any other firm or person who is a bidder or potential bidder on this project, and will not be so disclosed prior to the bid opening.

3. No attempt has been made or will be made to solicit, cause or induce any other firm or person to refrain from bidding on this project, or to submit a bid higher than the bid of this firm, or any intentionally high or non-competitive bid or other form of complementary bid.

4. The bid of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary bid.

5. My firm has not offered or entered into a subcontract or agreement regarding the purchase of materials or services from any firm or person, or offered, promised or paid cash or anything of value to any firm or person, whether in connection with this or any other project, in consideration for an agreement or promise by any firm or person to refrain from bidding or to submit a complementary bid on this project.

6. My firm has not accepted or been promised any subcontract or agreement regarding the sale of materials or services to any firm or person, and has not been promised or paid cash or anything of value by any firm or person, whether in connection with this or any other project, in consideration for my firm's submitting a complementary bid, or agreeing to do so, on this project.

7. I have made a diligent inquiry of all members, officers, employees, and agents of my firm with responsibilities relating to the preparation, approval or submission of my firm's bid on this project and have been advised by each of them that he or she has not participated in any communication, consultation, discussion, agreement, collusion, act or other conduct inconsistent with any of the statements and representations made in this Declaration.

8. As required by Section 337.165, Florida Statutes, the firm has fully informed the Department of Transportation in writing of all convictions of the firm, its affiliates (as defined in Section 337.165(l)(a), Florida Statutes), and all directors, officers, and employees of the firm and its affiliates for violation of state or federal antitrust laws with respect to a public contract or for violation of any state or federal law involving fraud, bribery, collusion, conspiracy or material misrepresentation with respect to a public contract. This includes disclosure of the names of current employees of the firm or affiliates who were convicted of contract crimes while in the employ of another company.

9. I certify that, except as noted below, neither my firm nor any person associated therewith in the capacity of owner, partner, director, officer, principal, investigator, project director, manager, auditor, and/or position involving the administration of Federal funds:

(a) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions, as defined in 49 CFR §29.110(a), by any Federal department or agency;

(b) has within a three-year period preceding this certification been convicted of or had a civil judgment rendered against him or her for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a Federal, State or local government transaction or public contract; violation of Federal or State antitrust statutes; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property;

(c) is presently indicted for or otherwise criminally or civilly charged by a Federal, State or local governmental entity with commission of any of the offenses enumerated in paragraph 9(b) of this certification; and

(d) has within a three-year period preceding this certification had one or more Federal, State or local government public transactions terminated for cause or default.

10. I(We), certify that I(We), shall not knowingly enter into any transaction with any subcontractor, material supplier, or vendor who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this contract by any Federal Agency unless authorized by the Department.

Where I am unable to declare or certify as to any of the statements contained in the above stated paragraphs numbered (1) through (10), I have provided an explanation in the "Exceptions" portion below or by attached separate sheet.

EXCEPTIONS:

(Any exception listed above will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted, indicate to whom it applies, initiating agency and dates of agency action. Providing false information may result in criminal prosecution and/or administrative sanctions.)

I declare under penalty of perjury that the foregoing is true and correct.

CONTRACTOR: (Seal)

BY: _____ WITNESS: _____
NAME AND TITLE PRINTED

BY: _____ WITNESS: _____
SIGNATURE

Executed on this _____ day of _____, _____

FAILURE TO FULLY COMPLETE AND EXECUTE THIS DOCUMENT MAY RESULT IN THE BID BEING DECLARED NONRESPONSIVE

REQUIRED CONTRACT PROVISIONS

This certification applies to subcontractors, material suppliers, vendors and other lower tier participants.

- Appendix B of 49 CFR Part 29 –

Appendix B—Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion—Lower Tier Covered Transactions

Instructions for Certification

1. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to whom this proposal is submitted for assistance in obtaining a copy of those regulations.

5. The prospective lower tier participant agrees by submitting this proposal that it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

6. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

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

9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion—Lower Tier Covered Transactions

(1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntary excluded from participation in this transaction by any Federal department or agency.

(2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION- LOWER TIER COVERED TRANSACTIONS FOR FEDERAL AID CONTRACTS

(Compliance with 2 CFR Parts 180 and 1200)

It is certified that neither the below identified firm nor its principals are presently suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.

Name of Consultant/Contractor: _____

By: _____

Date: _____

Title: _____

Instructions for Certification

Instructions for Certification - Lower Tier Participants:
(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)
a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

SECTION 01046
SPECIAL PROVISIONS

PART 1 – GENERAL

1.01 CONSTRUCTION AREAS

The CONTRACTOR shall:

A. Limit use of the construction areas for Work and for storage to allow for:

1. Work by other contractors.

2. Utilities use.

3. OWNER use.

4. Public use.

B. Coordinate use of Work site under direction of the PROJECT REPRESENTATIVE.

C. Assume full responsibility for the protection and safekeeping of materials and products under this Contract, stored on- or off-site.

D. Move any stored products, under CONTRACTOR's control, which interfere with operations of the OWNER, utilities, or any separate contractor.

E. Obtain and pay for the use of additional lay down areas needed for operations.

1.02 SPECIFICATIONS

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

The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any Work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these Specifications shall be made on that basis. The inclusion of the General Requirements (or work specified elsewhere) in the General part of

the Specifications is only for the convenience of the CONTRACTOR, and shall not be interpreted as a complete list of related Specification sections.

1.03 WORK PROGRESS

A. The CONTRACTOR shall construct the Work as shown on the Drawings and provide equipment which will be efficient, appropriate, and large enough to secure a satisfactory quality of Work and a rate of progress which will ensure the completion of the Work within the Contract Time.

B. If at any time, Project execution appears to be inefficient, inappropriate, or insufficient for securing the quality of Work required or for producing the necessary rate of progress, the PROJECT REPRESENTATIVE may request the CONTRACTOR to increase the efficiency, change the character or increase the project equipment and the CONTRACTOR shall conform to such request. Failure of the PROJECT REPRESENTATIVE to give such request shall in no way relieve the CONTRACTOR of his/her obligations to secure the quality of the Work and rate of progress required.

1.04 PRIVATE LAND

The CONTRACTOR shall not enter or occupy private land outside of the construction site or easements, except by written permission of the land owner.

1.05 WORK LOCATIONS

Structures, pipelines, and equipment shall be substantially located as indicated on the Drawings, but the ENGINEER through the PROJECT REPRESENTATIVE reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons.

1.06 OPEN EXCAVATIONS

A. All open excavations shall be adequately safeguarded by the CONTRACTOR by providing temporary barricades, caution signs, lights, and other appropriate means to prevent accidents to persons and damage to property. The CONTRACTOR shall, at his/her own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen. Bridges provided for access during construction shall be removed when no longer required. The length or size of excavation will be controlled by the particular surrounding conditions. The PROJECT REPRESENTATIVE may require special construction procedures such as limiting the length of the open trench, prohibiting stacking excavated material in the street or requiring that the trench shall not remain open overnight.

B. The CONTRACTOR shall take precautions to prevent injury to the public due to open trenches. All trenches, excavated material, equipment, or other obstacles which could be dangerous to the public shall be properly signed, appropriately barricaded, and well lighted at all times.

C. The CONTRACTOR shall adhere to the requirements of Chapter 553 Part II of the Florida Statutes entitled Trench Safety Act, and O.S.H.A. Excavation Safety Standards 29 CFRs 1926.650 Subpart P.

1.07 TEST PITS

A. Test pits for the purpose of locating all known and unknown underground pipelines, utilities, or structures in advance of the construction shall be excavated and backfilled by the CONTRACTOR at the direction of the PROJECT REPRESENTATIVE.

B. Test pits shall be immediately backfilled after its purpose has been satisfied and the surface restored and maintained in a manner satisfactory to the PROJECT REPRESENTATIVE.

C. No separate payment will be made for such test pit obligations.

1.08 CARE AND PROTECTION OF PROPERTY

A. The CONTRACTOR shall be responsible for the preservation of all public and private property and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the Work on the part of the CONTRACTOR, such property shall be restored by the CONTRACTOR, at his/her expense, to a condition similar or equal to that existing before the damage was done, or make good the damage in other manner acceptable to the OWNER and PROJECT REPRESENTATIVE.

B. All sidewalks, mailboxes, and driveways which are disturbed by the CONTRACTOR's operations shall be restored to its original construction or better and in accordance with best practice and the requirements of the Contract Documents.

C. All fences, walks, bushes, trees, shrubbery, and other physical features along the location of this Work shall be protected and restored in a thoroughly workmanlike manner. Fences and other features removed by the CONTRACTOR shall be replaced in the location and by the date indicated by the PROJECT REPRESENTATIVE.

All grass areas beyond the limits of construction which have been damaged by the CONTRACTOR shall be re-graded, sodded, and re-established as before damage. All sod shall match the same type of grass in front of each private "yard" within the right of way.

D. Trees close to the Work shall be boxed or otherwise protected against injury. The CONTRACTOR shall trim all branches that are liable to be damaged because of construction operations, but in no case shall any tree be cut or removed without prior notification or written approval of the PROJECT REPRESENTATIVE. All injuries to bark, trunk, limbs, and roots of trees shall be repaired by dressing, cutting, and painting according to appropriate methods, using only appropriate tools and materials. All landscaping to be removed shall be documented and replaced with like kind or better and re-established as before removal. All palm trees shown on plans shall be spaded out, protected, temporarily stored, and replaced to its same location(s).

E. The protection, removal, and replacement of existing physical features along the line of Work shall be a part of the Work under the Contract, and all costs in connection therewith shall be included in the lump sum prices.

1.09 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

A. The CONTRACTOR shall assume full responsibility for the protection of all buildings, structures, and utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, storm drains, as well as electric and telephone cables, whether or not they are shown on the Drawings. The CONTRACTOR shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the CONTRACTOR's, or any of its subcontractors, operations shall be repaired at his/her expense.

B. The CONTRACTOR shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water services, drain lines, and sewers). Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by the CONTRACTOR.

C. Protection and temporary removal and replacement of existing utilities and structures shall be a part of the Work under the Contract and all costs in connection therewith shall be included in the lump sum price.

D. The CONTRACTOR shall be responsible to maintain water, telephone, power, cable TV, sewer, gas, and other related utilities throughout construction at no additional cost to the OWNER.

E. The CONTRACTOR shall fully cooperate with all private and public utilities during the installation of new facilities, or relocation of existing facilities. The CONTRACTOR shall accordingly coordinate his/her work and shall have no claim except for time extension for delays associated with the proposed utility improvements.

1.10 CLEANUP AND DISPOSAL OF EXCESS MATERIAL

A. During the course of the Work, the CONTRACTOR shall keep the construction site in a reasonably clean and neat condition. The CONTRACTOR shall dispose of all residues resulting from the construction work and, at the conclusion of the work, shall remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures and any other refuse remaining from the construction operations as well as leave the entire site of the Work in a neat, orderly, and restored condition.

B. In order to prevent environmental pollution arising from the construction activities related to the performance of this Contract, the CONTRACTOR and his/her subcontractors shall comply with all applicable federal, state and local laws and regulations concerning waste material disposal, as well as any other specific requirements stated elsewhere in the Specifications or the Contract Documents.

1.11 MAINTENANCE OF ACCESS

Portions of the Work are located in developed areas requiring access for fire, police, emergency, and other city, state, or federal agencies to be provided and at least one free lane must be available at all times for all traffic. The CONTRACTOR shall arrange operations in these areas to meet these requirements and secure approval or operating procedures from the City of Southport, Bay County, or Florida Department of Transportation (FDOT) as the case may be.

1.12 MAINTENANCE OF TRAFFIC

A. Open pits, trenches, unpaved streets, debris, or other obstructions due to construction that will prevent the normal flow of traffic during an extended construction stoppage, for any reason, shall be minimized. In the event an extended construction stoppage is found to be necessary, the CONTRACTOR shall, at his/her own expense, maintain normal traffic flow during extended construction stoppage.

B. All excavated material shall be placed so that vehicular and pedestrian traffic may be maintained at all times. If construction operations cause traffic hazards, the CONTRACTOR shall repair the road surface, provide temporary roadways, erect wheel guards or fences, or take other satisfactory measures for safety, subject to approval by the PROJECT REPRESENTATIVE.

C. Detours around construction areas will be subject to the approval of the PROJECT REPRESENTATIVE. Where detours are permitted, the CONTRACTOR shall provide all necessary barricades and signs as required by the PROJECT REPRESENTATIVE to divert the flow of traffic.

While traffic is detoured, the CONTRACTOR shall expedite construction operations and the PROJECT REPRESENTATIVE will strictly control periods when traffic is being detoured.

1.13 CONNECTION TO WORK BY OTHERS

If construction by others occurs at the same time and in the same areas as Work being done under this Contract, the CONTRACTOR shall conduct operations as follows:

Force Mains and Water Mains:

A. If shown on the Drawings, pipelines constructed under this Contract may be connected to pipelines to be built by others.

B. Pipelines built under this Contract will be connected to pipelines constructed by others by removing the plugs at both ends of the pipeline segment and making the connection.

C. If the pipelines have not been constructed by others, the pipeline under this Contract shall be laid to the required line and grade, terminated with a plugged connection, precisely at the location of the connection indicated on the Drawings, and then backfilled and marked with a stake and the connection made later as specified in (B) above.

1.14 PROTECTION OF CONSTRUCTION AND EQUIPMENT

A. All newly constructed work shall be carefully protected from any injury or damage. The CONTRACTOR shall not allow any wheeling or walking or placing of heavy loads on any newly constructed Work and all portions injured or damaged shall be reconstructed by the CONTRACTOR at his/her own expense.

B. All structures shall be protected in a manner approved by the PROJECT REPRESENTATIVE. If, in the final inspection of the work, any defects, faults or omissions are found, the CONTRACTOR shall cause the same to be repaired or removed and replaced by proper materials and workmanship without extra compensation by the OWNER for the materials and labor required. Further, the CONTRACTOR shall be fully responsible for the satisfactory maintenance and repair of the construction and other work undertaken herein, for at least the guarantee period described in the Contract.

C. The CONTRACTOR shall take all necessary precautions to prevent damage to any structure due to water pressure during and after construction and until such structure is accepted and taken over by the OWNER.

D. The CONTRACTOR shall maintain the Work during construction and until the Project is accepted. Such maintenance shall constitute continuous and effective Work prosecuted on a daily basis, with adequate equipment and forces in order that the roads or structures are kept in satisfactory condition at all times. In the case of a contract for the placing of a previously constructed course or subgrade, the CONTRACTOR shall maintain the

previous course or subgrade during all construction operations.

All cost of maintenance work during construction and before the Project is accepted shall be included in the Contract Price and the CONTRACTOR will not be paid an additional amount for such Work.

1.15 APPENDICES

The CONTRACTOR shall follow all permit conditions in the Appendices which are part of the Contract Documents.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

SECTION 01065
PERMITS AND FEES

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

The CONTRACTOR shall:

A. Obtain and pay for any and all permits and licenses as specified in the General Conditions (Section 00100), except as otherwise provided herein, and in effect at the time of bidding.

B. Schedule all inspections and obtain all written approvals of the agencies required by the permits and licenses.

C. Comply with all construction related conditions specified in each permit and license.

A copy of the permits obtained by the OWNER will be furnished to the CONTRACTOR.

1.02 PERMITS BY OWNER

The OWNER will acquire the following permits (when applicable):

A. Florida Department of Environmental Protection (FDEP) Permit to Construct/ Operate Water Distribution System.

B. Florida Department of Environmental Protection (FDEP) Permit to Construct/ Operate Wastewater Collection and Transmission System.

1.03 CONSTRUCTION PERMIT

A. The CONTRACTOR shall be responsible for acquiring all construction permits including local building permits and any permits necessary to comply with the Northwest Florida Water Management District (NWFWMD) dewatering plan and the National Pollutant Discharge Elimination System (NPDES) stormwater discharge from construction site.

B. The dewatering plan shall include sequence of excavation, discharge locations, sediment sump, turbidity control, erosion control, and turbidity monitoring points.

1.04 NPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION SITE

A. The CONTRACTOR shall comply with stormwater discharge regulations and Amendments to the Clean Water Act (33 U.S.C. 1251 et seq.).

On September 17, 1992, the State of Florida certified the general permit for stormwater discharges from construction sites for use in Florida. This project is governed by regulations under this general permit and the CONTRACTOR shall comply with all such regulations.

B. Under these regulations, construction projects that disturb more than 5 acres must have and comply with a stormwater pollution prevention plan (SWPPP). The CONTRACTOR shall complete and sign a SWPPP prior to initiation of any construction activities on the site.

C. The CONTRACTOR shall ensure that all employees and subcontractors implement the specified erosion control practices to properly manage stormwater.

PART 2 - PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

SECTION 01100
SPECIAL PROJECT PROCEDURES

PART 1 – GENERAL

1.01 HURRICANE PREPAREDNESS PLAN

A. Within 20 days of the date of Notice to Proceed, the CONTRACTOR shall submit to the PROJECT REPRESENTATIVE a Hurricane Preparedness Plan. The plan shall outline the necessary measures which the CONTRACTOR proposes to perform at no additional cost to the OWNER in case of a hurricane warning. Such measures shall be in accordance with local and state requirements.

B. In the event of inclement weather, the CONTRACTOR will, and will cause Subcontractors to, protect carefully the Work and materials against damage or injury from the weather. If, in the opinion of PROJECT REPRESENTATIVE, any portion of Work or materials are damaged or injured by reason of failure on the part of the CONTRACTOR or Subcontractors to so protect the Work, such Work and materials shall be removed and replaced at the expense of CONTRACTOR.

1.02 CONSTRUCTION CONDITIONS AND SUBSURFACE INVESTIGATION

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

B. The CONTRACTOR shall be responsible for having determined, prior to bid submission, the nature and location of the Work, the conformation of the ground, the character and quality of the substrata, the types and quantity of materials to be encountered, the nature of the groundwater conditions, the character of equipment and facilities needed preliminary to and during the prosecution of the Work, the general and local conditions and all other matters which can in any way affect the Work under this Contract. The prices established for the Work to be done will reflect all costs pertaining to the Work. Any claims for extras based on substrata, groundwater table, and other such conditions will not be allowed.

1.03 PUBLIC NUISANCE

A. The CONTRACTOR shall not create a public nuisance including, but not limited to, encroachment on adjacent lands, flooding of adjacent lands, excessive noise, or odor.

B. No extra charge may be made for time lost due to work stoppage resulting from the CONTRACTOR's creation of a public nuisance.

1.04 RELOCATIONS

The CONTRACTOR shall be responsible for the relocation of structures, including, but not limited to, light poles, signs, sign poles, fences, piping, conduits and drains that interfere with the positioning of the work as set out on the Drawings. The cost of all such relocations shall be included in the Contract Price.

1.05 PUMPING

A. The CONTRACTOR shall accomplish all pumping necessary to prevent flotation of any part of any structures, or pipe/conduit during construction operations.

B. The CONTRACTOR shall, for the duration of the contract pump out water and wastewater which may seep or leak into the excavations or structures. Galleries and other operating areas shall be kept dry at all times. Discharges shall be in conformance with applicable regulations and permits.

1.06 WORK ON PRIVATE PROPERTY

A. The CONTRACTOR shall maintain construction operations within the presently existing road right-of-way and established easements throughout the Project. In the event that it becomes necessary or advisable to operate beyond the limits of the existing right-of-way, established easements and Right of Entry AGREEMENTs, the CONTRACTOR shall be responsible for securing written AGREEMENTs with the property owners. Immediately after contract award, the CONTRACTOR shall submit to the PROJECT REPRESENTATIVE a listing of those areas in which it is deemed necessary to work outside of the road right-of-way, easements, or AGREEMENTs. The listing shall be subject to the approval of the PROJECT REPRESENTATIVE and as construction areas are secured, copies of all written AGREEMENTs shall be placed on file with the PROJECT REPRESENTATIVE.

B. The CONTRACTOR shall be responsible for any encroachments on rights-of-way or property of the public or adjoining property owners caused by its operations and shall indemnify, defend and hold the OWNER, ENGINEER and PROJECT REPRESENTATIVE harmless because of any encroachments. In this regard, the CONTRACTOR shall, without extra cost to the OWNER, move any Work or that portion of any Work that encroaches on the property of others, or that is built beyond legal building or setback limits, and the CONTRACTOR shall rebuild the affected Work or portion of Work at the proper location and in full compliance with the Contract Documents before final payment will be authorized, the CONTRACTOR will be required to furnish the OWNER with written releases from property owners or public agencies where side AGREEMENTs or special easements have been made by the CONTRACTOR or when the CONTRACTOR'S

operations, for any reason, have not been kept within the construction right-of-way, easements or Right of Entry AGREEMENTs by the OWNER.

C. In the event written releases required in the above paragraph cannot be secured, the CONTRACTOR shall inform the PROJECT REPRESENTATIVE of the reasons for failure to do so. The PROJECT REPRESENTATIVE in conjunction with the OWNER, will then examine the Site and direct the CONTRACTOR to complete any Work that may be necessary to satisfy the terms of the permit or easement. Should the CONTRACTOR refuse to do the Work, the OWNER reserves the right to have the Work done by separate contract and deduct the cost of same from moneys due the CONTRACTOR, or require the CONTRACTOR to furnish a bond in a sum satisfactory to the OWNER to cover any legal claims for damages. When the PROJECT REPRESENTATIVE is satisfied that the Work has been completed in accordance with the Contract Documents, permits and/or AGREEMENTs, the OWNER reserves the right to waive the requirement of obtaining the statement if the CONTRACTOR'S failure to obtain such statement is due to the grantor's refusal to sign and this refusal is not based upon any legitimate claims that the CONTRACTOR has failed to fulfill any contract permit or AGREEMENT requirements, or if the CONTRACTOR is unable to contact, or has undue hardship in contacting, the grantors.

1.07 EMERGENCIES

A. The CONTRACTOR shall at all times after regular working hours, including weekend and holidays, maintain a telephone where the CONTRACTOR's representative can be reached on an emergency basis. The CONTRACTOR or CONTRACTOR's representative shall be prepared to act to correct conditions on the Site deemed to constitute an emergency by either the OWNER, the PROJECT REPRESENTATIVE, or local authorities and is obligated to act to prevent threatened damage, injury or loss without special instructions from the OWNER, PROJECT REPRESENTATIVE, or ENGINEER. The CONTRACTOR shall give the PROJECT REPRESENTATIVE prompt written notice of all significant changes in the Work or deviations from the Contract Documents caused thereby. If a condition on the Site requires attention after working hours, either the OWNER, PROJECT REPRESENTATIVE, or local authority shall call the CONTRACTOR or representative at the emergency telephone number, identify themselves and describe the emergency condition. The CONTRACTOR is expected to dispatch personnel and equipment to adequately institute corrective measures within 2 hours. If for some reason the CONTRACTOR or representative cannot be reached at the emergency number within two hours, the OWNER shall have the right to immediately initiate corrective measures, and the cost shall be borne by the CONTRACTOR.

B. In the event that the CONTRACTOR fails to maintain safe job conditions and traffic conditions, including, but not limited to, trench settlement and

hazardous storage of backfill or construction materials, the OWNER, after failure of the CONTRACTOR to commence substantial steps at the job site to rectify the situation within 2 hours of the time the CONTRACTOR has been notified of the unsafe condition, may hire guards, take such precautions, make such repairs and take any other steps which the OWNER or the PROJECT REPRESENTATIVE, in their sole discretion, consider necessary to protect the property, persons, or the OWNER. The cost of any of these precautions, guards, or steps shall be deducted from the payments due the CONTRACTOR, and the costs for such services, work and material shall be calculated at prevailing market rates.

1.09 PROPERTY DAMAGES

In the event of any indirect or direct damage to public or private property caused in whole or in part by an act, omission or negligence on the part of the CONTRACTOR, any of its Subcontractors, any of its Sub-subcontractors or anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable, the CONTRACTOR shall at no additional cost to OWNER promptly remedy and restore such property to a condition equal to or better than that existing before such damage was done. The CONTRACTOR shall perform such restoration by "underpinning", repairing, rebuilding, replanting, or otherwise restoring as may be required by the PROJECT REPRESENTATIVE, or shall correct such damage in a satisfactory and acceptable manner to the OWNER or the PROJECT EPRESENTATIVE. In case of failure on the part of the CONTRACTOR to promptly restore such property or correct such damage, the OWNER may, upon 5 calendar days written notice, proceed to repair, rebuild or otherwise restore such property as may be necessary and the cost thereof, or a sum sufficient in the judgment of the OWNER to reimburse the owners of the property so damaged, will be deducted from any monies due or to become due the CONTRACTOR under the Contract.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

SECTION 01110
ENVIRONMENTAL PROTECTION

1.01 SCOPE OF WORK

A. The Work covered by this Section consists of furnishing all labor, materials and equipment and performing all Work required for the prevention of environmental pollution in conformance with applicable laws and regulations, during and as the result of construction operations under this Contract. For the purpose of this Specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorable alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and/or recreational purposes; or violate any applicable environmental laws, rules, codes or regulations.

B. The control of environmental pollution requires consideration of air, water and land, and involves management of noise, odor, and solid waste, as well as other pollutants.

C. These Specifications are intended to ensure that construction is achieved with a minimum of disturbance to the existing ecological balance between a water resource and surroundings. These are general guidelines. It is the CONTRACTOR'S responsibility to determine the specific construction techniques to meet these guidelines.

D. The CONTRACTOR shall secure, if required, at its own cost, a surface water management permit from the Northwest Florida Water Management District and approvals from Bay County and/or Panama City Beach for any construction dewatering activities associated with this project.

1.02 APPLICABLE REGULATIONS

The CONTRACTOR shall comply with all applicable Federal, State and local laws and regulations concerning environmental pollution control and abatement.

1.03 NOTIFICATIONS

The OWNER through the PROJECT REPRESENTATIVE will notify the CONTRACTOR in writing immediately following identification of any non-compliance with the foregoing provisions or of any environmentally objectionable acts and any required corrective action to be taken by CONTRACTOR. State or local agencies responsible for verification of certain aspects of the environmental protection requirements may notify the CONTRACTOR of any non-compliance with State or local requirements. The CONTRACTOR shall, after receipt of such notice from the

regulatory agency shall immediately notify the PROJECT REPRESENTATIVE in writing and immediately take correction action. If the CONTRACTOR fails or refuses to comply promptly, the OWNER may issue an order stopping all or part of the Work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the CONTRACTOR unless it is later determined that the CONTRACTOR was in compliance and subject to the other terms of the Contract Documents.

1.04 IMPLEMENTATION

A. Prior to commencement of the Work, the CONTRACTOR shall meet with the PROJECT REPRESENTATIVE to develop mutual understandings relative to compliance with this specification and administration of the environmental pollution control program.

B. The CONTRACTOR shall remove temporary environmental control features, when approved by the PROJECT REPRESENTATIVE, and incorporate permanent control features into the Project at the earliest practicable time, consistent with the approved construction schedule.

1.05 EROSION CONTROL

A. The CONTRACTOR shall ensure sufficient precautions are taken during construction to minimize the run-off of polluting substances such as silt, clay, fuels, oils, bitumens, calcium chloride, or other polluting materials harmful to humans, fish, or other life, into the supplies and surface waters of the State. Control measures must be adequate to assure that turbidity in the receiving water will not be increased more than 10 nephelometric turbidity units (NTU), or as otherwise required by the State or other controlling body, in water used for public water supply or fish unless limits have been established for the particular water. In surface water used for other purposes, the turbidity must not exceed 25 NTU unless otherwise permitted. Special precautions shall be taken in the use of construction equipment to prevent operations which promote erosion.

Erosion evident within the limits of construction shall be the responsibility of the CONTRACTOR during the full term of the Contract and for the full (1) year guarantee period. Areas subject to erosion during this time shall be fully restored to original or design conditions (as applicable) within 10 days of notice to the CONTRACTOR.

B. The CONTRACTOR shall provide positive means of erosion control such as shallow ditches around construction to carry off surface water. Erosion control measures, such as siltation basins, hay check dams, mulching, jute netting and other equivalent techniques, shall be used as appropriate. Flow of surface water into excavated areas shall be prevented.

Ditches around construction area shall be used to carry away water resulting

from dewatering of excavated areas. At the completion of the Work, ditches shall be backfilled and the ground surface restored to original condition.

C. The CONTRACTOR shall schedule and conduct all Work in a manner that will minimize the erosion of soils in the area of the Work. Erosion control measures shall be provided such as diversion channels, sedimentation or filtration systems, berms, staked hay bales, seeding, mulching or other special surface treatments as are required by regulatory authorities to prevent silting and muddying of streams, rivers, canals, impoundments, lakes, etc. All erosion control measures shall be in place prior to any construction activity in any area of the Work.

1.06 PROTECTION OF LAND RESOURCES

A. Land resources within the Project boundaries and outside the limits of permanent Work shall be restored by CONTRACTOR to a condition, after completion of construction that will appear to be natural and not detract from the appearance of the project.

B. Outside of areas requiring earthwork for the construction of the new facilities, the CONTRACTOR shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without prior approval. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorage unless specifically authorized by the PROJECT REPRESENTATIVE. Where such special emergency use is permitted, first wrap the trunk with a sufficient thickness of burlap or rags over which softwood cleats shall be tied before any rope, cable, or wire is placed. The CONTRACTOR shall in any event be responsible for any damage resulting from such use.

C. Where trees may possibly be defaced, bruised, injured, or otherwise damaged by the CONTRACTOR'S equipment, dumping or other operations, CONTRACTOR shall protect such trees by placing board, planks, or poles around them. Monuments and markers shall be similarly protected by CONTRACTOR before beginning operations near them.

D. Any trees or other landscape feature scarred or damaged by the CONTRACTOR'S equipment or operations shall be restored as nearly as possible to its original condition. The PROJECT REPRESENTATIVE will decide what method of restoration shall be used and whether damaged trees shall be treated and healed or removed and disposed of.

All scars made on trees by CONTRACTOR's equipment, construction operations, or by the removal of limbs by CONTRACTOR larger than 1 inch in diameter shall be coated as soon as possible with an approve tree wound dressing.

All trimming or pruning by CONTRACTOR shall be performed in an approved manner by experienced workmen with saws or pruning shears. Tree trimming with axes will not be permitted.

Climbing ropes shall be used where necessary for safety. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by the CONTRACTOR and are beyond saving in the opinion of a certified nurseryman, shall be immediately removed and replace in kind and maintained until growth is assured.

E. The locations of the CONTRACTOR's lay down area, storage and other construction buildings, required temporarily in the performance of the Work, shall require written concurrence of the PROJECT REPRESENTATIVE. The preservation of the landscape and public perception shall be an imperative consideration in the selection of the lay down area and in the provision of any buildings.

F. All debris and excess material will be disposed of by CONTRACTOR outside wetland or floodplain areas in an environmentally sound and lawful manner.

1.07 PROTECTION OF AIR QUALITY

A. The use of burning for the disposal of refuse and debris will not be permitted.

B. The CONTRACTOR shall maintain all excavations, embankment, stockpiles, access roads, plant sites, waste areas, borrow areas, and all other work areas within or without the project boundaries free from dust which could cause the standards for air pollution to be exceeded, and which would cause a hazard or nuisance to others.

C. An approved method of stabilization consisting of sprinkling or other similar methods will be permitted to control dust. The use of petroleum products is prohibited. The use of chlorides may be permitted with concurrence from the appropriate regulatory authority.

D. Sprinkling must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times, and the CONTRACTOR must have sufficient competent equipment on the job to accomplish needed sprinkling. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs.

1.08 MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

During the life of this Contract, CONTRACTOR shall maintain all facilities constructed for pollution control as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created. All pollution control devices shall be inspected regularly to ensure they are operating correctly.

1.09 NOISE CONTROL

A. The CONTRACTOR shall make every effort to minimize noises caused by operations. Equipment, including dewatering systems, shall be equipped

with silencers or mufflers designed to operate with the least possible noise in compliance with State and Federal Regulations.

B. Sound levels measured by the PROJECT REPRESENTATIVE shall not exceed 55 dBA from 8:00 PM to 7:00 AM or 65 dBA from 7:00 AM to 8:00 PM. This sound level to be measured at the OWNER'S property line. Sound levels of equipment shall not exceed 95 dBA at any time. Sound levels in excess of these values are sufficient cause to have the Work halted until equipment can be quieted to acceptable levels. Work stoppage for excessive noise shall not relieve the CONTRACTOR of the other portions of this specification including, but not limited to Contract Time and Contract Price.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

SECTION 01300
SUBMITTALS

1.01 REQUIREMENTS INCLUDED

A. The CONTRACTOR shall submit to the ENGINEER for review such working drawings, shop drawings, test reports and data on materials and equipment (hereinafter in this Section called “Data”), and material samples (hereinafter in this Section called “Samples”) as are required for the proper control of work, including but not limited to those working drawings, shop drawings, Data and Samples for materials and equipment specified elsewhere in the Specifications and in the Contract Drawings.

B. The CONTRACTOR shall note that there are specific submittal requirements in other sections of these Specifications.

1.02 SHOP DRAWINGS

A. When used in the Contract Documents, the term “shop drawings” shall be considered to mean CONTRACTOR’s plans for material and equipment which become an integral part of the Project. These drawings shall be complete and detailed. Shop drawings shall consist of fabrication, erection and setting drawings and schedule drawings, manufacturer’s scale drawings, bills of material, wiring and control diagrams, and inspection and test reports including performance curves and certifications as applicable to the Work.

B. All details on shop drawings submitted for approval shall show clearly the elevations of the various parts to the main members and lines of the structure and/or equipment, and where correct fabrication of the Work depends upon field measurements, such measurements shall be made and noted on the shop drawings before being submitted for approval.

C. See Shop Drawing Schedule requirements in Subparagraph 1.07 CONTRACTOR’S RESPONSIBILITY.

1.03 PRODUCT DATA

Product data as specified in individual sections, include, but are not necessarily limited to, standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer’s product specification and installation instructions, availability of colors and patterns, MANUFACTURER’S printed statements of compliances and applicability, roughing-in diagrams and templates, catalog cuts, product photographs, standard wiring diagrams, printed performance curves and operational-range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare-parts listing storage instructions, and printed

product warranties, as applicable to the Work.

1.4 WORKING DRAWINGS

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

B. Working drawings shall be signed and sealed by a registered Professional Engineer, currently licensed to practice in the State and shall convey, or be accompanied by, calculations or other sufficient information to completely explain the structure, machine, or system described and its intended manner of use. Prior to commencing such Work, working drawings must have been reviewed without specific exceptions by the ENGINEER. Such review will be for general conformance and will not relieve the CONTRACTOR in any way from his responsibility with regard to the fulfillment of the terms of the Contract. All risks of error are assumed by the CONTRACTOR; the OWNER and ENGINEER shall have no responsibility therefore.

1.05 SUBMITTAL REQUIREMENTS

A. The CONTRACTOR shall review, approve, and submit, with reasonable promptness and in such sequence as shown on the Shop Drawing Submittal Schedule so as to cause no delay in the Contract Work or in the Work of the OWNER or any separate contractor, all shop drawings, product data, working drawings and samples required by the Contract Documents.

B. The CONTRACTOR shall submit one digital (.pdf format) copy of all shop drawings for the ENGINEER to review and comment. PDF formatting shall allow the ENGINEER to print any portion of the submittal at the original drawing size it was developed in prior to scanning and retain original drawing quality.

C. All submittals shall be directly transmitted to the ENGINEER’s office. Submittals to the PROJECT REPRESENTATIVE will not be accepted.

D. Shop drawings, product data, working drawings and Samples shall be furnished with the following information:

1. Number and title of the drawing.

2. Date of drawing or revision.

3. Name of project building or facility.

4. Name of contractor, subcontractor, and manufacturer submitting drawing.

5. A certification by the CONTRACTOR that states the following: I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is in compliance with the Contract Drawings and Specifications, can be installed in the allocated space, will be stored in accordance with the manufacturers recommendations and the Specifications, and is submitted for approval.

E. All items specified are not necessarily intended to be a manufacturer's standard product. Variations from specified items will be considered on an "or equal" basis. If submittals show variations from Contract requirements because of standard shop practice or for other reasons, the CONTRACTOR shall describe such variations in the letter of transmittal and on the shop drawings along with notification of intent to seek contract adjustment. If acceptable, proper adjustment in the Contract shall be implemented where appropriate. If the CONTRACTOR fails to describe such variations, responsibility will not be waived for executing the Work in accordance with the Contract, even though such drawings have been reviewed. Variations submitted but not described may be cause for rejection. Any variations initiated by the CONTRACTOR will not be considered as an addition to the scope of work unless specifically noted and then approved as such in writing by the ENGINEER.

F. Data on materials and equipment shall include materials and equipment lists giving, for each item thereon, the name and location of the supplier or manufacturer, trade name, catalog reference, material, size, finish, and all other pertinent data.

G. The CONTRACTOR shall use the color "green" to make his remarks on the Submittals. Only the ENGINEER will utilize the color "red" in marking submittals.

1.07 CONTRACTOR'S RESPONSIBILITY

A. It is the duty of the CONTRACTOR to check, and coordinate with the work of all trades, all drawings, Data, schedules and Samples before submitting them to the ENGINEER for review. Each and every copy of any drawing or data sheet larger than 11"x17" shall bear CONTRACTOR's stamp showing that they have been so checked and approved. Drawings or data sheets 11"x17" and smaller shall be grouped together in an orderly fashion and bear the CONTRACTOR's stamp on the cover sheet. The cover sheet shall fully describe the packaged data and include a list of all sheet numbers within the package. Shop drawings submitted to the ENGINEER without the CONTRACTOR's stamp will be returned to the CONTRACTOR, without review at the ENGINEER's option, for conformance with this requirement.

B. The CONTRACTOR shall review shop drawings, product data, and Samples prior to submission to determine and verify the following:

1. Field measurements.

2. Field construction criteria.

3. Manufacturer's catalog numbers and similar data.

4. Conformance with Specifications.

C. Shop drawings shall indicate any deviations in the submittal from the requirements of the Contract Documents.

D. At a time decided upon at the preconstruction meeting the CONTRACTOR shall furnish the PROJECT REPRESENTATIVE and ENGINEER a Shop Drawing schedule fixing the respective dates for the initial submission of shop and working drawings, the beginning of manufacture, testing and installation of materials, supplies and equipment. This schedule shall be provided as a separate entity and indicate those submittals that are critical to the progress schedule. The CONTRACTOR shall prepare and transmit each submittal sufficiently in advance of performing the related work or other applicable activities, or within the time specified in the individual work sections of the Specifications, so that the installation will not be delayed by processing times including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery, and similar sequenced activities. No extension of time will be authorized because of the CONTRACTOR's failure to transmit complete and acceptable submittals sufficiently in advance of the Work.

E. The CONTRACTOR shall not begin any Work affected by a submittal returned not approved. Before starting this Work, all revisions must be corrected by the CONTRACTOR. After resubmittal they will be reviewed and returned by the ENGINEER. If approved or approved as noted, then the CONTRACTOR may begin this Work. Any corrections made to the shop drawings are to be followed without exception.

F. The CONTRACTOR shall submit to the ENGINEER all shop drawings and data sufficiently in advance of construction requirements to provide no less than 14 calendar days for review from the time the ENGINEER receives them. No less than **30** calendar days will be required for major equipment that requires review by more than one engineering discipline.

G. The CONTRACTOR shall be responsible for and bear all cost of damages which may result from the ordering of any material or from proceeding with any part of Work prior to the review and approval by ENGINEER of the necessary shop drawings.

H. All shop drawings, product data, working drawings and Samples submitted by subcontractors for approval shall be sent directly to the CONTRACTOR for checking. The CONTRACTOR shall be responsible for their submission according to the approved shop drawing schedule so as to prevent delays in delivery of materials and project completion.

I. The CONTRACTOR shall check all subcontractors' shop drawings, product

data, working drawings and Samples regarding measurements, size of members, materials, and details to satisfy himself that they are in conformance to the Contract Documents. Shop drawings found to be inaccurate or otherwise in error shall be returned to the subcontractors for correction before submission to the ENGINEER.

J. Requests for Information (RFI) shall be submitted on a standard form through the PROJECT REPRESENTATIVE. RFIs shall indicate their importance to the timely completion of the project. RFIs will be processed as a shop drawing unless there is an urgent need for immediate response.

1.08 ENGINEER'S REVIEW OF SHOP DRAWINGS, PRODUCT DATA, WORKING DRAWINGS AND SAMPLES

A. The ENGINEER's review is for general conformance with the design concept and contract drawings. Markings or comments shall not be construed as relieving the CONTRACTOR from compliance with the contract plans and specifications or from departures therefrom. The CONTRACTOR remains responsible for details and accuracy, for coordinating the Work with all other associated work and trades, for selecting fabrication processes, for techniques of assembly, and for performing work in a safe manner.

B. The review of shop drawings, Data, and Samples will be general. They shall not be construed:

1. as permitting any departure from the Contract requirements;

2. as relieving the CONTRACTOR of responsibility for any errors, including details, dimensions, and materials;

3. as approving departures from details furnished by the ENGINEER, except as otherwise provided herein.

C. If the shop drawings, Data or Samples as submitted describe variations per Subparagraph (1.6H), and show a departure from the Contract requirements which ENGINEER finds to be in the interest of the OWNER and to be so minor as not to involve a change in Contract Price or Contract Time for performance, the ENGINEER may return the reviewed drawings without noting an exception.

D. Submittals will be returned to the CONTRACTOR under one of the following:

"APPROVED" is assigned when there are no notations or comments on the submittal. The CONTRACTOR may release the equipment and/or material for manufacture.

"**APPROVED AS NOTED**" is assigned when notations or comments have been made on the submittal pointing out minor discrepancies as compared with the Contract Documents. Resubmittal or confirmation is not necessary prior to release for manufacturing.

"**NOT APPROVED/RESUBMIT**" The submittal is in noncompliance with the Contract Documents and must be corrected and the entire package resubmitted. This generally means that the equipment or material cannot be released for manufacture unless the CONTRACTOR takes full responsibility for providing the submitted items in accordance with Contract Documents.

"**FOR YOUR INFORMATION**" is assigned when the package provides information of a general nature that may or may not require a response
.

E. Resubmittals will be handled in the same manner as first submittals. On resubmittals the CONTRACTOR shall direct specific attention, in writing on the letter of transmittal and on resubmitted shop drawings by use of revision triangles or other similar methods, to revisions other than the corrections requested by the ENGINEER on previous submissions. Any such revisions which are not clearly identified shall be made at the risk of the CONTRACTOR. The CONTRACTOR shall make corrections to any Work done because of this type revision that is not in accordance to the Contract Documents as may be required by the ENGINEER.

F. If the CONTRACTOR considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, the CONTRACTOR shall give written notice thereof to the PROJECT REPRESENTATIVE at least 7 working days prior to release for manufacture.

G. The ENGINEER will review a submittal a maximum of two times, after which cost of review will be borne by the CONTRACTOR. The cost of engineering shall be equal to the ENGINEER's charges to the OWNER under the terms of the ENGINEER's AGREEMENT with the OWNER.

H. When the shop drawings have been completed to the satisfaction of the ENGINEER, the CONTRACTOR shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the ENGINEER.

I. Partial submittals may not be reviewed. The ENGINEER will be the only judge as to the completeness of a submittal. Submittals not complete will be returned to the CONTRACTOR, and will be considered "Not Approved" until resubmitted. The ENGINEER may, but is not required to, provide a list or mark the submittal directing the CONTRACTOR to the areas that are incomplete

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

SECTION 01380
CONSTRUCTION PHOTOGRAPHS

1.01 REQUIREMENTS

The CONTRACTOR shall employ a competent photographer to take digital construction record photographs or perform digital video recording, including providing all labor, materials, equipment and incidentals necessary to obtain specified photographs and/or video. All photographs or video provided to the OWNER in the course of this PROJECT is considered to be in the public domain and may be freely disseminated without additional compensation to the CONTRACTOR or its photographer.

1.02 QUALIFICATIONS

A. All photography shall be accomplished by a competent camera operator who is fully experienced and qualified with the specified equipment.

B. For the video tape recording, the audio portion should be accomplished by a person qualified and knowledgeable in the specifics of the Contract, who shall speak with clarity and diction so as to be easily understood.

1.03 PROJECT PHOTOGRAPHS

A. Provide clear high resolution (1600x1200 pixel minimum, .jpg format) photographs of the entire work area prior to any construction for the purpose of records of conditions prior to construction. All service locations from tap location to meter shall be thoroughly photographed prior to construction per and post construction. All digital file names shall include actual street address of service.

B. Photographs shall be submitted each month on a project-labeled CD with the monthly Request for Payment. Provide photographs of all service locations completed or in active work areas. Payment will be withheld until the required photographs are provided.

C. The CONTRACTOR shall pay all costs associated with the required photography and producing completed CD media.

D. All project photographs shall be taken from locations to adequately illustrate conditions prior to construction, or conditions of construction and state of progress or particular construction activities or problems. The CONTRACTOR shall consult with the PROJECT REPRESENTATIVE for instructions concerning views required. A minimum of five photographs from different viewpoints, both pre and post construction, shall be provided for each service location

1.04 VIDEO RECORDINGS

A. Video recording shall be accomplished along all routes that are scheduled for Construction in addition to required construction photographs. All video recording shall be in digital hi-resolution (720p resolution minimum) color. Video shall include full recording of both sides of all streets on which construction is to be performed. File format shall be .mpg.

B. The video shall, when viewed, show the image, ¼ of the roadway fronting all property and ¾ of the image shall be of the property. The video shall be accomplished so as to show the roadway and property in an oblique view (30 degrees).

C. A complete view, in sufficient detail, of all existing facilities shall be provided.

D. Two complete sets of video recordings shall be delivered to the PROJECT REPRESENTATIVE for the permanent and exclusive use of the PROJECT REPRESENTATIVE prior to the start of any construction on the project.

E. All video shall contain the name of the project, the date and time of the video taping, the name and address of the photographer and any other identifying information required.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

SECTION 01505
MOBILIZATION/DEMOBILIZATION

PART 1 - GENERAL

1.01 DEFINITION AND SCOPE

As required for the proper performance and completion of the Work, mobilization shall include, but not be limited to, the following principal items:

A. Move onto the site all CONTRACTOR's equipment required for the first month's operation.

B. Install any necessary temporary construction power, wiring, telephone, and lighting facilities.

C. Establish a safety program.

D. Secure construction water supply.

E. Provide on-site sanitary facilities.

F. Arrange for and erect CONTRACTOR'S lay down and storage yard and employee's parking facilities.

G. Submit all required insurance certificates and bonds.

H. Obtain all required permits.

I. Post all OSHA, FDEP, Department of Labor, and all other required notices.

J. Have CONTRACTOR'S project manager and/or superintendent at the job site full time.

K. Submit a detailed construction schedule acceptable to the PROJECT REPRESENTATIVE.

L. Submit a Schedule of Values of the Work in an approved format acceptable to the PROJECT REPRESENTATIVE.

M. Submit a hurricane preparedness plan acceptable to the PROJECT REPRESENTATIVE.

1.02 PAYMENT FOR MOBILIZATION

Payment for all mobilization/demobilization work will be made at the lump sum price bid for mobilization and demobilization of all labor, equipment, materials and appurtenances necessary for construction of the project. Mobilization shall include all items listed in the above paragraph. Also included, but not limited to, as part of

this bid item is the cost for project performance indemnification's, shop drawings, working drawings, schedules, record drawings and documents, coordination, and phasing and other miscellaneous items associated with the work. Measurement and payment for this bid item will be lump sum. The lump sum price for mobilization/demobilization will be limited to 5.0 percent of the total contract amount. Eighty percent (70%) of the lump sum amount will be payable upon mobilization. The remaining 30% will be payable upon demobilization.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

SECTION 01705
PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of Contract apply to work of this section.

1.02 DESCRIPTION OF REQUIREMENTS

Definitions:

A. Closeout is hereby defined to include general requirements near the end of Contract Time, in preparation for final acceptance, final payment, normal termination of Contract, and similar actions evidencing completion of the Work. Specific requirements for individual units of work are specified elsewhere in these Specifications.

B. Time of closeout is directly related to "Substantial Completion," and therefore; may be either a single time period for entire Work or a series of time periods for individual parts of the Work which have been certified as substantially complete at different dates. That time variation (if any) shall be applicable to other provisions of this section.

1.03 PREREQUISITES FOR SUBSTANTIAL COMPLETION

C. General:

Prior to requesting ENGINEER's inspection for certification of Substantial Completion (for either entire work or portions thereof), complete the following and list known exceptions in request:

1. In progress payment request, coincident with or first following date claimed, show either 100% completion for portion of Work claimed as "substantially complete" or list incomplete items, value of incompletion, and reasons for being incomplete.

2. Include supporting documentation for completion as indicated in these Contract Documents.

3. Submit statement showing accounting of changes to the Contract Sum.

4. Advise OWNER of pending insurance change-over requirements.

5. Submit special warranties, workmanship/maintenance bonds, maintenance AGREEMENTs, final certifications, and similar documents.

6. Obtain and submit releases enabling OWNER's full and unrestricted use of the work and access to services and utilities, including (where required) operating certificate, and similar releases.

7. Submit record drawings, and similar final record information.

8. Complete final cleaning up requirements, including touch-up painting of marred surfaces.

D. Inspection Procedures:

Upon receipt of CONTRACTOR's request, the ENGINEER will either proceed with inspection or advise CONTRACTOR of prerequisites not fulfilled. Following initial inspection, the ENGINEER will either prepare certificate of Substantial Completion, or advice the CONTRACTOR of work which must be performed prior to issuance of certificate; and repeat inspection when requested and assured that work has been substantially completed. Results of completed inspection will form initial "punch-list" for final acceptance.

1.04 PREREQUISITES FOR FINAL ACCEPTANCE

A. General:

Prior to requesting ENGINEER's final inspection for certification of final acceptance and final payment, as required by General Conditions (Section 00100), complete the following and list known exceptions (if any) in request:

1. Submit final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

2. Submit updated final statement, accounting for additional (final) changes to the Contract Sum.

3. Submit consent of surety.

4. Submit final liquidation damages settlement statement, acceptable to the OWNER.

5. Revise and submit evidence of final continuing insurance coverage complying with insurance requirements.

B. Reinspection Procedure:

Upon receipt of CONTRACTOR's notice that the work has been completed, including punch-list items resulting from earlier inspections, and excepting incomplete items delayed because of acceptable circumstances, the ENGINEER will reinspect the Work. Upon completion of reinspection, the ENGINEER will either prepare a certificate of final acceptance or advise the CONTRACTOR of Work not completed or obligations not fulfilled as required for final acceptance. If necessary, procedure will be repeated.

1.05 RECORD DOCUMENT SUBMITTALS

A. General:

Specific requirements for record documents are indicated in individual sections of these specifications. Other requirements are indicated in General Conditions. General submittal requirements are indicated in Section 01300 (Submittals).

Do not use record documents for construction purposes; protect from deterioration and loss in a secure fire-resistive location; provide access to record documents for ENGINEER'S reference during normal working hours.

B. Record Drawings:

1. Maintain a set of contract drawings and shop drawings in clean, undamaged condition, with mark-up of actual installations which very substantially from the work as originally shown.

2. Mark whichever drawing is most capable of showing "field" condition fully and accurately; however, where shop drawings are used for mark-up, record a cross-reference at corresponding location on working drawings.

3. Mark with red erasable pencil and, where feasible, use other colors to distinguish between variations in separate categories of work.

4. Mark-up new information which is recognized to be of importance to the OWNER, but was for some reason not shown on either the Drawings or Shop Drawings. Give particular attention to concealed work, which would be difficult to measure and record at a later date.

5. Note related Change Order numbers where applicable.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 CLOSEOUT PROCEDURES

A. General:

Special cleaning for specific units of work is specified in other sections. The following are examples, but not by way of limitation, of cleaning levels required:.

1. Clean Project site of litter and foreign substances.

2. Sweep paved areas to a broom-clean condition; remove stains, petro-chemical spills and other foreign deposits.

3. Rake grounds which are neither planted nor paved, to a smooth, even-textured surface.

B. Compliances:

1. Comply with safety standards and governing regulations for cleaning operations.

2. Do not burn waste materials at site, or bury debris or excess materials on OWNER's property, or discharge volatile or other harmful or dangerous materials into drainage systems.

3. Remove waste materials from site and dispose of in a lawful manner.

4. Dispose of extra materials of value remaining after completion of the associated Work has become the OWNER's property, to OWNER' best advantage as directed.

END OF SECTION

APPENDIX A

CHANGE ORDER FORM

APPENDIX A - CHANGE ORDER

No. _____

PROJECT _____

DATE OF ISSUANCE _____ EFFECTIVE DATE _____

OWNER _____

OWNER's Contract No _____

CONTRACTOR _____ ENGINEER _____

You are directed to make the following changes in the Contract Documents

Description:

Reason for Change Order:

Attachments:

Original Contract Price $0.00	CHANGE IN CONTRACT TIMES: Original Contract Times: Substantial Completion: _____ Final Completion _____ days or dates
Net changes from previous Change Orders $0.00	Net changes from previous Change Orders 0 days
Contract Price prior to this Change Order $0.00	Contract Time prior to this Change Order Substantial Completion: _____ Final Completion _____ days or dates
Net decrease of this Change Order $0.00	Net Increase of this Change Order 0 days
Contract Price with all approved Change Orders $0.00	Contract Times with all approved Change Orders Substantial Completion: _____ Final Completion _____ days or dates

RECOMMENDED: APPROVED ACCEPTED:

By:_____ By:_____ By:_____

Engineer (Authorized Signature) (Authorized Signature) Contractor:

Date:_____ Date:_____ Date:_____

EJCDC No: 1910-4-B (1990 Edition)

Prepared by the Engineers Joint Contract Documents Committee and endorsed by The As6ociatcd General Contractors of America.

APPENDIX B

PAY REQUEST FORM

APPENDIX B - Pay Request Form

APPLICATION AND CERTIFICATE FOR PAYMENT

Date:

TO (OWNER): **City of Panama City Beach**
110 South Arnold Road
Panama City Beach, FL 32413

PROJECT:

PROJECT NO:

FROM (CONTRACTOR):

VIA (ENGINEER):

APPLICATION NO:

PERIOD TO:

APPLICATION DATE:

CONTRACT DATE:

DISTRIBUTION TO:
- ☐ OWNER
- ☐ ENGINEER
- ☐ CONTRACTOR
- ☐ PCS-FO
- ☐ PCS-AP

JOB#

CONTRACTOR'S APPLICATION FOR PAYMENT

CHANGE ORDER SUMMARY				
Number	Date Approved		ADDITIONS	DEDUCTIONS
	TOTAL			
PENDING CHANGE ORDERS				
(SCHEDULE ATTACHED)				
	SUBTOTAL			
TOTAL CHANGE ORDERS				

1	ORIGINAL CONTRACT SUM	
2	NET CHANGE BY CHANGE ORDERS	
3	CONTRACT SUM TO DATE (line 1 + line 2)	
4	TAX SAVINGS AGREEMENT	
	a. Total Purchase Orders Issued by Owner (To Date)	
	b. Anticipated Tax Savings on Owner Issued PO's	
	c. Total Tax Savings Agreement Deduction (4a and 4b)	
5	CONTRACT VALUE LESS TAX SAVINGS AGREEMENT (line 3 - line 4c)	
6	VENDOR EARLY PAYMENT DISCOUNT	
7	CONTRACT VALUE (including Half of Discount) (line 5 + line 6)	
8	CONTRACTOR EARNED TO DATE	

(value of work completed excludes owner purchased materials)

9	RETAINAGE: (5% of line 8)	
	a. Unpaid Vendor Retainages on Owner Purchased Equipment (report only)	
10	DISCOUNT WITHHELD	
11	TOTAL EARNED LESS RETAINAGE (line 8 less line 9)	
12	LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 9 from prior Certificate)	
13	CURRENT PAYMENT DUE	
14	BALANCE TO FINISH INCLUDING RETAINAGE & WITHHOLDING (line 7 - line 11)	

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information, and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for for which previous Certificates for Payment were issued and payments received from the Owner, and that the current payment shown herein is now due.

CONTRACTOR
Name

By: Date:

Name and Title

State of: Florida County of: Bay

Subscribed and sworn to before me this _____ day of _____

Notary Public:

Commission:

ENGINEER'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising the above application, the Engineer certifies to the Owner that to the best of the Engineer's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

ENGINEER:

AMOUNT CERTIFIED $

(Attach explanation if amount certified differs from the amount applied for.)

By: Date:

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein.

Issuance, payment, and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

APPENDIX C

QUESTIONNAIRE

PANAMA CITY BEACH – ALF COLEMAN ROAD
FPID NO. 441742-2-58-01 & 441742-2-58-02

QUESTIONNAIRE

(Submit with necessary attachments along with your bid documents)

The undersigned warrants the truth and accuracy of all statements and answers herein contained. Include additional sheets if necessary.

1. Do you have a current Florida General Contractor License? State your license number:_____
   Do you have a current Florida Underground Utility Contractor License? State your license number:_____.

2. How many years has your organization been in business as a General Contractor?

   _____

3. Describe and give the date and owner and engineer of record with reference information of the last project that you have completed similar in type, size, and nature as the one proposed? Must be a stormwater improvements project.
   _____
   _____
   _____
   _____

4. List five (5) projects completed in the last five years that you have completed similar in type, size, and nature as the one proposed **(Attached spreadsheets will not be accepted).**

   a. Name of Project:_____

      Owner: _____ Telephone No._____

      Engineer: _____ Telephone No._____

      Date Started: _____ Date Completed:_____

      Value of Contract:_____

      Description of Project:_____
      _____
      _____

b. Name of Project:_____

Owner: _____ Telephone No._____

Engineer: _____ Telephone No._____

Date Started:_____ Date Completed:_____

Value of Contract:_____

Description of Project:_____
_____
_____

c. Name of Project:_____

Owner: _____ Telephone No._____

Engineer: _____ Telephone No._____

Date Started:_____ Date Completed:_____

Value of Contract:_____

Description of Project:_____
_____
_____

d. Name of Project:_____

Owner: _____ Telephone No._____

Engineer: _____ Telephone No._____

Date Started: _____ Date Completed:_____

Value of Contract:_____

Description of Project:_____
_____
_____

e. Name of Project: _____

Owner: _____ Telephone No._____

Engineer: _____ Telephone No._____

Date Started: _____ Date Completed:_____

Value of Contract:_____

Description of Project:_____
_____
_____

5. Have you ever failed to complete work awarded to you? If so, where and why?
_____
_____

6. Name engineers with phone numbers for which you have performed work and to which you refer:
_____
_____
_____

7. Have you personally inspected the site of the proposed work? Describe any anticipated problems with the site and your proposed solutions:

_____
_____
_____
_____

8. Will you Subcontract any part of this Work? If so, describe which portions:

_____
_____

9. Please list the names and addresses of the subcontractors to be used for the portions of the work listed above.

Sub-Contractor	Type of Work
_____	_____
_____	_____

_____ _____

_____ _____

_____ _____

10. State the true and exact, correct, and complete name under which you do business.
BIDDER IS:

SOLE PROPRIETORSHIP

_____ (SEAL)
(Individuals Signature)

_____
(Individuals Name)

Business address: _____

Phone No.: _____

A PARTNERSHIP

_____(SEAL)
(Partnership Name)

_____
(General Partner's Signature)

_____
(General Partner's Name)

Business address: _____

Phone No.: _____
A CORPORATION

_____ (SEAL)
(Corporation Name)

_____
(State of Incorporation)

By_____

(Name of person authorized to sign)

_____

(Title)

_____

(Authorized Signature)

(Corporate Seal)

Attest _____

(Secretary)

Business address: _____

Phone No.: _____

THE INFORMATION PROVIDED HEREIN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE:

FIRM: _____

BY:_____

(Please Type)

SIGNATURE: _____

TITLE: _____

(Owner, President, etc.)

DATE:_____

END OF SECTION 00045

APPENDIX D

FDEP ERP

Northwest Florida Water Management District

700 U.S. Highway 331 South, DeFuniak Springs, FL 32435

Phone: (850) 951-4660 • Fax: (850) 892-8007

Brett J. Cyphers
Executive Director

March 25, 2020

David O Campbell
City of Panama City Beach
17007 Panama City Beach Parkway
Panama City Beach, FL 32413

RE: Notice of Final Agency Action – Determination of Qualification
General Environmental Resource Permit
Project Number: GEN-005-290622-1
Permit Name: Alf Coleman Road Improvements

Dear David O Campbell:

The District has received your notice of intent to use a General Environmental Resource Permit. Based upon the submitted information, the proposed activity qualifies for a General Environmental Resource Permit pursuant to Chapter 62-330, Florida Administrative Code (F.A.C.). The proposed activity is subject to the general conditions in Rule 62-330.405, F.A.C. (see attached Exhibit A) and the specific conditions (see attached Exhibit B) if any. Deviations from these conditions may subject you to enforcement action and possible penalties. You are responsible for conducting construction in a manner that satisfies all criteria.

Please be advised that the District has not published a notice in the newspaper advising the public that this activity has qualified for the use of a General Environmental Resource Permit. Publication, using the District form, notifies the public of their right to challenge the issuance of this permit. If proper notice is given by publication, third parties have a 21-day time limit to file a petition opposing the issuance of the permit. If you do not publish, a party's right to challenge the issuance of the permit extends for an indefinite period of time. If you wish to have certainty that the period for filing such a challenge is closed, then you may publish, at your own expense, such a notice in a newspaper of general circulation. A copy of the form of the notice and a list of newspapers of general circulation is attached for your information. If you do publish a notice, please submit a copy of the published notice to the District for our records.

This verification of qualification to use a General Environmental Resource Permit does not eliminate the need for obtaining all necessary permits or approvals from other agencies.

Should you have any questions regarding your permit or its conditions, please contact your permit reviewer, Dana Palermo, P.E., at (850) 951-4660 or by e-mail: Dana.Palermo@nwfwater.com, Erica Bundrick, at (850) 951-4660 or by e-mail: Erica.Bundrick@nwfwater.com and Ted Reese, at (850) 951-4660 or by e-mail: Ted.Reese@nwfwater.com

Sincerely,

Andrew Joslyn
ERP Bureau Chief

cc:

Consultant:
Malies Warren
Volkert, Inc.
14101 Panama City Beach Parkway
Suite 190
Panama City Beach, FL 32413

Travis Justice
GPI
1273 Office Park Drive
Chipley, FL 32561

Enc:

Notice of Rights
Sample Newspaper Notice

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
GENERAL ENVIRONMENTAL RESOURCE PERMIT

PERMIT NO: GEN-005-290622-1 **DATE ISSUED:** March 25, 2020
PROJECT NAME: Alf Coleman Road Improvements

A PERMIT AUTHORIZING:
The use of Section 62-330.447, F.A.C. General Permit to Florida Department of Transportation, Counties, and Municipalities for Minor Activities within Existing Rights-of-Way or Easements, for improvements along Alf Coleman Road, from US Highway 98 to County Road 292A (Hutchison Boulevard) in Panama City Beach (Bay County). The proposed activities will mainly consist of modifications to the vertical profile of the roadway to mitigate flooding within the roadway and adjacent rights-of-way. All other proposed activities can be found on Pages 1 and 2 of the Project Narrative received on December 23, 2020. The project includes impacts to wetlands and surface water conveyance ditches over and area of approximately 0.46 acres. Impacts to wetlands and other surface waters which exceed the thresholds of the general permit are minimal and exempt from the need to obtain a permit per Section 373.406(6), F.S.

Bay County

ISSUED TO:
City of Panama City Beach
17007 Panama City Beach Parkway
Panama City Beach, FL 32413

Permittee agrees to hold and save the Northwest Florida Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

The use of a General Environmental Resource permit does not convey to permittee any property rights or any rights or privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes:

Activities conducted under this permit are subject to the following conditions:

See conditions on attached “Exhibit A”, dated March 25, 2020

AUTHORIZED BY: Northwest Florida Water Management District
Division of Resource Regulation

By: _____
Andrew Joslyn
ERP Bureau Chief

"EXHIBIT A"
CONDITIONS FOR ISSUANCE OF PERMIT NUMBER GEN-005-290622-1
Alf Coleman Road Improvements
DATED March 25, 2020

1. The general permit is valid only for the specific activity indicated. Any deviation from the specified activity and the conditions for undertaking that activity shall constitute a violation of the permit and may subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.

2. This general permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any construction, alteration, operation, maintenance, removal or abandonment authorized by this permit.

3. This general permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the general permit.

4. The general permit does not relieve the permittee from liability and penalties when the permitted activity causes harm or injury to: human health or welfare; animal, plant or aquatic life; or property. It does not allow the permittee to cause pollution that violates state water quality standards.

5. Section 253.77, F.S., provides that a person may not commence any excavation, construction, or other activity involving the use of state-owned or other lands of the state, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required consent, lease, easement, or other form of authorization authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on state-owned lands.

6. The authorization to conduct activities under a general permit may be modified, suspended or revoked in accordance with Chapter 120, F.S., and Section 373.429, F.S.

7. This permit shall not be transferred to a third party except pursuant to Rule 62-330.340, F.A.C. The permittee transferring the general permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to sale, conveyance, or other transfer of ownership or control of the permitted project, activity, or the real property at which the permitted project or activity is located.

8. Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the permitted system to ensure conformity with the plans and specifications approved by the permit.

9. The permittee shall maintain any permitted project or activity in accordance with the plans submitted to the Agency and authorized in this general permit.

10. A permitee's right to conduct a specific activity under this general permit is authorized for a duration of five years.

11. Activities shall be conducted in a manner that does not cause or contribute to violations of state water quality standards. Performance-based erosion and sediment control best management practices shall be implemented and maintained immediately prior to, during, and after construction as needed to stabilize all disturbed areas, including other measures

specified in the permit to prevent adverse impacts to the water resources and adjacent lands. Erosion and sediment control measures shall be installed and maintained in accordance with the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual (Florida Department of Environmental Protection and Florida Department of Transportation June 2007)*, available at www.dep.state.fl.us/water/wetlands/docs/erp/FLErosionSedimentManual_6_07.pdf, and the *Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008)*, available at www.dep.state.fl.us/water/nonpoint/docs/erosion/erosion-inspectors-manual.pdf.

12. Unless otherwise specified in the general permit, temporary vehicular access within wetlands during construction shall be performed using vehicles generating minimum ground pressure to minimize rutting and other environmental impacts. Within forested wetlands, the permittee shall choose alignments that minimize the destruction of mature wetland trees to the greatest extent practicable. When needed to prevent rutting or soil compaction, access vehicles shall be operated on wooden, composite, metal, or other non-earthen construction mats. In all cases, access in wetlands shall comply with the following:
    a. Access within forested wetlands shall not include the cutting or clearing of any native wetland tree having a diameter 4 inches or greater at breast height;
    b. The maximum width of the construction access area shall be limited to 15 feet;
    c. All mats shall be removed within 72 hours after the work commences; and
    d. Areas disturbed for access shall be restored to natural grades immediately after the maintenance or repair is completed.

13. Barges or other work vessels used to conduct in-water activities shall be operated in a manner that prevents unauthorized dredging, water quality violations, and damage to submerged aquatic communities.

14. The construction, alteration, or use of the authorized project shall not adversely impede navigation or create a navigational hazard in the water body.

15. Except where specifically authorized in a general permit, activities must not:
    a. Impound or obstruct existing water flow, cause adverse impacts to existing surface water storage and conveyance capabilities, or otherwise cause adverse water quantity or flooding impacts to receiving water and adjacent lands;
    b. Cause an adverse impact to the maintenance of surface or ground water levels or surface water flows established pursuant to Section 373.042, F.S., or a Works of the District established pursuant to Section 373.086, F.S.; or

16. If any prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, work involving subsurface disturbance in the immediate vicinity of such discoveries shall cease. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section, at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Such subsurface work shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and notification shall be provided in accordance with Section 872.05, F.S.

17. The activity must be capable, based on generally accepted engineering and scientific principles, of being performed and of functioning as proposed, and must comply with any applicable District special basin and geographic area criteria.

18. The permittee shall comply with the following when performing work within waters accessible to federally- or state-listed aquatic species, such as manatees, marine turtles, smalltooth sawfish, and Gulf sturgeon:
    a. All vessels associated with the project shall operate at “Idle Speed/No Wake” at all times while in the work area and where the draft of the vessels provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
    b. All deployed siltation or turbidity barriers shall be properly secured, monitored, and maintained to prevent entanglement or entrapment of listed species.
    c. All in-water activities, including vessel operation, must be shutdown if a listed species comes within 50 feet of the work area. Activities shall not resume until the animal(s) has moved beyond a 50-foot radius of the in-water work, or until 30 minutes elapses since the last sighting within 50 feet. Animals must not be herded away or harassed into leaving. All on-site project personnel are responsible for observing water-related activities for the presence of listed species.
    d. Any listed species that is killed or injured by work associated with activities performed shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1(888)404-3922 and ImperiledSpecies@myFWC.com.
    e. Whenever there is a spill or frac-out of drilling fluid into waters accessible to the above species during a directional drilling operation, the FWC shall be notified at imperiledspecies@myfwc.com with details of the event within 24 hours following detection of the spill or frac-out.

19. The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any activity authorized by the general permit.

20. The permittee shall immediately notify the Agency in writing of any submitted information that is discovered to be inaccurate.

NOTICE OF RIGHTS

Northwest Florida Water Management District
152 Water Management Drive, Havana, FL 32333-4712
(850) 539-5999 Fax (850) 539-2693
www.nwfwater.com

The following information addresses procedures to be followed if you desire an administrative hearing or other review of agency action.

PETITION FOR FORMAL ADMINISTRATIVE PROCEEDINGS

Any person whose substantial interests are or may be affected by the action described in the enclosed Notice of Agency Action, may petition for an administrative hearing in accordance with the requirements of section 28-106.201, Florida Administrative Code, or may choose to pursue mediation as an alternative remedy under section 120.573, Florida Statutes, before the deadline for filing a petition. Pursuit of mediation will not adversely affect the right to administrative proceedings in the event mediation does not result in a settlement. Petitions for an administrative hearing must be filed with the Agency Clerk of the Northwest Florida Water Management District, 81 Water Management Drive, Havana, Florida 32333-9700 by the deadline specified in the attached cover letter. Failure to file a petition within this time period shall constitute a waiver of any rights such person may have to request an administrative determination (hearing) under section 120.57, Florida Statutes, concerning the subject permit application. Petitions which are not filed in accordance with the above provisions are subject to dismissal.

DISTRICT COURT OF APPEAL

A party who is adversely affected by final agency action on the permit application and who has exhausted available administrative remedies is entitled to judicial review in the District Court of Appeal pursuant to section 120.68, Florida Statutes. Review under section 120.68, Florida Statutes, is initiated by filing a Notice of Appeal in the appropriate District Court of Appeal in accordance with Florida Rule of Appellate Procedure 9.110.

SECTION 28-106.201, FLORIDA ADMINISTRATIVE CODE, INITIATION OF PROCEEDINGS

(1) Unless otherwise provided by statute, and except for agency enforcement and disciplinary actions that shall be initiated under Rule 28-106.2015, F.A.C., initiation of proceedings shall be made by written petition to the agency responsible for rendering final agency action. The term "petition" includes any document that requests an evidentiary proceeding and asserts the existence of a disputed issue of material fact. Each petition shall be legible and on 8 1/2 by 11 inch white paper. Unless printed, the impression shall be on one side of the paper only and lines shall be double-spaced.

(2) All petitions filed under these rules shall contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, any e-mail address, any facsimile number, and telephone number of the petitioner, if the petitioner is not represented by an attorney or a qualified representative; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action;

(f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and

(g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

(3) Upon receipt of a petition involving disputed issues of material fact, the agency shall grant or deny the petition, and if granted shall, unless otherwise provided by law, refer the matter to the Division of Administrative Hearings with a request that an administrative law judge be assigned to conduct the hearing. The request shall be accompanied by a copy of the petition and a copy of the notice of agency action.

Rulemaking Authority 14.202, 120.54(3), (5) FS. Law Implemented 120.54(3) FS. History–New 4-1-97, Amended 9-17-98, 1-15-07, 2-5-13.

NOTICING PUBLICATION INFORMATION

The District's action regarding the issuance or denial of a permit, a petition or qualification for an exemption only becomes closed to future legal challenges from members of the public ("third parties"), if 1) "third parties" have been properly notified of the District's action regarding the permit or exemption, and 2) no "third party" objects to the District's action within a specific period of time following the notification.

Notification of "third parties" is provided through publication of certain information in a newspaper of general circulation in the county where the proposed activities are to occur. Publication of notice informs "third parties" of their right to have a 21-day time limit in which to file a petition opposing the District's action. However, if no notice to "third parties" is published, there is no time limit to a party's right to challenge the District's action. The District has not published a notice to "third parties" that it has taken final action on your application. If you want to ensure that the period of time in which a petition opposing the District's action regarding your application is limited to the time frame state above, you may publish, at your own expense, a notice in a newspaper of general circulation. A copy of the Notice of Agency Action the District uses for publication is attached. You may use this format or create your own, as long as the essential information is included.

If you do decide to publish a Notice of Final Agency Action, please provide the District a copy of the Proof of Publication when you receive it. That will provide us notice that action on this permit application is closed after the 21 days following publication.

Notice of Final Agency Action Taken by the
Northwest Florida Water Management District

Notice is given that Environmental Resource permit number GEN-005-290622-1 was issued on March 25, 2020 to David O Campbell
City of Panama City Beach for the construction of a new surface water management system designed to serve safety and drainage improvements along Alf Coleman Road, from US Highway 98 to County Road 292A (Hutchison Boulevard) in Panama City Beach (Bay County). Improvements include of modifications to the vertical profile of the roadway to mitigate flooding within the roadway and adjacent rights-of-way. All other proposed activities can be found on Pages 1 and 2 of the Project Narrative received on December 23, 2020. The activities appear to meet the requirements of Section 62-330.447, F.A.C. General Permit to Florida Department of Transportation, Counties, and Municipalities for Minor Activities within Existing Rights-of-Way or Easements. The project includes impacts to wetlands and surface water conveyance ditches over and area of approximately 0.46 acres. Impacts to wetlands and other surface waters which exceed the thresholds of the general permit are minimal and exempt from the need to obtain a permit per Section 373.406(6), F.S. The project is located at Alf Coleman Road. The project will begin at Highway 98 and end at Hutchison Boulevard., Bay County.

The application file is available online and can be accessed through the District's e-Permitting Portal at: https://permitting.sjrwmd.com/nwepermitting/jsp/Search.do?theAction=PermitNumSearch. If you have any questions or are experiencing difficulty viewing the electronic application, please contact us at (850) 951-4660.

A person whose substantial interests are affected by the District permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S., or may choose to pursue mediation as an alternative remedy under Section 120.573, Florida Statutes, and Rules 28-106.111 and 28-106.401-404, Florida Administrative Code. Petitions must comply with the requirements of Florida Administrative Code, Chapter 28-106 and be filed with (received by) the District Clerk located at District Headquarters, 81 Water Management Drive, Havana, FL 32333-4712. Petitions for administrative hearing on the above application must be filed within twenty-one (21) days of publication of this notice or within twenty-six (26) days of the District depositing notice of this intent in the mail for those persons to whom the District mails actual notice. Failure to file a petition within this time period shall constitute a waiver of any right(s) such person(s) may have to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., concerning the subject permit. Petitions which are not filed in accordance with the above provisions are subject to dismissal.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the District's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the District on the application have the right to petition to become a party to the proceedings, in accordance with the requirements set forth above.

APPENDIX E

U.S. ARMY CORP. OF ENGINEERS PERMIT

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

March 12, 2020

Regulatory Division
North Permit Branch
Panama City Permits Section
SAJ-2019-03066(NW-LSL)

Mr. Tony O'Rourke
City of Panama City Beach
17007 Panama City Beach Parkway
Panama City Beach, Florida 32413

Dear Mr. O'Rourke:

The U.S. Army Corps of Engineers (Corps) assigned your application for a Department of the Army permit, which the Corps received on December 20, 2019, the file number SAJ-2019-03066. A review of the information and drawings provided indicates that the proposed work will result in 0.4501 acre of impact to jurisdictional ditches and swales for road improvements along 0.6 mile on Alf Coleman Road. The project includes modification of the vertical profile of Alf Coleman Road to mitigate flooding and other safety and drainage improvements, i.e. construction of retaining walls and portions of sidewalks, grading for tie in to existing elevations, piping and fill of nonfunctional swales, installation of underground pipes, culverts, inlets, and a manhole. Erosion and sedimentation controls are proposed. The activities subject to this permit are authorized pursuant to authorities under Section 404 of the Clean Water Act (33 U.S.C. § 1344). The project area is approximately 0.6 miles in length and is located within the existing right-of-way (ROW) of Alf Coleman Road, between State Road (SR) 392A (Hutchinson Boulevard) and SR 30A (Highway 98). The Alf Coleman ROW is located in Section 26, Township 3 south, Range 16 west, Panama City Beach, Bay County, Florida.

Your project, as depicted on the enclosed drawings, is authorized by Nationwide Permit (NWP) Number 14. In addition, project specific conditions have been enclosed. This verification is valid until **March 18, 2022**. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant nationwide permit is modified or revoked, you will have 12 months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this nationwide permit. Please access the U.S. Army Corps of Engineers' (Corps) Jacksonville District's Regulatory Internet page to access Internet links to view the Final Nationwide Permits, Federal Register Vol. 82, dated January 6, 2017,

specifically pages 1983 to 2008, and the table of Regional Conditions. The Internet page address is as follows:

http://www.saj.usace.army.mil/Missions/Regulatory.aspx

Please be aware this Internet address is case sensitive and should be entered as it appears above. Once there you will need to click on "Source Book"; and, then click on "Nationwide Permits." These files contain the description of the Nationwide Permit authorization, the Nationwide Permit general conditions, and the regional conditions, which apply specifically to this verification for NWP 14. Enclosed is a list of the six General Conditions, which apply to all Department of the Army authorizations. You must comply with all of the special and general conditions and any project specific condition of this authorization or you may be subject to enforcement action. In the event you have not completed construction of your project within the specified time limit, a separate application or re-verification may be required.

The following special conditions are included with this verification:

1. **Reporting Address**: The Permittee shall submit all reports, notifications, documentation and correspondence required by the general and special conditions of this permit to either (not both) of the following addresses:

a. For electronic mail (preferred): SAJ-RD-Enforcement@usace.army.mil (not to exceed 15 MB).

b. For standard mail: U.S. Army Corps of Engineers, Regulatory Division, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232-0019.

The Permittee shall reference this permit number, SAJ-2019-03066(NW - LSL), on all submittals.

2. **Commencement Notification**: Within 10 days from the date of initiating the work authorized by this permit the Permittee shall submit a completed "Commencement Notification" Form (Attachment A).

3. **As-Built Certification**: Within 60 days of completion of the work authorized by this permit, the Permittee shall submit as-built drawings of the authorized work and a completed "As-Built Certification By Professional Engineer" form (Attachment B) to the Corps. The as-built drawings shall be signed and sealed by a registered professional engineer and include the following:

a. A plan view drawing of the location of the authorized work footprint, as shown on the permit drawings, with transparent overlay of the work as constructed in the same scale as the permit drawings on 8½-inch by 11-inch sheets. The plan view drawing should show all "earth disturbance," including wetland impacts and water management structures.

b. A list of any deviations between the work authorized by this permit and the work as constructed. In the event that the completed work deviates, in any manner, from the authorized work, describe on the attached “As-Built Certification By Professional Engineer” form the deviations between the work authorized by this permit and the work as constructed. Clearly indicate on the as-built drawings any deviations that have been listed. Please note that the depiction and/or description of any deviations on the drawings and/or “As-Built Certification By Professional Engineer” form does not constitute approval of any deviations by the Corps.

c. Include the Department of the Army permit number on all sheets submitted.

4. **Agency Changes/Approvals**: Should any other agency require and/or approve changes to the work authorized or obligated by this permit, the Permittee is advised a modification to this permit instrument is required prior to initiation of those changes. It is the Permittee’s responsibility to request a modification of this permit from the Panama City Permits Section. The Corps reserves the right to fully evaluate, amend, and approve or deny the request for modification of this permit.

5. **Posting of Permit**: The Permittee shall have available and maintain for review a copy of this permit and approved plans at the construction site.

6. **Cultural Resources/Historic Properties**:

a. No structure or work shall adversely affect impact or disturb properties listed in the National Register of Historic Places (NRHP) or those eligible for inclusion in the NRHP.

b. If during the ground disturbing activities and construction work within the permit area, there are archaeological/cultural materials encountered which were not the subject of a previous cultural resources assessment survey (and which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, ceramics, stone tools or metal implements, dugout canoes, evidence of structures or any other physical remains that could be associated with Native American cultures or early colonial or American settlement), the Permittee shall immediately stop all work and ground-disturbing activities within a 100-meter diameter of the discovery and notify the

Corps within the same business day (8 hours). The Corps shall then notify the Florida State Historic Preservation Officer (SHPO) and the appropriate Tribal Historic Preservation Officer(s) (THPO(s)) to assess the significance of the discovery and devise appropriate actions.

c. Additional cultural resources assessments may be required of the permit area in the case of unanticipated discoveries as referenced in accordance with the above Special Condition ; and if deemed necessary by the SHPO, THPO(s), or Corps, in accordance with 36 CFR 800 or 33 CFR 325, Appendix C (5). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume on non-federal lands without written authorization from the SHPO for finds under his or her jurisdiction, and from the Corps.

d. In the unlikely event that unmarked human remains are identified on non-federal lands, they will be treated in accordance with Section 872.05 Florida Statutes. All work and ground disturbing activities within a 100-meter diameter of the unmarked human remains shall immediately cease and the Permittee shall immediately notify the medical examiner, Corps, and State Archeologist within the same business day (8-hours). The Corps shall then notify the appropriate SHPO and THPO(s). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume without written authorization from the State Archeologist and from the Corps.

7. **Erosion Control**: Prior to the initiation of any work authorized by this permit, the Permittee shall install erosion control measures along the perimeter of all work areas to prevent the displacement of fill material outside the work area into waters of the United States. Immediately after completion of the final grading of the land surface, all slopes, land surfaces, and filled areas shall be stabilized using sod, degradable mats, barriers, or a combination of similar stabilizing materials to prevent erosion. The erosion control measures shall remain in place and be maintained until all authorized work is completed and the work areas are stabilized.

8. **Fill Material**: The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete block with exposed reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act.

This letter of authorization does not obviate the necessity to obtain any other Federal, State, or local permits, which may be required. Prior to the initiation of any construction, projects qualifying for this Nationwide permit must qualify for an exemption under section 403.813(1), Florida Statutes or 373.406, Florida Statutes, or otherwise be authorized by the applicable permit required under Part IV of Chapter 373, Florida Statutes, by the Department of Environmental Protection, a water management district under section 373.069, Florida Statutes, or a local government with delegated authority under section 373.441, Florida Statutes, and receive Water Quality Certification and applicable Coastal Zone Consistency Concurrence or waiver thereto, as well as any authorizations required for the use of state-owned submerged lands under Chapter 253, Florida Statutes, and, as applicable, Chapter 258, Florida Statutes. You should check State-permitting requirements with the Florida Department of Environmental Protection or the appropriate water management district.

This letter of authorization does not include conditions that would prevent the 'take' of a state-listed fish or wildlife species. These species are protected under sec. 379.411, Florida Statutes, and listed under Rule 68A-27, Florida Administrative Code. With regard to fish and wildlife species designated as species of special concern or threatened by the State of Florida, you are responsible for coordinating directly with the Florida Fish and Wildlife Conservation Commission (FWC). You can visit the FWC license and permitting webpage (http://www.myfwc.com/license/wildlife/) for more information, including a list of those fish and wildlife species designated as species of special concern or threatened. The Florida Natural Areas Inventory (http://www.fnai.org/) also maintains updated lists, by county, of documented occurrences of those species.

This letter of authorization does not give absolute Federal authority to perform the work as specified on your application. The proposed work may be subject to local building restrictions mandated by the National Flood Insurance Program. You should contact your local office that issues building permits to determine if your site is located in a flood-prone area, and if you must comply with the local building requirements mandated by the National Flood Insurance Program.

If you are unable to access the internet or require a hardcopy of any of the conditions, limitations, or expiration date for the above referenced NWP, please contact me by telephone at 850-285-9533.

Thank you for your cooperation with our permit program. The Corps Jacksonville District Regulatory Division is committed to improving service to our customers. We strive to perform our duty in a friendly and timely manner while working to preserve our environment. We invite you to complete our automated Customer Service Survey at

http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. Please be aware this Internet address is case sensitive; and, you will need to enter it exactly as it appears above. Your input is appreciated – favorable or otherwise.

Sincerely,

Lisa S. Lovvorn
Project Manager

Enclosures

cc:
Mrs. Malies Warren, Volkert, Inc.
CESAJ-RD-E

GENERAL CONDITIONS
33 CFR PART 320-330

1. The time limit for completing the work authorized ends on **March 18, 2022**.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort of if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow a representative from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

DEPARTMENT OF THE ARMY PERMIT TRANSFER REQUEST

PERMIT NUMBER: SAJ-2019-03066(NW-LSL)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. Although the construction period for works authorized by Department of the Army permits is finite, the permit itself, with its limitations, does not expire.

To validate the transfer of this permit and the associated responsibilities associated with compliance with its terms and conditions, have the transferee sign and date below and mail to the U.S. Army Corps of Engineers, Enforcement Section, Post Office Box 4970, Jacksonville, FL 32232-0019 or electronic mail at saj-rd-enforcement@usace.army.mil.

_____
(TRANSFEREE-SIGNATURE)

_____
(DATE)

_____
(NAME-PRINTED)

_____

_____
(MAILING ADDRESS)

_____
(CITY, STATE, ZIP CODE)

_____
(SUBDIVISION)

_____ _____
(LOT) **(BLOCK)**

_____
(STREET ADDRESS)

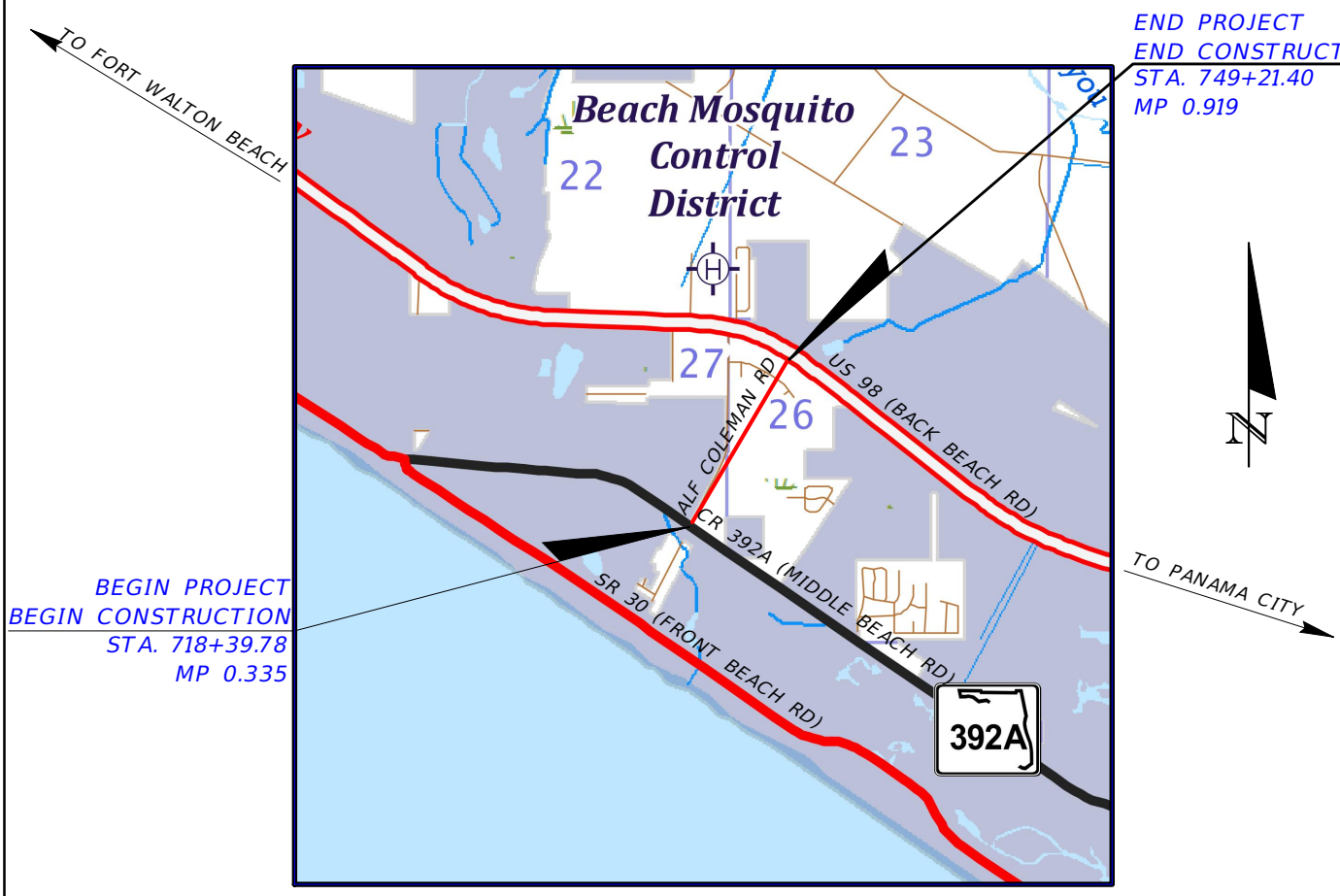
CITY OF PANAMA CITY BEACH

DREDGE AND FILL PERMIT PLANS

BAY COUNTY (46160000)

ALF COLEMAN RD.

FROM SR 392A (MIDDLE BEACH RD. TO SR 30A/US 98 (BACK BEACH RD.)



INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	PROJECT LAYOUT
3	GENERAL NOTES
4 - 14	EXISTING CONDITIONS
15	SUMMARY OF WETLAND IMPACTS
16 - 26	PLAN SHEETS
27 - 31	CROSS SECTIONS
32 - 34	TYPICAL SECTION DETAILS
35 - 36	SPECIAL DETAILS

RICKY L. DODD
LICENSE
No 88526
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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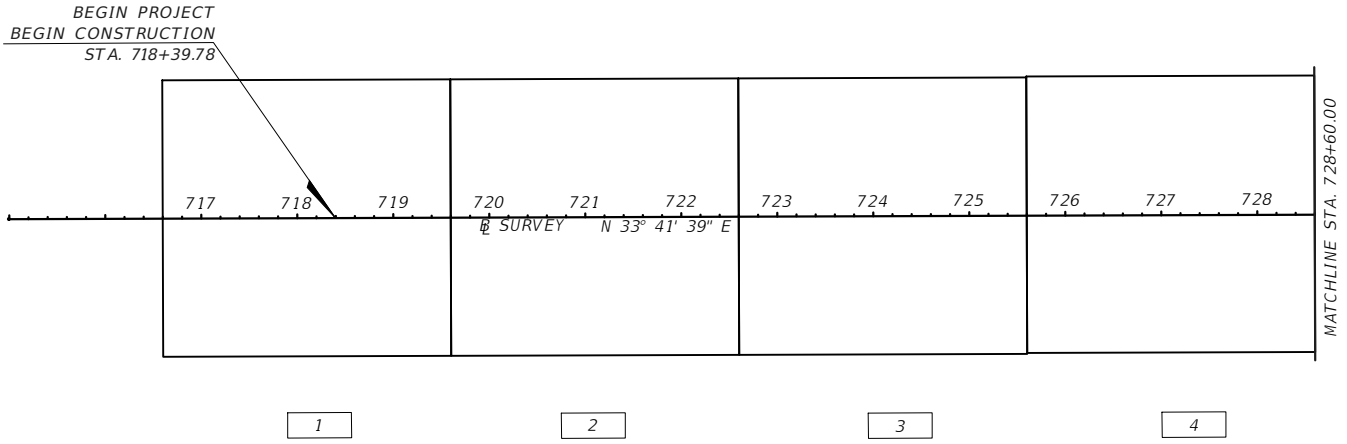

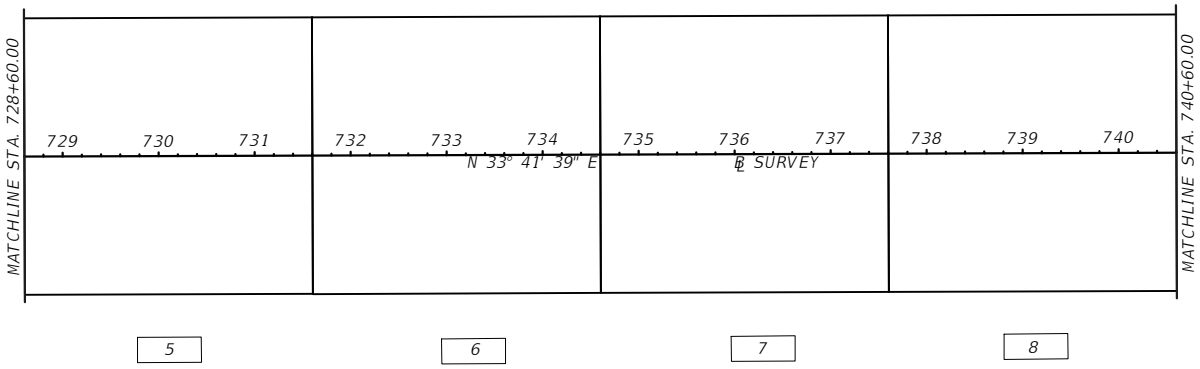

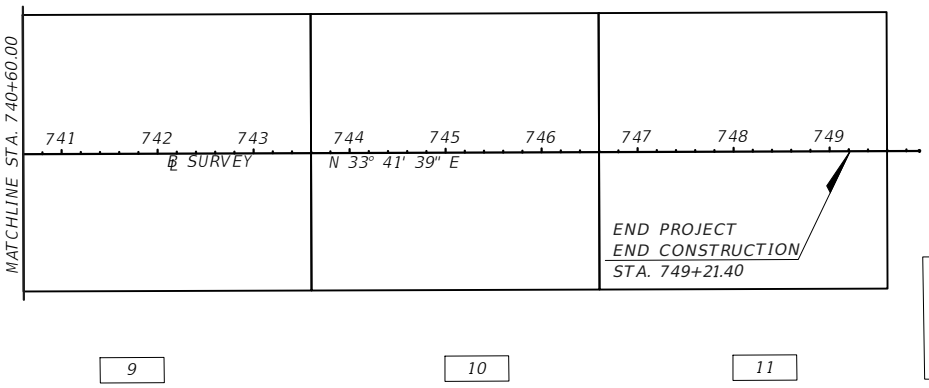

LEGEND

1 PLAN SHEET NUMBER

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TRAVIS K. JUSTICE, P.E.
P.E. LICENSE NUMBER 63092
GREENMAN-PEDERSEN-INC.
1273 OFFICE PARK DR.
CHIPLEY, FL 32428
REGISTRY NO. : 3498

CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

PROJECT LAYOUT

SHEET NO. 2

GENERAL NOTES

1. CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED IN WETLAND AREAS UNLESS SUCH CONSTRUCTION PRACTICES ARE APPROVED IN A PLAN OF OPERATION SUBMITTED TO THE ENGINEER & THE APPROPRIATE REGULATORY AUTHORITIES. WHERE CONSTRUCTION IS NECESSARY ACROSS OR ADJACENT TO WETLAND JURISDICTIONAL AREAS, SEDIMENT BARRIERS SHALL BE INSTALLED AS SHOWN ON THE PLANS. SEDIMENT BARRIERS SHALL BE CONSIDERED LIMITS OF CONSTRUCTION WITHIN OR ADJACENT TO JURISDICTIONAL AREAS.

2. STAKED OR FLOATING SILT SCREENS OR SYNTHETIC HAY BALES, AS APPROPRIATE, SHALL BE UTILIZED AS SEDIMENT BARRIERS AND PLACED IN LOCATIONS SHOWN ON THE PLANS AND AT OTHER LOCATIONS AS REQUIRED TO KEEP SEDIMENT FROM REACHING WATER BODIES OR WETLAND AREAS. ONCE CONSTRUCTION IS COMPLETE AND FINISH GRADING / STABILIZATION HAS BEEN ACHIEVED, SEDIMENT BARRIERS SHALL BE COMPLETELY REMOVED TO THE SATISFACTION OF THE OWNER AND PRIOR TO FINAL ACCEPTANCE.

3. ALL FUGITIVE DUST SHALL BE CONTROLLED ON SITE. ONLY AREAS SCHEDULED FOR IMMEDIATE CONSTRUCTION SHALL BE CLEARED OR STRIPPED OF VEGETATION. WATERING, APPLICATION OF CALCIUM CHLORIDE OR OTHER PRIOR APPROVED MEANS OF DUST CONTROL SHALL BE EMPLOYED TO PREVENT THE EMANATION OF DUST FROM THE SITE. PERMANENT GRASSING, LANDSCAPING AND OTHER SITE WORK SHALL BE INITIATED AS SOON AS POSSIBLE.

4. ALL WATER COLLECTED AND PUMPED DURING TRENCH DEWATERING ACTIVITIES SHALL BE DISPOSED OF IN UPLAND AREAS INTO DOUBLE STAKED HAY BALES. DISCHARGE LOCATIONS SHALL BE A MINIMUM OF 75 FEET FROM THE NEAREST SURFACE WATER BODY OR WETLAND AREA, TO ALLOW FOR MAXIMUM OVERLAND FILTRATION OF SOIL PARTICLES.

5. TEMPORARY STOCKPILES SHALL NOT BE LOCATED ADJACENT TO UNDISTURBED WETLANDS. ADDITIONALLY, STOCKPILES TO REMAIN FOR LONGER THAN 24 HOURS SHALL BE CONFINED BY SEDIMENT BARRIERS WHICH PREVENT RUNOFF SEDIMENTATION FROM ENCROACHING UPON WETLAND AREAS OR SURFACE WATER BODIES. STOCKPILES IN PLACE AND UNTOUCHED FOR 7 DAYS OR MORE TO HAVE VEGETATIVE COVER TO PREVENT WIND EROSION AND SEDIMENT DISPERSAL.

6. SOIL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED PRIOR TO CONSTRUCTION, MAINTAINED THROUGHOUT CONSTRUCTION AND UNTIL THE SITE IS PERMANENTLY STABILIZED. SEE SWPPP / CSWMP NOTES AND DETAIL SHEETS FOR ADDITIONAL INFORMATION.

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CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

GENERAL NOTES

SHEET NO. 3

WETLAND IMPACTS			
AREA NUMBER	IMPACT AREA (SF)	IMPACT AREA (ACRE)	FILL AREA (CY)
1	1295.33	0.0297	47.98
2	1176.77	0.0270	226.42
3	115.03	0.0026	15.81
4	170.63	0.0039	36.33
5	484.40	0.0111	107.00
6	443.11	0.0102	86.48
7	406.69	0.0093	82.59
8	1348.37	0.0310	295.94
9	400.28	0.0092	76.93
10	234.73	0.0054	12.87
11	1031.33	0.0237	81.70
12	1455.32	0.0334	47.06
13	416.11	0.0096	3.71
14	815.35	0.0187	36.63
15	879.91	0.0202	133.58
16	208.08	0.0048	8.85
17	1689.51	0.0388	202.74
18	263.55	0.0061	11.71
19	142.83	0.0033	5.92
20	2601.04	0.0597	196.67
21	667.32	0.0153	24.72
22	21.79	0.0005	0.81
23	3450.85	0.0792	445.16
24	103.10	0.0024	3.82
25	192.63	0.0044	7.13
TOTAL	20014.06	0.4595	2194.43

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CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

SUMMARY OF WETLAND IMPACTS

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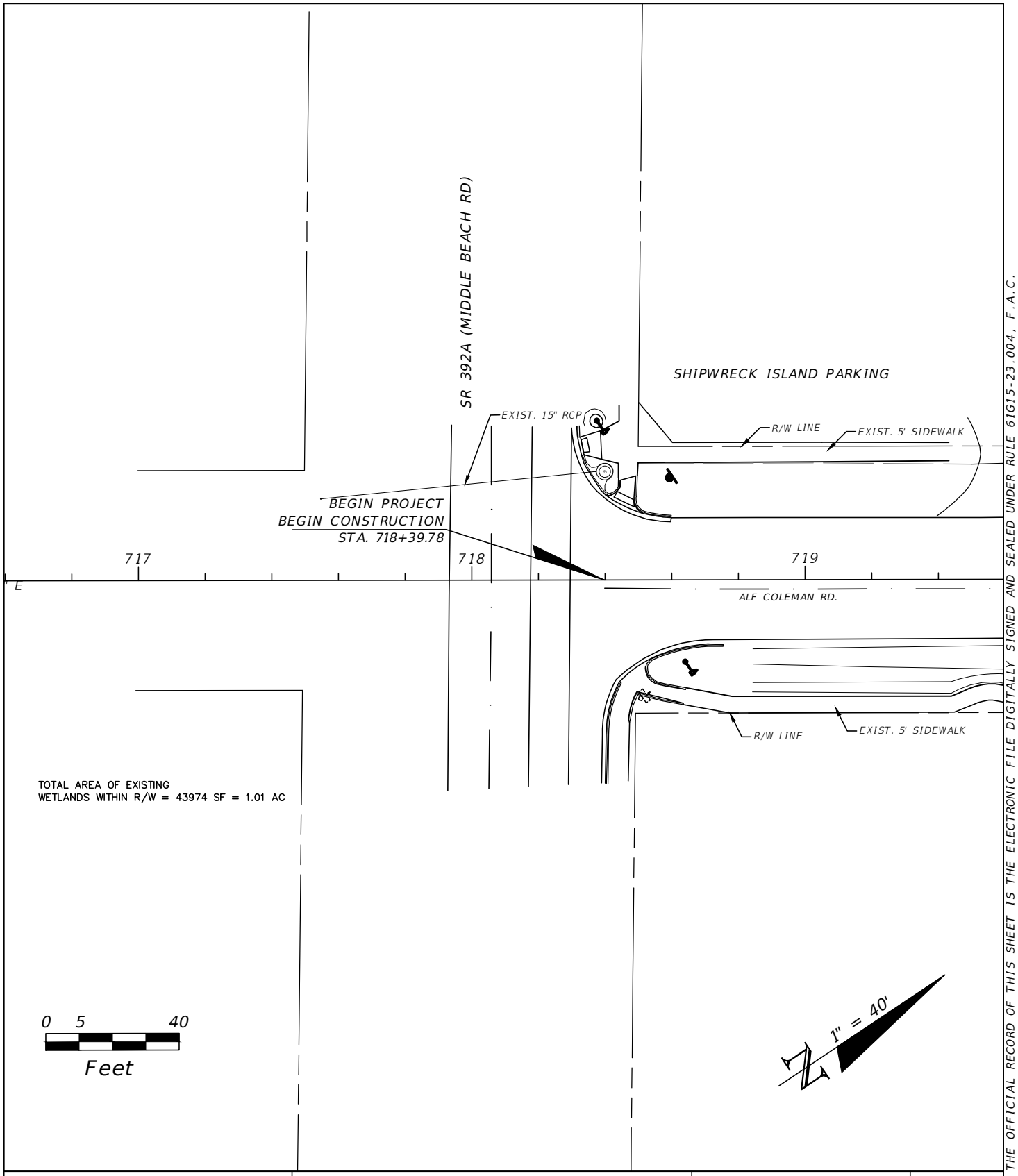

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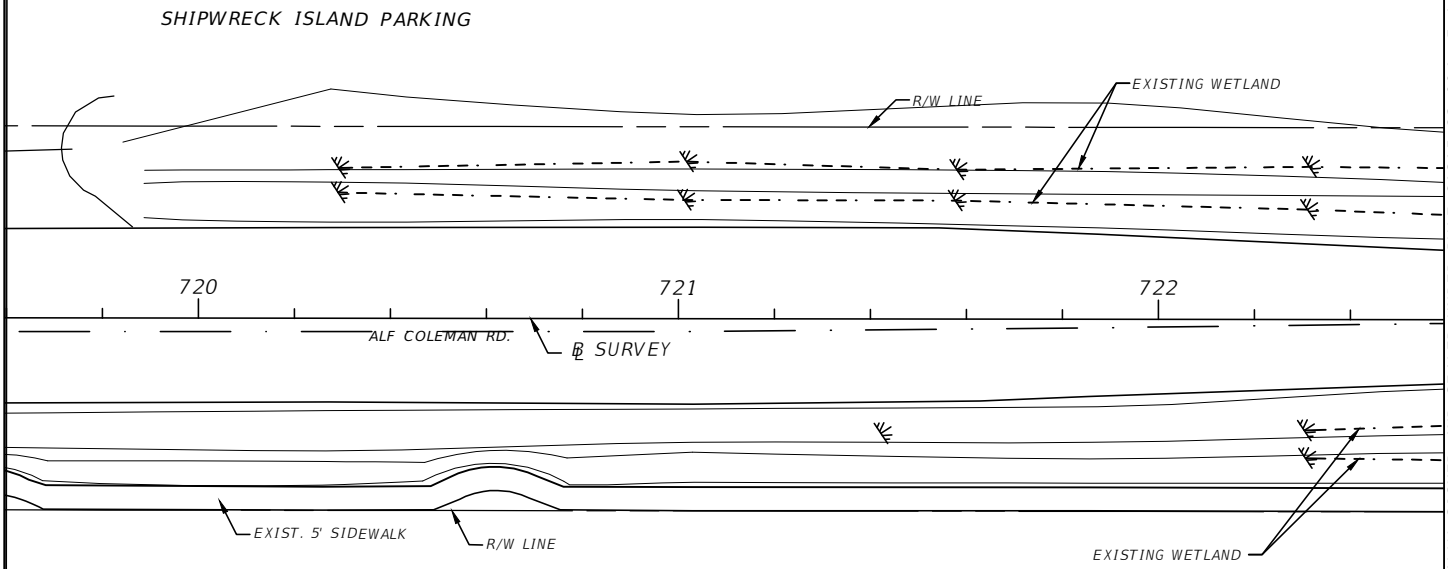
CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

EXISTING CONDITIONS

SHEET NO. 4



0 5 40

Feet

1" = 40'

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EXISTING CONDITIONS

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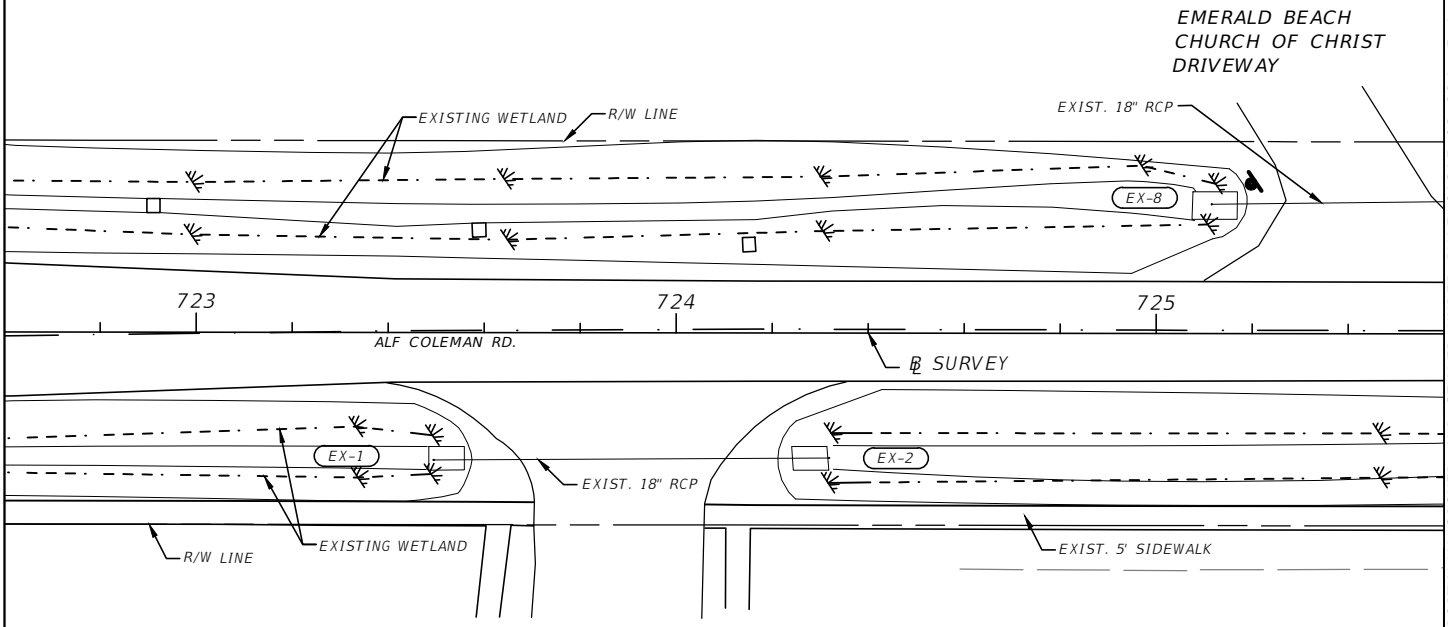

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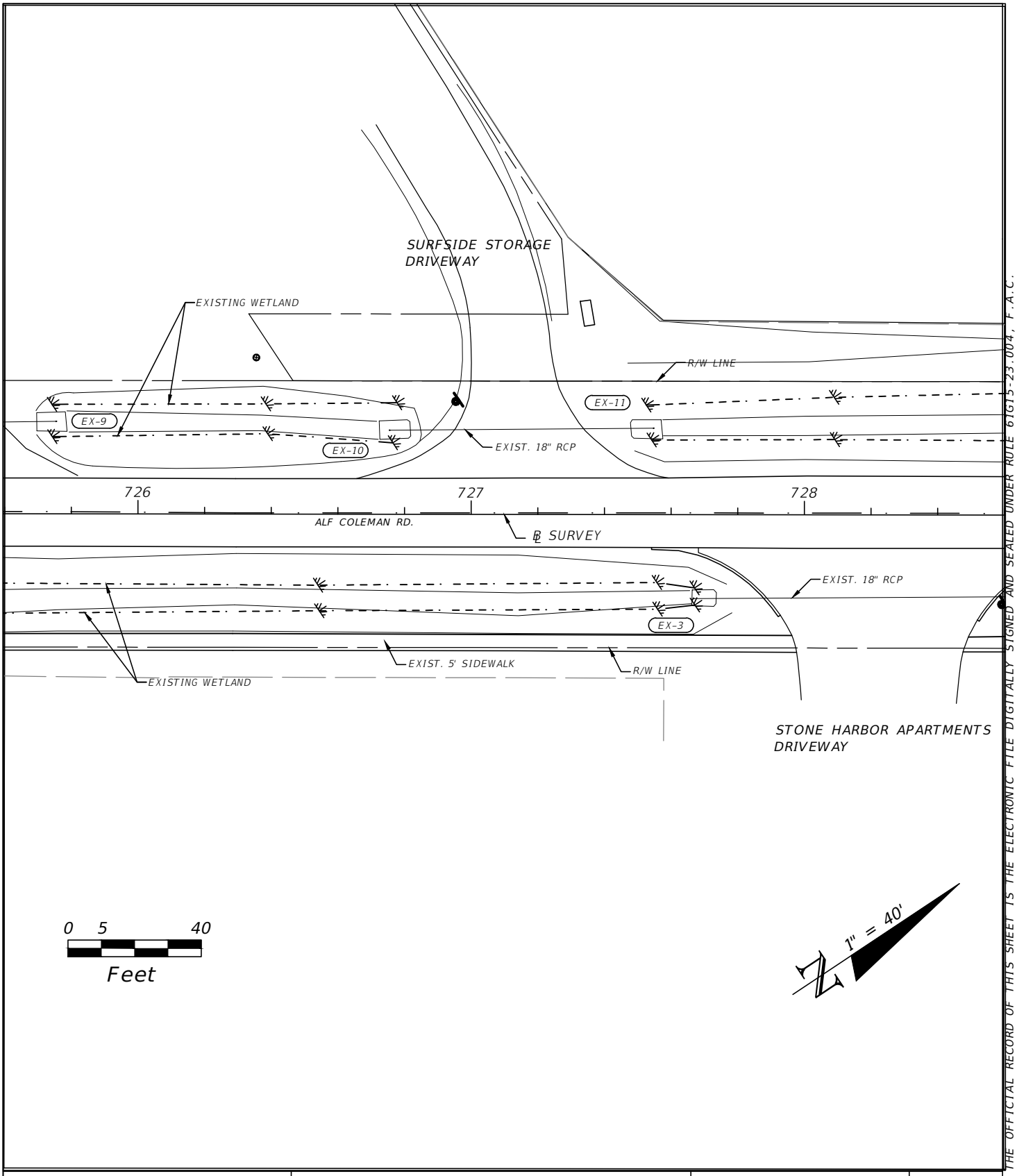
N/A	BAY	441742-2-58-01

EXISTING CONDITIONS

SHEET NO. 6



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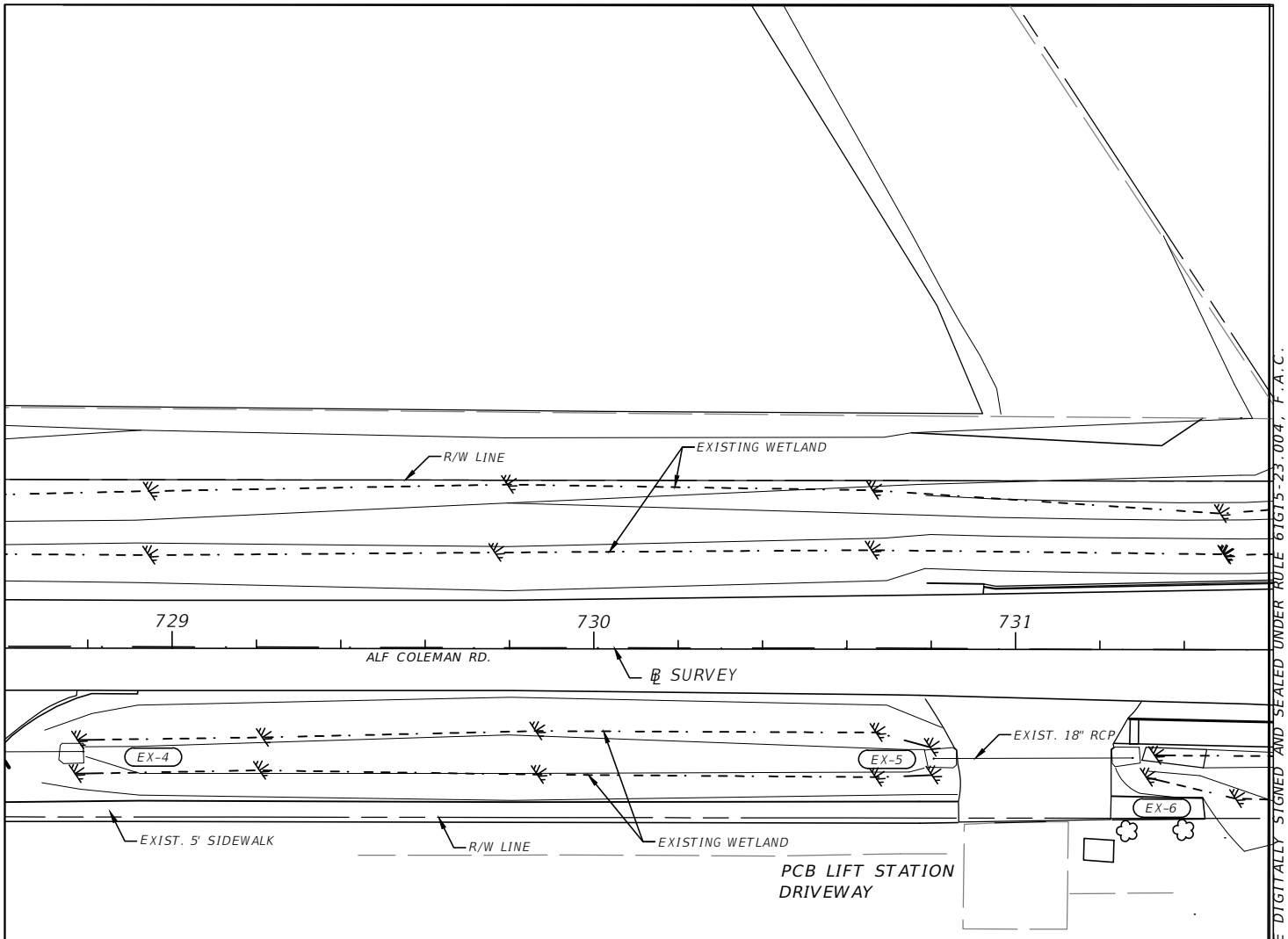
TRAVIS K. JUSTICE, P.E. P.E. LICENSE NUMBER 63092 GREENMAN-PEDERSEN-INC. 1273 OFFICE PARK DR. CHIPLEY, FL 32428 REGISTRY NO. : 3498	CITY OF PANAMA CITY BEACH			EXISTING CONDITIONS	SHEET NO.
	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
	N/A	BAY	441742-2-58-01		7



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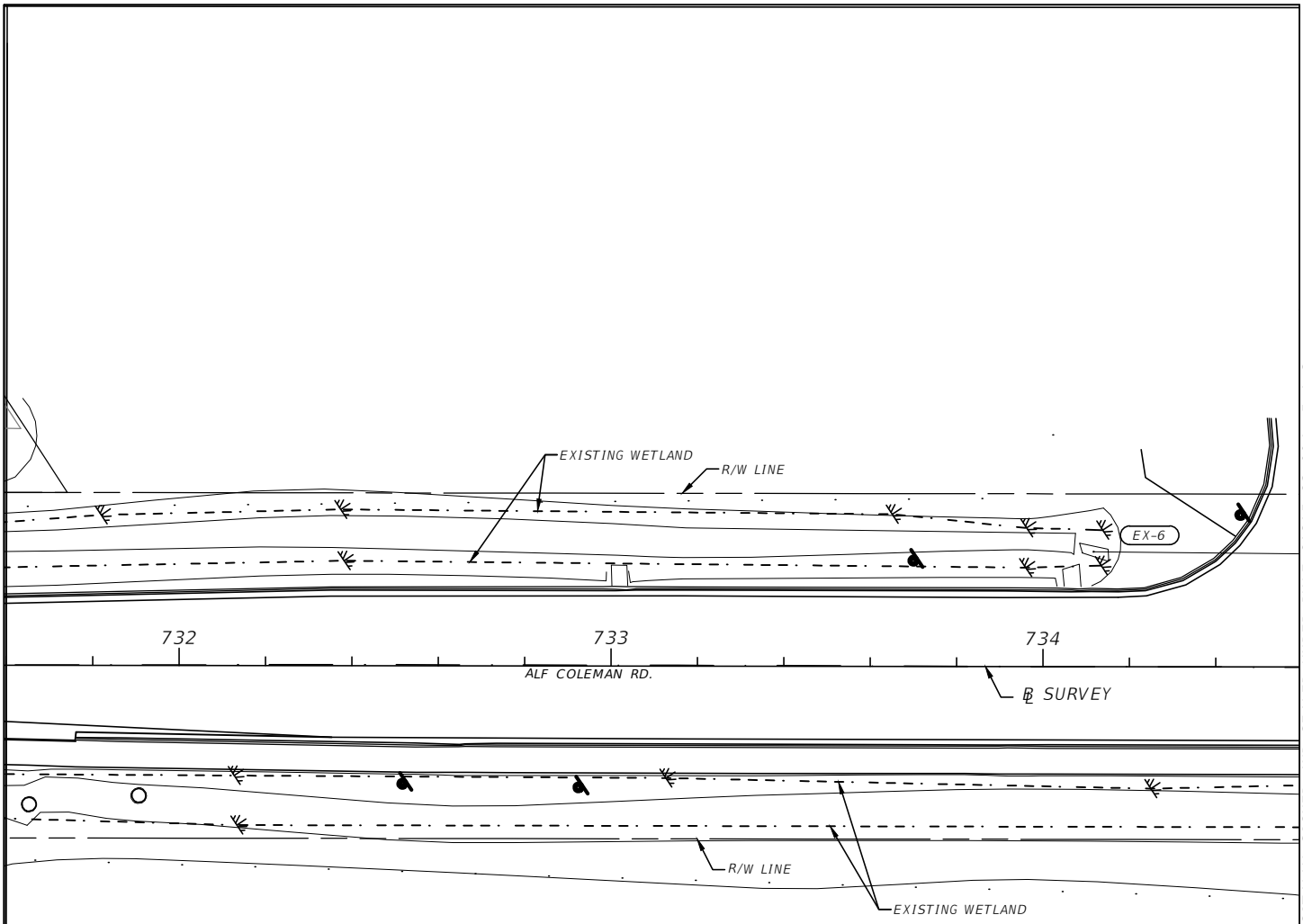
N/A	BAY	441742-2-58-01

EXISTING CONDITIONS

SHEET NO. 8



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CITY OF PANAMA CITY BEACH

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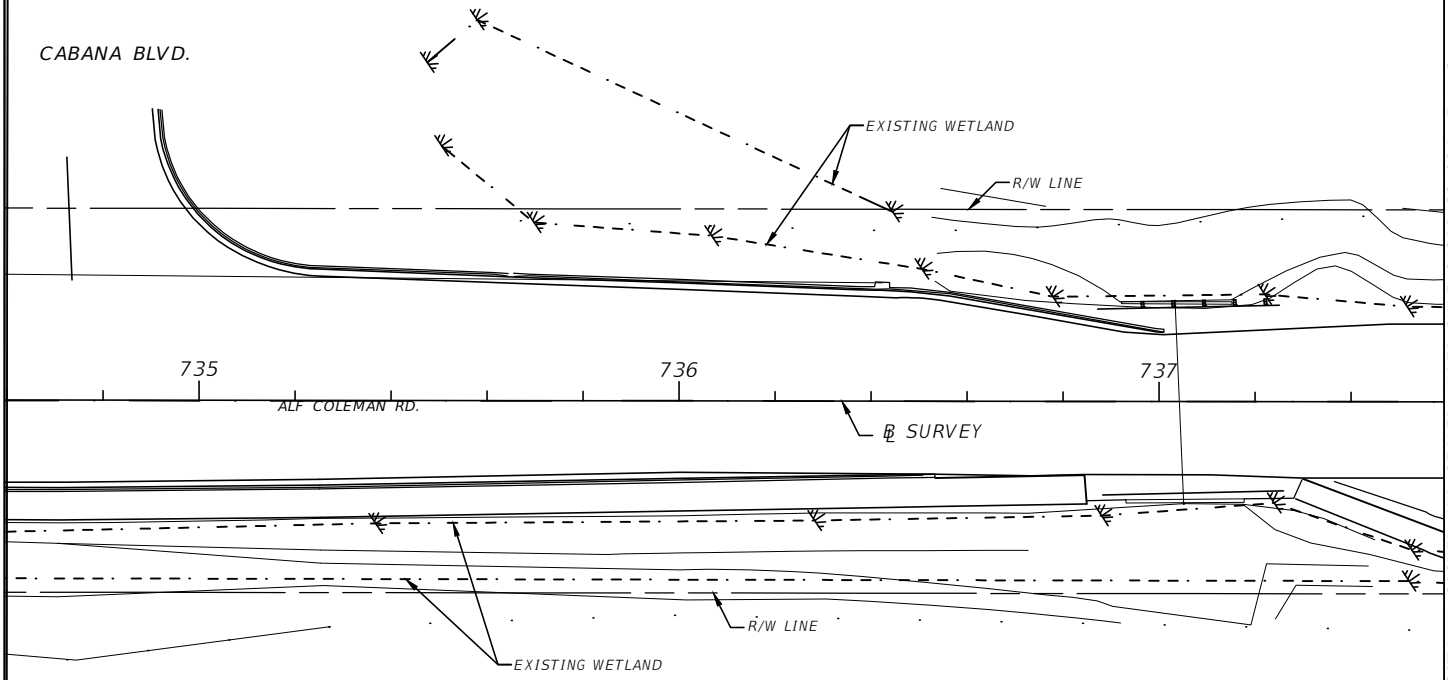
EXISTING CONDITIONS

SHEET NO.

9



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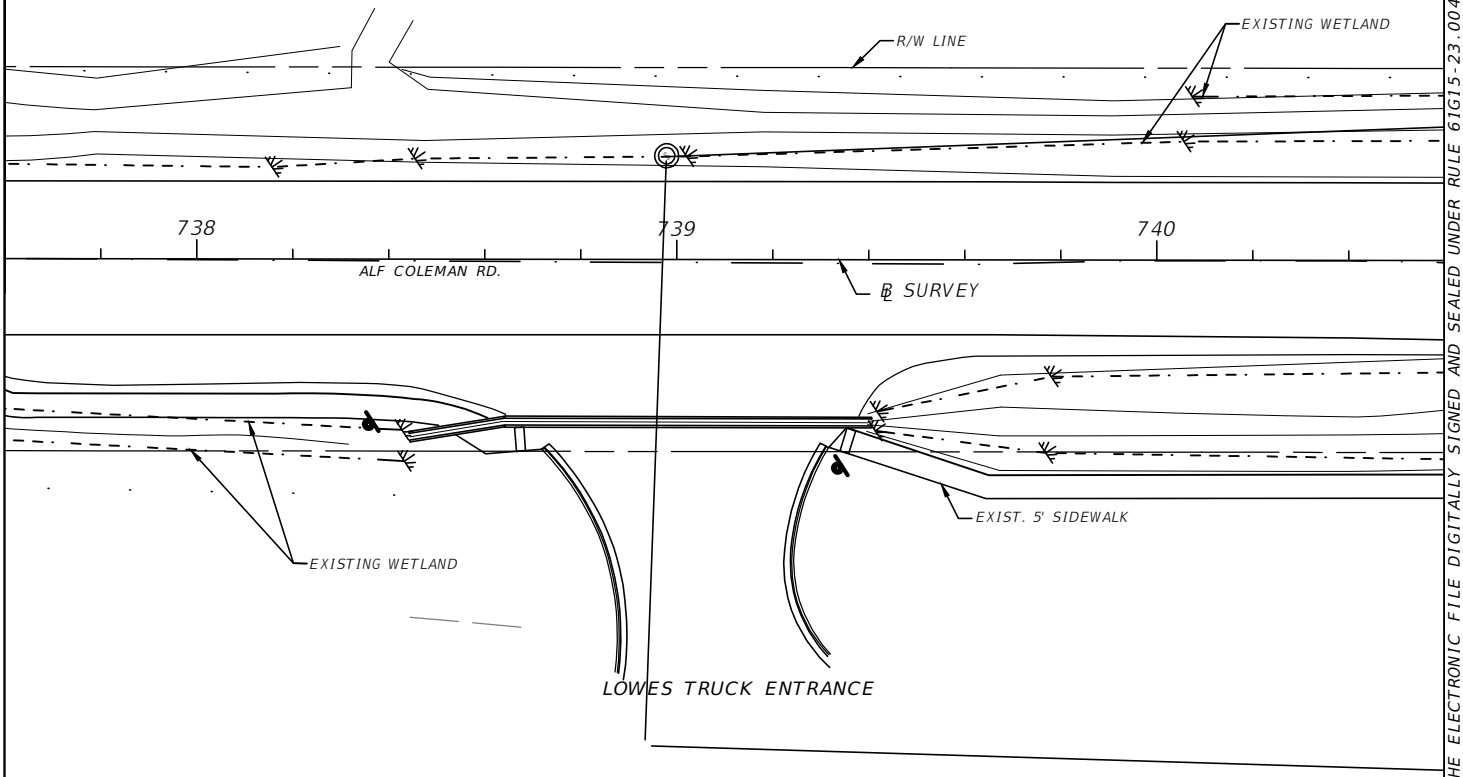
EXISTING CONDITIONS

SHEET NO. 10



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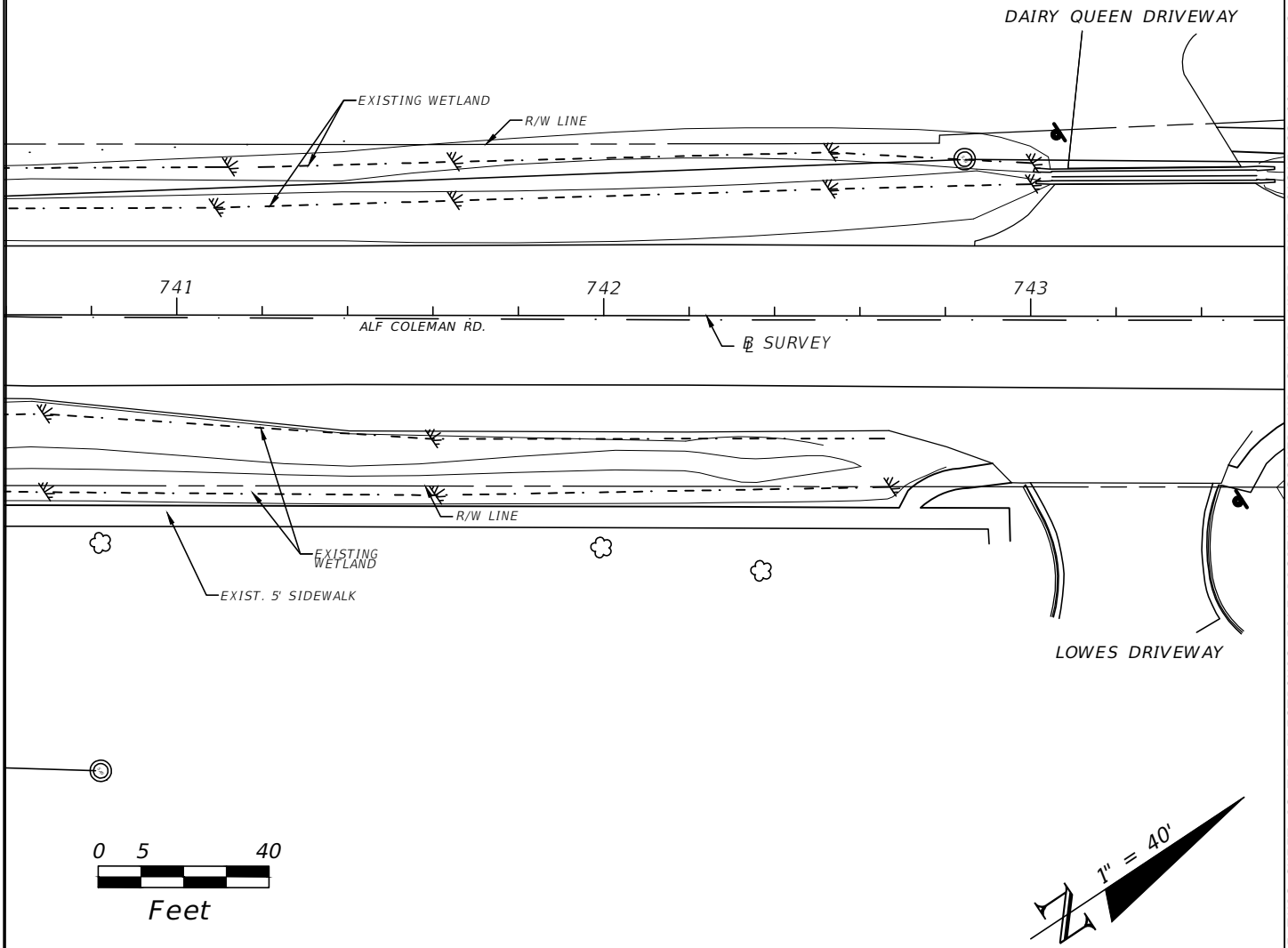
EXISTING CONDITIONS

SHEET NO.

11



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Feet

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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EXISTING CONDITIONS

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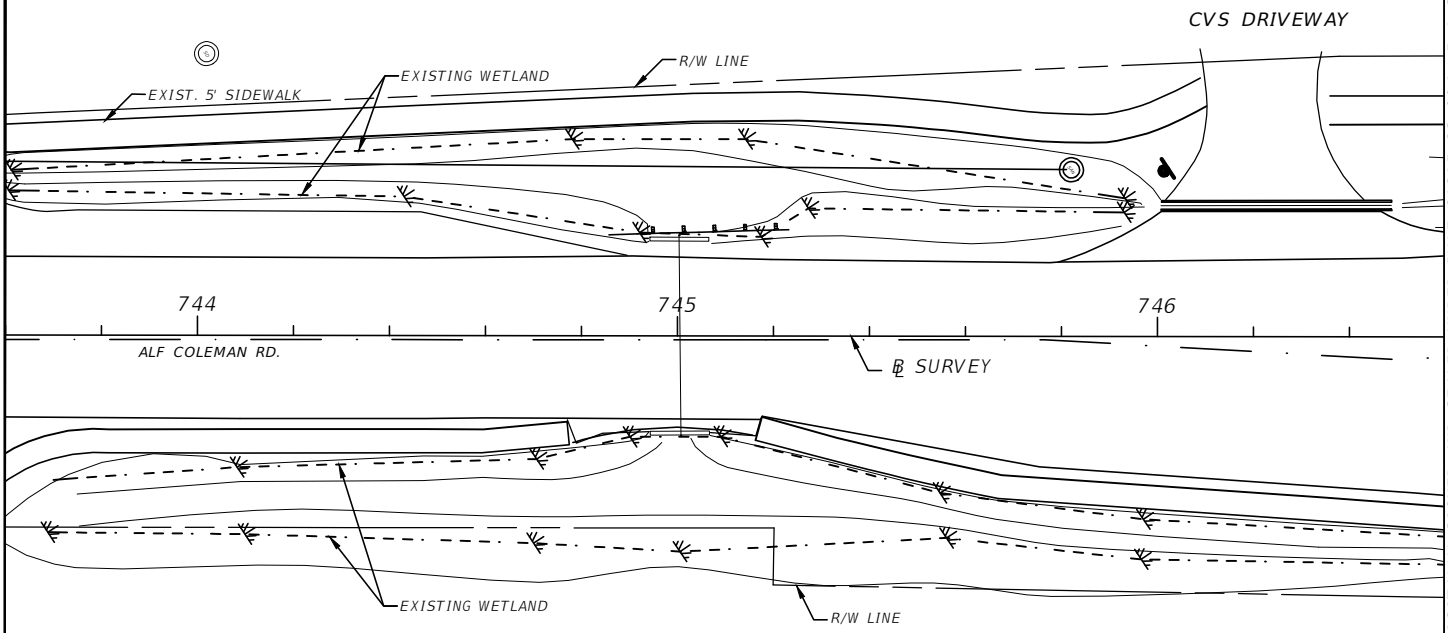

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CITY OF PANAMA CITY BEACH

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N/A	BAY	441742-2-58-01

EXISTING CONDITIONS

SHEET NO.

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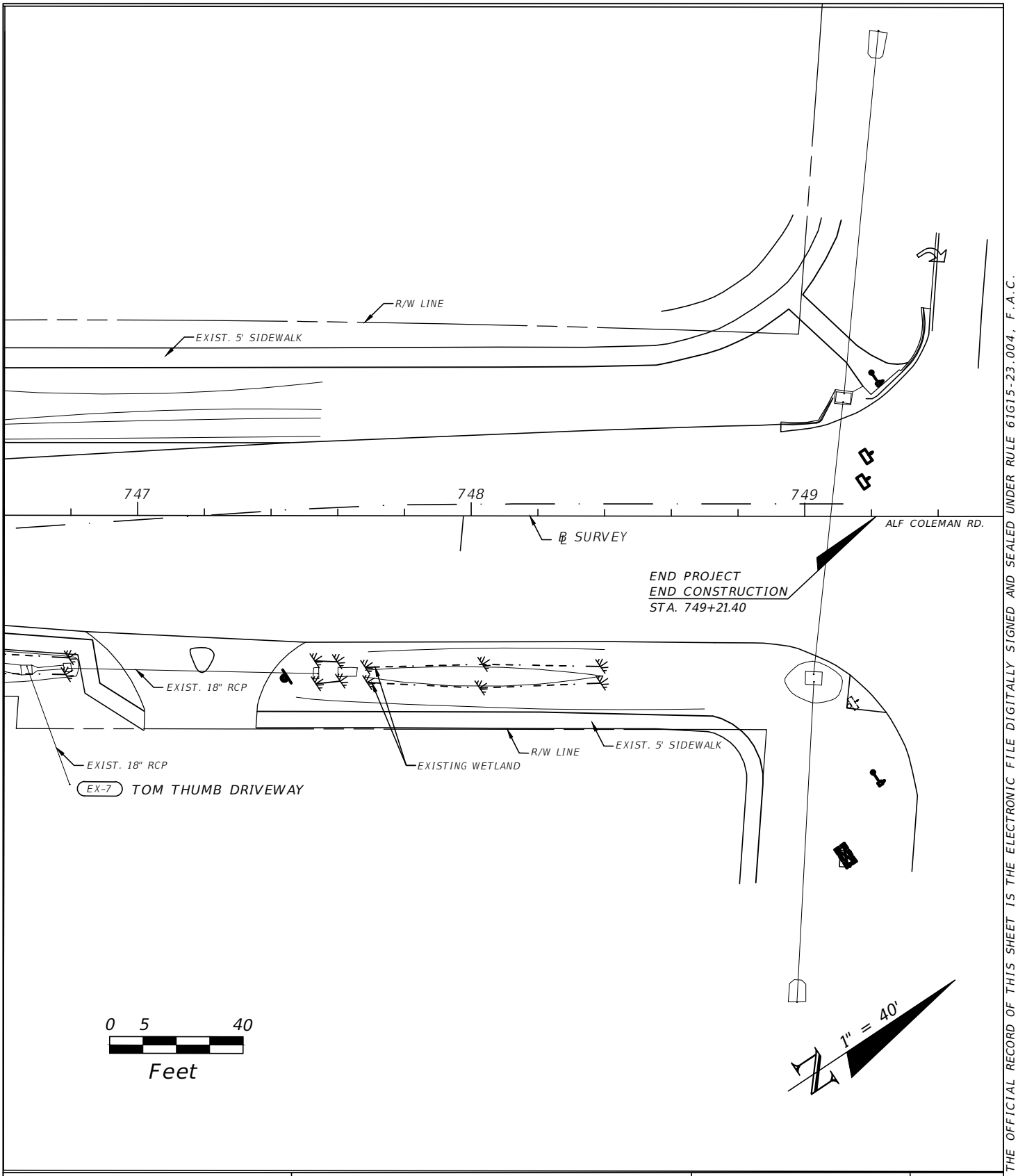

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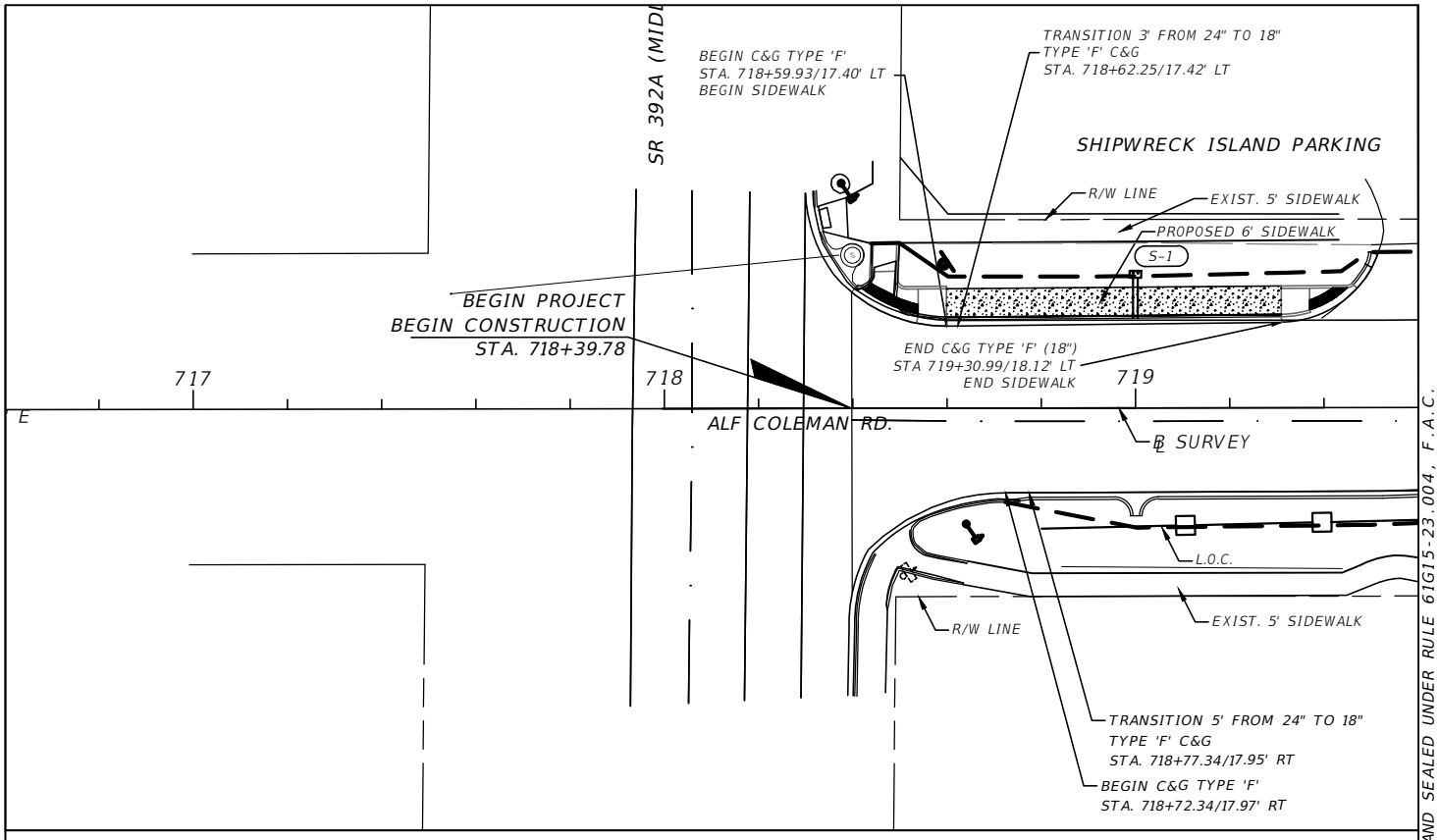
TRAVIS K. JUSTICE, P.E. P.E. LICENSE NUMBER 63092 GREENMAN-PEDERSEN-INC. 1273 OFFICE PARK DR. CHIPLEY, FL 32428 REGISTRY NO. : 3498	CITY OF PANAMA CITY BEACH			EXISTING CONDITIONS	SHEET NO.
	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
	N/A	BAY	441742-2-58-01		14



LEGEND

PROPOSED 6' SIDEWALK

LIMITS OF CONSTRUCTION

SEDIMENT BARRIER

0 5 40

Feet

1" = 40'

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CITY OF PANAMA CITY BEACH

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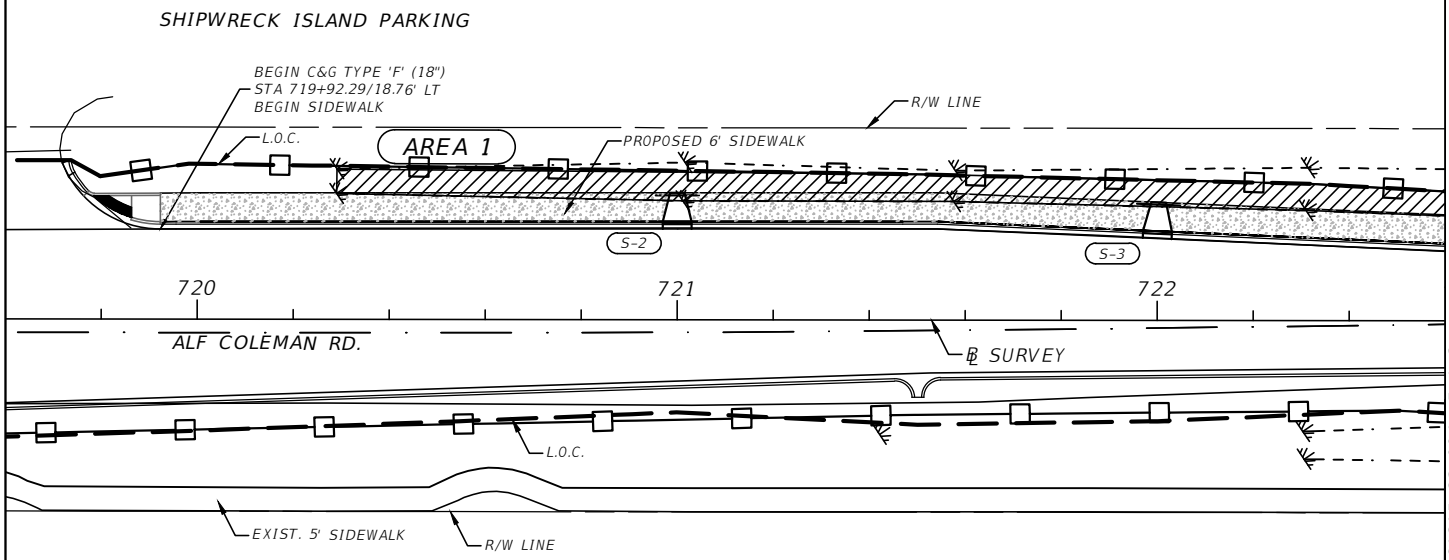
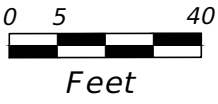
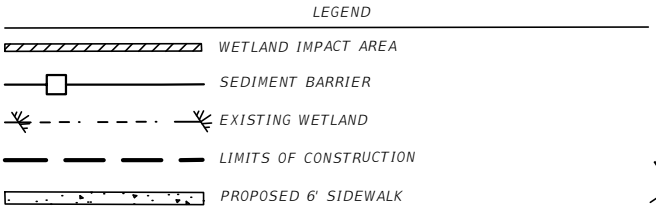
N/A	BAY	441742-2-58-01

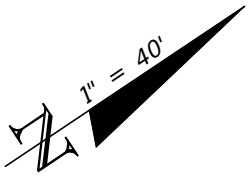
PLAN SHEET (1)

SHEET NO. 16









WETLAND IMPACTS				
AREA NUMBER	IMPACT AREA (SF)	IMPACT AREA (ACRE)	FILL AREA (CY)	TYPE OF ACTIVITY
1	1295.33	0.0297	47.975	CONST. OF SIDEWALK WITH TIE-IN GRADING

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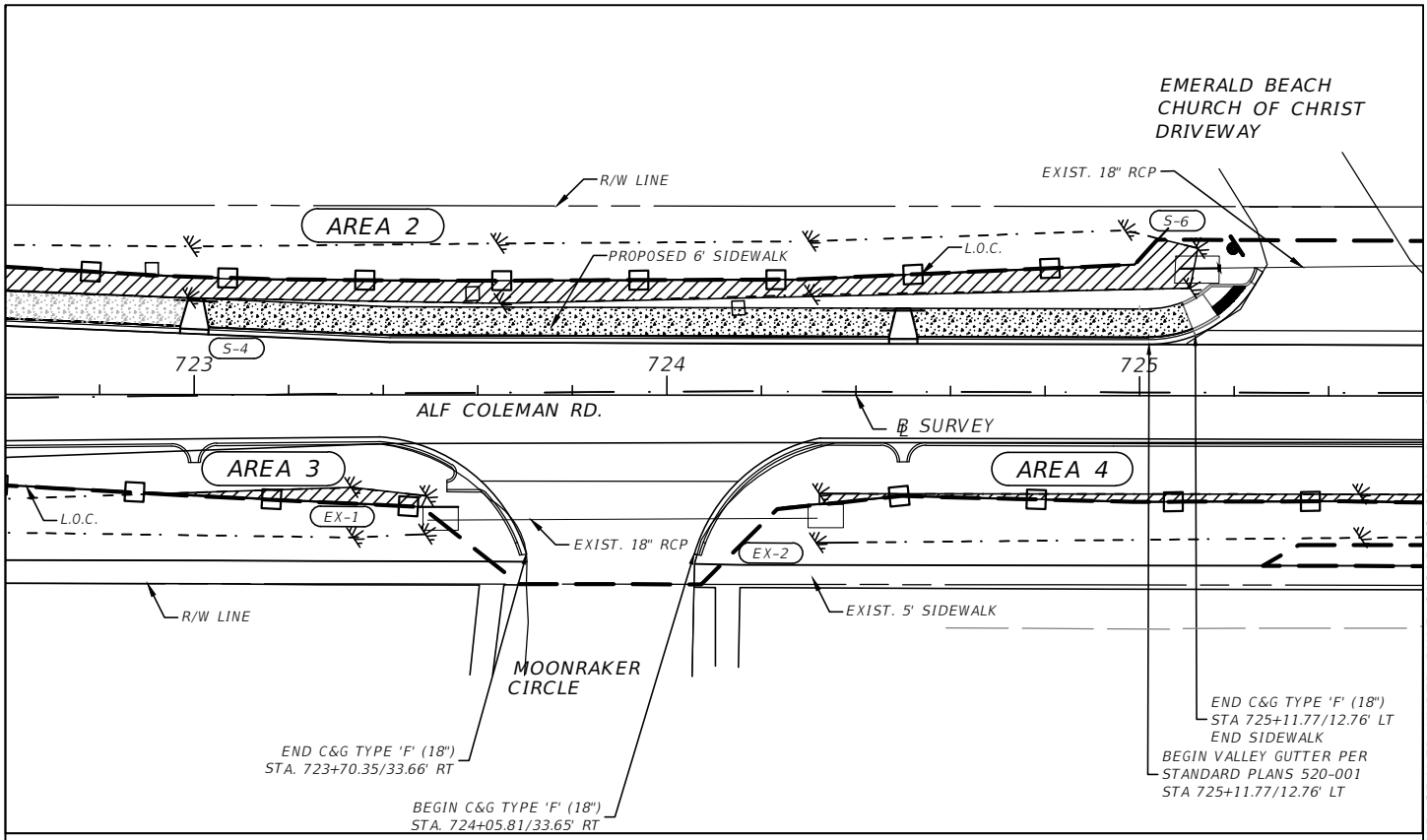
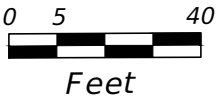
CITY OF PANAMA CITY BEACH

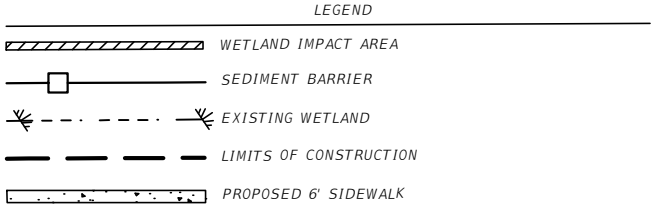
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

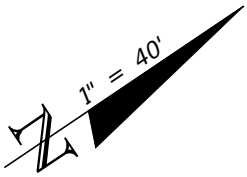
PLAN SHEET (2)

SHEET NO. 17









WETLAND IMPACTS				
AREA NUMBER	IMPACT AREA (SF)	IMPACT AREA (ACRE)	FILL AREA (CY)	TYPE OF ACTIVITY
2	1176.77	0.0270	226.419	CONST. OF SIDEWALK WITH TIE-IN GRADING
3	115.03	0.0026	15.806	CONST. OF C&G WITH TIE-IN GRADING
4	170.63	0.0039	36.332	CONST. OF C&G WITH TIE-IN GRADING

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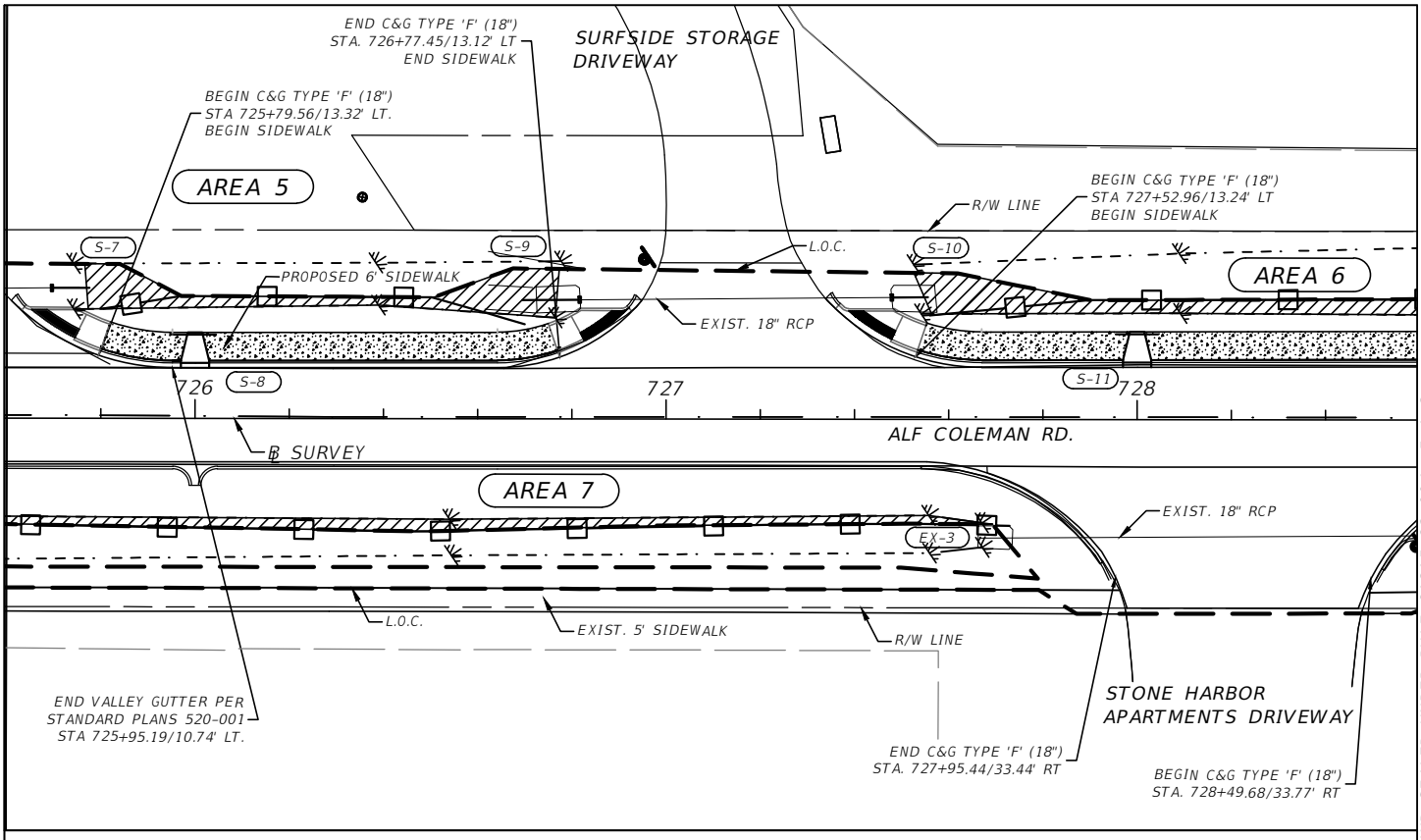
CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

PLAN SHEET (3)

SHEET NO. 18



0 5 40

Feet

LEGEND

WETLAND IMPACT AREA

SEDIMENT BARRIER

EXISTING WETLAND

LIMITS OF CONSTRUCTION

PROPOSED 6' SIDEWALK

1" = 40'

WETLAND IMPACTS				
AREA NUMBER	IMPACT AREA (SF)	IMPACT AREA (ACRE)	FILL AREA (CY)	TYPE OF ACTIVITY
5	484.40	0.0111	106.999	CONST. OF SIDEWALK WITH TIE-IN GRADING
6	443.11	0.0101	86.48	CONST. OF SIDEWALK WITH TIE-IN GRADING
7	406.69	0.0093	82.588	CONST. OF C&G WITH TIE-IN GRADING

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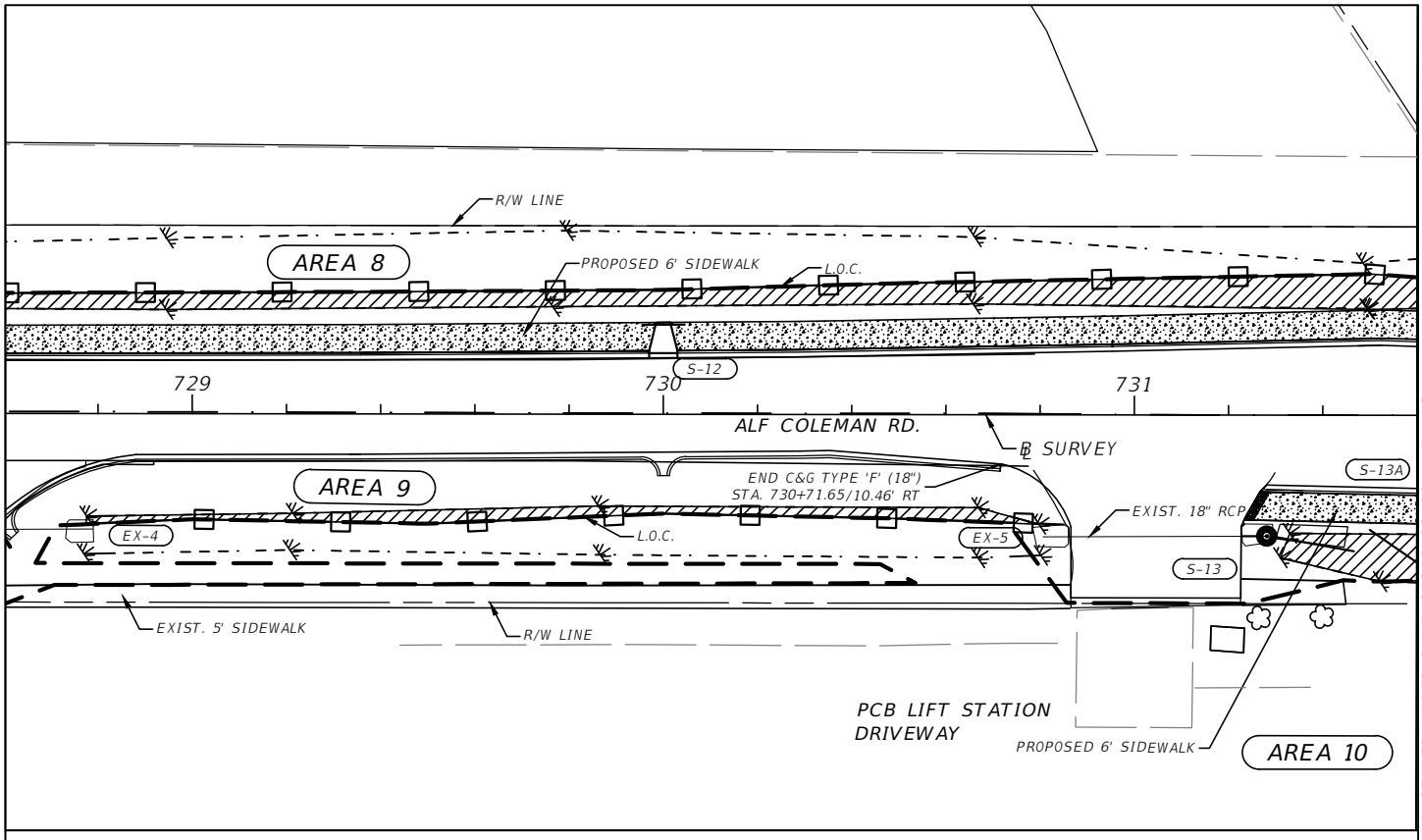
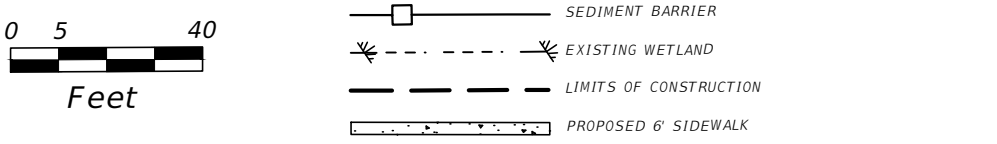
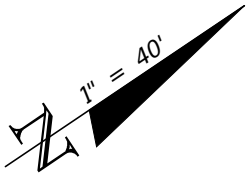
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

PLAN SHEET (4)

SHEET NO. 19







WETLAND IMPACTS				
AREA NUMBER	IMPACT AREA (SF)	IMPACT AREA (ACRE)	FILL AREA (CY)	TYPE OF ACTIVITY
8	1348.37	0.0310	295.942	CONST. OF SIDEWALK WITH TIE-IN GRADING
9	400.28	0.0092	76.928	CONST. OF C&G WITH TIE-IN GRADING
10	234.73	0.0054	12.866	CONST. OF SIDEWALK WITH TIE-IN GRADING

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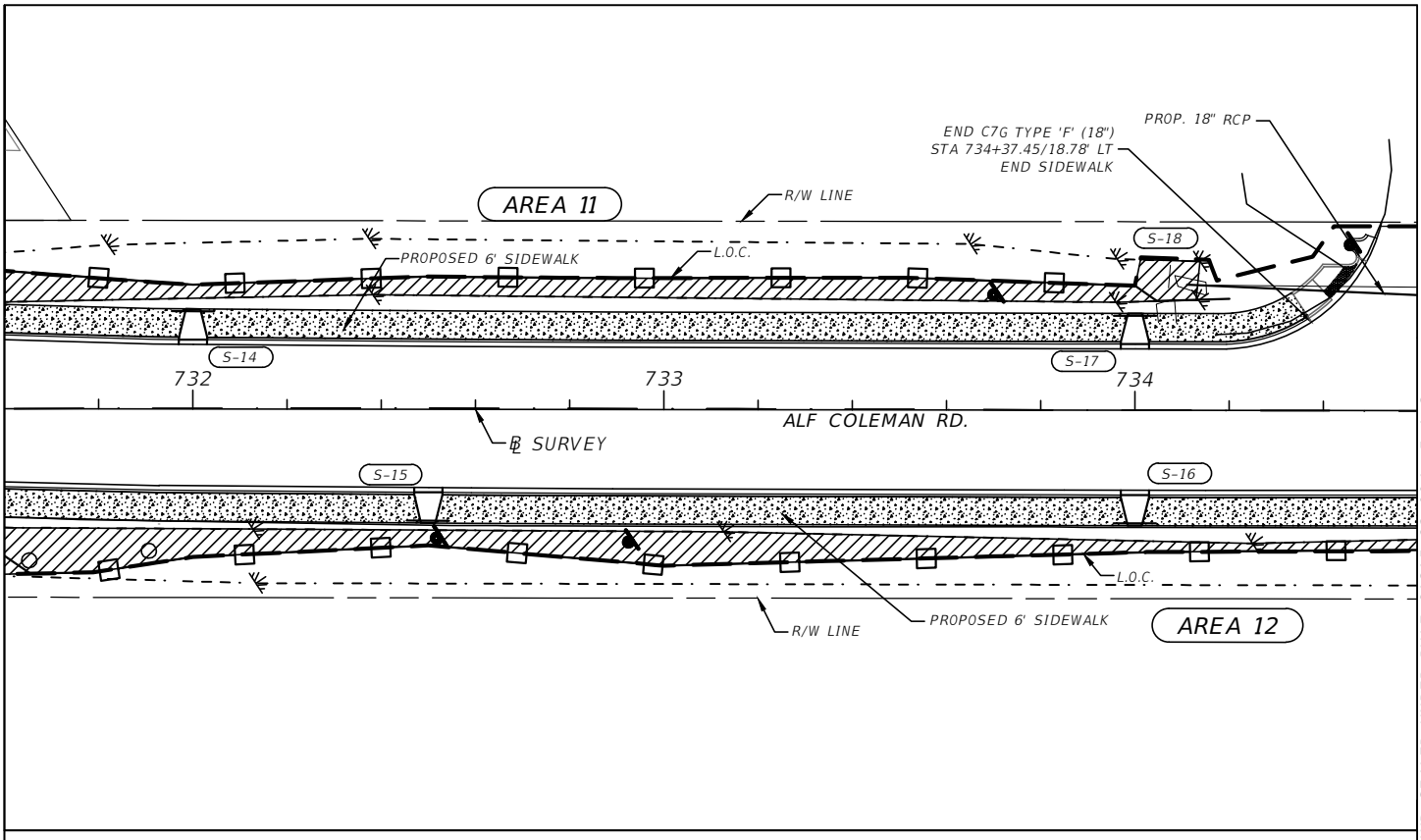
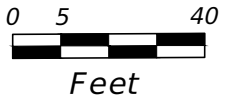
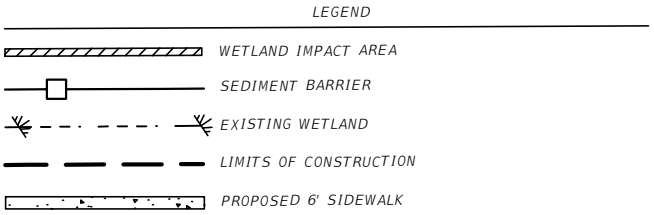
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

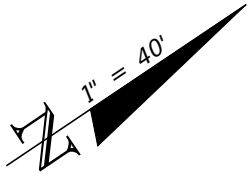
PLAN SHEET (5)

SHEET NO. 20









WETLAND IMPACTS				
AREA NUMBER	IMPACT AREA (SF)	IMPACT AREA (ACRE)	FILL AREA (CY)	TYPE OF ACTIVITY
11	1031.33	0.0237	81.704	CONST. OF SIDEWALK WITH TIE-IN GRADING
12	1455.32	0.0334	47.055	CONST. OF SIDEWALK WITH TIE-IN GRADING

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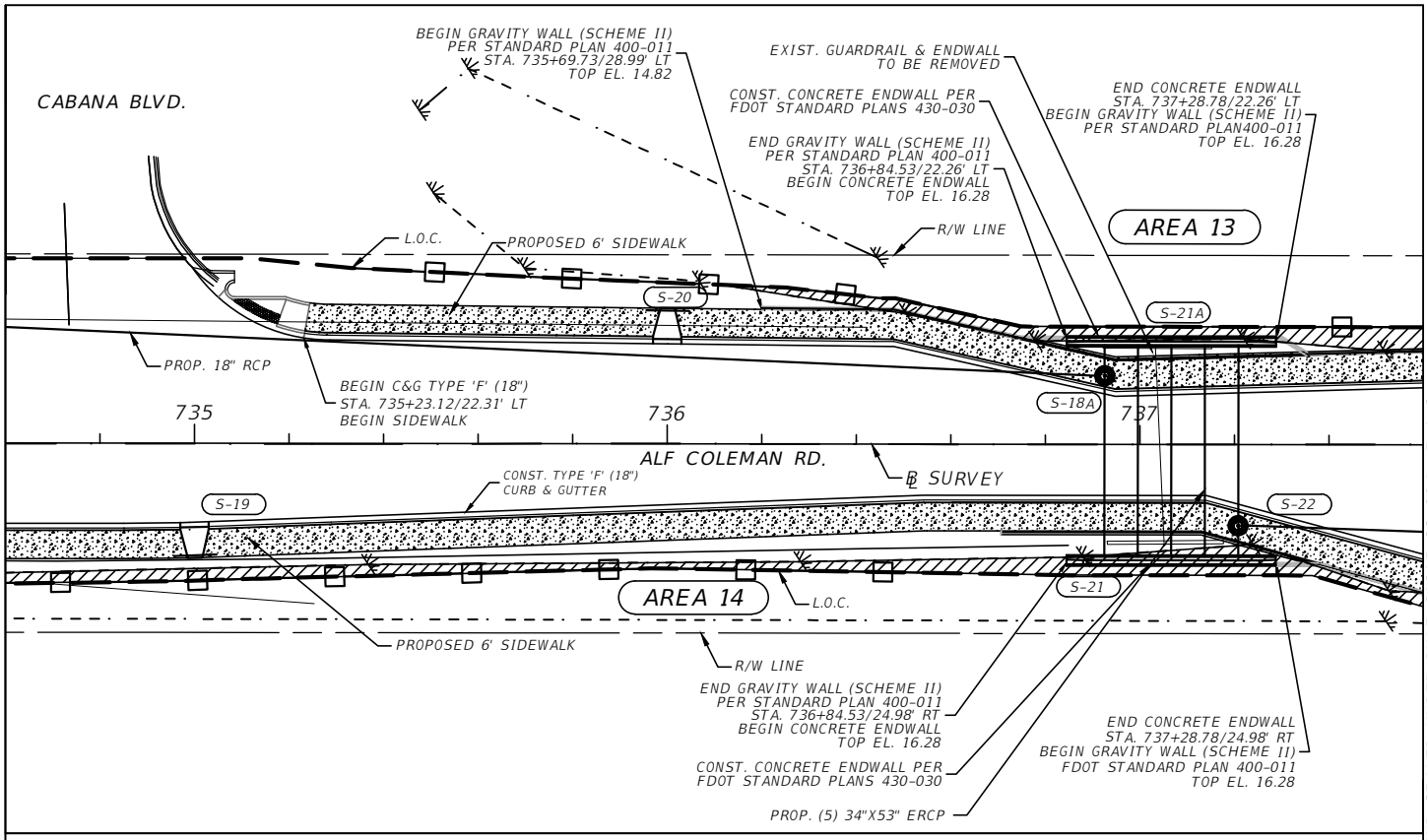
CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

PLAN SHEET (6)

SHEET NO. 21



LEGEND

- WETLAND IMPACT AREA
- SEDIMENT BARRIER
- FLOATING TURBIDITY BARRIER
- EXISTING WETLAND
- LIMITS OF CONSTRUCTION
- PROPOSED 6' SIDEWALK

0 5 40

Feet

1" = 40'

WETLAND IMPACTS				
AREA NUMBER	IMPACT AREA (SF)	IMPACT AREA (ACRE)	FILL AREA (CY)	TYPE OF ACTIVITY
13	416.11	0.0096	3.714	CONST. OF RET. WALL WITH TIE-IN GRADING
14	815.35	0.0187	36.630	CONST. OF RET. WALL WITH TIE-IN GRADING

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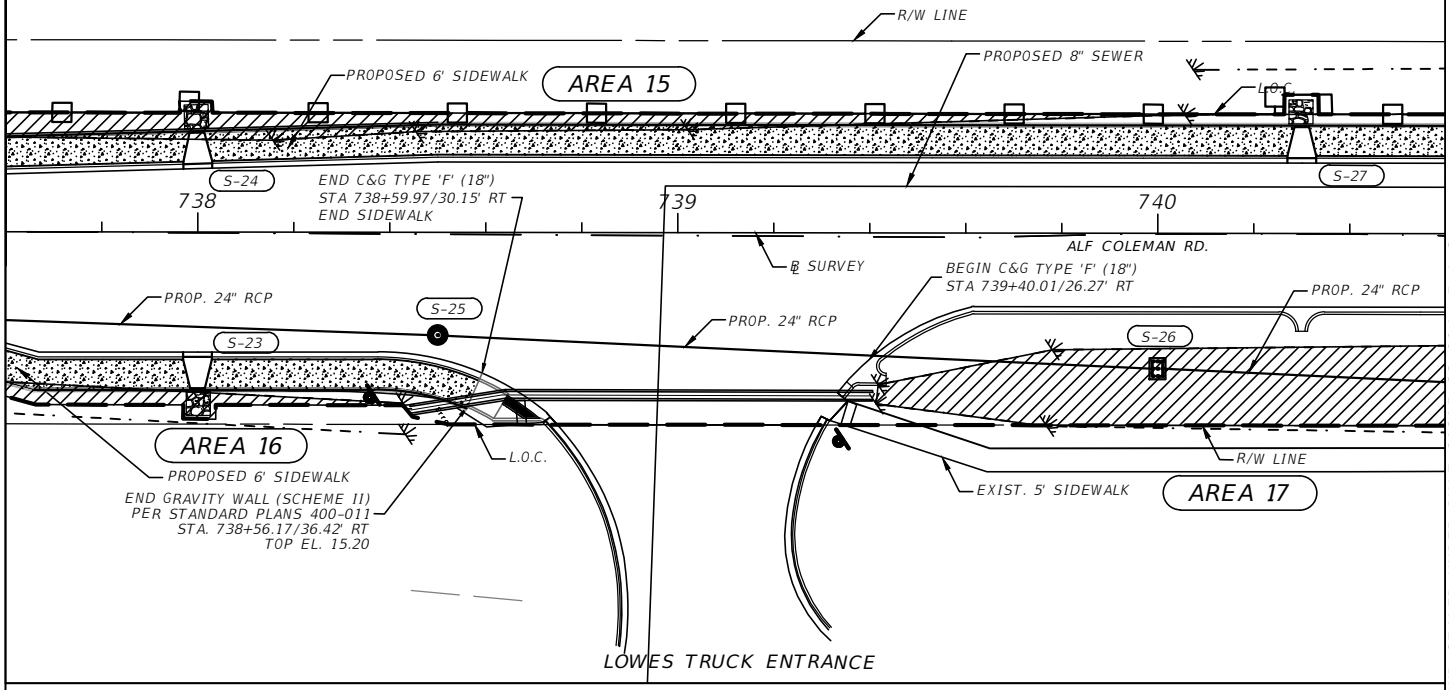
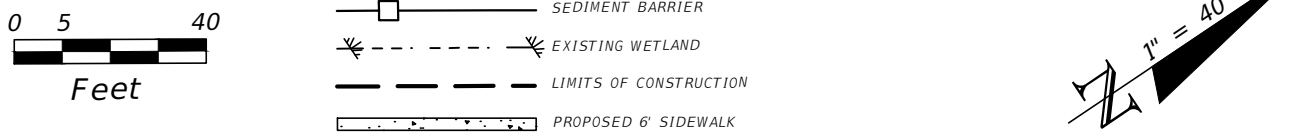
CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

PLAN SHEET (7)

SHEET NO. 22





WETLAND IMPACTS				
AREA NUMBER	IMPACT AREA (SF)	IMPACT AREA (ACRE)	FILL AREA (CY)	TYPE OF ACTIVITY
15	879.91	0.0202	133.583	CONST. OF RET. WALL WITH TIE-IN GRADING
16	208.08	0.0048	8.855	CONST. OF RET. WALL WITH TIE-IN GRADING
17	1689.51	0.0388	202.741	PIPE AND FILL

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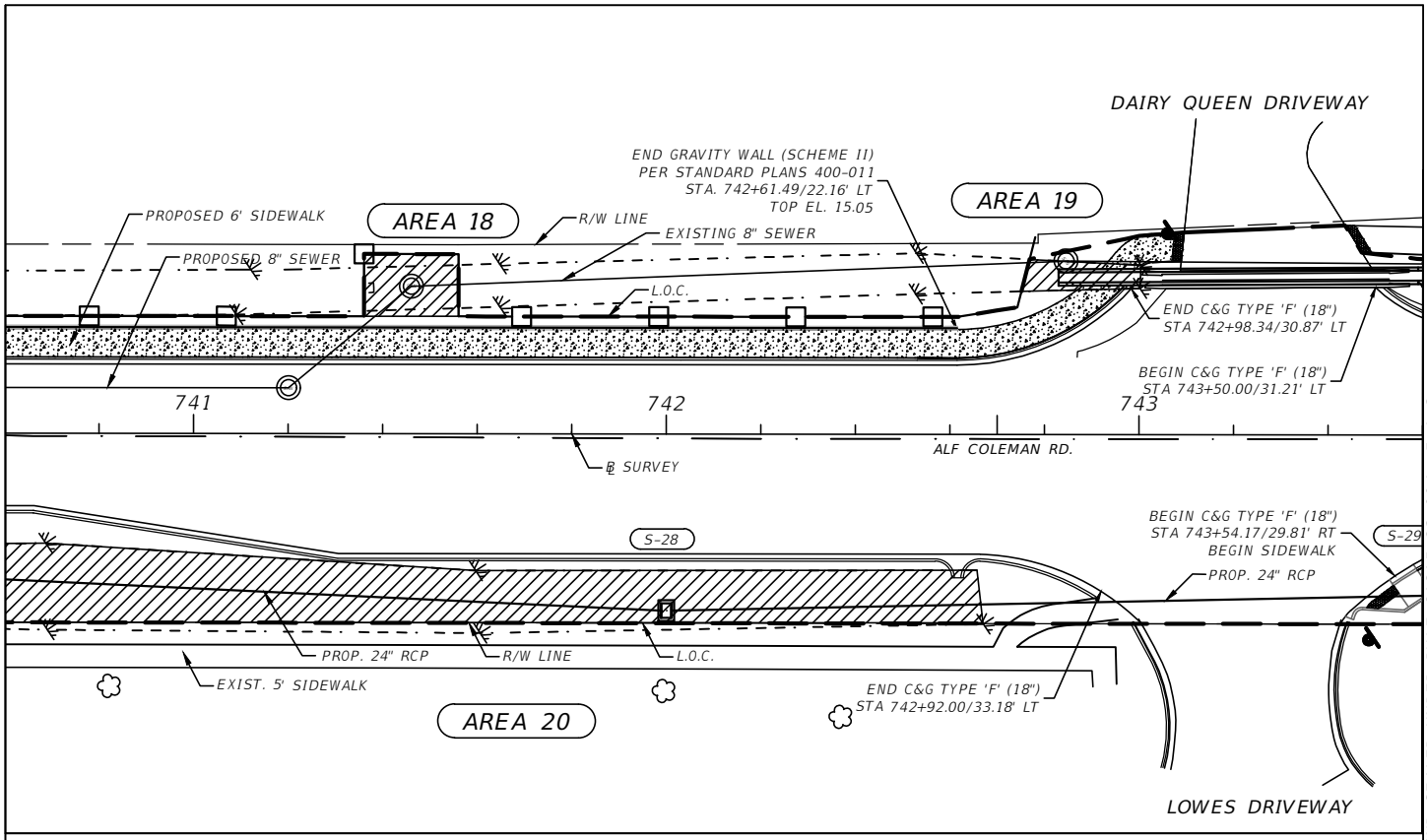
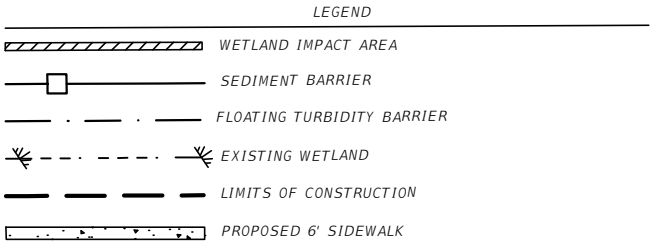
CITY OF PANAMA CITY BEACH

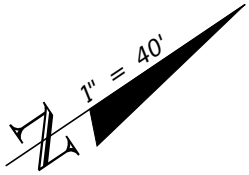
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

PLAN SHEET (8)

SHEET NO. 23







WETLAND IMPACTS				
AREA NUMBER	IMPACT AREA (SF)	IMPACT AREA (ACRE)	FILL AREA (CY)	TYPE OF ACTIVITY
18	263.55	0.0061	11.713	CONST. OF GRAVITY SEWER
19	142.83	0.0033	5.924	CONST. OF RET. WALL WITH TIE-IN GRADING
20	2601.04	0.0597	192.67	PIPE AND FILL

NOTE: AREA 18 WILL HAVE A PERMANENT IMPACT OF 7 SQUARE FEET FOR THE GRAVITY SEWER MANHOLE AND TEMPORARY IMPACT OF 256.55 SQUARE FEET.

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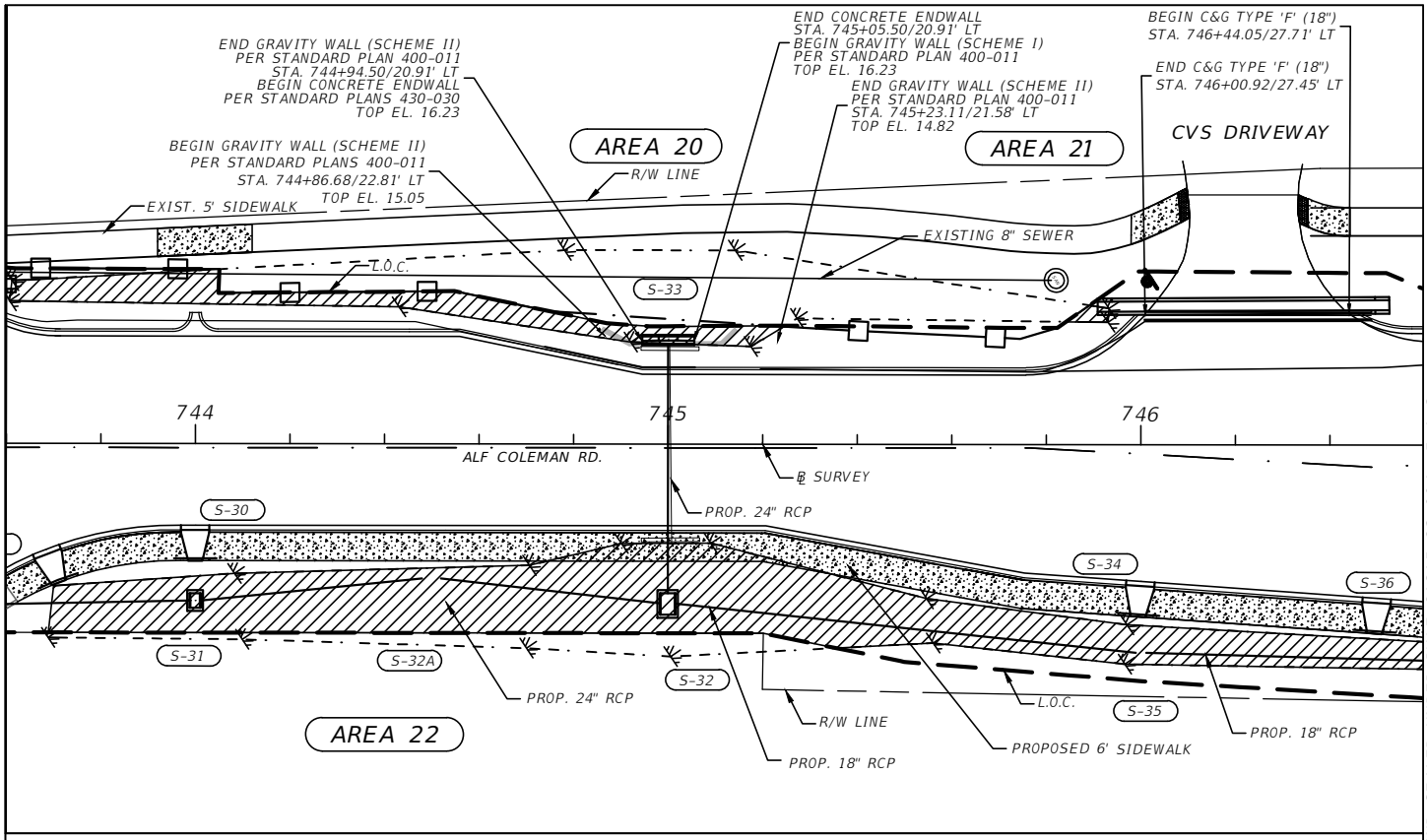
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

PLAN SHEET (9)

SHEET NO. 24



LEGEND

- WETLAND IMPACT AREA
- SEDIMENT BARRIER
- FLOATING TURBIDITY BARRIER
- EXISTING WETLAND
- LIMITS OF CONSTRUCTION
- PROPOSED 6' SIDEWALK

0 5 40

Feet

1" = 40'

WETLAND IMPACTS				
AREA NUMBER	IMPACT AREA (SF)	IMPACT AREA (ACRE)	FILL AREA (CY)	TYPE OF ACTIVITY
21	667.32	0.0153	24.715	CONST. OF C&G WITH TIE-IN GRADING
22	21.79	0.0005	0.807	CONST. OF TRENCH DRAIN
23	3450.85	0.0792	445.160	PIPE AND FILL

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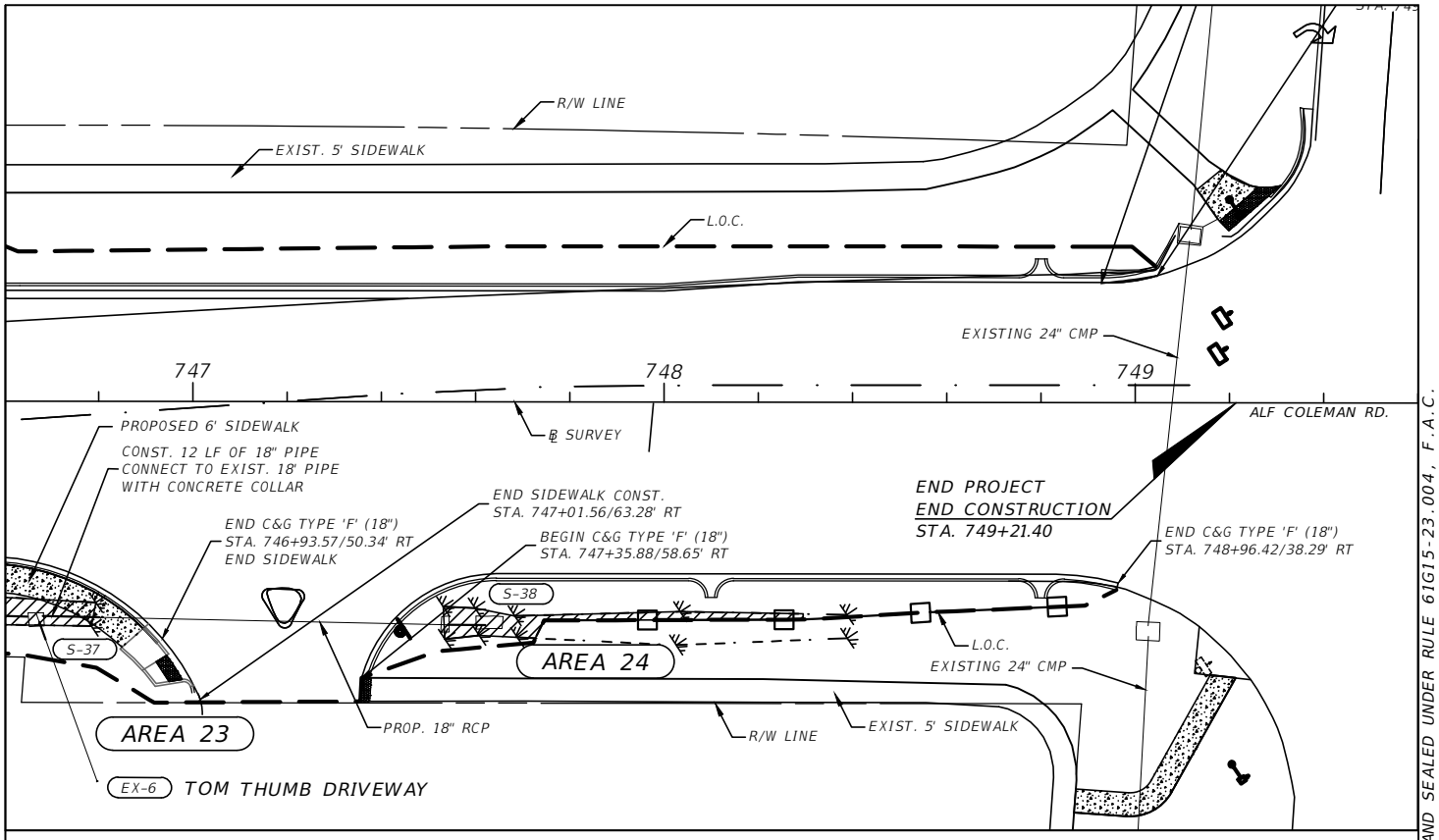
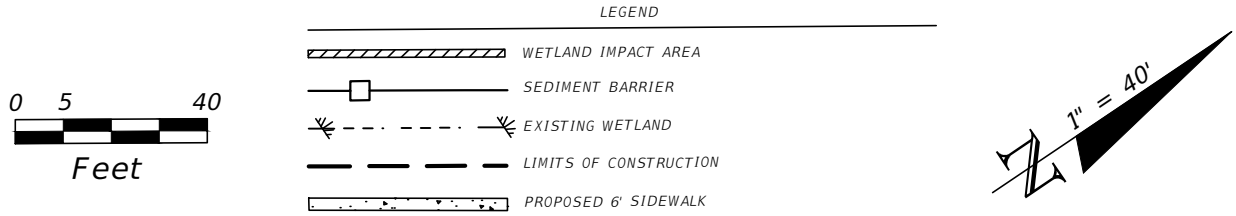
CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

PLAN SHEET (10)

SHEET NO. 25





WETLAND IMPACTS				
AREA NUMBER	IMPACT AREA (SF)	IMPACT AREA (ACRE)	FILL AREA (CY)	TYPE OF ACTIVITY
24	103.10	0.0023	3.818	PIPE AND FILL
25	192.63	0.0044	7.134	CONST. OF MES AND TIE-IN GRADING

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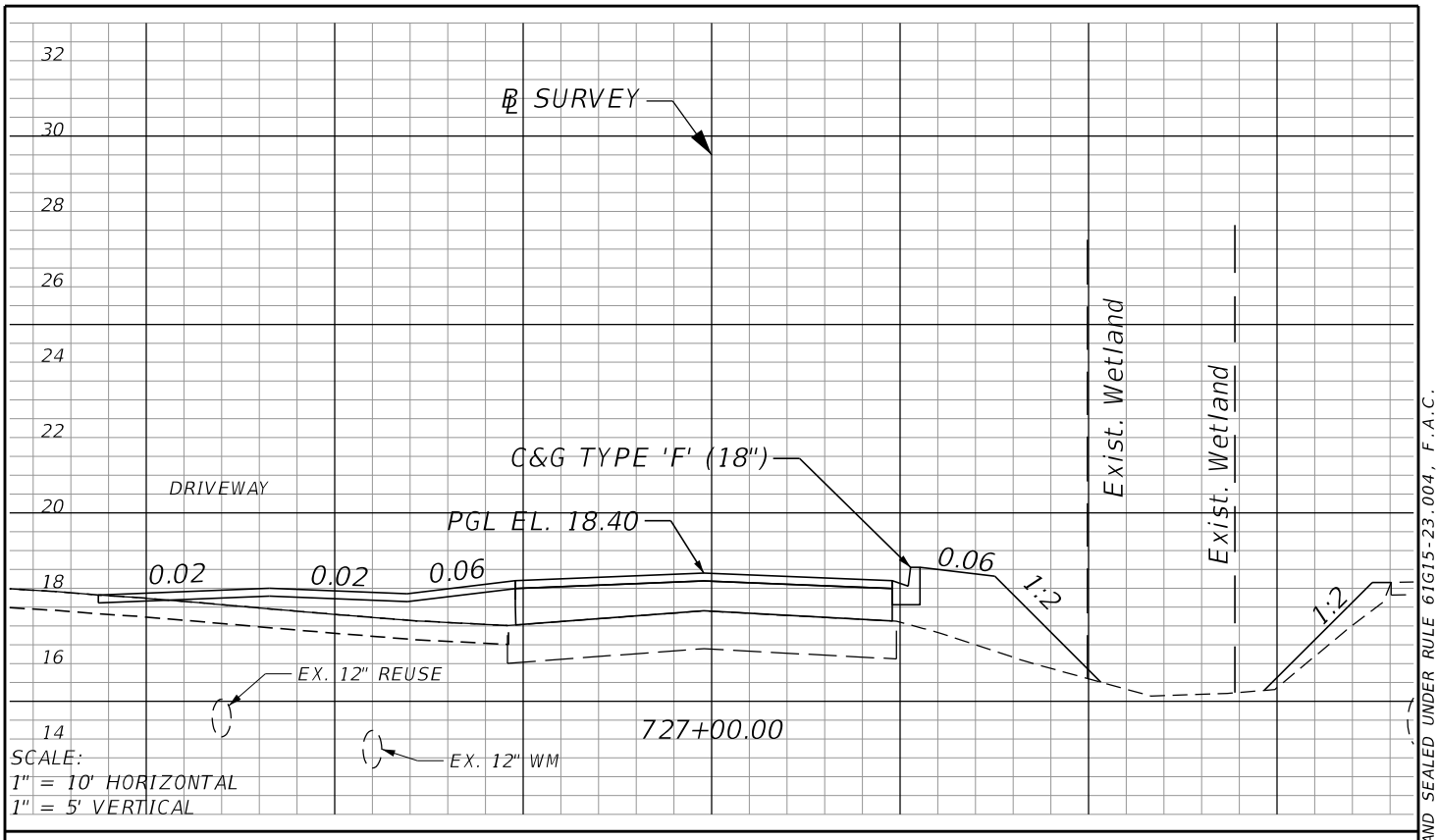
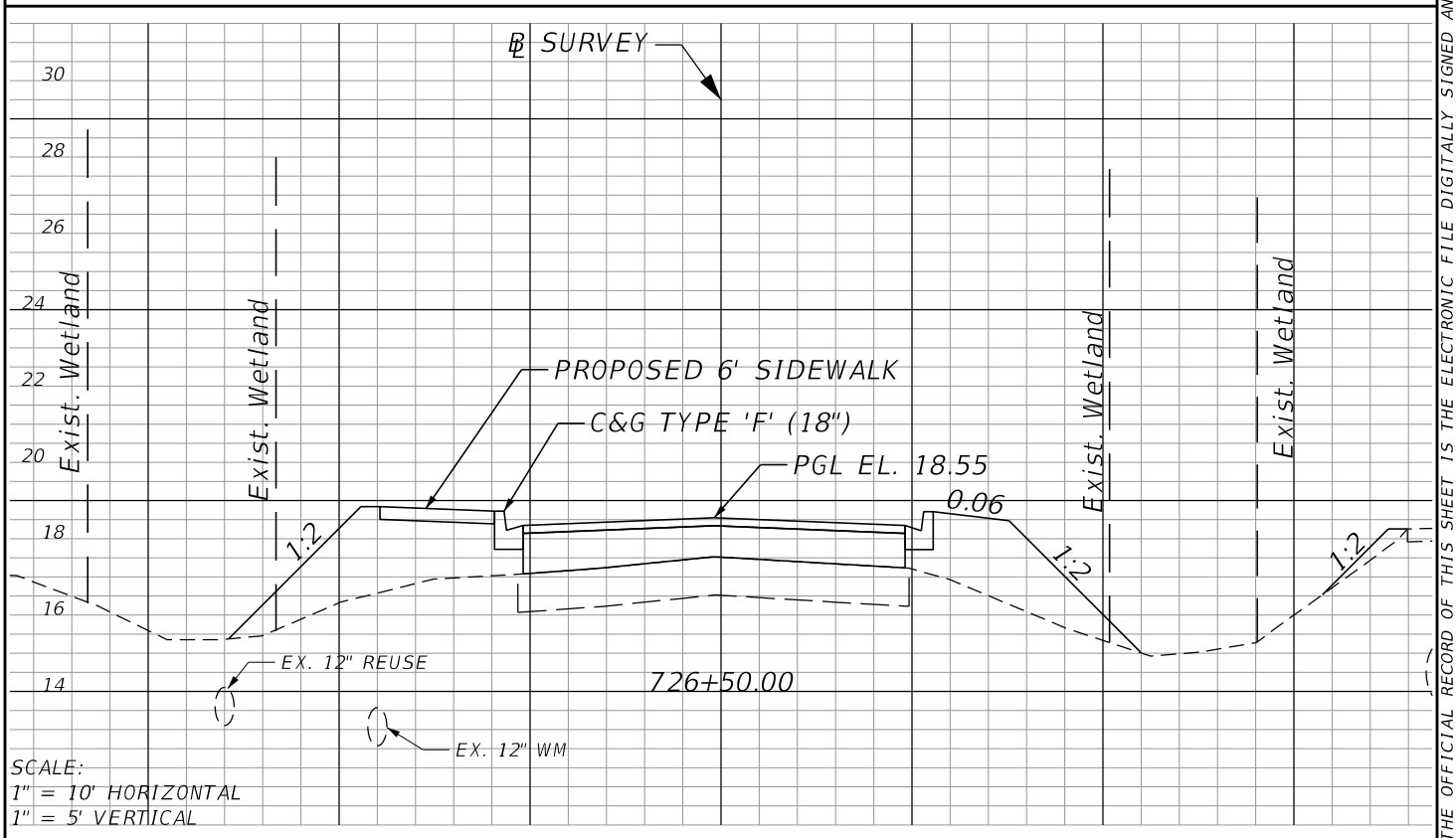
CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

PLAN SHEET (11)

SHEET NO. 26





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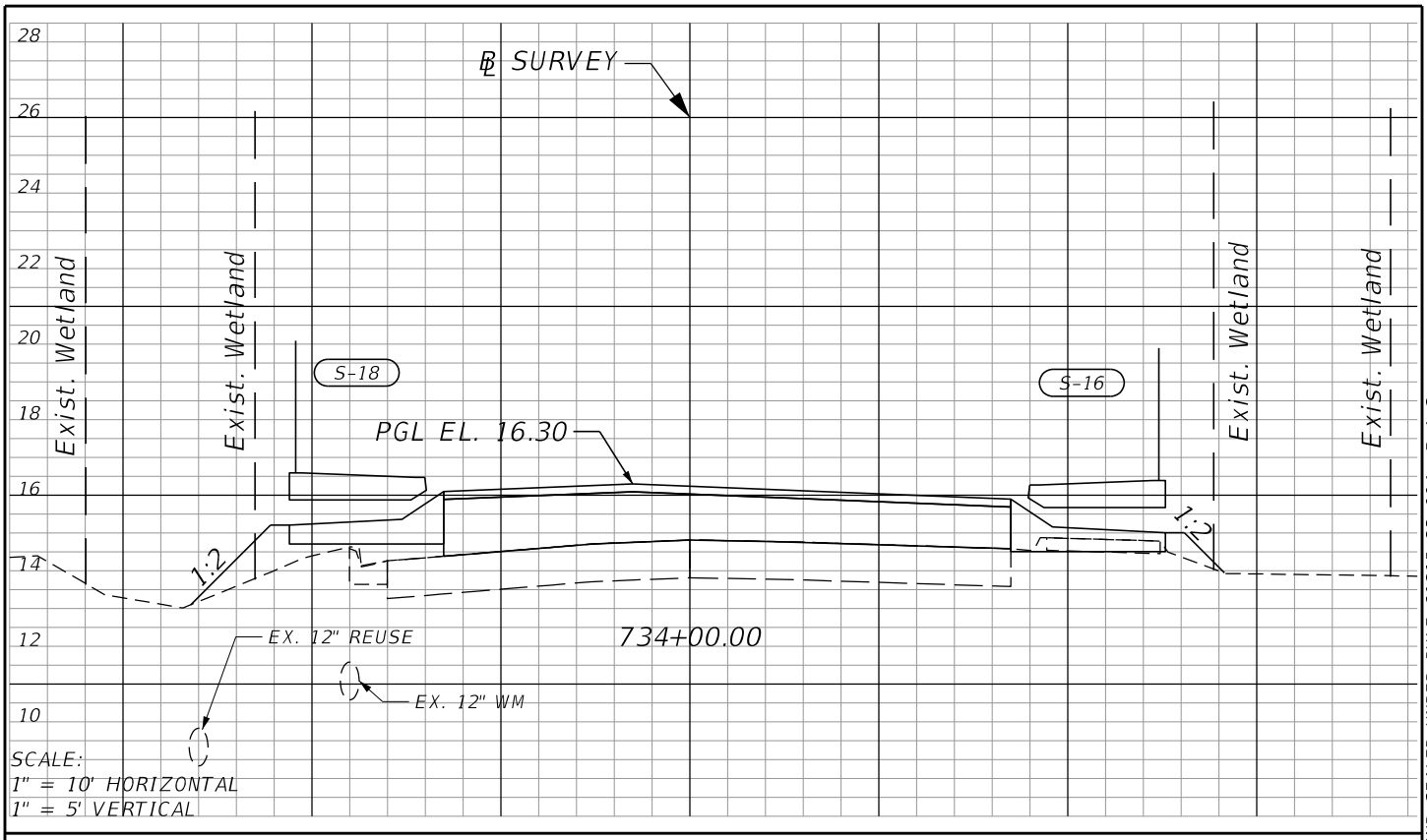
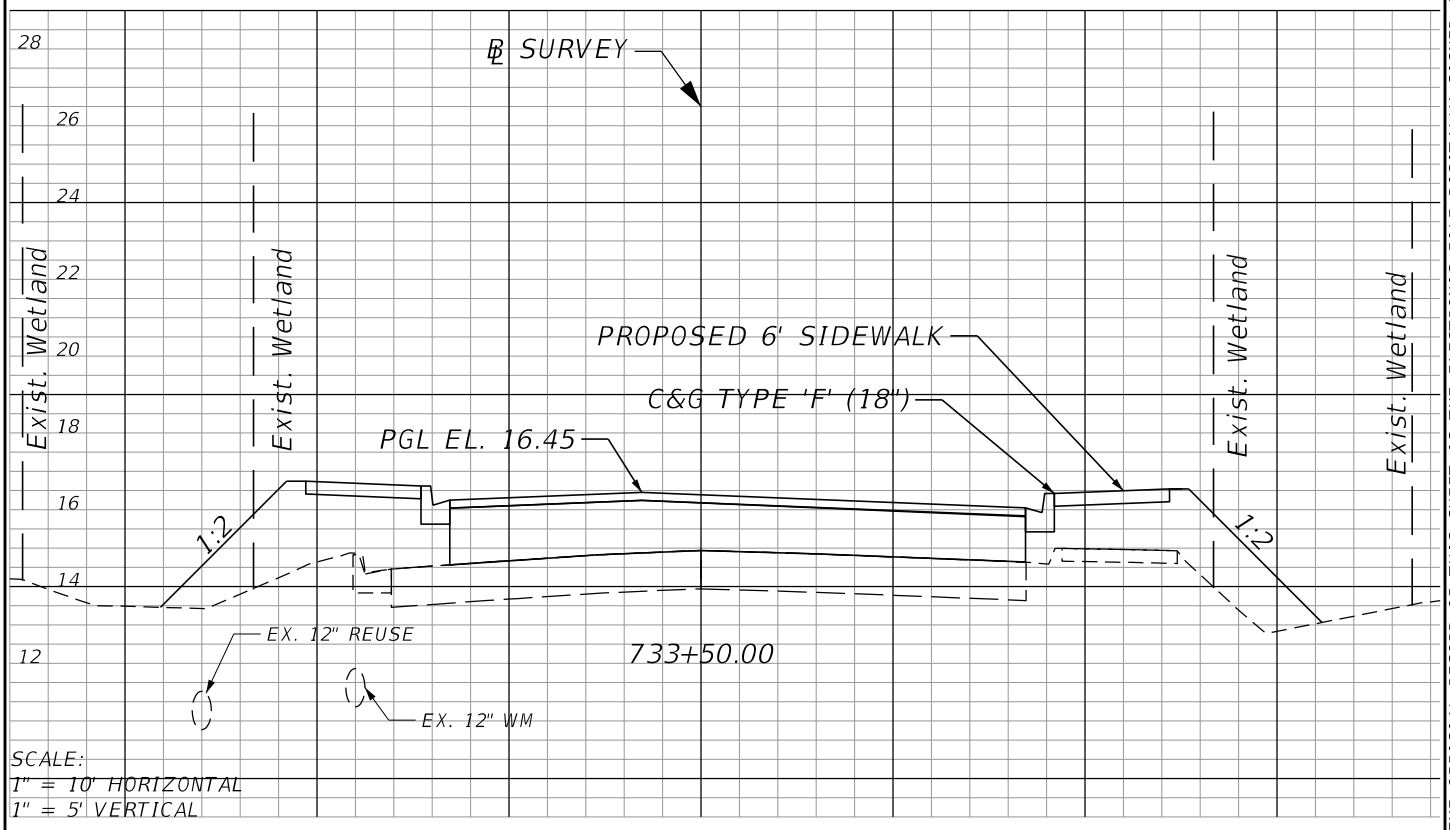
CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

DREDGE AND FILL CROSS SECTIONS

SHEET NO. 27





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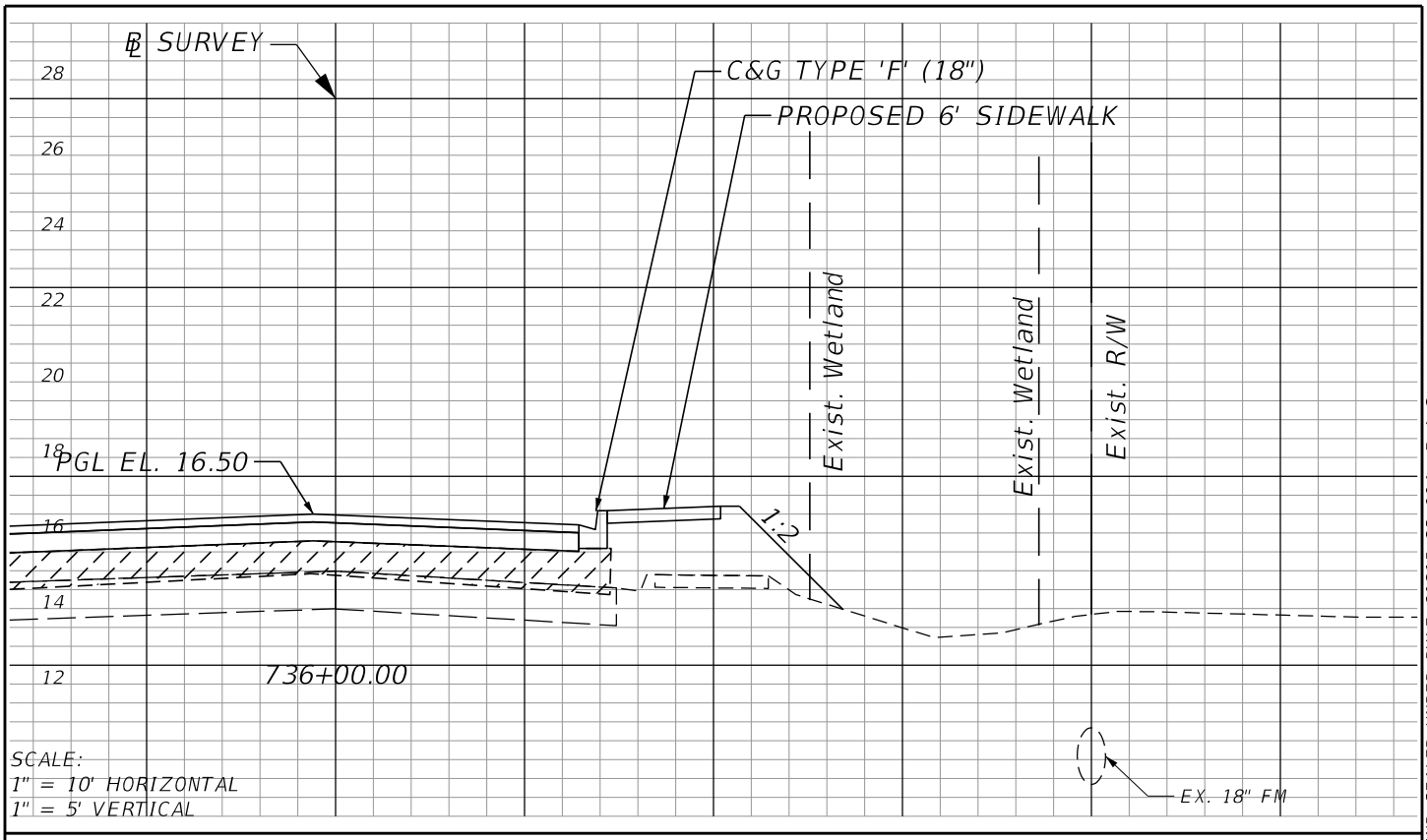
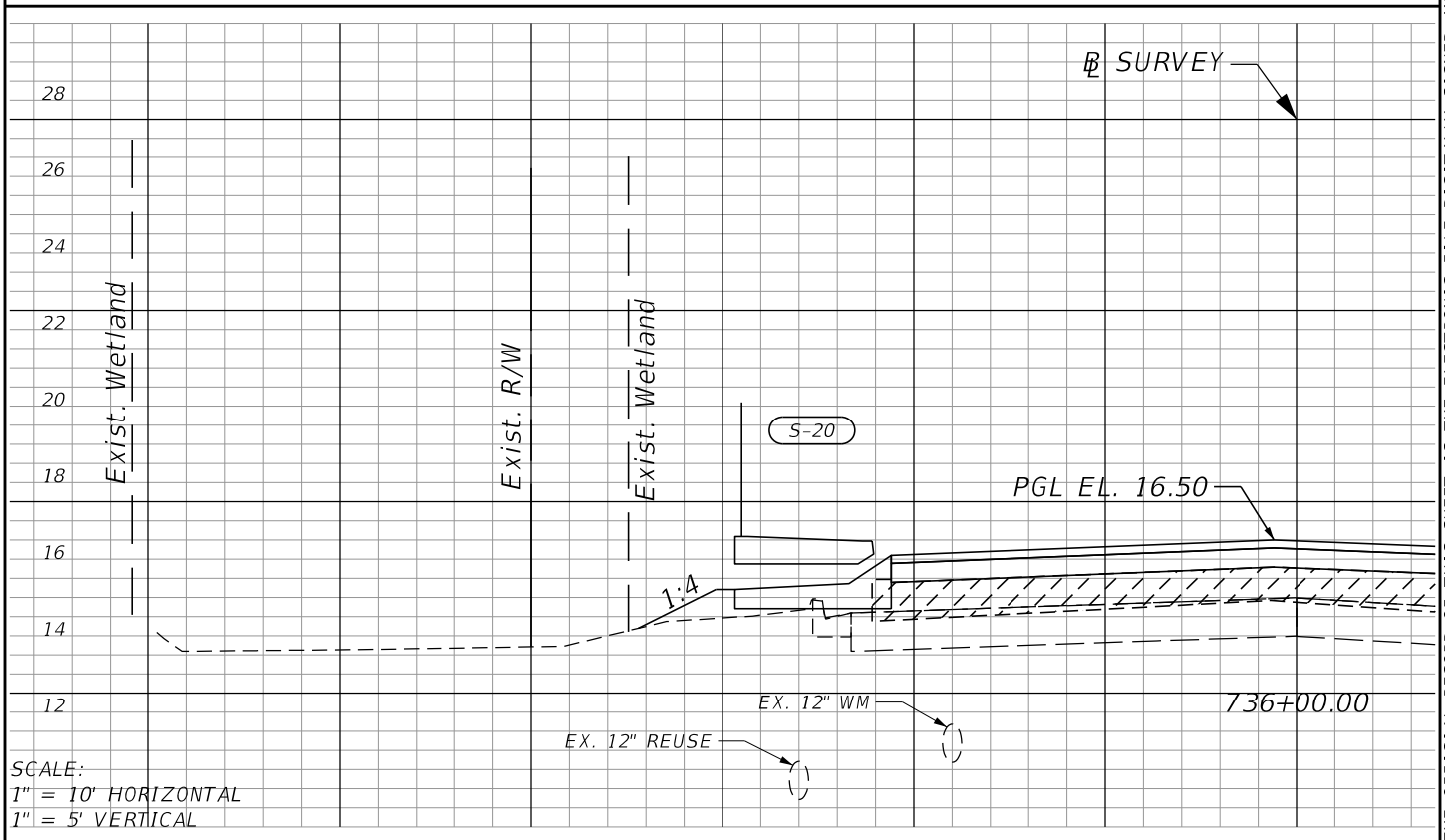
CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

DREDGE AND FILL CROSS SECTIONS

SHEET NO. 28





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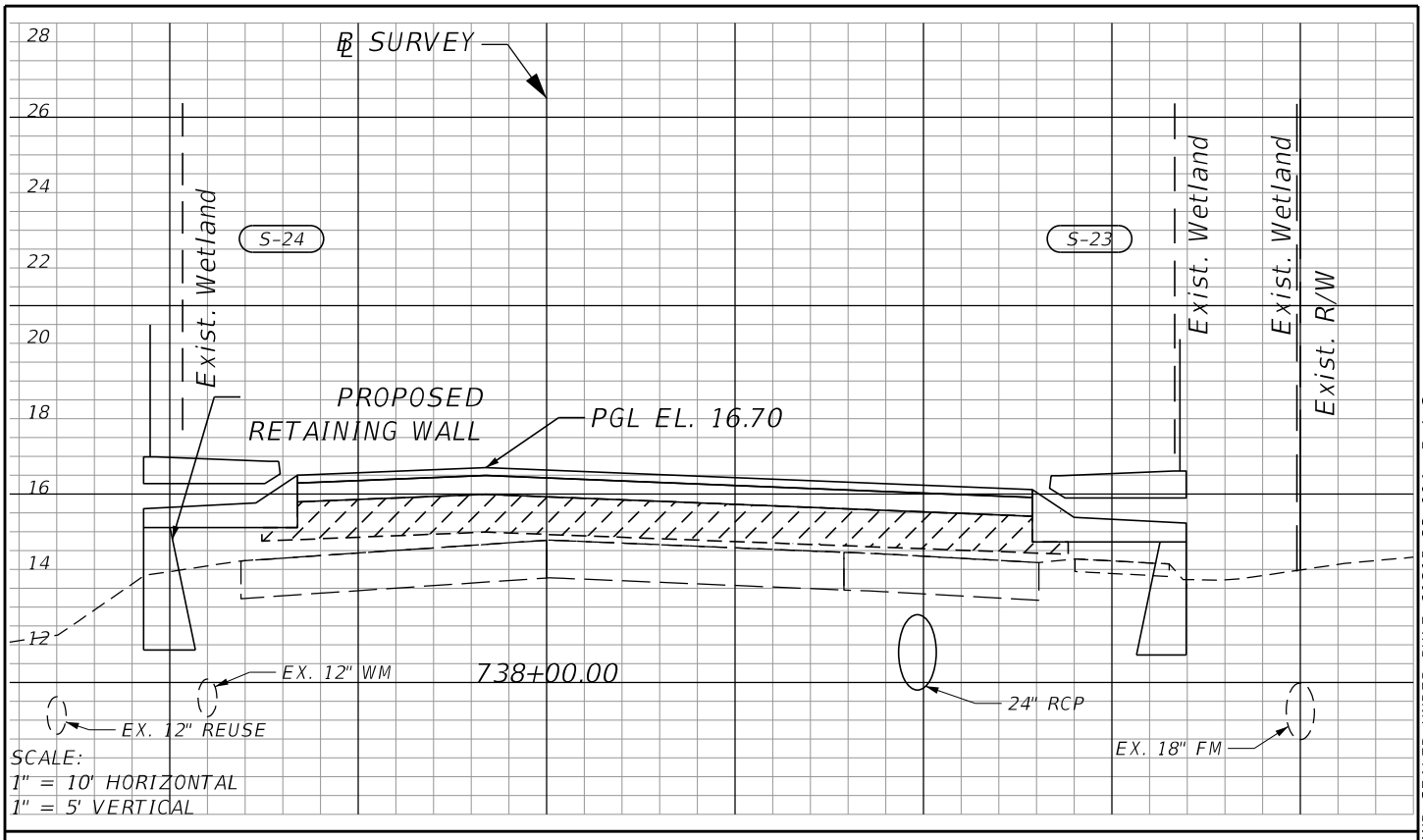
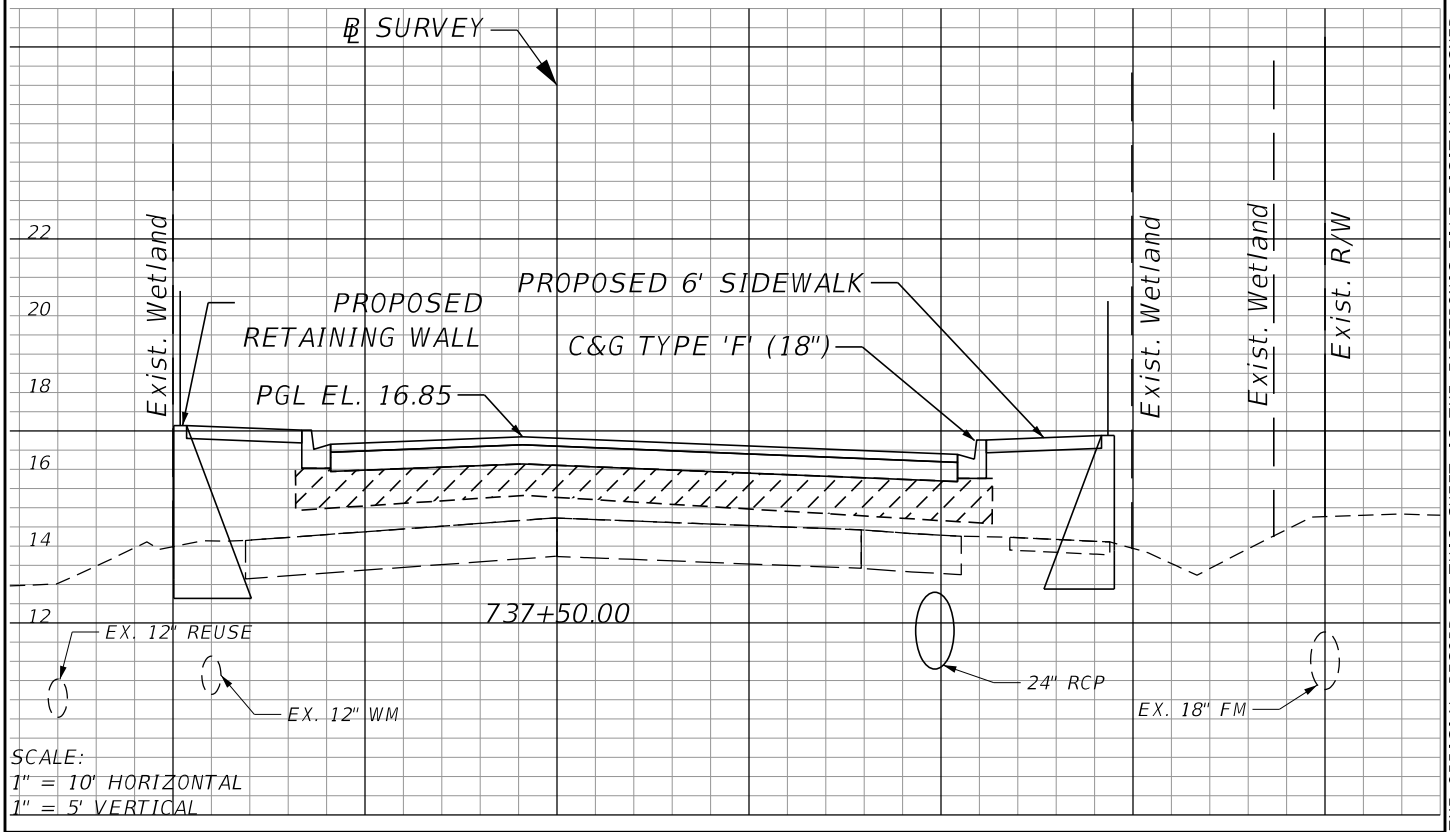
CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

DREDGE AND FILL CROSS SECTIONS

SHEET NO. 29





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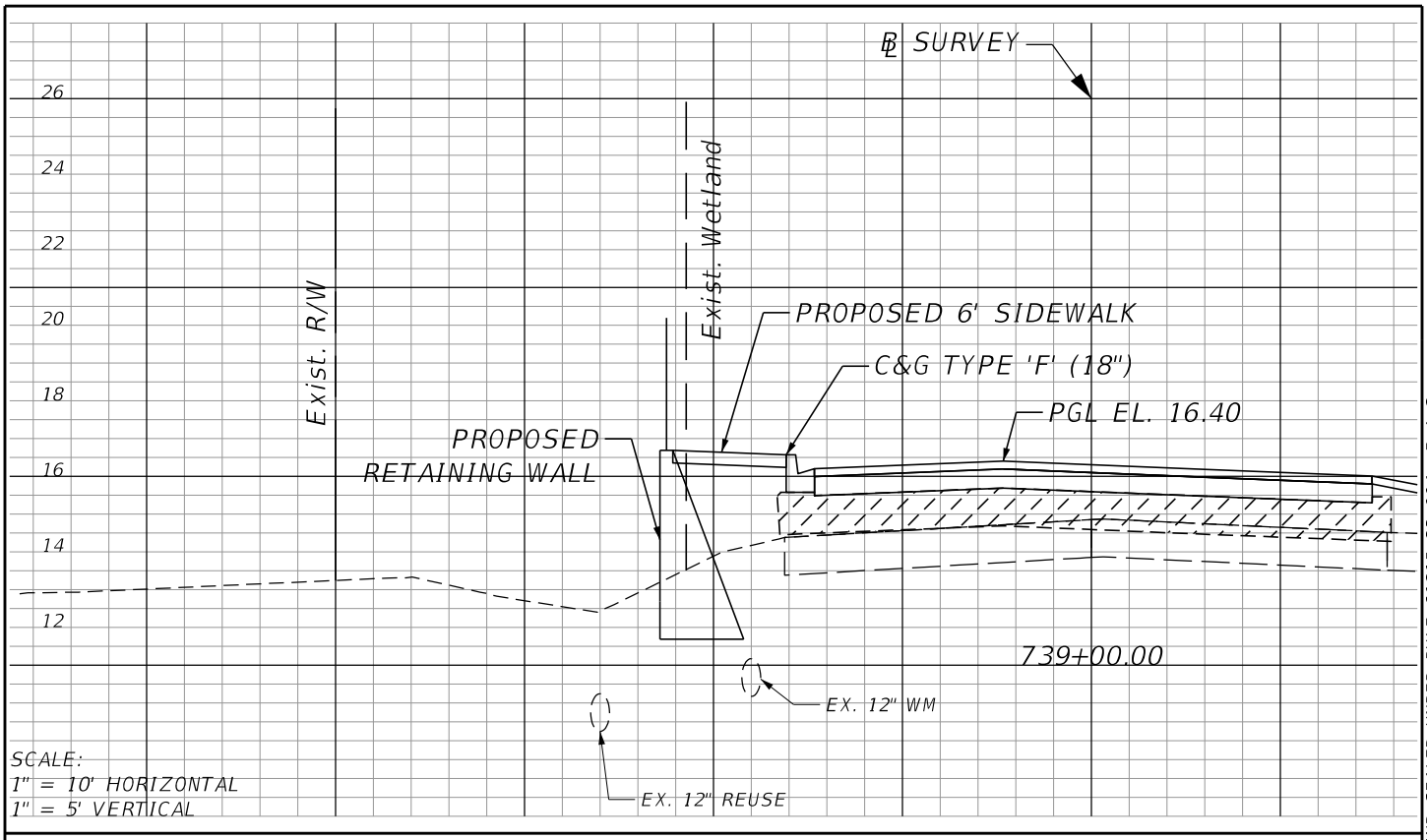
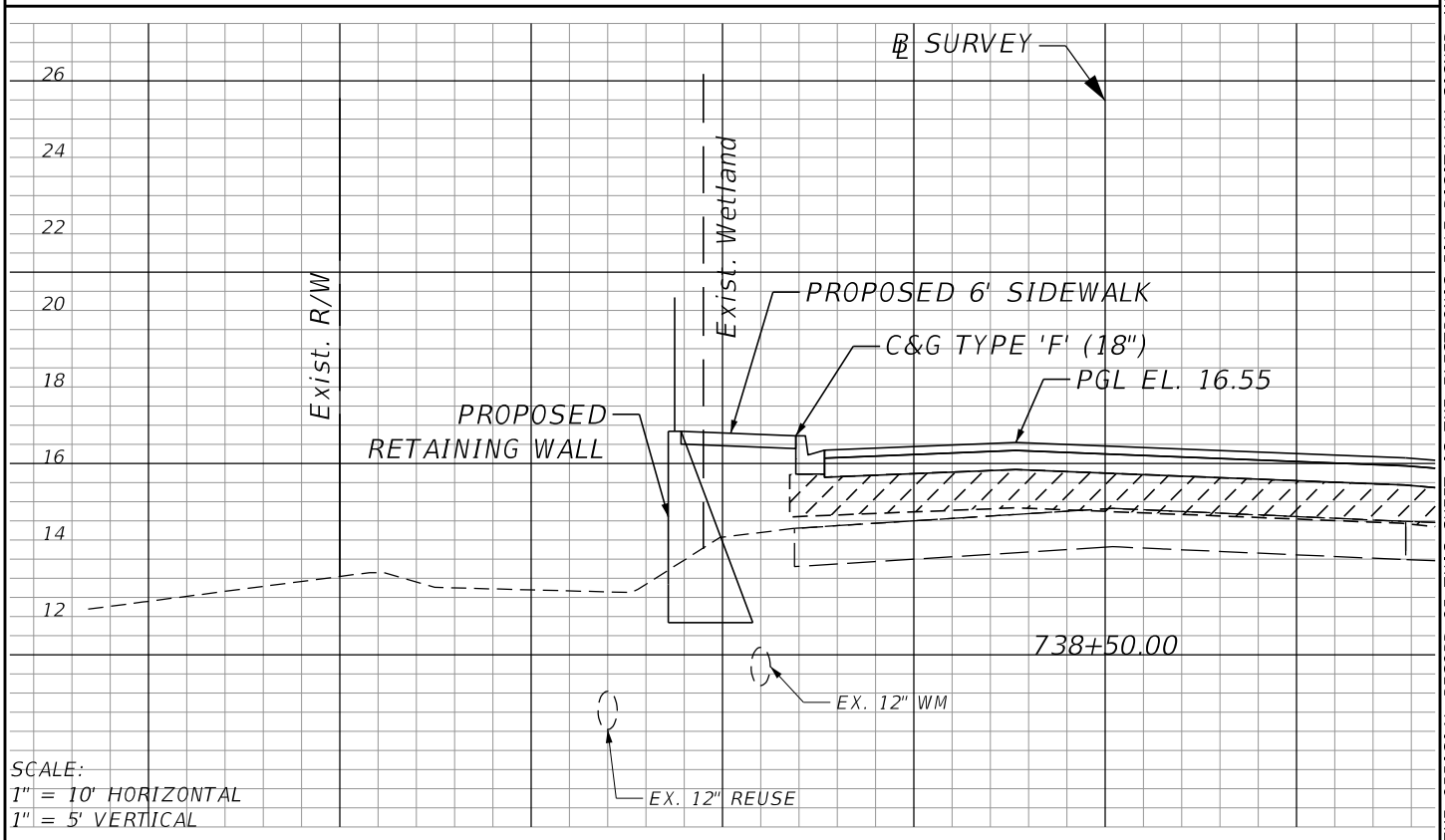
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

DREDGE AND FILL
CROSS SECTIONS

SHEET NO.
30





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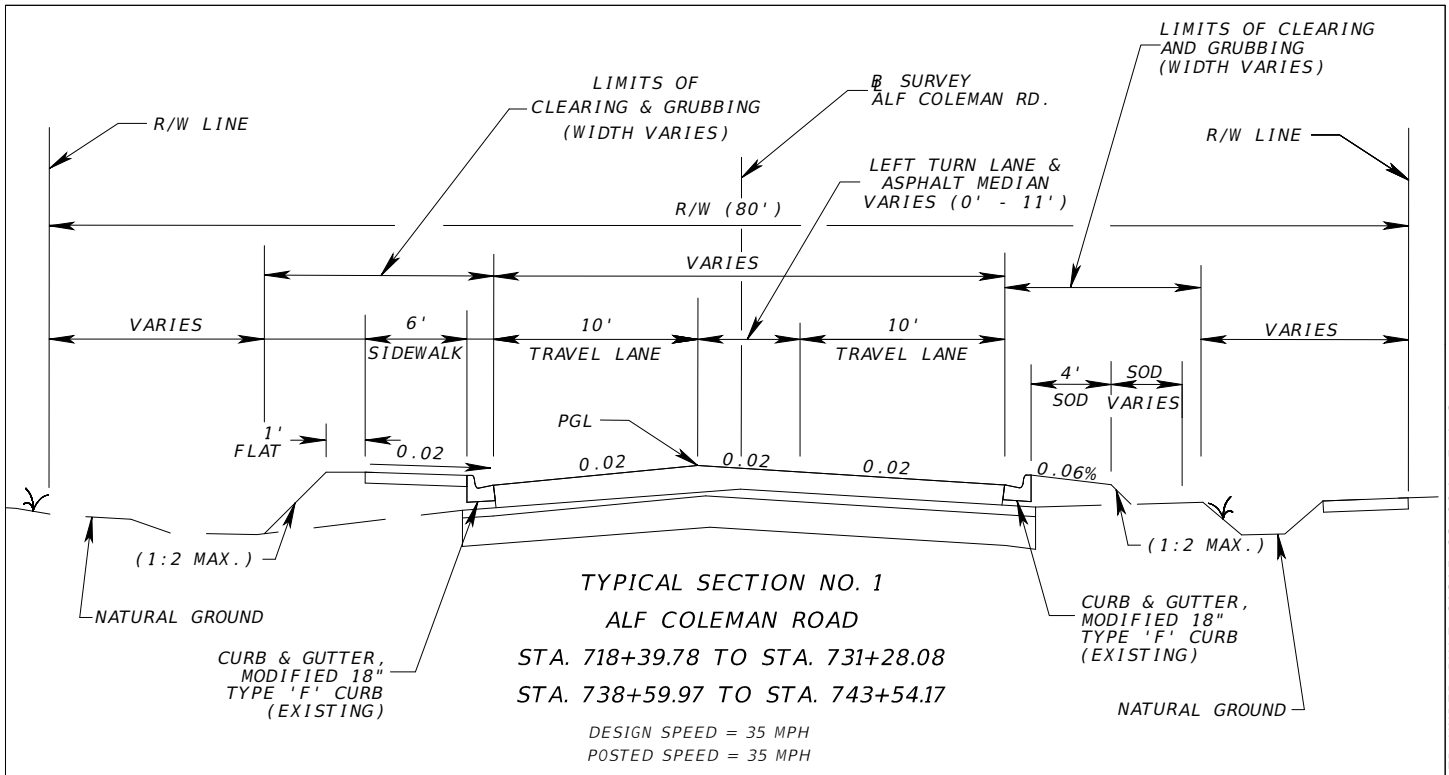
CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

DREDGE AND FILL
CROSS SECTIONS

SHEET NO.
31



TYPICAL SECTION NO. 1

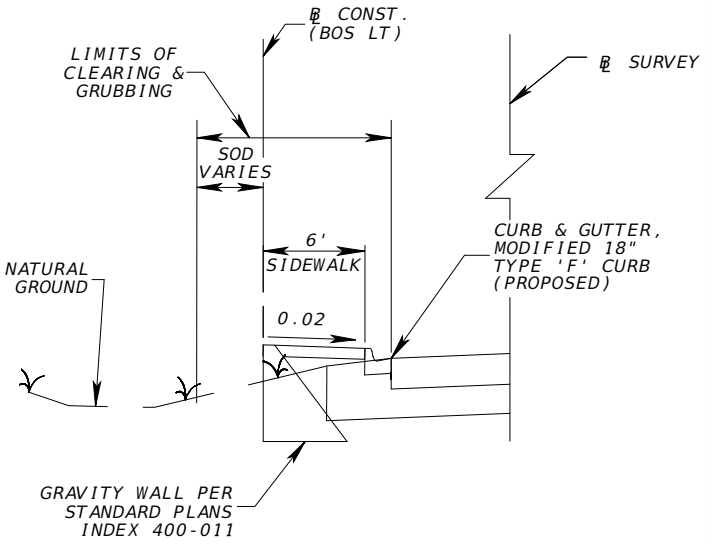
ALF COLEMAN ROAD

STA. 718+39.78 TO STA. 731+28.08

STA. 738+59.97 TO STA. 743+54.17

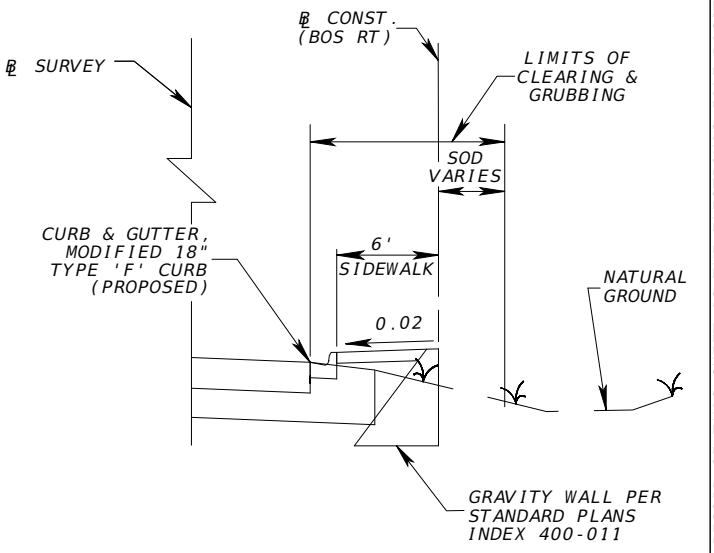
DESIGN SPEED = 35 MPH

POSTED SPEED = 35 MPH



SIDEWALK CONSTRUCTION LEFT SIDE

STA. 735+69.73 TO STA. 736+68.53



SIDEWALK CONSTRUCTION RIGHT SIDE

STA. 731+35.66 TO STA. 738+56.75

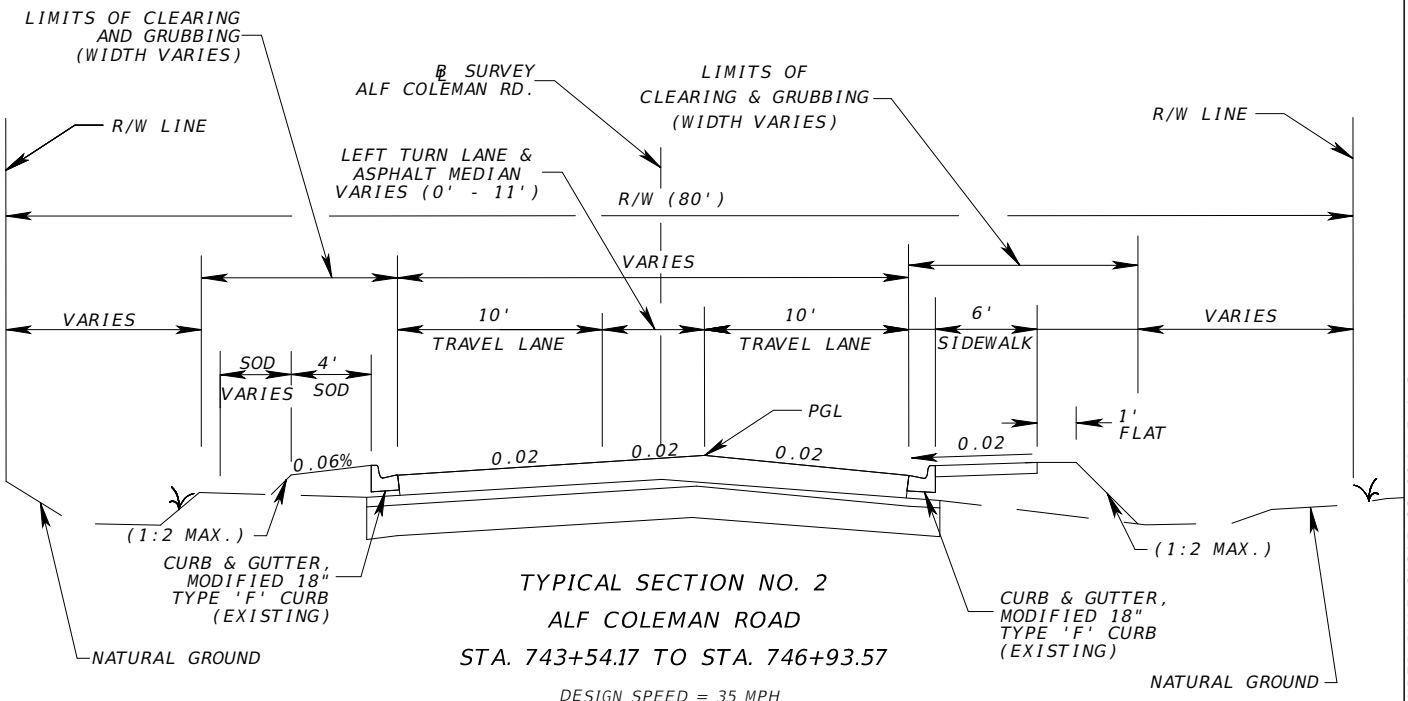
TRAVIS K. JUSTICE, P.E.
P.E. LICENSE NUMBER 63092
GREENMAN-PEDERSEN-INC.
1273 OFFICE PARK DR.
CHIPLEY, FL 32428
CERTIFICATE OF AUTHORIZATION: 3498

CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

TYP. SECT. DETAILS (1)

SHEET NO. 32



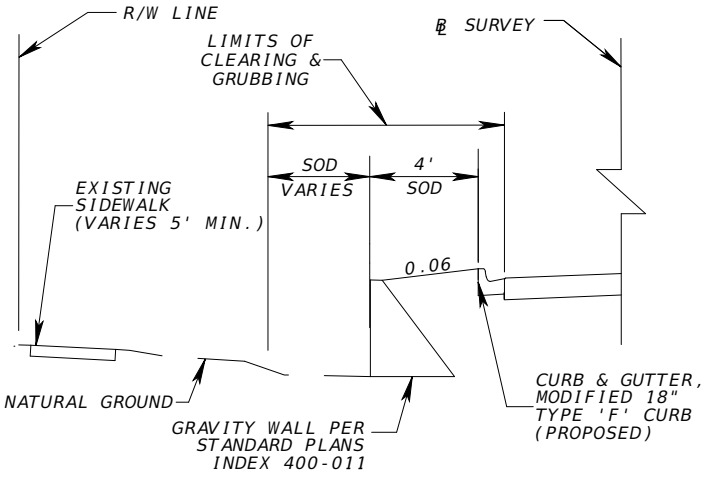
TYPICAL SECTION NO. 2

ALF COLEMAN ROAD

STA. 743+54.17 TO STA. 746+93.57

DESIGN SPEED = 35 MPH

POSTED SPEED = 35 MPH



CURB CONSTRUCTION LEFT SIDE

STA. 743+50.00 TO STA. 745+93.33

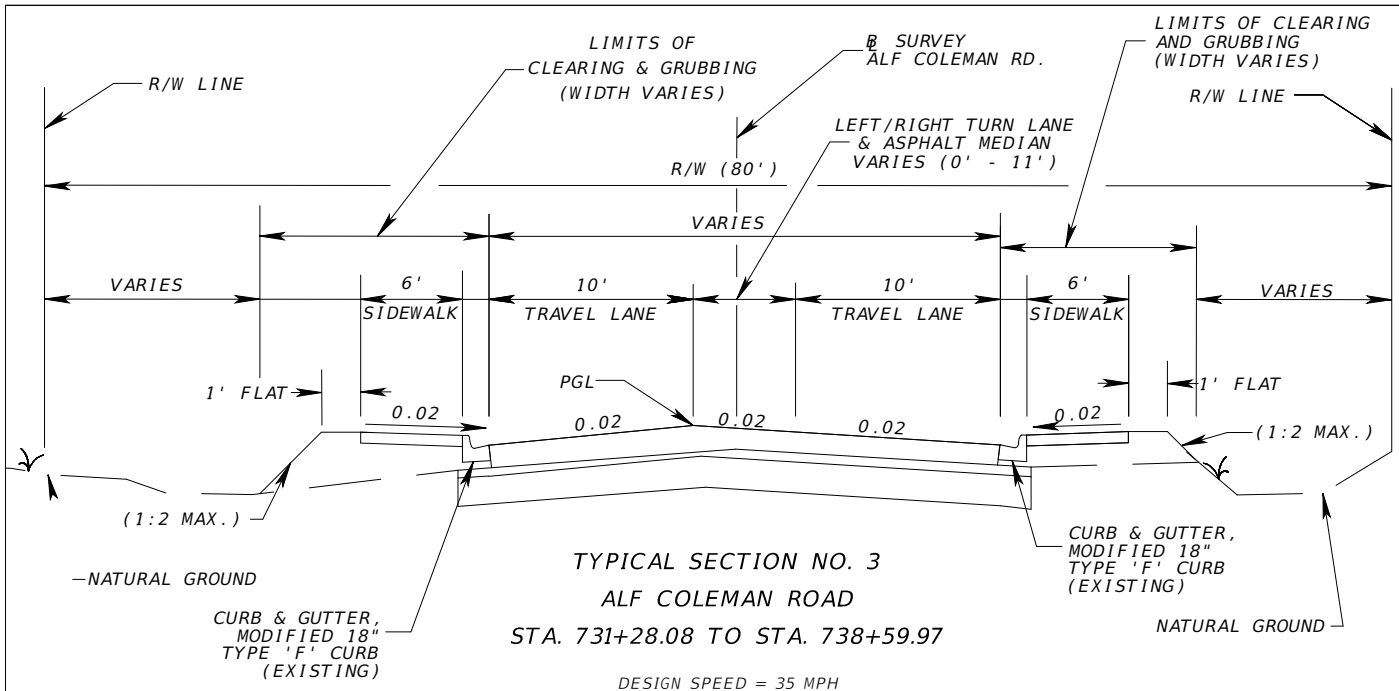
TRAVIS K. JUSTICE, P.E.
P.E. LICENSE NUMBER 63092
GREENMAN-PEDERSEN-INC.
1273 OFFICE PARK DR.
CHIPLEY, FL 32428
CERTIFICATE OF AUTHORIZATION: 3498

CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

TYP. SECT. DETAILS (2)

SHEET NO. 33



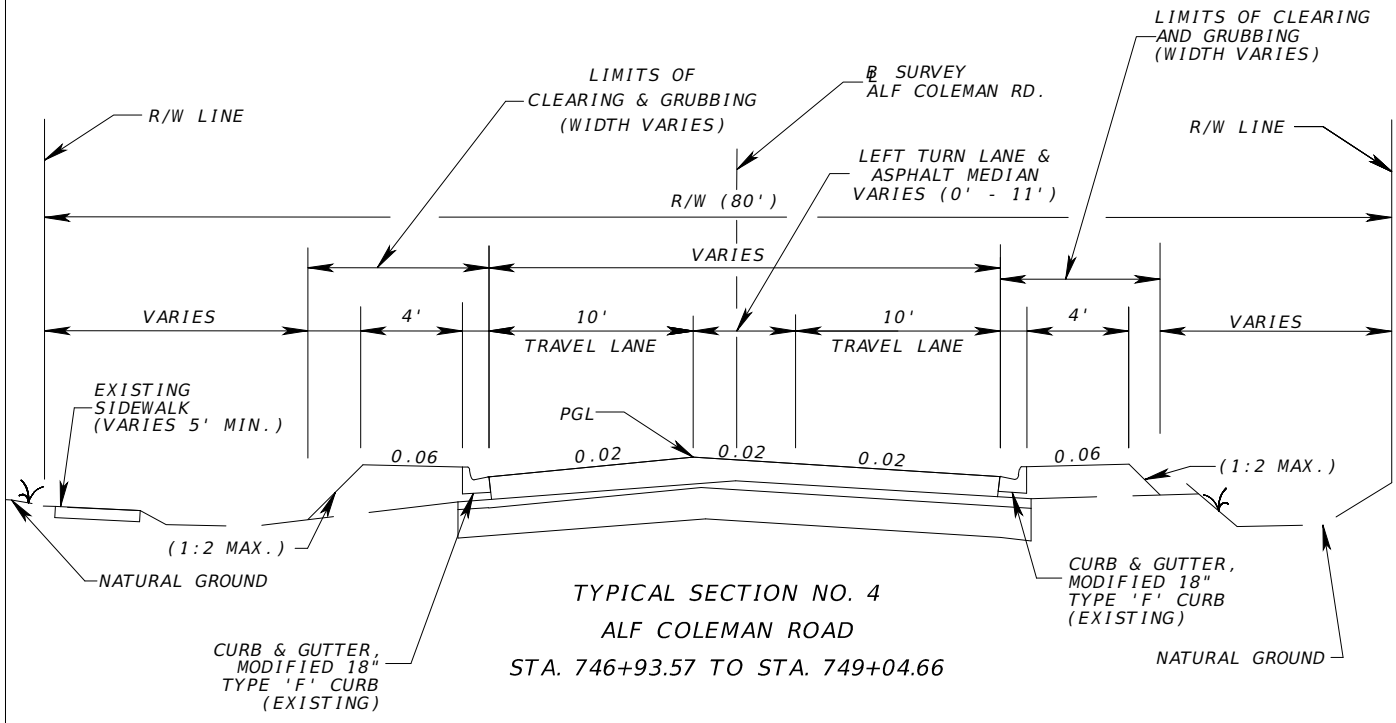
TYPICAL SECTION NO. 3

ALF COLEMAN ROAD

STA. 731+28.08 TO STA. 738+59.97

DESIGN SPEED = 35 MPH

POSTED SPEED = 35 MPH



TYPICAL SECTION NO. 4

ALF COLEMAN ROAD

STA. 746+93.57 TO STA. 749+04.66

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

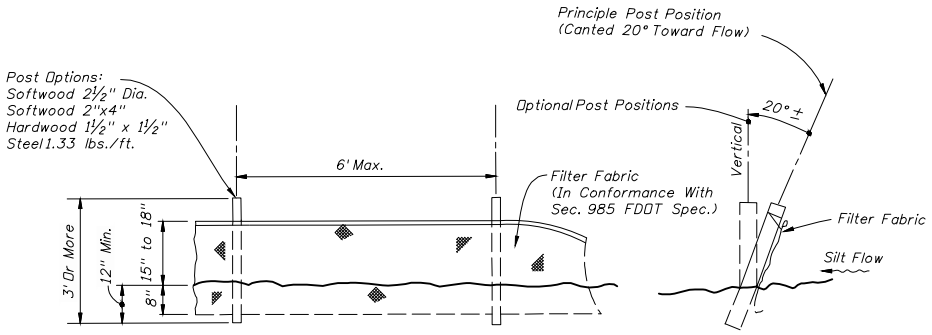
TRAVIS K. JUSTICE, P.E.
P.E. LICENSE NUMBER 63092
GREENMAN-PEDERSEN-INC.
1273 OFFICE PARK DR.
CHIPLEY, FL 32428
CERTIFICATE OF AUTHORIZATION: 3498

CITY OF PANAMA CITY BEACH

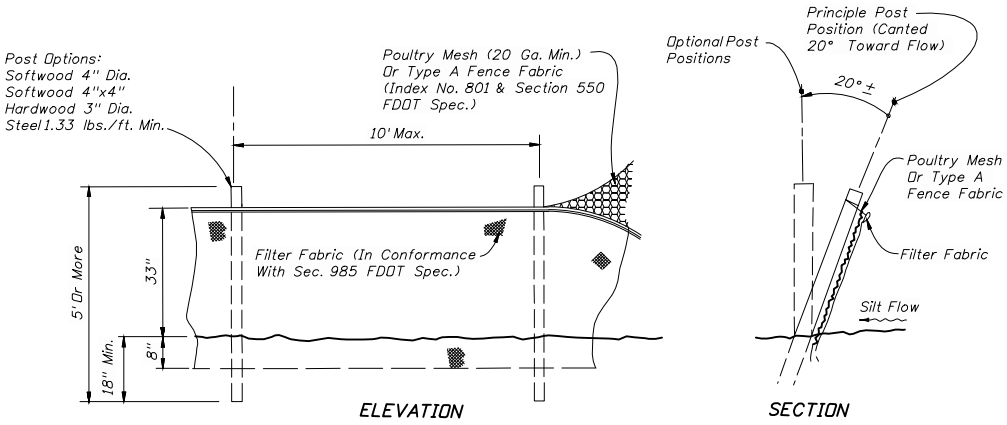
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

TYP. SECT. DETAILS (3)

SHEET NO. 34



TYPE III SILT FENCE



TYPE IV SILT FENCE

TRAVIS_K._JUSTICE,_P.E.
P.E. LICENSE NUMBER 63092
GREENMAN-PEDERSEN,_INC.
1273_OFFICE_PARK_DR.
CHIPLEY,_FL_32428
REGISTRY NO. : 3498

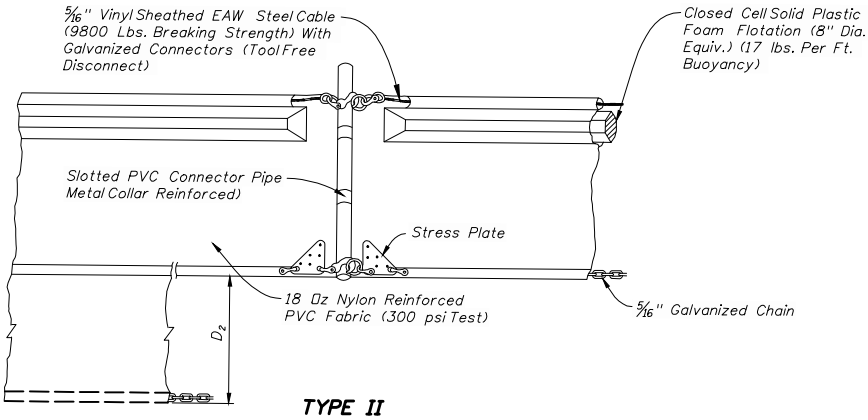
CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

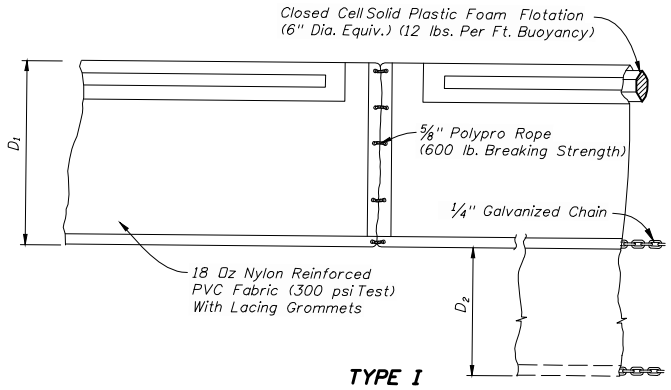
SPECIAL DETAIL

SHEET NO.

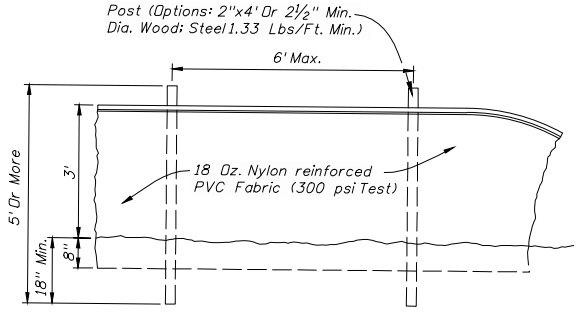
35



TYPE II



TYPE I



STAKED TURBIDITY BARRIER

FLOATING TURBIDITY BARRIERS

TRAVIS K. JUSTICE, P.E.
P.E. LICENSE NUMBER 63092
GREENMAN-PEDERSEN, INC.
1273 OFFICE PARK DR.
CHIPLEY, FL 32428
REGISTRY NO. : 3498

CITY OF PANAMA CITY BEACH

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-2-58-01

SPECIAL DETAIL

SHEET NO. 36

COMMENCEMENT NOTIFICATION

Within ten (10) days of initiating the authorized work, submit this form via electronic mail to saj-rd-enforcement@usace.army.mil (preferred, not to exceed 15 MB) ***or*** *by standard mail to U.S. Army Corps of Engineers, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232-0019.*

1. **Department of the Army Permit Number**: SAJ-2019-03066(NW-LSL)

2. **Permittee Information**:

   Name: _____

   Email: _____

   Address: _____

   _____

   Phone: _____

3. **Construction Start Date**: _____

4. **Contact to Schedule Inspection**:

   Name: _____

   Email: _____

   Phone: _____

_____
Signature of Permittee

_____
Printed Name of Permittee

_____
Date

AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER

Submit this form and one set of as-built engineering drawings to the U.S. Army Corps of Engineers, Enforcement Section, 41 North Jefferson Street, Suite 301, Pensacola, Florida, 32502. If you have questions regarding this requirement, please contact the Enforcement Branch at 904-232-3131.

1. Department of the Army Permit Number: SAJ-2019-03066(NW-LSL)

2. Permittee Information:

Name: _____

Address: _____

_____

3. Project Site Identification (physical location/address):

_____

_____

4. As-Built Certification: I hereby certify that the authorized work, including any mitigation required by Special Conditions to the permit, has been accomplished in accordance with the Department of the Army permit with any deviations noted below. This determination is based upon on-site observation, scheduled, and conducted by me or by a project representative under my direct supervision. I have enclosed one set of as-built engineering drawings.

_____ _____
Signature of Engineer Name (*Please type*)

_____ _____
(FL, PR, or VI) Reg. Number Company Name

_____ _____ _____
City State ZIP

(Affix Seal)

_____ _____
Date Telephone Number

ATTACHMENT B (2 PAGES)

Date Work Started:_____ Date Work Completed:_____

Identify any deviations from the approved permit drawings and/or special conditions (attach additional pages if necessary):

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

APPENDIX F

GEOTECHNICAL ENGINEERING REPORT

REPORT OF
GEOTECHNICAL INVESTIGATION

ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 392A TO SR 30A
BAY COUNTY, FLORIDA
FPID: 441742-1-52-01

Prepared For:

GREENMAN-PEDERSEN, INC.
1590 VILLAGE SQUARE BOULEVARD
TALLAHASSEE, FLORIDA 32309

Prepared By:

ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.
104 NORTH MAGNOLIA DRIVE
TALLAHASSEE, FLORIDA 32301
(850) 386-1253

February 2020
37-63-18-01

February 10, 2019

EGS File Number: 37-63-18-01

Greenman-Pedersen, Inc.
1590 Village Square Blvd
Tallahassee, Florida 32309

ATTN: Dustin Evans, P.E.
Project Manager

SUBJECT: Report of Geotechnical Investigation
Roadway Improvements
Alf Coleman Road from SR 392A to SR 30A
Bay County, Florida
FPID: 441742-1-52-01

Dear Dustin:

Environmental and Geotechnical Specialists, Inc. (**EGS**) **has completed** the Geotechnical Investigation, as authorized by Greenman-Pedersen, Inc. (**GPI**) and the Florida Department of Transportation (**FDOT**), for the roadway improvements proposed along Alf Coleman Road from SR 392A (Hutchinson Boulevard) to SR 30A (Panama City Beach Parkway) in Bay County, Florida. **EGS understands** this project will consist of miscellaneous roadway and stormwater management improvements, the addition of sidewalks, retaining walls, and culvert extensions. This Geotechnical Report includes a summary of the subsurface investigation, evaluation of field and laboratory test data, measured and estimated "normal" seasonal high groundwater levels, geotechnical design recommendations and construction considerations.

SITE LOCATION AND CONDITIONS

The project site is located in west Panama City Beach along Alf Coleman Road from SR 392A to SR 30A. Alf Coleman Road is a two-lane paved roadway that receives moderate to high volumes of automobile and truck traffic. A Project Location Map has been provided as **Figure 1**.

The United States Geological Survey (**USGS**) topographic contours have been overlain on an aerial map of the project area and provided as **Figure 2**. As can be seen in this **Figure**, the surrounding area consists primarily of residential and commercial developments. The **USGS** contours indicates that the project area is relatively flat with existing ground surface elevations (EL) ranging from approximately EL 12 to EL 18 feet. Photographs taken by **EGS** personnel of the existing site conditions have been included as **Figures 3A** through **3D**. As can be seen in these **Figures**, standing water was observed in the existing roadside ditches and culverts.

As part of this investigation, **EGS reviewed** the United States Department of Agriculture's (**USDA**) Natural Resources Conservation Service (**NRCS**) Soil Survey for Bay County within the project limits. An **NRCS** Soil Survey Map has been overlain on an aerial map of the project area included in **Figure 2**. **EGS** has provided a summary of **NRCS** reported data as **TABLE 1** that includes soil reference number, material name, and other pertinent soils data. The **NRCS** reports that the surficial soils are predominately sands with some "organic" soils in the low-lying areas surrounding the wetlands. Copies of tables from the **NRCS** Soil Survey Report are included as **APPENDIX A**.

PROPOSED IMPROVEMENTS

EGS understands the proposed improvements will include raising the roadway grade 2 feet and extending the existing culverts to allow for the construction of the proposed sidewalks. Although the design has not been completed, gravity retaining walls are being considered to support the proposed fill in some areas along the sidewalks. The improvements will also include increasing the stormwater management capacity of the area by utilizing an existing gravel parking lot on the west side of Alf Coleman Road approximately 1,000 feet north of SR 392A.

SUBSURFACE INVESTIGATION

EGS installed 54 soil borings for this subsurface investigation to depths ranging from approximately 4½ to 25 feet below the existing roadway. The soil borings were spaced on intervals ranging from 50 to 200 feet along the east and west sides of the existing roadway to evaluate the subsurface conditions and to identify the limits of highly organic soils, if they exist. The soil borings were labeled to correspond with the Stationing where they were installed (i.e. Soil Boring **RD-719R** was installed on the right side of the roadway at Station 719+00). A summary of the soil boring labels, depths, elevations, and approximate locations are provided in **TABLE 2** with a plan view of boring locations shown in **Figures 4A** and **4B**.

The soil borings were installed either using a hand auger or a mechanized rotary drill. To minimize potential impacts to mismarked buried utilities, all soil borings were hand augered to a depth of 5 feet. In the hand augered soil borings samples of the subsoils were collected on 1-foot intervals and Static Cone Penetrometer Index (**CPI**) tests were conducted on 1-foot intervals. In those soil borings installed with the mechanical drill rig, Standard Penetration Tests (**SPT**) were conducted on 2½ foot intervals to the boring termination depth using an automatic hammer in accordance with ASTM D1586. To facilitate uniformity of the subsurface data, all **CPI** values in this Report have been converted to equivalent **SPT** "**N**" values using the correlation **N**=**CPI**/4.

Samples of the subsoils were collected, classified, and sealed in the field by **EGS** personnel, then transported to **EGS**' laboratory for determination of soil index properties. The laboratory testing included determination of water content, organic content, grain-size distribution, and corrosion testing. The subsoils have been classified with respect to the American Association of State Highway and Transportation Officials (**AASHTO**) Soil Classification System.

A summary of the testing performed has been summarized in the Geotechnical Plan Sheets included as **APPENDIX B**. Soil Boring Logs and Soil Classification Data sheets have been provided as **APPENDICES C** and **D**, respectively.

GENERAL SUBSURFACE CONDITIONS

Existing Soils

"Generalized" Subsurface Profiles for the existing subsoils based on the results of this investigation have been included as **Figures 5A** through **5F**. As can be seen in these **Figures**, the soils encountered during this subsurface investigation consist primarily of Loose to Medium Dense Fine and Silty Fine Sand (**A-3** to **A-2-4**), with lenses of Organic Sand (**A-3** to **A-2-4**) and 2 areas of Muck (**A-8**).

Groundwater

Groundwater was encountered at depths ranging from approximately ½ to 3½ feet below the existing ground surface during this subsurface investigation. As evidenced in the site photographs included as **Figures 3B** and **3C**, the groundwater table is in the ditches at several locations. The measured and estimated depth to "normal" seasonal high groundwater have been provided in **TABLE 2**. Additionally, the measured water levels are shown on the Geotechnical Plan Sheets, provided in **APPENDIX B**, and the "Generalized" Subsurface Profiles provided as **Figures 5A** through **5F**.

Corrosion Series Testing

As part of this study, **EGS performed** corrosion series testing on representative soil and water samples collected from each culvert location. The corrosion testing included determination of resistivity, pH, sulfate content, and chloride content conducted in accordance with the **FDOT** recommended Florida Method. The test results have been summarized in **TABLE 3** and included on the Roadway Soil Survey sheet in **APPENDIX B**. Additionally, **TABLE 3** includes the environmental classification based on the criteria outlined in the **FDOT** Structures Design Guidelines (**SDG**).

GEOTECHNICAL DESIGN RECOMMENDATIONS

Existing Soils

Based on the results of this investigation and the material designations recommended by the **FDOT** Standard Plans Index (**SPI**) 120-001, **EGS** has assigned the following **STRATUM** Numbers:

- **STRATUM 1** represents a "**SELECT**" soil that classifies as an **A-3** material described as a Fine Sand. This material is does not require subsoil excavation.

- **STRATUM 2** represents a "**SELECT**" soil that classifies as an **A-2-4** material described as Silty Sand. This material generally does not require subsoil excavation.
- **STRATUM 3** represents an "**ORGANIC**" soil that classifies as an **A-3** or **A-2-4** material with an average organic content greater than 5% but no greater than 10%. This material is described as an Organic Sand. *If this material is excavated, its reuse is limited and is not allowed unless approved by the District Geotechnical Engineer*.
- **STRATUM 4** represents a "**HIGHLY ORGANIC**" soil that classifies as an **A-8** material with an average organic content greater than 20%. This material is a "Muck" and should be completely overexcavated below the roadway. *If this material is excavated, its reuse is limited and is not allowed unless approved by the District Geotechnical Engineer*.

Reuse of these materials should be in accordance with **FDOT SPI** 120-001. Removal of materials encountered shall be in accordance with **FDOT SPI** 120-002, unless otherwise noted.

Subsoil Excavation

As previously mentioned, the "**MUCK**" (**A-8**/**STRATUM 4**) was encountered at 2 locations near the middle of the project at a depth of approximately 1½ to 3 feet below the existing ground surface. Because of the high organic content and relatively shallow depth, ***EGS recommends*** *the "**MUCK**" be overexcavated and replaced with suitable fill*. The approximate limits of the overexcavation are provided in **TABLE 4**.

As can be seen in the "Generalized" Soil Profiles in **Figure 5**, there are a number of isolated pockets of Organic Sands (**A-3**/**STRATUM 3**). Because of the depth, limited extent, and relatively low organic content (less than 10 percent), ***EGS does not believe*** *that this **STRATUM** needs to be removed*.

Roadway Subgrade Considerations

EGS believes the "normal" seasonal high groundwater exists within 3 feet of the proposed roadway grade and, therefore, special considerations for the pavement design should be used. In areas where 3 feet of clearance cannot be achieved between the estimated "normal" seasonal high groundwater and the proposed roadway base, the following Design Options should be implemented:

- Use a moisture resistance Optional Base Group Material such as Graded Aggregate Base (GAB) or Type B-12.5 (referred to as "Black Base"); and,
- Reduce the design Resilient Modulus (M_R) as outlined in the **FDOT** Flexible Pavement Design Manual.

If excavations are planned below the water table, dewatering countermeasures will need to be considered prior to construction.

Gravity Retaining Walls

Gravity retaining walls are being proposed to support the fill beneath the proposed sidewalks along both sides of Alf Coleman Road. There are 4 segments (approximately 1,650 feet) along the west side of the roadway and 3 segments (approximately 350 feet) along the east side of the road where retaining walls are proposed. Gravity walls are relatively sensitive to weak bearing soils where significant differential settlement can occur. Based on the subsurface conditions and relatively small grade change expected, **EGS believes** a gravity retaining wall is a viable option. However, due to the shallow depth to the "normal" seasonal high groundwater, the subsurface conditions do not meet the requirements in **FDOT SPI** 400-011; therefore the gravity walls will need to be designed without the benefit of **FDOT SPI** 400-011. *It should be noted that to prepare the subgrade for the retaining walls dewatering will likely be required.*

Provided that the subgrade for the retaining walls are prepared in accordance with the **FDOT** Standard Specifications, the following geotechnical design parameters can be used for the gravity wall design:

- Soil Classification: Cohesionless
- Soil Friction Angle: 30°
- Average SPT N-Value: 8
- Allowable Bearing Pressure (q_{all}): 1,500 lb/ft^2
- Long-term Settlement (S_e): <1.0 inch
- Modulus of Subgrade Reaction (K_s): 40,000 lb/ft^3
- Long-term Differential Settlement (ΔY): <0.5 inch

Culvert Extensions

EGS understands 2 existing culverts are to be extended to accommodate the proposed sidewalk and retaining walls. **Figure 6** has been provided to illustrate the "generalized" subsurface conditions at each culvert location. As can be seen in this **Figure**, the existing soils consist primarily of Medium Dense Fine to Silty Fine Sand (**A-3** to **A-2-4**).

Preparation of the culvert bearing surface should be performed in accordance with **FDOT** Standard Specification Section 125. Provided that the bearing surface is prepared in accordance with the Standard Specification, the following geotechnical design parameters can be used for the culvert design:

- Nominal Bearing Resistance (q_n): 4,400 lb/ft^2
- Allowable Bearing Pressure (q_{all}): 2,000 lb/ft^2
- Modulus of Subgrade Reaction (K_s): 45,000 lb/ft^3
- Total Settlement <1.0 inch
- Long-term Differential Settlement (ΔY): <0.5 inch

Temporary Retaining Walls

Temporary retaining walls may be needed to facilitate construction of the culvert extensions. **EGS has provided** geotechnical design parameters for the design of these temporary walls in **TABLE 5**.

MONITORING EXISTING STRUCTURES

Because of the surrounding development, vibration and inspection monitoring of adjacent structures in accordance with **FDOT** Standard Specification Section 108 may be needed during construction. **EGS understands** that others will be responsible for evaluating the need for monitoring of existing structures for this project. *If monitoring of existing structures is believed needed, then a Pay Item for Monitoring Existing Structures should be included in the Plans*.

PLANS PREPARATION

EGS recommends the following be included in the Plans:

- Geotechnical Plan Sheets - Roadway Soil Survey, Report of Wall Borings, Report of Culvert Borings, Report of Pond Borings, and Approximate Limits of Muck included in **APPENDIX B**; and,
- Soil boring profiles illustrated on the Cross-Sections using the “Geopak” compatible files provided with this Report.

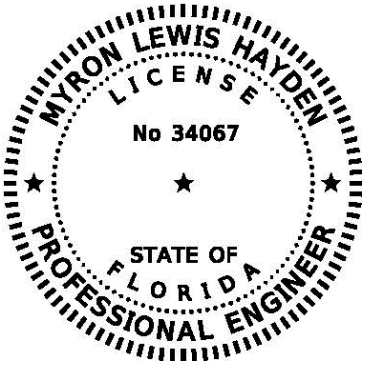
CLOSURE

The data and results presented in this Geotechnical Report are intended for use by Greenman-Pedersen, Inc. and the Florida Department of Transportation for the design of the roadway improvements along Alf Coleman Road, as identified herein. This data may not be used without the expressed written consent of Greenman-Pedersen, Inc. or the Florida Department of Transportation. This Report is not intended for any other use and will likely not be applicable. This Report shall not be reproduced, except in full, without the written approval of Environmental and Geotechnical Specialists, Inc. The data and recommendations presented in this Report are based on the soil borings made at specific locations and depths noted. Subsurface conditions at other locations may vary significantly from those presented herein. Should data become available which is different from the data presented herein, Environmental and Geotechnical Specialists, Inc. requests the opportunity to review the data and make any modifications to the design recommendations that may be appropriate.

Environmental & Geotechnical Specialists, Inc.
Certificate of Authorization: 6222

Myron L. Hayden

Myron L. Hayden, P.E.
Chief Geotechnical Engineer
FL P.E. No.: 34067



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY MYRON HAYDEN ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

TABLES

TABLE 1
NRCS SOIL SURVEY DATA
ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 392A TO SR 30A
BAY COUNTY, FLORIDA

NRCS SOIL REFERENCE NUMBER	SOIL BORING NUMBER	MATERIAL NAME	DEPTH (IN)	MATERIAL DESCRIPTION	MATERIAL CLASSIFICATION		REACTION (pH)	CORROSION POTENTIAL		DEPTH TO SEASONAL HIGH GROUNDWATER (FEET)
					UNIFIED	AASHTO		UNCOATED STEEL	CONCRETE	
13	RW-721L, RD-723R RD-721R, RD-722+50L RD-748+50L	LEON SAND, 0 TO 2 PERCENT SLOPES	0 - 5	SAND	SP, SP-SM	A-2-4, A-3	3.5 - 6.5	HIGH	HIGH	0.2
			5 - 18	SAND	SP, SP-SM	A-2-4, A-3	3.5 - 6.5			
			18 - 26	SAND	SP, SP-SM	A-2-4, A-3	3.5 - 6.5			
			26 - 65	SAND	SP, SP-SM	A-2-4, A-3	3.5 - 6.5			
			65 - 80	SAND	SP, SP-SM	A-2-4, A-3	3.5 - 6.5			
22	RW-733L, RD-733+50R RD-734L, RD-734R RD-734+50R RD-735R, RD-735+50L RD-735+50R RD-736R, RD-736+50R CV-736+50L CV-737R, RD-737+50L RD-737+50R RD-738L, RD-738R RD-738+50R RW-739L, RD-739+50L RD-739+50R RD-740L, RD-740R RD-740+50L RD-740+50R, RD-744L RW-744R CV-745L, CV-745R	PAMLICO COMPLEX	0 - 32	MUCK	PT	A-8	3.5 - 5.0	HIGH	HIGH	0.0
			32 - 72	LOAMY SAND, SAND, LOAMY FINE SAND	SM, SP-SM	A-2, A-3	3.5 - 5.0			
		DOROVAN COMPLEX	0 - 60	MUCK	PT	A-8	4.5 - 5.5	HIGH	HIGH	
			60 - 80	SAND, LOAMY SAND, SANDY LOAM	SC-SM, SM, SP-SM	A-2-4, A-3	4.5 - 5.5			

NOTES: 1. BASED ON THE NRCS SOIL SURVEY REPORT FOR BAY COUNTY, FLORIDA.
2. SEE APPENDIX A FOR DETAILED NRCS SURVEY INFORMATION.

TABLE 1 (CON'T)
NRCS SOIL SURVEY DATA
ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 392A TO SR 30A
BAY COUNTY, FLORIDA

NRCS SOIL REFERENCE NUMBER	SOIL BORING NUMBER	MATERIAL NAME	DEPTH (IN)	MATERIAL DESCRIPTION	MATERIAL CLASSIFICATION		REACTION (pH)	CORROSION POTENTIAL		DEPTH TO SEASONAL HIGH GROUNDWATER (FEET)
					UNIFIED	AASHTO		UNCOATED STEEL	CONCRETE	
27	RD-720L	MANDARIN SAND, 0 TO 2 PERCENT SLOPES	0 - 7	SAND	SP, SP-SM	A-2-4, A-3	4.5-6.0	HIGH	HIGH	1.5
			7 - 25	SAND	SP, SP-SM, SM	A-2-4, A-3	4.5-6.0			
			25 - 57	SAND	SP-SM, SC-SM	A-2-4, A-3	4.5-6.0	HIGH	HIGH	
			57 - 80	SAND	SP-SM, SM	A-2-4, A-3	4.5-6.0			
29	RW-724L, RD-725R RW-726L RD-727R, RD-728+50L RD-729+50R RW-730L, RD-731L RD-731+50R	RUTLEGE SAND, 0 TO 2 PERCENT SLOPES	0 - 22	SAND	SP-SM	A-3	3.5-5.0	HIGH	HIGH	0.0
			22 - 80	SAND	SP-SM	A-3	3.5-5.0			
30	RD-719R RD-741R RW-742L RD-742+50R RD-746R RD-747L RD-747+50R	POTTSBURG	0 - 5	SAND	SM, SP-SM	A-3, A-2-4	4.5-5.5	HIGH	HIGH	0.5
			5 - 60	SAND	SM, SP-SM	A-2-4, A-3	4.5-5.5			
			60 - 80	SAND	SP-SM, SM	A-2-4, A-3	4.5-5.5			
		POTTSBURG, (WET)	0 - 5	SAND	SP-SM, SM	A-2-4, A-3	4.5-5.5			0.0
			5 - 60	SAND	SM, SP-SM	A-2-4, A-3	4.5-5.5			
			60 - 80	SAND	SP-SM	A-2-4, A-3	4.5-5.5			

NOTES: 1. BASED ON THE NRCS SOIL SURVEY REPORT FOR BAY COUNTY, FLORIDA.
2. SEE APPENDIX A FOR DETAILED NRCS SURVEY INFORMATION.

TABLE 2
SOIL BORING AND GROUNDWATER DATA
ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 392A TO SR 30A
BAY COUNTY, FLORIDA

BORING LABEL	BORING DEPTH [1] (FEET)	DATE INSTALLED	STATION [2]	OFFSET FROM STATION [2] (FEET)	GROUND SURFACE ELEVATION [2] (FEET)	MEASURED GROUNDWATER [3]		ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER [4]	
						DEPTH [1] (FEET)	ELEVATION (FEET)	DEPTH [1] (FEET)	ELEVATION (FEET)
ROADWAY SOIL BORINGS									
RD-719R	5.5	6/6/2019	719+00	25 RIGHT	17.4	2.5	14.9	2.0	15.4
RD-720L	5.5	6/5/2019	720+00	24 LEFT	17.4	3.0	14.4	2.0	15.4
RD-721R	5.5	6/5/2019	721+00	22 RIGHT	17.2	2.5	14.7	2.0	15.2
RD-722+50L	5.5	6/6/2019	722+50	15 LEFT	17.7	2.5	15.2	2.0	15.7
RD-723R	5.5	6/6/2019	723+00	16 RIGHT	17.4	3.0	14.4	2.0	15.4
RD-725R	5.5	6/6/2019	725+00	16 RIGHT	16.7	2.0	14.7	1.5	15.2
RD-727R	5.5	6/6/2019	727+00	15 RIGHT	16.3	2.0	14.3	1.0	15.3
RD-728+50L	5.5	6/5/2019	728+50	15 LEFT	16.3	2.0	14.3	1.0	15.3
RD-729+50R	5.5	6/6/2019	729+50	15 RIGHT	15.6	1.5	14.1	0.5	15.1
RD-731L	5.5	6/5/2019	731+00	19 LEFT	15.4	1.5	13.9	0.5	14.9
RD-731+50R	5.5	6/6/2019	731+50	25 RIGHT	14.7	1.0	13.7	- -	14.7 [4]
RD-733+50R	5.5	6/6/2019	733+50	26 RIGHT	14.5	1.0	13.5	- -	14.5 [4]
RD-734L	5.5	6/5/2019	734+00	21 LEFT	14.2	1.0	13.2	- -	14.2 [4]
RD-734R	5.5	8/10/2019	734+00	28 RIGHT	13.9	1.0	12.9	- -	13.9 [4]
RD-734+50R	5.5	8/10/2019	734+50	29 RIGHT	14.0	1.0	13.0	- -	14.0 [4]
RD-735R	5.5	6/5/2019	735+00	24 RIGHT	14.8	1.5	13.3	- -	14.8 [4]
RD-735+50L	8.5	6/5/2019	735+50	29 LEFT	14.8	1.5	13.3	- -	14.8 [4]
RD-735+50R	5.5	8/10/2019	735+50	32 RIGHT	13.4	0.5	12.9	- -	13.4 [4]
RD-736R	5.5	8/10/2019	736+00	26 RIGHT	14.1	1.0	13.1	- -	14.1 [4]
RD-736+50R	5.5	8/10/2019	736+50	26 RIGHT	13.7	0.5	13.2	- -	13.7 [4]
RD-737+50R	5.5	6/6/2019	737+60	26 RIGHT	14.1	1.5	12.6	- -	14.1 [4]
RD-737+50L	5.5	8/10/2019	737+50	16 LEFT	14.2	1.0	13.2	- -	14.2 [4]
RD-738L	5.5	6/5/2019	738+00	17 LEFT	14.2	2.0	12.2	- -	14.2 [4]
RD-738R	5.5	8/10/2019	738+00	33 RIGHT	14.1	1.0	13.1	- -	14.1 [4]
RD-738+50R	4.5	8/10/2019	738+50	36 RIGHT	14.3	1.0	13.3	- -	14.3 [4]
RD-739+50R	6.5	6/5/2019	739+60	15 RIGHT	14.2	2.0	12.2	- -	14.2 [4]
RD-739+50L	5.5	8/10/2019	739+50	20 LEFT	13.9	1.5	12.4	- -	13.9 [4]
RD-740L	5.5	8/10/2019	740+00	19 LEFT	14.2	1.0	13.2	- -	14.2 [4]
RD-740R	5.5	8/10/2019	740+00	21 RIGHT	14.3	1.0	13.3	- -	14.3 [4]

NOTES: 1. DEPTH MEASURED BELOW EXISTING GROUND SURFACE.

2. SOIL BORING LOCATIONS AND ELEVATIONS ARE APPROXIMATE AND BASED ON ELECTRONIC PLANS PROVIDED BY GPI.

3. MEASURED GROUNDWATER INDICATES WATER LEVEL ENCOUNTERED DURING THIS INVESTIGATION.

4. SURFACE WATER CONDITIONS ANTICIPATED AT OR ABOVE GROUND SURFACE.

5. ELEVATIONS UNAVAILABLE AT TIME OF REPORT.

TABLE 2 (CON'T)
SOIL BORING AND GROUNDWATER DATA
ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 392A TO SR 30A
BAY COUNTY, FLORIDA

BORING LABEL	BORING DEPTH [1] (FEET)	DATE INSTALLED	STATION [2]	OFFSET FROM STATION [2] (FEET)	GROUND SURFACE ELEVATION [2] (FEET)	MEASURED GROUNDWATER [3]		ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER	
						DEPTH [1] (FEET)	ELEVATION (FEET)	DEPTH [1] (FEET)	ELEVATION (FEET)
ROADWAY SOIL BORINGS									
RD-740+50L	5.5	6/5/2019	740+50	20 LEFT	14.0	2.0	12.0	- -	14.0 [4]
RD-740+50R	5.5	8/10/2019	740+50	21 RIGHT	14.0	1.0	13.0	- -	14.0 [4]
RD-741R	5.5	6/5/2019	741+00	26 RIGHT	13.5	2.0	11.5	- -	13.5 [4]
RD-742+50R	5.5	6/5/2019	742+50	30 RIGHT	13.8	2.0	11.8	- -	13.8 [4]
RD-744L	5.5	6/5/2019	744+00	27 LEFT	13.6	2.0	11.6	- -	13.6 [4]
RD-746R	5.5	6/5/2019	746+00	38 RIGHT	14.3	2.5	11.8	0.5	13.8
RD-747L	5.5	6/5/2019	747+00	22 LEFT	14.7	3.0	11.7	1.0	13.7
RD-747+50R	5.5	6/5/2019	747+50	37 RIGHT	14.7	3.0	11.7	1.0	13.7
RD-748+50L	5.5	6/5/2019	748+50	28 LEFT	14.7	3.0	11.7	1.0	13.7
CULVERT SOIL BORINGS									
CV-736+50L	25.0	5/29/2019	736+50	24 LEFT	14.4	1.0	13.4	- -	14.4 [4]
CV-737R	25.0	5/29/2019	737+00	21 RIGHT	14.4	1.0	13.4	- -	14.4 [4]
CV-745L	25.0	5/29/2019	745+00	21 LEFT	14.0	1.0	13.0	- -	14.0 [4]
CV-745R	25.0	5/29/2019	745+00	25 RIGHT	13.8	1.0	12.8	- -	13.8 [4]
RETAINING WALL SOIL BORINGS									
RW-721L	20.0	6/4/2019	721+00	27 LEFT	15.9	1.5	14.4	0.5	15.4
RW-724L	20.0	6/4/2019	724+00	23 LEFT	16.0	1.5	14.5	0.5	15.5
RW-726L	20.0	6/5/2019	726+00	16 LEFT	16.8	2.0	14.8	1.5	15.3
RW-730L	20.0	6/5/2019	730+00	18 LEFT	15.2	1.5	13.7	0.5	14.7
RW-733L	20.0	6/5/2019	733+00	21 LEFT	14.5	1.0	13.5	- -	14.5 [4]
RW-739L	20.0	6/4/2019	739+00	21 LEFT	13.6	1.5	12.1	- -	13.6 [4]
RW-742L	20.0	6/4/2019	742+00	29 LEFT	14.0	2.0	12.0	- -	14.0 [4]
RW-744R	20.0	6/4/2019	744+00	26 RIGHT	13.7	2.0	11.7	- -	13.7 [4]
STORMWATER MANAGEMENT FACILITY SOIL BORINGS [5]									
ACP-1	15.0	6/3/2019	727+19	196 LEFT	N/A	2.5	N/A	2.0	N/A
ACP-2	15.0	6/3/2019	727+88	122 LEFT	N/A	3.5	N/A	3.0	N/A
ACP-3	15.0	6/3/2019	728+91	288 LEFT	N/A	2.5	N/A	2.0	N/A
ACP-4	15.0	6/3/2019	729+94	113 LEFT	N/A	2.5	N/A	2.0	N/A

NOTES: 1. DEPTH MEASURED BELOW EXISTING GROUND SURFACE.

2. SOIL BORING LOCATIONS AND ELEVATIONS ARE APPROXIMATE AND BASED ON ELECTRONIC PLANS PROVIDED BY WANTMAN GROUP.

3. MEASURED GROUNDWATER INDICATES WATER LEVEL ENCOUNTERED DURING THIS INVESTIGATION.

4. SURFACE WATER CONDITIONS ANTICIPATED AT OR ABOVE GROUND SURFACE.

5. ELEVATIONS UNAVAILABLE AT TIME OF REPORT.

TABLE 3
CORROSION SERIES TEST DATA
ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 392A TO SR 30A
BAY COUNTY, FLORIDA

SAMPLE LOCATION	DEPTH (FEET)	RESISTIVITY (OHM-CM)	pH	SULFATES (PPM)	CHLORIDES (PPM)	ENVIRONMENTAL CLASSIFICATION	
						STEEL	CONCRETE
SILTY FINE SAND / A-2-4 / STRATUM 2							
CV-737R	1.0 - 4.0	2,800	7.7	189	55	MODERATELY AGGRESSIVE	MODERATELY AGGRESSIVE
CV-745R	1.0 - 3.0	6,500	7.4	45	73	SLIGHTLY AGGRESSIVE	SLIGHTLY AGGRESSIVE
WATER SAMPLES							
CULVERT (≈STATION 737+00)	- -	7,700	6.8	17	113	MODERATELY AGGRESSIVE	SLIGHTLY AGGRESSIVE
CULVERT (≈STATION 745+00)	- -	6,100	6.4	3	105	MODERATELY AGGRESSIVE	SLIGHTLY AGGRESSIVE

NOTE: ENVIRONMENTAL CLASSIFICATION AS IDENTIFIED IN THE FDOT STRUCTURES MANUAL TABLE 1.3.2-1

TABLE 4
ESTIMATED LIMITS OF OVEREXCAVATION
ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 292A TO SR 30A
BAY COUNTY, FLORIDA

SOIL BORING NUMBER	BEGIN STATIONING (FEET)	END STATIONING (FEET)	APPROXIMATE DEPTH OF OVEREXCAVATION (FEET)	MATERIAL
ROADWAY SOIL BORINGS				
RD-735R	734+50	735+50	3.0	MUCK
RD-739+50R	739+50	740+50	3.0	MUCK

TABLE 5
GEOTECHNICAL DESIGN PARAMETERS
TEMPORARY RETAINING WALLS
ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 392A TO SR 30A
BAY COUNTY, FLORIDA

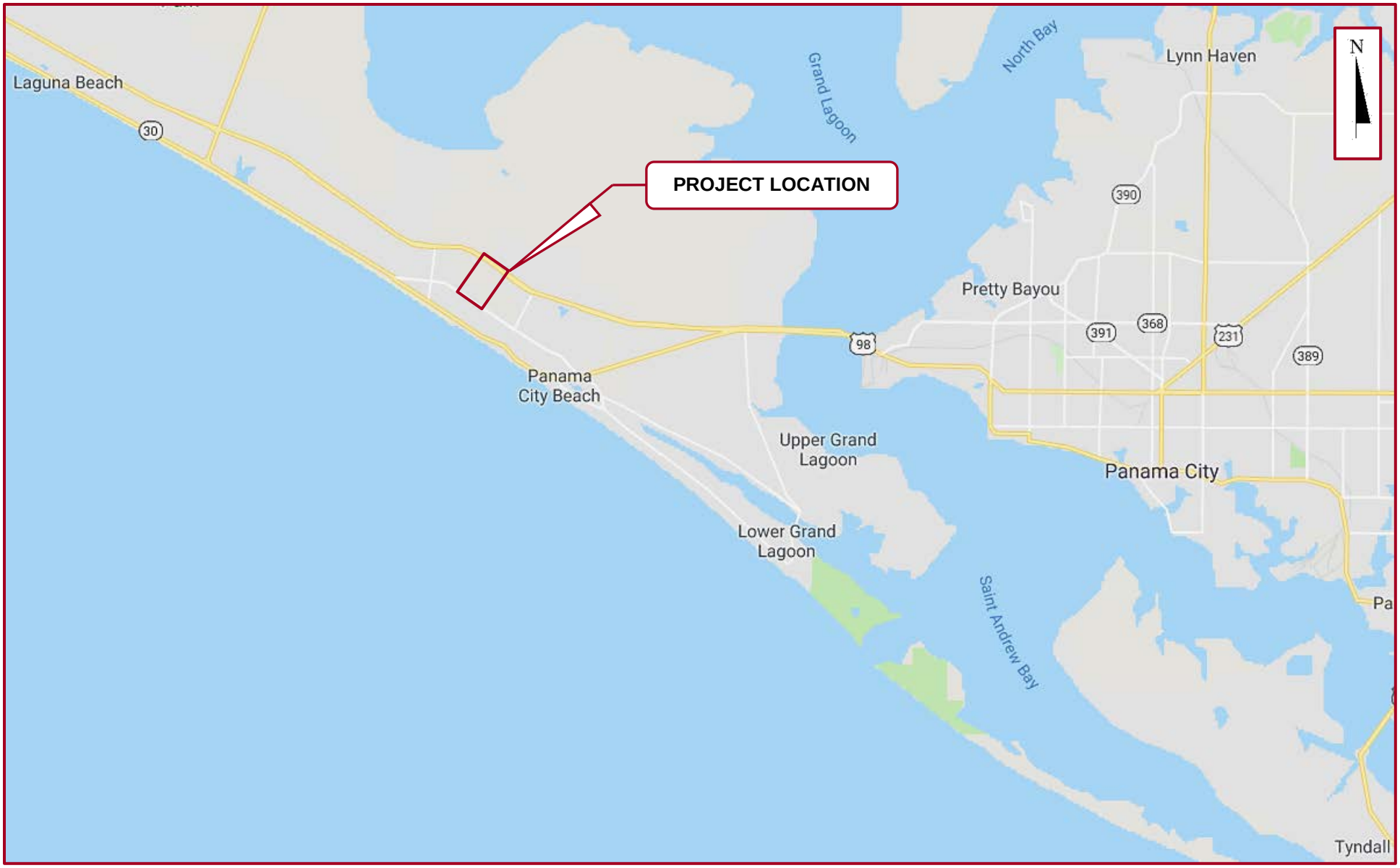
TOP OF LAYER DEPTH (FEET)	BOTTOM OF LAYER DEPTH [1] (FEET)	LAYER SPT 'N' VALUE [2]	TOTAL SOIL UNIT WEIGHT, γ (LB/FT^3)	EFFECTIVE SOIL UNIT WEIGHT, γ' (LB/FT^3)	COHESION, c (LB/FT^2)	ANGLE OF INTERNAL FRICTION, ϕ (DEGREES)	WALL FRICTION ANGLE, δ (DEGREES)	RANKINE ACTIVE EARTH PRESSURE COEFFICIENT k_a	RANKINE PASSIVE EARTH PRESSURE COEFFICIENT k_p	SOIL DESCRIPTION
CULVERT (≈STATION 737+00)										
0.0	9.0	4	110	48	0	28	14	0.36	2.77	LOOSE FINE TO SILTY FINE SAND (**A-3** TO **A-2-4**)
9.0	25.0	14	115	53	0	32	16	0.31	.3.25	MEDIUM DENSE FINE SAND (**A-3**)
CULVERT (≈STATION 745+00)										
0.0	3.0	7	110	48	0	30	15	0.33	3.00	LOOSE FINE TO SILTY FINE SAND (**A-3** TO **A-2-4**)
3.0	15.0	16	115	53	0	32	16	0.31	3.25	MEDIUM DENSE FINE SAND (**A-3**)
15.0	25.0	31 [3]	120	58	0	36	24	0.26	3.85	DENSE FINE SAND (**A-3**)

NOTES: 1. DEPTH IS BELOW EXISTING GROUND SURFACE.

2. SPT 'N' VALUE HAS BEEN CORRECTED FOR HAMMER EFFICIENCY.

3. INSTALLATION OF SHEET PILES INTO THIS DENSE SAND ZONE WILL BE VERY DIFFICULT.

FIGURES



DRAWN: M. HUDSON	CHECKED: K. SWEENEY, E.I.	ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC. 104 NORTH MAGNOLIA DRIVE TALLAHASSEE, FLORIDA 32301 OFFICE #: (850) 386-1253	TITLE: PROJECT LOCATION MAP ROADWAY IMPROVEMENTS ALF COLEMAN ROAD FROM SR 392A TO SR 30A BAY COUNTY, FLORIDA
ENGINEER: M. HAYDEN, P.E.			
CLIENT: GREENMAN-PEDERSEN, INC.			
PROJ. NO.: 37-63-18-01			DATE: OCTOBER 2019 / FIGURE NO.: 1

BEGIN PROJECT

END PROJECT

ALF COLEMAN ROAD

SR 392A (HUTCHISON BLVD)

SR 30A (PANAMA CITY BEACH PARKWAY)

Legend

- Survey Baseline
- USGS Elevation Contours (2-Feet)

NRCS Map Unit Symbol, Map Unit Name

- 13 ,Leon sand
- 22 ,Pamlico-Dorovan complex
- 27 ,Mandarin sand
- 29 ,Rutlege sand
- 30 ,Pottsburg sand

COLOR	DEPTH TO SHWT (FEET)
BLUE	0 to 1
LIGHT BLUE	1 to 3
HATCH	MATERIAL
	POSSIBLE ORGANICS (>5%)

0 60 300

Feet

PREPARED:	M. HUDSON
CHECKED:	K. SWEENEY, E.I.
REVISED:	M. HUDSON
ENGINEER:	M. HAYDEN, P.E.

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OFFICE #: (850) 386-1253

AERIAL VIEW MAP
ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 392A TO SR 30A
BAY COUNTY, FLORIDA

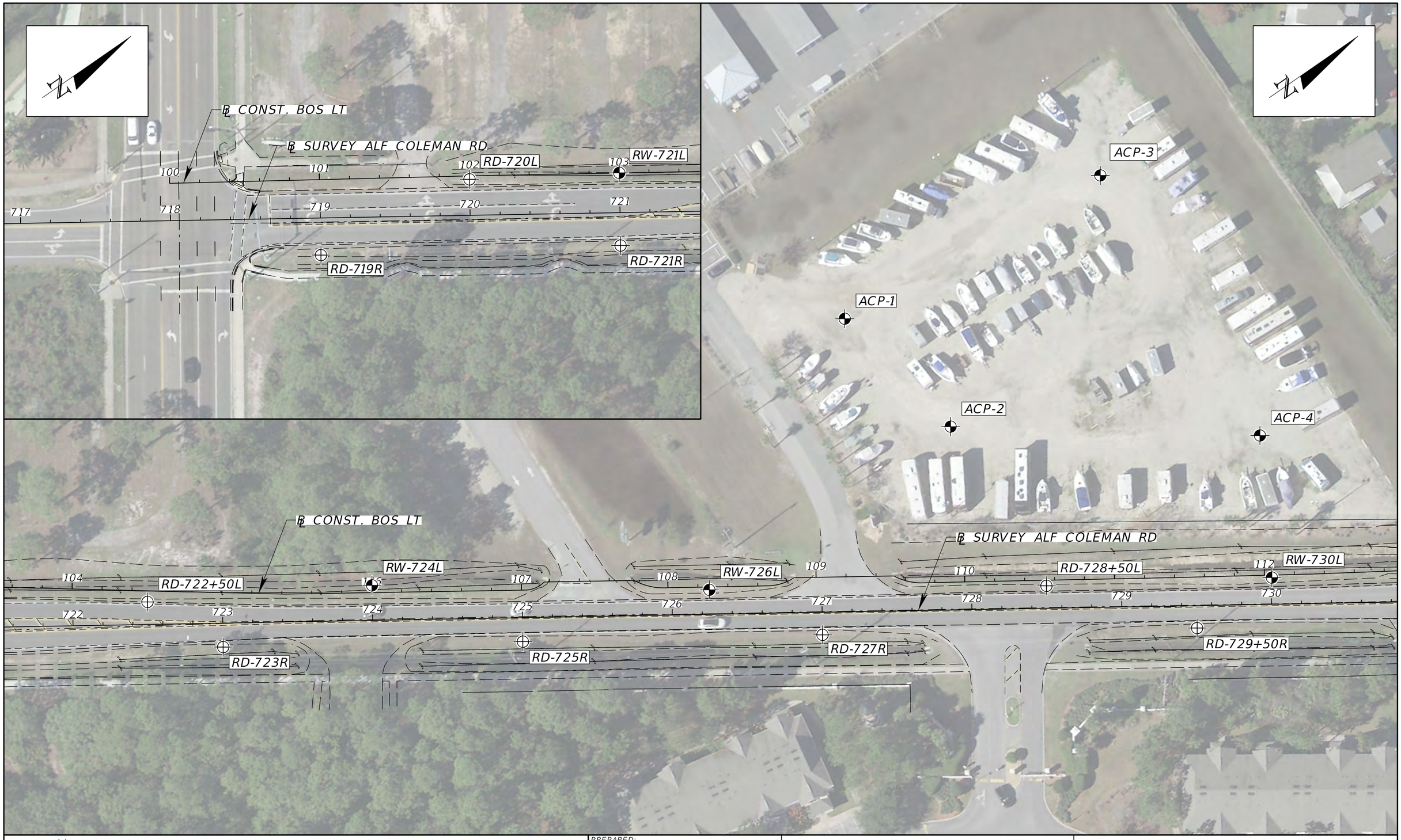
SCALE:	AS SHOWN	DATE:	OCTOBER 2019
PROJ. NO.:	37-63-18-01	FIGURE NO.:	2

FIGURE 3A: EXISTING SITE CONDITIONS
NEAR STATION 730+00 (FACING SOUTHWEST)

FIGURE 3B: EXISTING SITE CONDITIONS
NEAR STATION 736+60 (FACING NORTHEAST)

FIGURE 3C: EXISTING SITE CONDITIONS
NEAR STATION 746+00 (FACING SOUTHWEST)

FIGURE 3D: EXISTING SITE CONDITIONS
NEAR PROPOSED POND SITE (FACING EAST)



LEGEND

- SPT SOIL BORING LOCATION
- HAND AUGER SOIL BORING LOCATION

0 12 60
Feet

PREPARED:	K. SWEENEY, E.I.
CHECKED:	M. HAYDEN, P.E.
REVISED:	K. SWEENEY, E.I.
ENGINEER:	M. HAYDEN, P.E.

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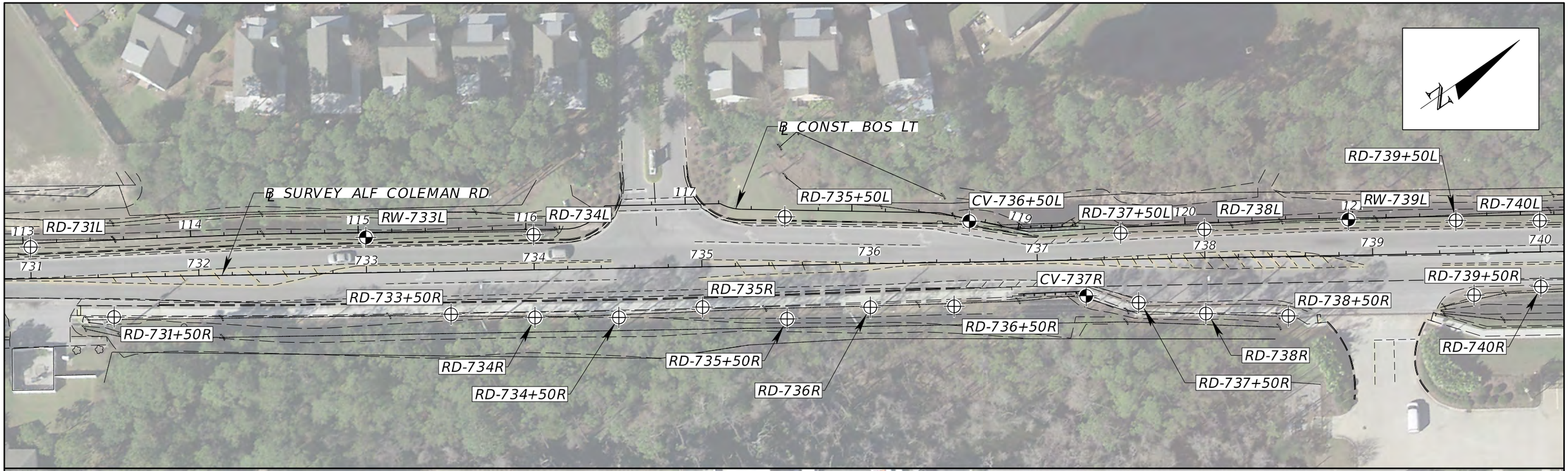
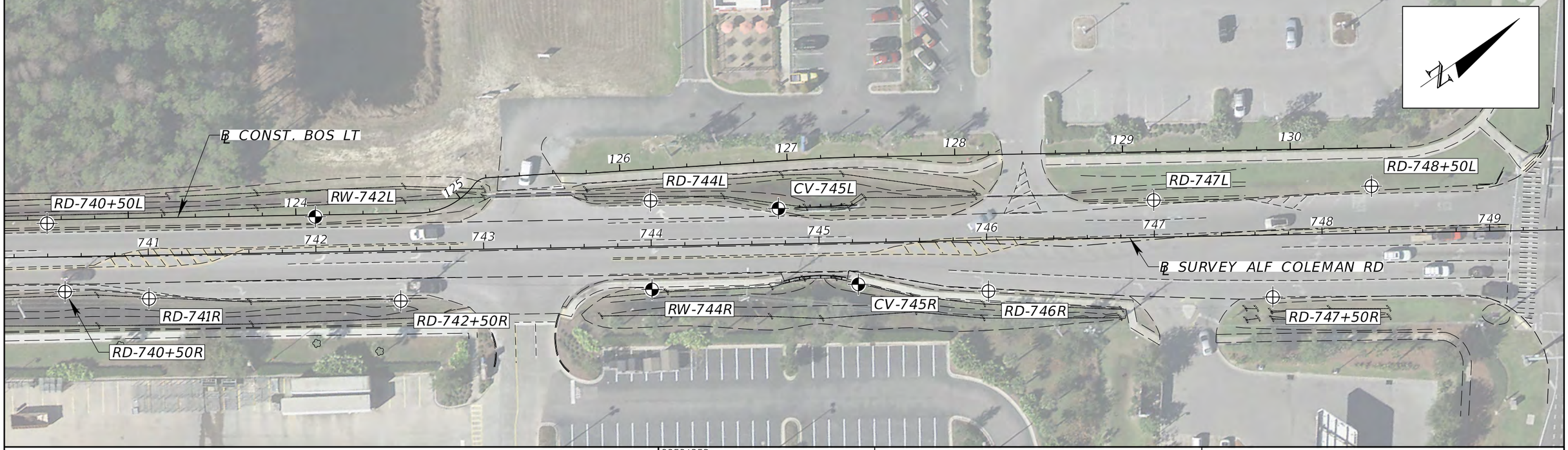
SOIL BORING LOCATION MAP
ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 392A TO SR 30A
BAY COUNTY, FLORIDA

SCALE:	AS SHOWN	DATE:	OCTOBER 2019
PROJ. NO.:	37-63-18-01	FIGURE NO.:	4A





LEGEND

- SPT SOIL BORING LOCATION
- HAND AUGER SOIL BORING LOCATION

0 12 60
Feet

PREPARED:	K. SWEENEY, E.I.
CHECKED:	M. HAYDEN, P.E.
REVISED:	K. SWEENEY, E.I.
ENGINEER:	M. HAYDEN, P.E.

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TALLAHASSEE, FLORIDA 32301
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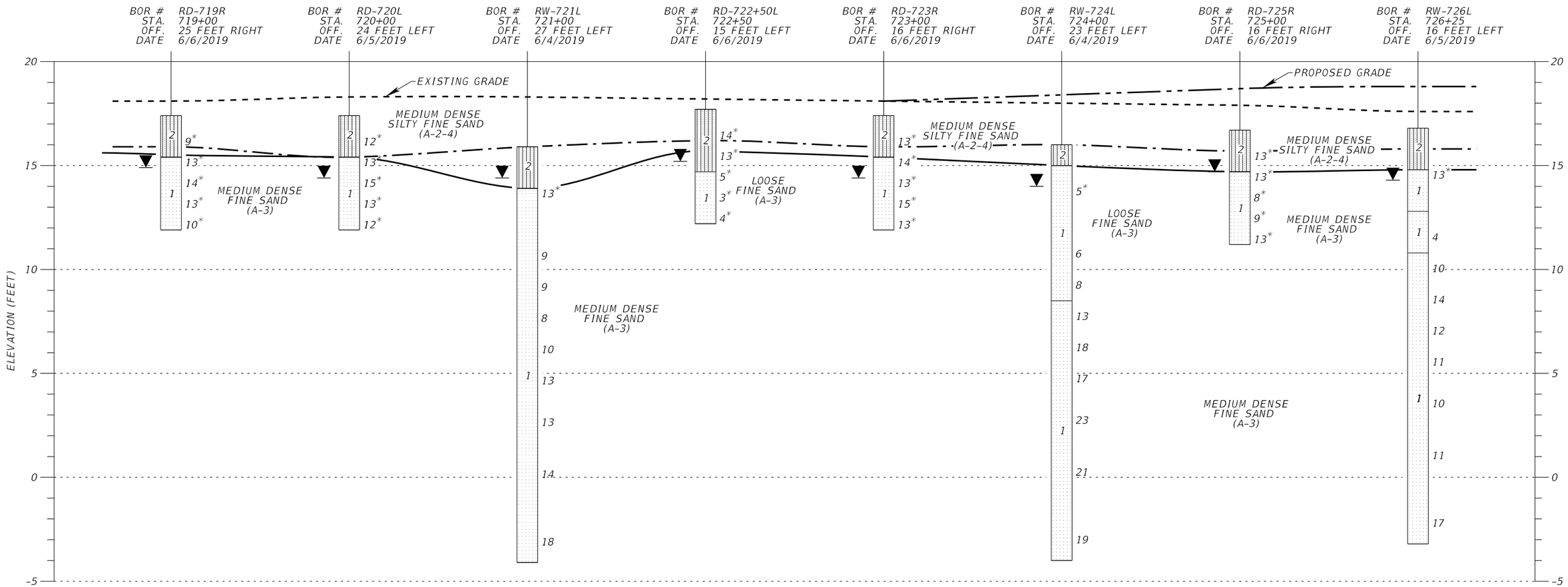
SOIL BORING LOCATION MAP
ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 392A TO SR 30A
BAY COUNTY, FLORIDA

SCALE:	AS SHOWN	DATE:	OCTOBER 2019
PROJ. NO.:	37-63-18-01	FIGURE NO.:	4B

"GENERALIZED" SUBSURFACE PROFILE

ALF COLEMAN ROAD (1 OF 5)



LEGEND

MEASURED WATER LEVEL	▼
ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER	—·—
EXISTING GRADE (℄ SURVEY)	·– – –
PROPOSED GRADE (℄ SURVEY)	——·–
N-VALUE EQUIVALENT (NOTE 2)	N*

NOTES

1. NUMBERS RIGHT OF BORING INDICATE STANDARD PENETRATION TEST (SPT) N-VALUES FOR 12 INCH PENETRATION (UNLESS OTHERWISE NOTED).
2. N-VALUES DENOTED WITH AN ASTERISK (*) WERE DERIVED FROM HAND STATIC CONE PENETROMETER INDEX TESTS.
3. NUMBERS IN CENTER OF BORING INDICATE THE STRATUM NUMBER. REFER TO ROADWAY SOIL SURVEY SHEET IN APPENDIX A FOR STRATUM PROPERTIES.
4. MEASURED WATER LEVEL SHOWN IS THE WATER LEVEL ENCOUNTERED DURING THE SUBSURFACE INVESTIGATION. WATER LEVEL FLUCTUATIONS SHOULD BE ANTICIPATED.

PREPARED:	K. SWEENEY, E.I.
CHECKED:	M. HAYDEN, P.E.
REVISED:	K. SWEENEY, E.I.
ENGINEER:	M. HAYDEN, P.E.

ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

104 NORTH MAGNOLIA DRIVE
TALLAHASSEE, FLORIDA 32301
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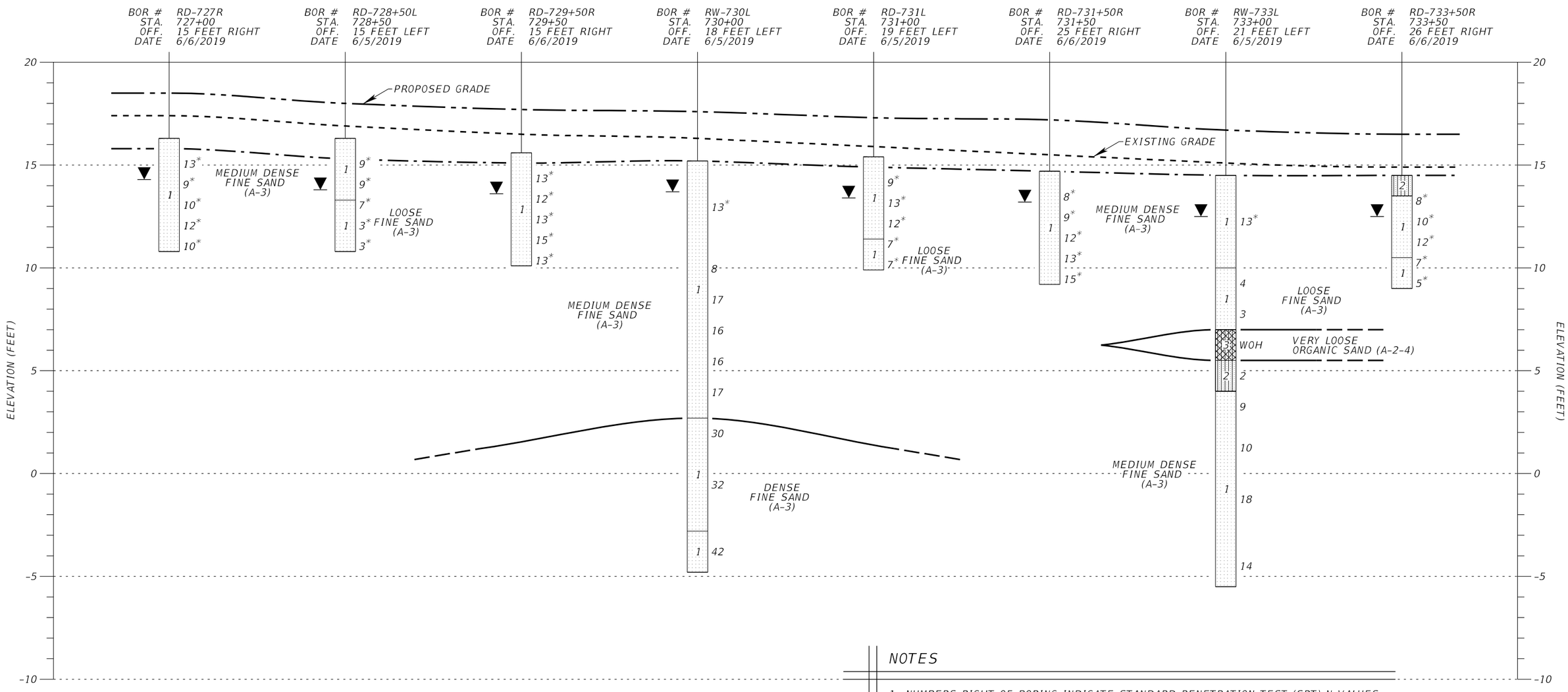
"GENERALIZED" SUBSURFACE PROFILE
ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 392A TO SR 30A
BAY COUNTY, FLORIDA

SCALE:	AS SHOWN	DATE:	OCTOBER 2019
PROJ. NO.:	37-63-18-01	FIGURE NO.:	5A

"GENERALIZED" SUBSURFACE PROFILE

ALF COLEMAN ROAD (2 OF 5)



LEGEND

MEASURED WATER LEVEL	▼
ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER	— · —
EXISTING GRADE (℄ SURVEY)	· — — —
PROPOSED GRADE (℄ SURVEY)	— — · —
N-VALUE EQUIVALENT (NOTE 2)	N*

NOTES

1. NUMBERS RIGHT OF BORING INDICATE STANDARD PENETRATION TEST (SPT) N-VALUES FOR 12 INCH PENETRATION (UNLESS OTHERWISE NOTED).
2. N-VALUES DENOTED WITH AN ASTERISK (*) WERE DERIVED FROM HAND STATIC CONE PENETROMETER INDEX TESTS.
3. NUMBERS IN CENTER OF BORING INDICATE THE STRATUM NUMBER. REFER TO ROADWAY SOIL SURVEY SHEET IN APPENDIX A FOR STRATUM PROPERTIES.
4. MEASURED WATER LEVEL SHOWN IS THE WATER LEVEL ENCOUNTERED DURING THE SUBSURFACE INVESTIGATION. WATER LEVEL FLUCTUATIONS SHOULD BE ANTICIPATED.

PREPARED:	K. SWEENEY, E.I.
CHECKED:	M. HAYDEN, P.E.
REVISED:	K. SWEENEY, E.I.
ENGINEER:	M. HAYDEN, P.E.

ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

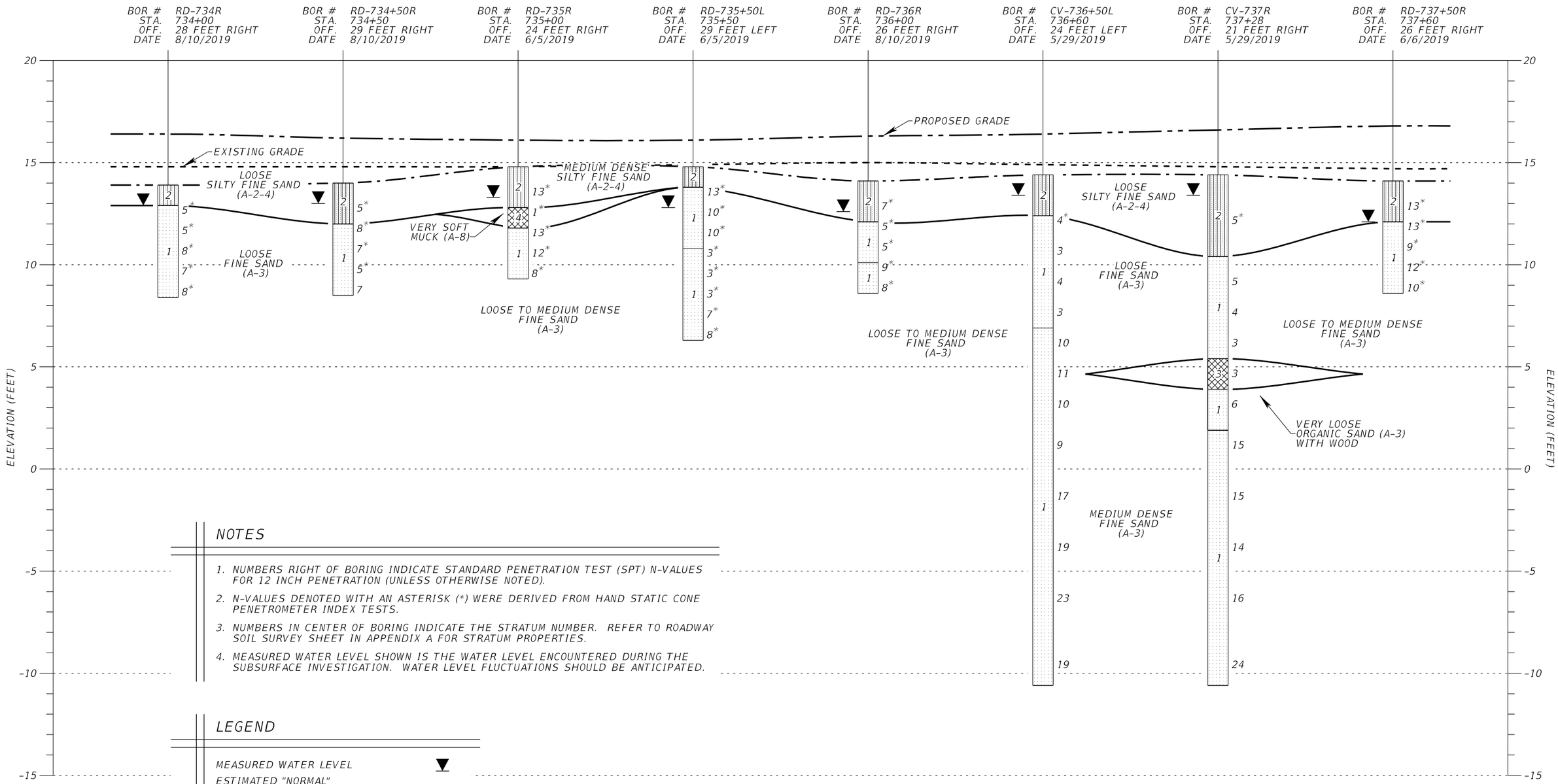
104 NORTH MAGNOLIA DRIVE
TALLAHASSEE, FLORIDA 32301
OFFICE : (850) 386-1253

"GENERALIZED" SUBSURFACE PROFILE
ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 392A TO SR 30A
BAY COUNTY, FLORIDA

SCALE:	AS SHOWN	DATE:	OCTOBER 2019
PROJ. NO.:	37-63-18-01	FIGURE NO.:	5B

"GENERALIZED" SUBSURFACE PROFILE

ALF COLEMAN ROAD (3 OF 5)



NOTES

1. NUMBERS RIGHT OF BORING INDICATE STANDARD PENETRATION TEST (SPT) N-VALUES FOR 12 INCH PENETRATION (UNLESS OTHERWISE NOTED).
2. N-VALUES DENOTED WITH AN ASTERISK (*) WERE DERIVED FROM HAND STATIC CONE PENETROMETER INDEX TESTS.
3. NUMBERS IN CENTER OF BORING INDICATE THE STRATUM NUMBER. REFER TO ROADWAY SOIL SURVEY SHEET IN APPENDIX A FOR STRATUM PROPERTIES.
4. MEASURED WATER LEVEL SHOWN IS THE WATER LEVEL ENCOUNTERED DURING THE SUBSURFACE INVESTIGATION. WATER LEVEL FLUCTUATIONS SHOULD BE ANTICIPATED.

LEGEND

MEASURED WATER LEVEL	▼
ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER	— · —
EXISTING GRADE (℄ SURVEY)	· — — —
PROPOSED GRADE (℄ SURVEY)	——— - ·
N-VALUE EQUIVALENT (NOTE 2)	N*

PREPARED:	K. SWEENEY, E.I.
CHECKED:	M. HAYDEN, P.E.
REVISED:	K. SWEENEY, E.I.
ENGINEER:	M. HAYDEN, P.E.

ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

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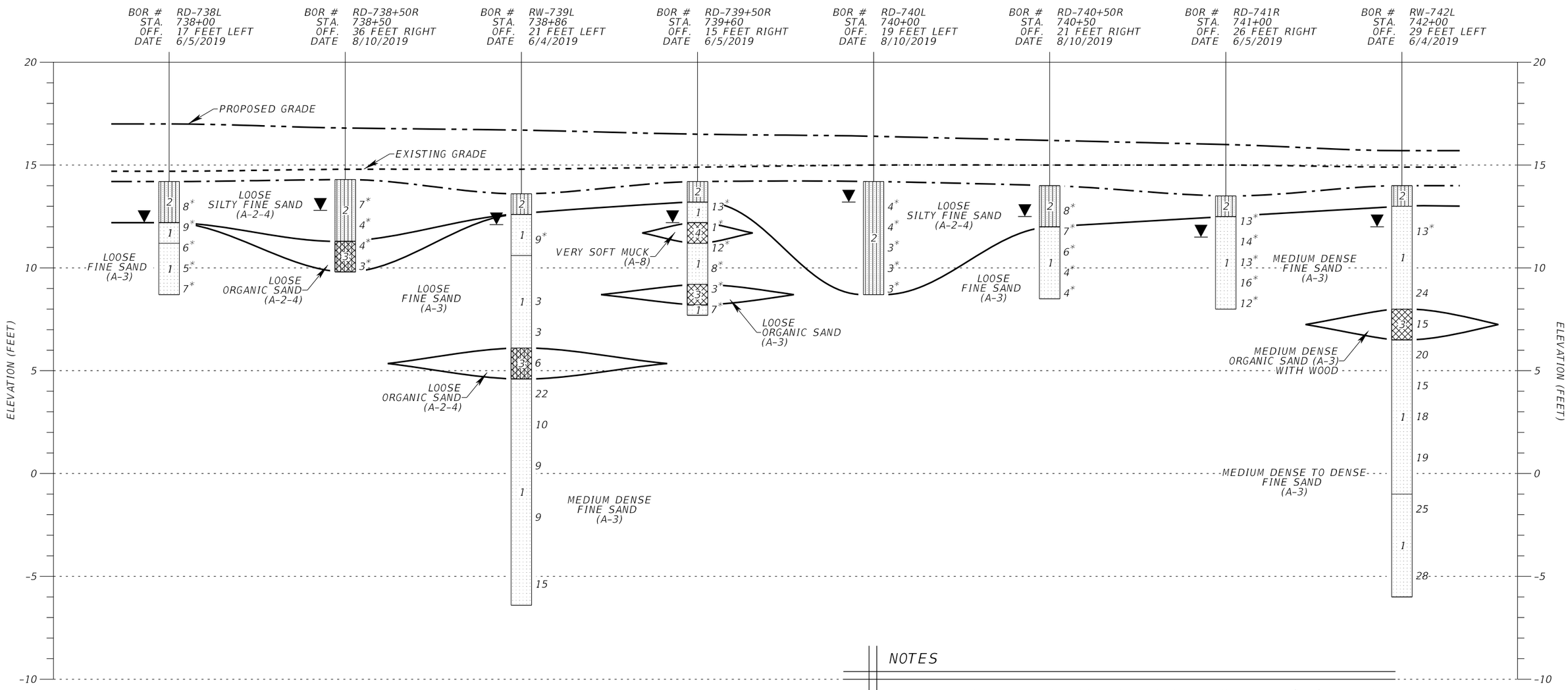
TALLAHASSEE, FLORIDA 32301
OFFICE : (850) 386-1253

"GENERALIZED" SUBSURFACE PROFILE
ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 392A TO SR 30A
BAY COUNTY, FLORIDA

SCALE:	AS SHOWN	DATE:	OCTOBER 2019
PROJ. NO.:	37-63-18-01	FIGURE NO.:	5C

"GENERALIZED" SUBSURFACE PROFILE

ALF COLEMAN ROAD (4 OF 5)



LEGEND

MEASURED WATER LEVEL	▼
ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER	— · —
EXISTING GRADE (℄ SURVEY)	· – – –
PROPOSED GRADE (℄ SURVEY)	——— - ·
N-VALUE EQUIVALENT (NOTE 2)	N*

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ALF COLEMAN ROAD FROM SR 392A TO SR 30A
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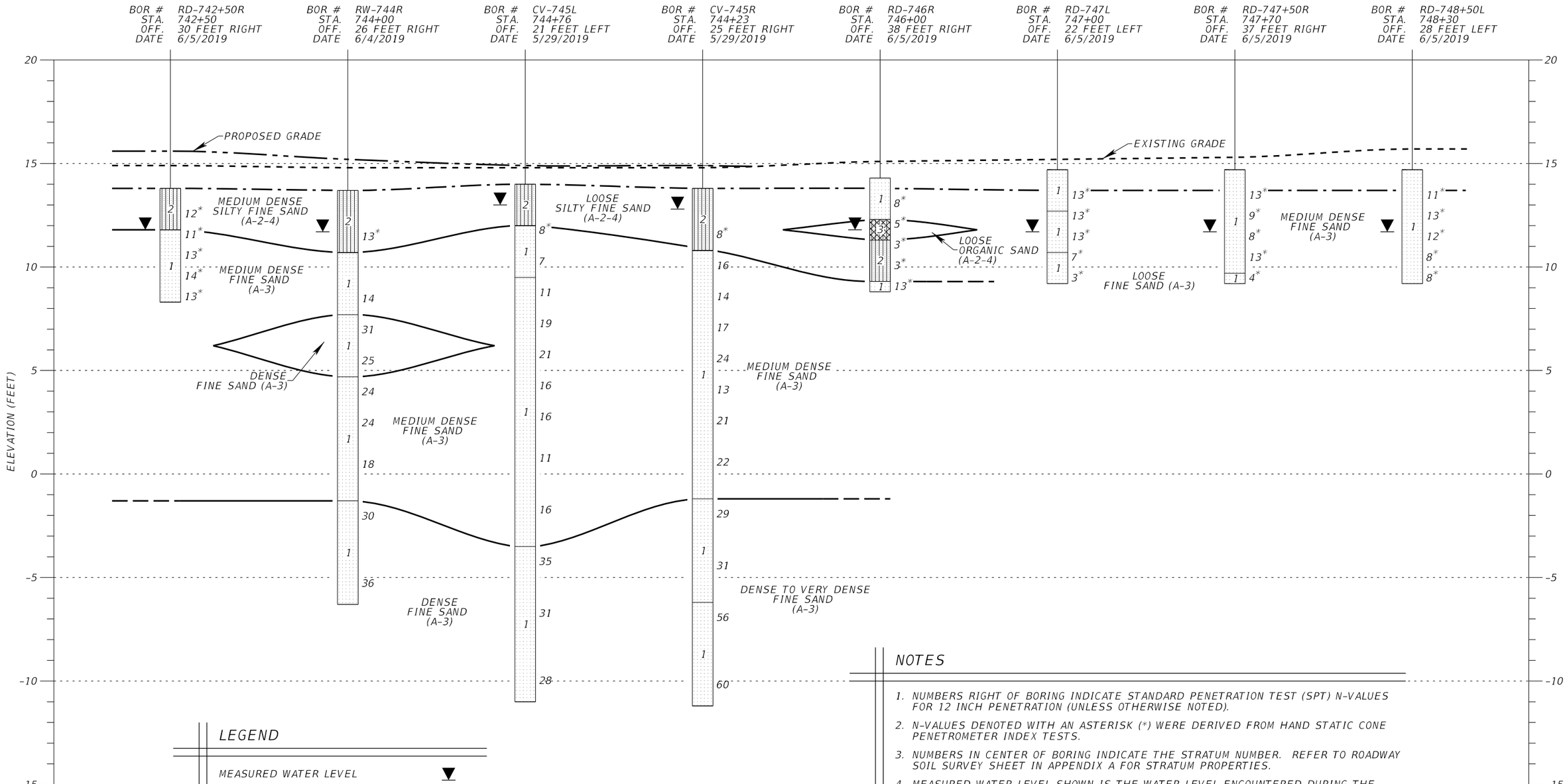
SCALE:	AS SHOWN	DATE:	OCTOBER 2019
PROJ. NO.:	37-63-18-01	FIGURE NO.:	5D

"GENERALIZED" SUBSURFACE PROFILE

ALF COLEMAN ROAD (5 OF 5)



LEGEND

MEASURED WATER LEVEL	▼
ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER	— · —
EXISTING GRADE (℄ SURVEY)	· — — —
PROPOSED GRADE (℄ SURVEY)	—— · ·
N-VALUE EQUIVALENT (NOTE 2)	N*

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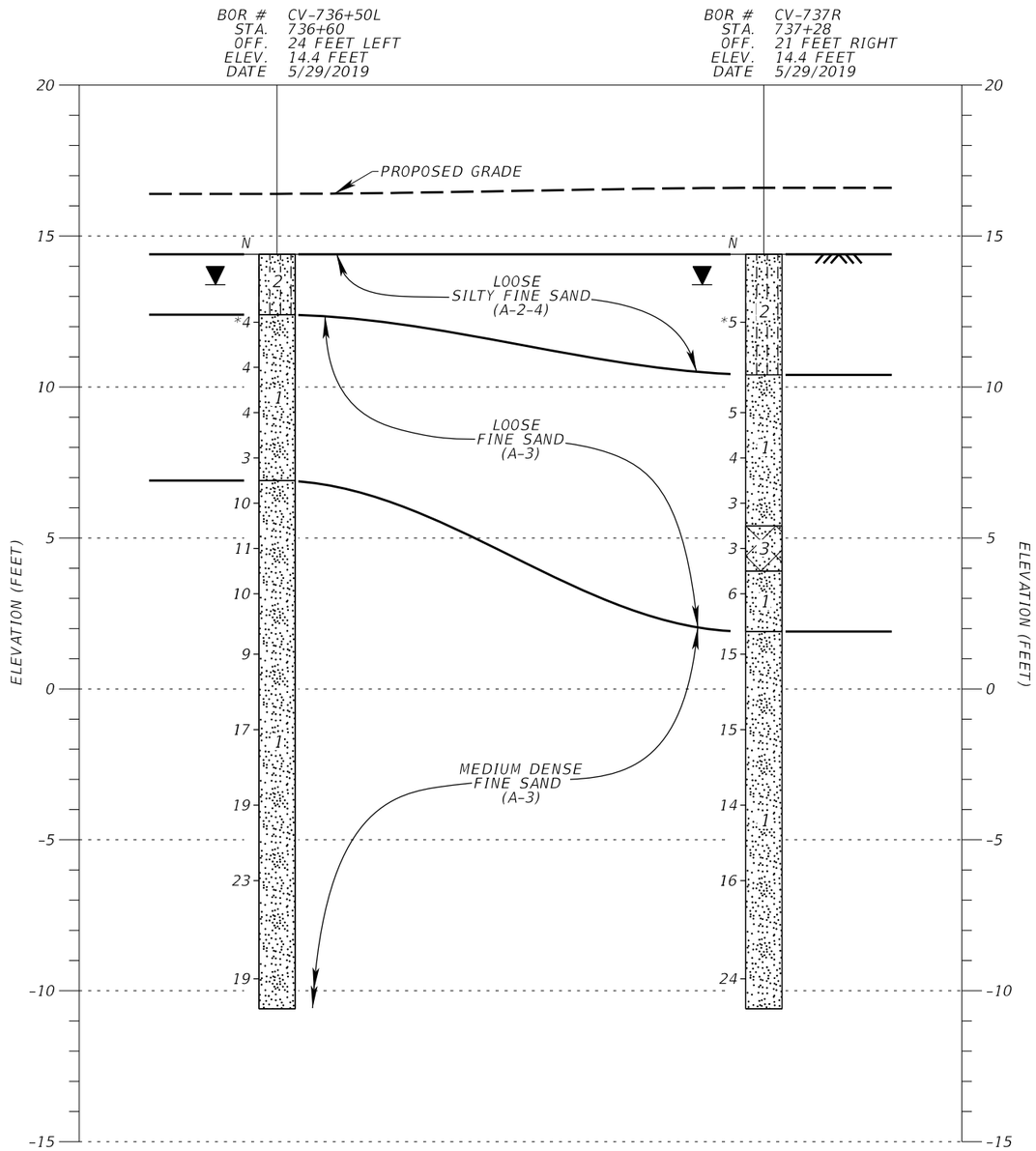
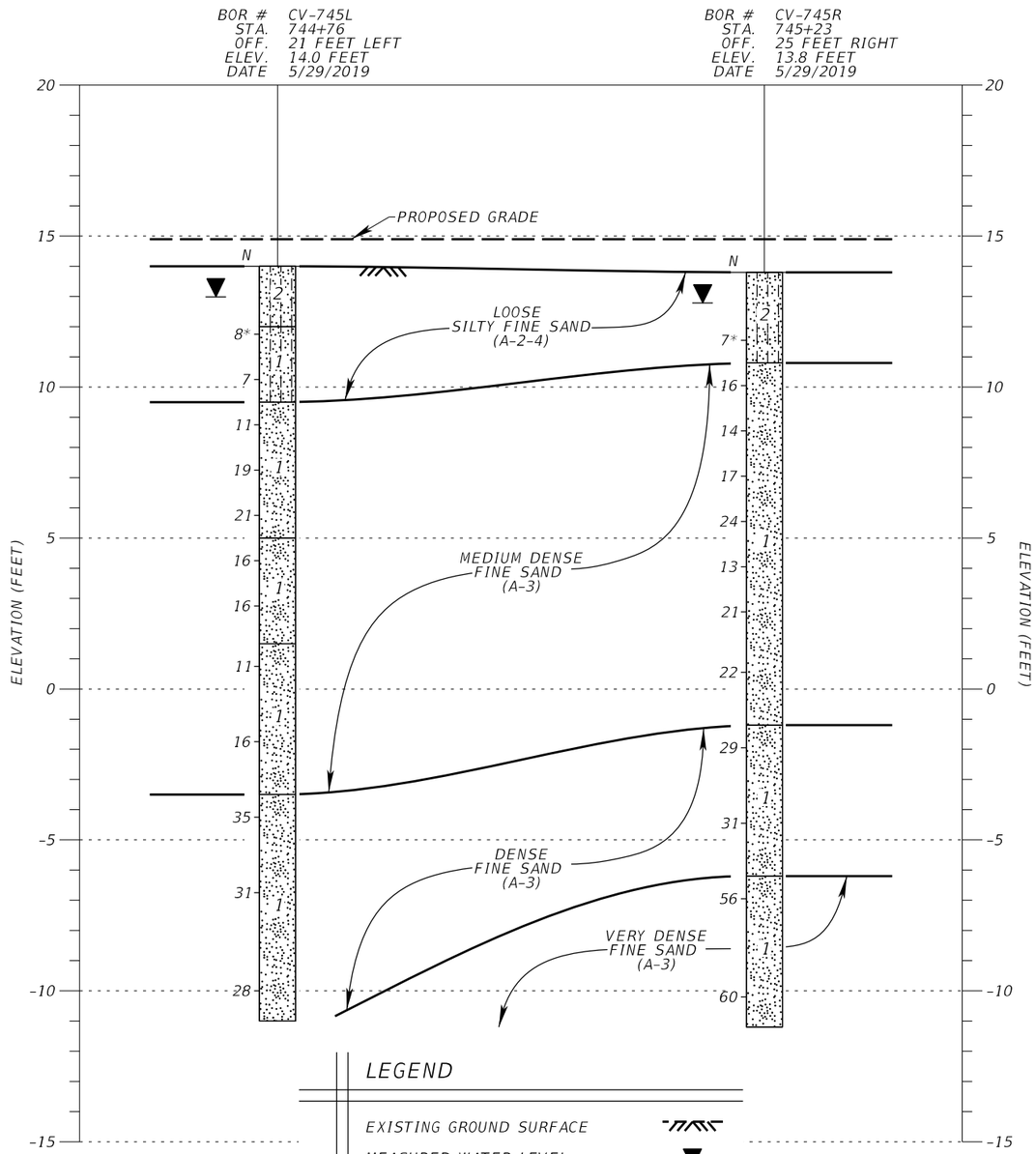
"GENERALIZED" SUBSURFACE PROFILE
ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 392A TO SR 30A
BAY COUNTY, FLORIDA

SCALE:	AS SHOWN	DATE:	OCTOBER 2019
PROJ. NO.:	37-63-18-01	FIGURE NO.:	5E

"GENERALIZED" SUBSURFACE PROFILE

CULVERT SOIL BORINGS





LEGEND

EXISTING GROUND SURFACE	
MEASURED WATER LEVEL	
PROPOSED GRADE (℄ SURVEY)	
N-VALUE EQUIVALENT (NOTE 2)	*N

NOTES

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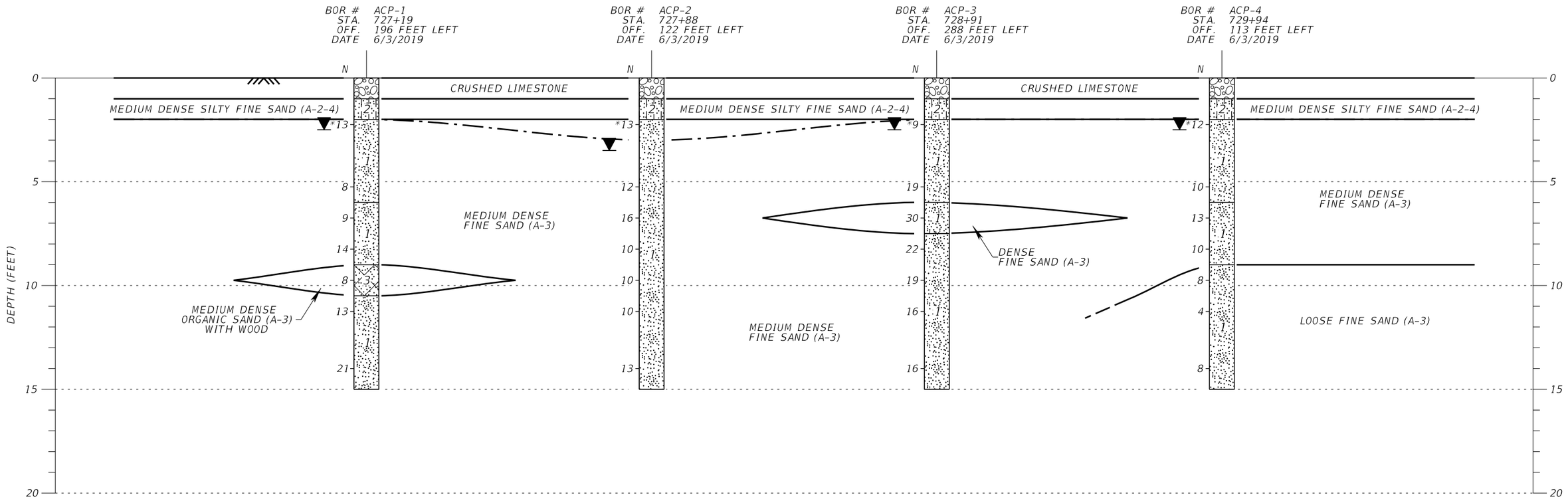
"GENERALIZED" SUBSURFACE PROFILE
ROADWAY IMPROVEMENTS
ALF COLEMAN ROAD FROM SR 392A TO SR 30A
BAY COUNTY, FLORIDA

SCALE:	AS SHOWN	DATE:	OCTOBER 2019
PROJ. NO.:	37-63-18-01	FIGURE NO.:	6

"GENERALIZED" SUBSURFACE PROFILE

POND SOIL BORINGS



LEGEND

EXISTING GROUND SURFACE	
MEASURED WATER LEVEL	
ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER	
N-VALUE EQUIVALENT (NOTE 2)	*N

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5. ELEVATIONS UNAVAILABLE AT TIME OF REPORT.

PREPARED:	K. SWEENEY, E.I.
CHECKED:	M. HAYDEN, P.E.
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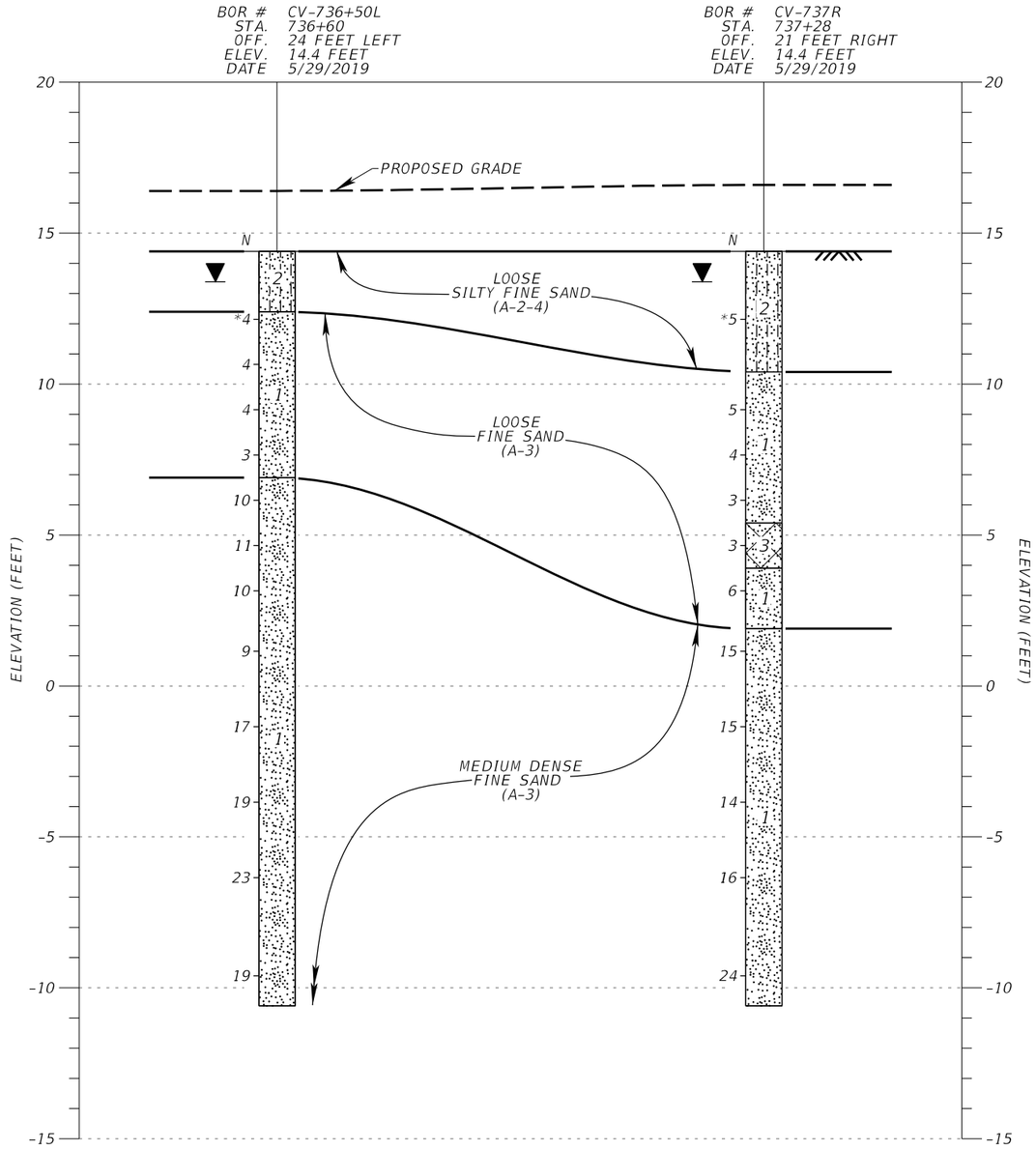
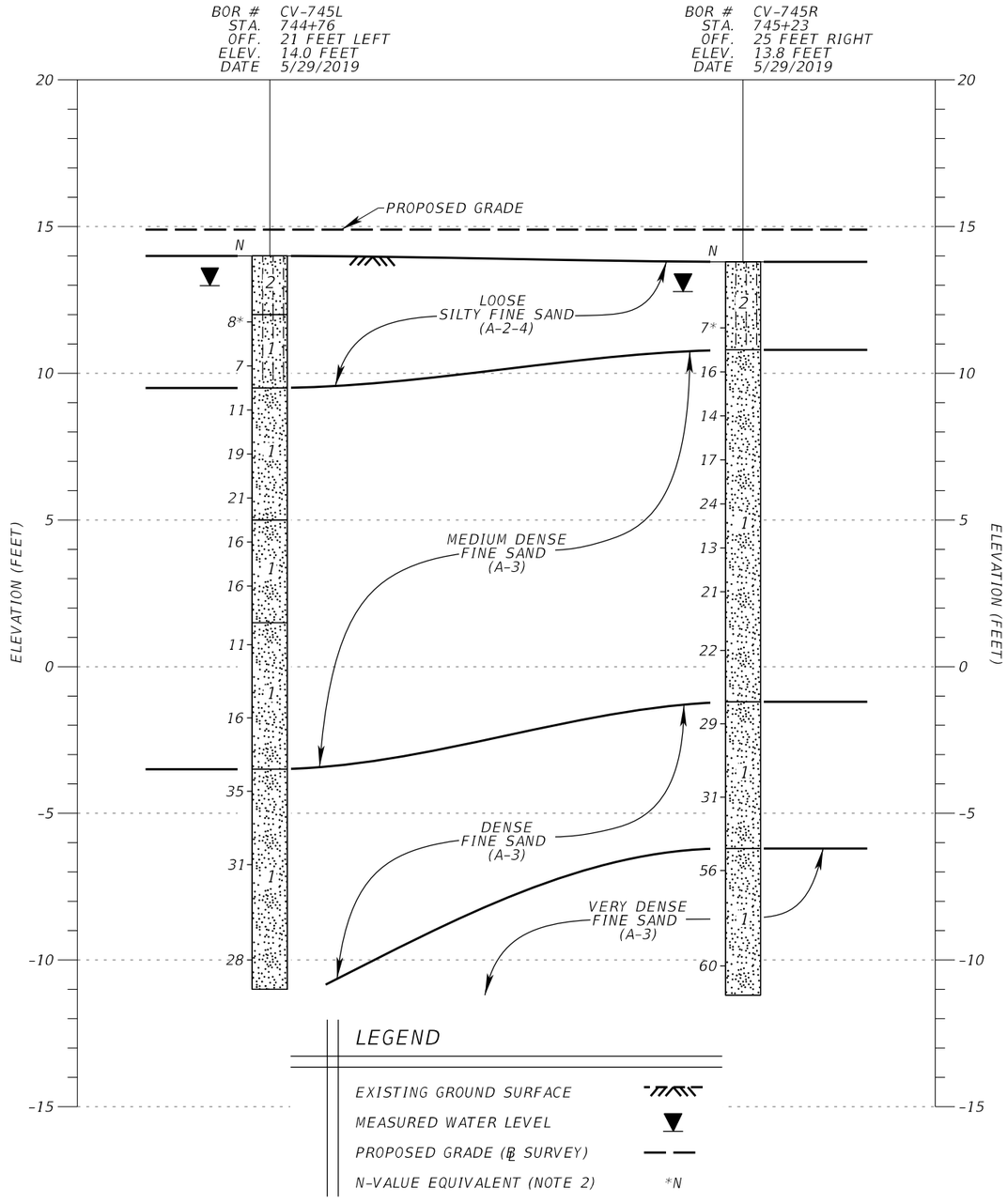
SCALE:	AS SHOWN	DATE:	OCTOBER 2019
PROJ. NO.:	37-63-18-01	FIGURE NO.:	5F

"GENERALIZED" SUBSURFACE PROFILE

CULVERT SOIL BORINGS





LEGEND

EXISTING GROUND SURFACE	
MEASURED WATER LEVEL	
PROPOSED GRADE (℄ SURVEY)	
N-VALUE EQUIVALENT (NOTE 2)	*N

NOTES

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SCALE:	AS SHOWN	DATE:	OCTOBER 2019
PROJ. NO.:	37-63-18-01	FIGURE NO.:	6

APPENDIX A

NRCS SOIL SURVEY

Chemical Soil Properties–Bay County, Florida								
Map symbol and soil name	**Depth**	**Cation-exchange capacity**	**Effective cation-exchange capacity**	**Soil reaction**	**Calcium carbonate**	**Gypsum**	**Salinity**	**Sodium adsorption ratio**
	In	*meq/100g*	*meq/100g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
13—Leon sand, 0 to 2 percent slopes								
Leon	0-5	—	0.2-3.5	3.5-6.5	0	0	0.0-2.0	0-4
	5-18	—	0.0-1.9	3.5-6.5	0	0	0.0-2.0	0-4
	18-26	—	0.5-4.5	3.5-6.5	0	0	0.0-2.0	0-4
	26-65	—	0.0-2.3	3.5-6.5	0	0	0.0-2.0	0-4
	65-80	—	0.4-4.1	3.5-6.5	0	0	0.0-2.0	0-4
22—Pamlico-Dorovan complex								
Pamlico	0-32	—	8.7-53	3.5-5.0	0	0	0.0-2.0	0-4
	32-72	—	2.1-15	3.5-5.0	0	0	0.0-2.0	0-4
Dorovan	0-60	—	15-70	4.5-5.5	0	0	0.0-2.0	0-4
	60-80	—	6.2-20	4.5-5.5	0	0	0.0-2.0	0-4
27—Mandarin sand, 0 to 2 percent slopes								
Mandarin	0-7	—	0.1-2.4	4.5-6.0	0	0	0.0-2.0	0-4
	7-25	—	0.0-1.4	4.5-6.0	0	0	0.0-2.0	0-4
	25-57	—	0.3-3.5	4.5-6.0	0	0	0.0-2.0	0-4
	57-80	—	0.0-1.1	4.5-6.0	0	0	0.0-2.0	0-4
29—Rutlege sand, 0 to 2 percent slopes								
Rutlege	0-22	—	1.1-6.0	3.5-5.0	0	0	0.0-2.0	0-4
	22-80	—	0.6-3.8	3.5-5.0	0	0	0.0-2.0	0-4

Chemical Soil Properties–Bay County, Florida								
Map symbol and soil name	**Depth**	**Cation-exchange capacity**	**Effective cation-exchange capacity**	**Soil reaction**	**Calcium carbonate**	**Gypsum**	**Salinity**	**Sodium adsorption ratio**
	In	*meq/100g*	*meq/100g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
30—Pottsburg-Pottsburg, wet, sand, 0 to 2 percent slopes								
Pottsburg	0-5	—	0.2-2.8	4.5-5.5	0	0	0.0-2.0	0-4
	5-60	—	0.0-2.0	4.5-5.5	0	0	0.0-2.0	0-4
	60-80	—	0.3-3.8	4.5-5.5	0	0	0.0-2.0	0-4
Pottsburg, wet	0-5	—	0.2-2.8	4.5-5.5	0	0	0.0-2.0	0-4
	5-60	—	0.0-2.0	4.5-5.5	0	0	0.0-2.0	0-4
	60-80	—	0.3-3.8	4.5-5.5	0	0	0.0-2.0	0-4

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties–Bay County, Florida														
Map unit symbol and soil name	**Pct. of map unit**	**Hydrologic group**	**Depth**	**USDA texture**	**Classification**		**Pct Fragments**		**Percentage passing sieve number—**				**Liquid limit**	**Plasticity index**
					Unified	**AASHTO**	**>10 inches**	**3-10 inches**	**4**	**10**	**40**	**200**		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
13—Leon sand, 0 to 2 percent slopes														
Leon	80	A/D	0-5	Sand	SP, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	80-90-100	2- 7- 12	0-7 -14	NP
			5-18	Sand	SP, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	80-90-100	2- 7- 12	0-7 -14	NP
			18-26	Sand	SP, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	80-90-100	3-12- 20	0-7 -14	NP
			26-65	Sand	SP, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	80-90-100	2- 7- 12	0-7 -14	NP
			65-80	Sand	SP, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	80-90-100	3-12- 20	0-7 -14	NP
22—Pamlico-Dorovan complex														
Pamlico	40	A/D	0-32	Muck	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	100-100-100	100-100-100	—	—
			32-72	Loamy sand, sand, loamy fine sand	SM, SP-SM	A-2, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	70-83-95	5-11- 20	0-7 -14	NP
Dorovan	35	B/D	0-60	Muck	PT	A-8	0- 0- 0	0- 0- 0	100-100-100	100-100-100	100-100-100	100-100-100	—	—
			60-80	Sand, loamy sand, sandy loam	SC-SM, SM, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	5-38- 70	5-27- 49	0-10 -20	NP-4 -7

Engineering Properties–Bay County, Florida														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
27—Mandarin sand, 0 to 2 percent slopes														
Mandarin	85	A	0-7	Sand	SP, SP-SM	A-3, A-2-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	69-76-85	3- 7- 12	0-0 -14	NP
			7-25	Sand	SP, SP-SM, SM	A-3, A-2-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	69-77-86	4- 7- 13	0-0 -14	NP
			25-57	Sand	SP-SM, SC-SM	A-3, A-2-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	70-78-86	7-11- 19	0-0 -23	NP-0 -5
			57-80	Sand	SP-SM, SM	A-3, A-2-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	70-77-87	6-10- 16	0-0 -14	NP
29—Rutlege sand, 0 to 2 percent slopes														
Rutlege	85	A/D	0-22	Sand	SP-SM	A-3	0- 0- 0	0- 0- 0	94-98-100	89-96-100	68-74-78	8-10- 12	0-0 -51	NP-0 -2
			22-80	Sand	SP-SM	A-3	0- 0- 0	0- 0- 0	96-99-100	92-97-100	70-75-78	8-10- 12	0-0 -24	NP-0 -3

Engineering Properties–Bay County, Florida														
Map unit symbol and soil name	**Pct. of map unit**	**Hydrologic group**	**Depth**	**USDA texture**	**Classification**		**Pct Fragments**		**Percentage passing sieve number—**				**Liquid limit**	**Plasticity index**
					Unified	**AASHTO**	**>10 inches**	**3-10 inches**	**4**	**10**	**40**	**200**		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
30—Pottsburg-Pottsburg, wet, sand, 0 to 2 percent slopes														
Pottsburg	65	A/D	0-5	Sand	SM, SP-SM	A-3, A-2-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	5-13- 18	0-7 -14	NP
			5-60	Sand	SM, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	5-13- 18	0-7 -14	NP
			60-80	Sand	SP-SM, SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	4-12- 18	0-7 -14	NP
Pottsburg, wet	25	A/D	0-5	Sand	SP-SM, SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	5-13- 18	0-7 -14	NP
			5-60	Sand	SM, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	5-13- 18	0-7 -14	NP
			60-80	Sand	SP-SM	A-3, A-2-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	4-12- 18	0-7 -14	NP

Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Physical Soil Properties–Bay County, Florida														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
13—Leon sand, 0 to 2 percent slopes														
Leon	0-5	86-94- 97	0- 3- 9	1- 3- 5	1.30-1.38-1.45	42.00-92.00-141.00	0.05-0.10-0.15	0.0- 1.5- 2.9	0.5- 2.3-4.0	.05	.05	5	1	220
	5-18	90-98- 98	0- 2- 7	0- 1- 3	1.40-1.50-1.60	42.00-92.00-141.00	0.02-0.04-0.05	0.0- 1.5- 2.9	0.0- 0.3-0.5	.02	.02			
	18-26	87-92- 93	0- 5- 6	2- 3- 8	1.25-1.45-1.65	4.00-23.00-42.00	0.15-0.23-0.30	0.0- 1.5- 2.9	2.0- 3.0-4.0	.10	.10			
	26-65	90-96- 98	0- 3- 6	1- 1- 4	1.50-1.58-1.65	14.00-78.00-141.00	0.05-0.08-0.10	0.0- 1.5- 2.9	0.0- 0.3-0.5	.02	.02			
	65-80	87-98- 99	0- 1- 5	0- 1- 8	1.25-1.45-1.65	1.40-8.00-14.00	0.15-0.23-0.30	0.0- 1.5- 2.9	1.0- 2.0-3.0	.10	.10			
22—Pamlico-Dorovan complex														
Pamlico	0-32	—	—	—	0.40-0.50-0.65	4.23-23.29-42.34	0.24-0.25-0.26	—	20.0-50.0-80.0			1	2	134
	32-72	-94-	0- 1- 15	5- 5- 10	1.60-1.68-1.75	42.34-91.74-141.14	0.03-0.05-0.06	0.0- 1.5- 2.9	2.0- 5.0-10.0	.02	.02			
Dorovan	0-60	—	—	—	0.35-0.45-0.55	4.23-9.17-14.11	0.25-0.38-0.50	—	20.0-50.0-80.0			2	2	134
	60-80	-94-	0- 1- 15	5- 5- 20	1.40-1.53-1.65	42.34-91.74-141.14	0.05-0.07-0.08	0.0- 1.5- 2.9	5.0- 7.0-10.0	.02	.02			

Physical Soil Properties–Bay County, Florida														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
27—Mandarin sand, 0 to 2 percent slopes														
Mandarin	0-7	95-98- 98	0- 1- 5	0- 2- 3	1.59-1.60-1.60	42.34-91.74-141.14	0.03-0.05-0.07	0.0- 0.1- 0.4	0.5- 0.8-3.0	.02	.02	5	1	220
	7-25	95-97- 98	0- 1- 5	0- 2- 3	1.64-1.64-1.65	42.34-91.74-141.14	0.03-0.05-0.07	0.0- 0.1- 0.3	0.1- 0.1-0.3	.02	.02			
	25-57	89-93- 97	0- 4- 9	2- 3- 9	1.54-1.56-1.59	4.23-9.17-14.11	0.10-0.13-0.15	0.1- 0.3- 0.7	0.5- 1.1-1.5	.15	.15			
	57-80	91-94- 98	0- 5- 9	0- 1- 3	1.66-1.67-1.68	42.34-91.74-141.14	0.03-0.05-0.07	0.0- 0.1- 0.3	0.1- 0.1-0.3	.02	.02			
29—Rutlege sand, 0 to 2 percent slopes														
Rutlege	0-22	94-94- 94	1- 3- 5	2- 3- 6	0.71-1.14-1.56	42.34-91.74-141.14	0.04-0.05-0.06	0.0- 0.2- 0.6	3.0-6.0-15.0	.02	.02	5	1	220
	22-80	94-94- 94	1- 3- 5	2- 3- 6	1.58-1.64-1.70	42.34-91.74-141.14	0.04-0.06-0.08	0.2- 0.4- 0.6	0.5- 1.8-3.0	.02	.02			

Physical Soil Properties–Bay County, Florida														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
30—Pottsburg-Pottsburg, wet, sand, 0 to 2 percent slopes														
Pottsburg	0-5	94-96- 96	0- 1- 5	1- 3- 4	1.20-1.45-1.70	42.34-91.74-141.14	0.03-0.07-0.10	0.0- 1.5- 2.9	0.5- 1.3-3.0	.02	.02	5	1	220
	5-60	94-96- 96	0- 1- 5	1- 3- 4	1.20-1.45-1.70	42.34-91.74-141.14	0.03-0.07-0.10	0.0- 1.5- 2.9	0.0- 0.3-0.5	.02	.02			
	60-80	94-96- 96	0- 1- 5	1- 3- 4	1.30-1.50-1.70	4.23-9.17-14.11	0.10-0.18-0.25	0.0- 1.5- 2.9	1.0- 2.5-4.0	.10	.10			
Pottsburg, wet	0-5	94-96- 96	0- 1- 5	1- 3- 4	1.20-1.45-1.70	42.34-91.74-141.14	0.03-0.07-0.10	0.0- 1.5- 2.9	0.5- 1.3-3.0	.02	.02	5	1	220
	5-60	95-96- 97	0- 1- 4	1- 3- 4	1.20-1.45-1.70	42.34-91.74-141.14	0.03-0.07-0.10	0.0- 1.5- 2.9	0.0- 0.3-0.5	.02	.02			
	60-80	94-96- 96	0- 1- 5	1- 3- 6	1.30-1.50-1.70	4.23-9.17-14.11	0.10-0.18-0.25	0.0- 1.5- 2.9	1.0- 2.5-4.0	.10	.10			

Soil Features–Bay County, Florida									
Map symbol and soil name	**Restrictive Layer**				**Subsidence**		**Potential for frost action**	**Risk of corrosion**	
	Kind	**Depth to top**	**Thickness**	**Hardness**	**Initial**	**Total**		**Uncoated steel**	**Concrete**
		Low-RV-High	*Range*		*Low-High*	*Low-High*			
		In	*In*		*In*	*In*			
13—Leon sand, 0 to 2 percent slopes									
Leon		—	—		0	0	None	High	High
22—Pamlico-Dorovan complex									
Pamlico		—	—		4-12	10-25	None	High	High
Dorovan		—	—		4-12	51-80	None	High	High
27—Mandarin sand, 0 to 2 percent slopes									
Mandarin		—	—		0	0	None	High	High
29—Rutlege sand, 0 to 2 percent slopes									
Rutlege		—	—		0	0	None	High	High
30—Pottsburg-Pottsburg, wet, sand, 0 to 2 percent slopes									
Pottsburg		—	—		0	0	None	High	High
Pottsburg, wet		—	—		0	0	None	High	High

Map unit symbol and soil name	Hydrologic group	Surface runoff	Most likely months	Water table			Ponding			Flooding	
				Upper limit	Lower limit	Kind	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*		*Ft*				
13—Leon sand, 0 to 2 percent slopes											
Leon	A/D	High	Jan-Apr	0.2-1.5	6.0	Apparent	—	—	None	—	None
			May-Nov	—	—	—	—	—	None	—	None
			Dec	0.2-1.5	6.0	Apparent	—	—	None	—	None
22—Pamlico-Dorovan complex											
Pamlico	A/D	Very high	Jan-May	0.0-1.0	6.0	Apparent	0.0-1.0	Long (7 to 30 days)	Frequent	Very long (more than 30 days)	Frequent
			Jun-Nov	—	—	—	—	—	—	Very long (more than 30 days)	Frequent
			Dec	0.0-1.0	6.0	Apparent	0.0-1.0	Long (7 to 30 days)	Frequent	Very long (more than 30 days)	Frequent
Dorovan	B/D	Very high	Jan-Dec	0.0-0.5	6.0	Apparent	0.0-1.0	Very long (more than 30 days)	Frequent	Very long (more than 30 days)	Frequent
27—Mandarin sand, 0 to 2 percent slopes											
Mandarin	A	Very low	Jan-May	—	—	—	—	—	None	—	None
			Jun-Dec	1.5-3.5	6.0	Apparent	—	—	None	—	None

Map unit symbol and soil name	Hydrologic group	Surface runoff	Most likely months	Water table			Ponding			Flooding	
				Upper limit	Lower limit	Kind	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*		*Ft*				
29—Rutlege sand, 0 to 2 percent slopes											
Rutlege	A/D	Negligible	Jan-May	0.0-0.5	6.0	Apparent	0.0-2.0	Very long (more than 30 days)	Frequent	—	None
			Jun-Nov	—	—	—	—	—	—	—	None
			Dec	0.0-0.5	6.0	Apparent	0.0-2.0	Very long (more than 30 days)	Frequent	—	None
30—Pottsburg-Pottsburg, wet, sand, 0 to 2 percent slopes											
Pottsburg	A/D	Negligible	Jan-Mar	0.5-1.5	6.0	Apparent	—	—	None	—	None
			Apr-Jun	—	—	—	—	—	None	—	None
			Jul-Dec	0.5-1.5	6.0	Apparent	—	—	None	—	None
Pottsburg, wet	A/D	Negligible	Jan-Mar	0.0-0.5	6.0	Apparent	—	—	None	—	None
			Apr-Jun	—	—	—	—	—	None	—	None
			Jul-Dec	0.0-0.5	6.0	Apparent	—	—	None	—	None

APPENDIX B

GEOTECHNICAL PLAN SHEETS

DATE OF SURVEY: SEPTEMBER 2019

SURVEY MADE BY: ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

SUBMITTED BY: MYRON L. HAYDEN, P.E.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
MATERIALS AND RESEARCH

DISTRICT: THREE

ROAD NO.: N/A

COUNTY: BAY

FINANCIAL PROJECT ID : 441742-1-52-01
PROJECT NAME: ALF COLEMAN ROAD - ROADWAY IMPROVEMENTS

CROSS SECTION SOILS SURVEY FOR THE DESIGN OF ROADS

REFERENCE: ℄ SURVEY ALF COLEMAN RD SURVEY BEGINS STA.: 718+40 SURVEY ENDS STA.: 749+21

	ORGANIC CONTENT			SIEVE ANALYSIS RESULTS PERCENT PASS (%)						ATTERBERG LIMITS (%)						CORROSION TEST RESULTS				
STRATUM NO.	NO. OF TESTS	% ORGANIC	MOISTURE CONTENT	NO. OF TESTS	10 MESH	40 MESH	60 MESH	100 MESH	200 MESH	NO. OF TESTS	LIQUID LIMIT	PLASTIC INDEX	AASHTO GROUP	DESCRIPTION		NO. OF TESTS	RESISTIVITY ohm-cm	CHLORIDES ppm	SULFATES ppm	pH
1	59	1.1-4.8	9-55	56	76-100	51-100	24-71	3-16	1-10	--	--	--	A-1-b, A-3	TAN, GRAY, DARK GRAY	FINE SAND	--	--	--	--	--
2	15	1.3-4.1	14-32	27	58-100	51-94	30-45	18-28	13-26	--	--	--	A-2-4	TAN, ORANGE, GRAY, DARK GRAY	SILTY FINE SAND	2	2,800-6,500	55-73	45-189	7.4-7.7
3	10	6.3-9.8	24-73	3	95-99	74-86	37-47	19-21	16-17	--	--	--	A-3, A-2-4	DARK GRAY	ORGANIC SAND	--	--	--	--	--
4	2	25.1-27.0	113-153	1	98	84	68	47	38	--	--	--	A-8	BLACK	MUCK	--	--	--	--	--

STRATA NOTES

1. STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH BORING ONLY. ANY SUBSOIL CONNECTING LINES SHOWN ARE FOR ESTIMATING ONLY AND DO NOT INDICATE ACTUAL STRATUM LIMITS. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED.
2. REMOVAL OF MATERIAL ENCOUNTERED SHOULD BE ACCOMPLISHED IN ACCORDANCE WITH FDOT STANDARD PLANS INDEX 120-002, UNLESS OTHERWISE NOTED IN THE PLANS.
3. MATERIAL UTILIZED IN EMBANKMENT CONSTRUCTION SHALL BE IN ACCORDANCE WITH FDOT STANDARD PLANS INDEX 120-001.
4. STRATA 1 AND 2 REPRESENT "SELECT" MATERIALS. DUE TO THE HIGH FINES CONTENT, STRATUM 2 WILL RETAIN MOISTURE AND MAY BE DIFFICULT TO COMPACT WHEN WET.
5. STRATUM 3 REPRESENTS A "SELECT" MATERIAL WITH AN AVERAGE ORGANIC CONTENT BETWEEN 5 AND 10 PERCENT.
6. STRATUM 4 REPRESENTS A "MUCK" MATERIAL WITH AN AVERAGE ORGANIC CONTENT GREATER THAN 20 PERCENT.

LEGEND

▼ MEASURED WATER LEVEL

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MYRON L. HAYDEN, P.E.
P.E. NO.: 34067
ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.
104 NORTH MAGNOLIA DRIVE
TALLAHASSEE, FLORIDA 32301
CERTIFICATE OF AUTHORIZATION 6222

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

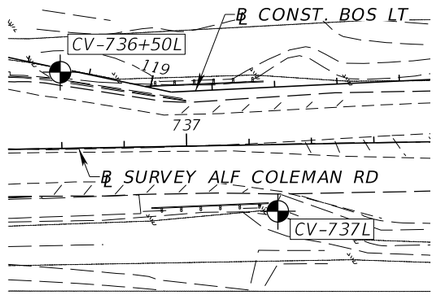
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-1-52-01

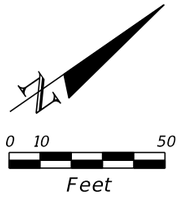
$USER$ $DATE$ $TIME$ $FILE$

ROADWAY SOIL SURVEY

SHEET NO.

SOIL BORING LOCATION MAP





LEGEND

SPT SOIL BORING LOCATION		FINE SAND (A-3)	
MEASURED WATER LEVEL		SILTY FINE SAND (A-2-4)	
LABORATORY TESTING RESULTS		ORGANIC SAND (A-3)	
WATER CONTENT (%)	Wc=	AASHTO SOIL CLASSIFICATION GROUP SYMBOL (A-3)	
-200 SIEVE (%)	-200=		
ORGANIC CONTENT (%)	OC=		
N-VALUE EQUIVALENT (NOTE 2)	*N		

NOTES

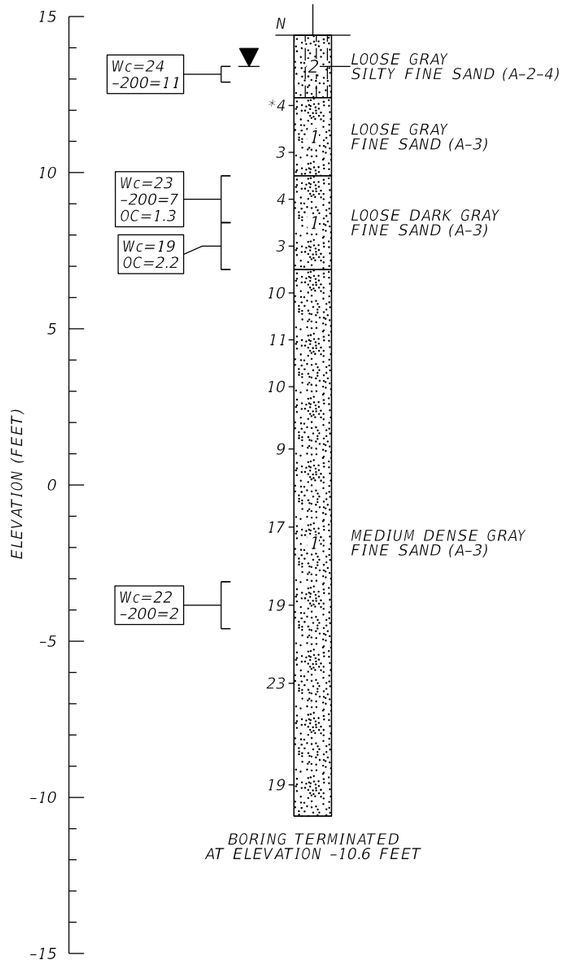
1. NUMBERS LEFT OF BORING INDICATE STANDARD PENETRATION TEST (SPT) N-VALUES FOR 12 INCH PENETRATION (UNLESS OTHERWISE NOTED).
2. N-VALUES DENOTED WITH AN ASTERISK (*) WERE DERIVED FROM HAND STATIC CONE PENETROMETER TESTS.
3. NUMBERS IN CENTER OF BORING INDICATE THE STRATUM NUMBER. REFER TO ROADWAY SOIL SURVEY SHEET FOR ADDITIONAL STRATUM PROPERTIES.
4. MEASURED WATER LEVEL SHOWN IS THE WATER LEVEL ENCOUNTERED DURING THE SUBSURFACE INVESTIGATION. WATER LEVEL FLUCTUATIONS SHOULD BE ANTICIPATED.
5. SOIL DESCRIPTIONS, TEST DATA, AND STANDARD PENETRATION VALUES SHOWN ARE FOR THE SOIL BORING ONLY AND MAY NOT APPLY TO ANY OTHER LOCATIONS EXCEPT AT THE LOCATIONS OF THE SOIL BORING. EXTRAPOLATION OF THE SOIL DATA TO OTHER LOCATIONS IS THE SOLE RESPONSIBILITY OF THE PERSON PERFORMING THE EXTRAPOLATION.

AUTOMATIC HAMMER

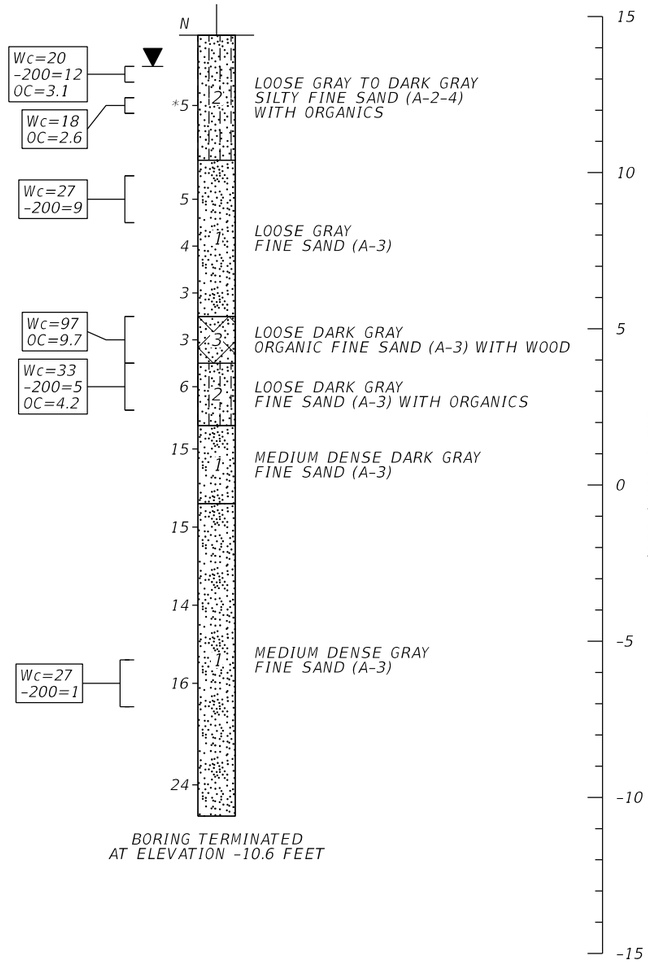
GRANULAR MATERIALS RELATIVE DENSITY	SPT (BLOWS/12 IN.)	SILTS AND CLAYS CONSISTENCY	SPT (BLOWS/12 IN.)
VERY LOOSE	LESS THAN 3	VERY SOFT	LESS THAN 1
LOOSE	3 - 8	SOFT	1 - 3
MEDIUM DENSE	8 - 24	FIRM	3 - 6
DENSE	24 - 40	STIFF	6 - 12
VERY DENSE	GREATER THAN 40	VERY STIFF	12 - 24
		HARD	GREATER THAN 24

SPLIT-SPOON:
INSIDE DIAMETER: 1.375 in.
OUTSIDE DIAMETER: 2.0 in.
AVG. HAMMER DROP: 30.0 in.
HAMMER WEIGHT: 140 lbs.

BOR # CV-736+50L
STA. 736+60
REF. ℄ SURVEY ALF COLEMAN RD
OFF. 24 FEET LEFT
ELEV. 14.4 FEET
DATE 5/29/2019
DRILLER B. GUERRA
HAMMER AUTOMATIC
RIG D-25



BOR # CV-737R
STA. 737+28
REF. ℄ SURVEY ALF COLEMAN RD
OFF. 21 FEET RIGHT
ELEV. 14.4 FEET
DATE 5/29/2019
DRILLER B. GUERRA
HAMMER AUTOMATIC
RIG D-25



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MYRON L. HAYDEN, P.E.
P.E. NO.: 34067
ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.
104 NORTH MAGNOLIA DRIVE
TALLAHASSEE, FLORIDA 32301
CERTIFICATE OF AUTHORIZATION 6222

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

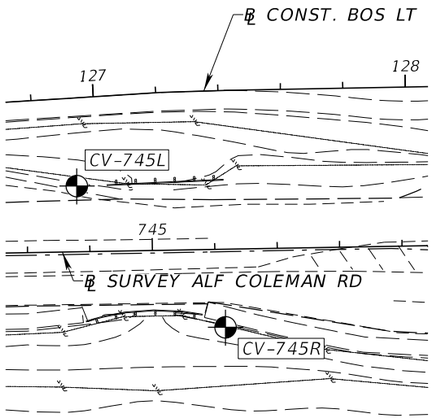
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-1-52-01

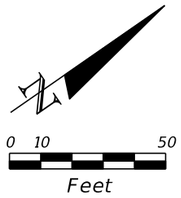
REPORT OF CULVERT BORINGS (1 OF 2)

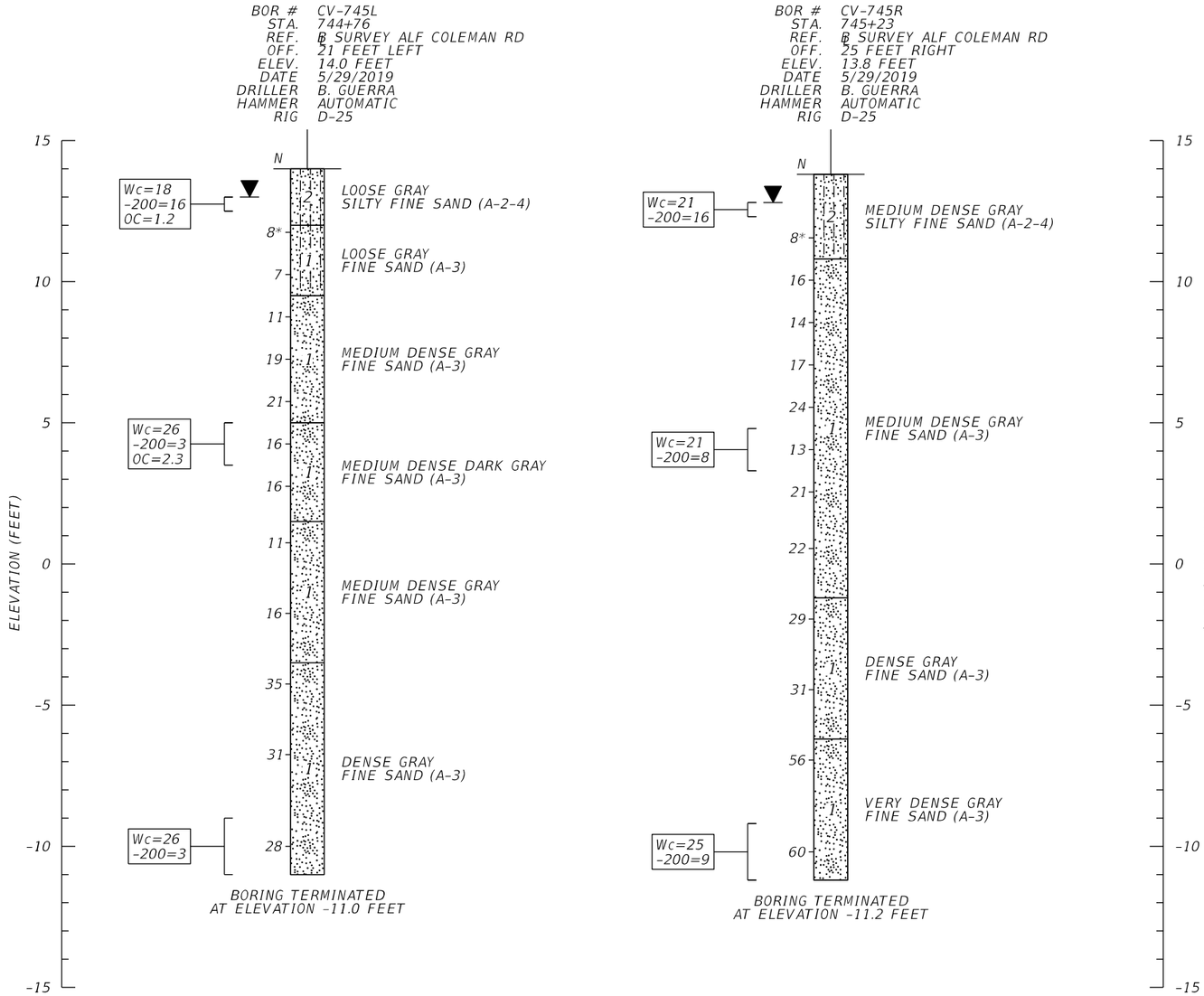
SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$

SOIL BORING LOCATION MAP







REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MYRON L. HAYDEN, P.E.
P.E. NO.: 34067
ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.
104 NORTH MAGNOLIA DRIVE
TALLAHASSEE, FLORIDA 32301
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

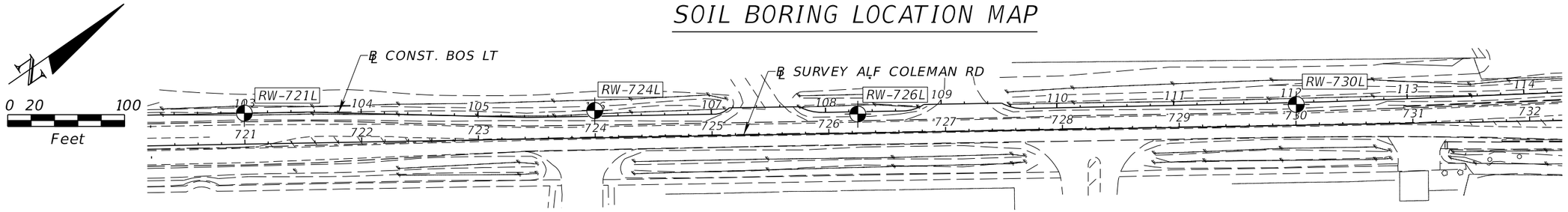
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-1-52-01

REPORT OF CULVERT BORINGS
(2 OF 2)

SHEET NO.

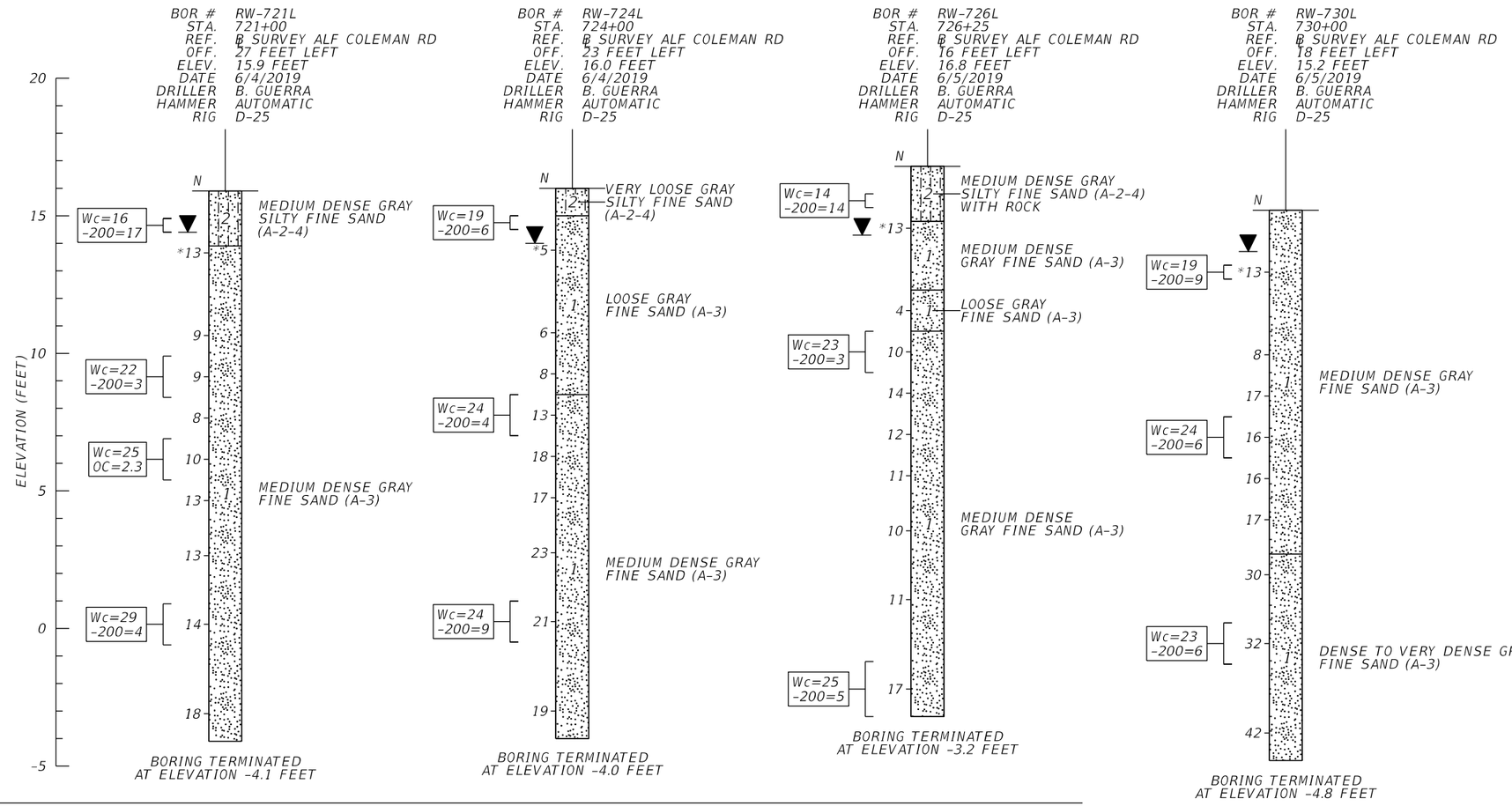
$USER$ $DATE$ $TIME$ $FILE$

SOIL BORING LOCATION MAP



NOTES

1. NUMBERS LEFT OF BORING INDICATE STANDARD PENETRATION TEST (SPT) N-VALUES FOR 12 INCH PENETRATION (UNLESS OTHERWISE NOTED).
2. N-VALUES DENOTED WITH AN ASTERISK (*) WERE DERIVED FROM HAND STATIC CONE PENETROMETER TESTS.
3. NUMBERS IN CENTER OF BORING INDICATE THE STRATUM NUMBER. REFER TO ROADWAY SOIL SURVEY SHEET FOR ADDITIONAL STRATUM PROPERTIES.
4. MEASURED WATER LEVEL SHOWN IS THE WATER LEVEL ENCOUNTERED DURING THE SUBSURFACE INVESTIGATION. WATER LEVEL FLUCTUATIONS SHOULD BE ANTICIPATED.
5. SOIL DESCRIPTIONS, TEST DATA, AND STANDARD PENETRATION VALUES SHOWN ARE FOR THE SOIL BORING ONLY AND MAY NOT APPLY TO ANY OTHER LOCATIONS EXCEPT AT THE LOCATIONS OF THE SOIL BORING. EXTRAPOLATION OF THE SOIL DATA TO OTHER LOCATIONS IS THE SOLE RESPONSIBILITY OF THE PERSON PERFORMING THE EXTRAPOLATION.



LEGEND

SPT SOIL BORING LOCATION

MEASURED WATER LEVEL

LABORATORY TESTING RESULTS

WATER CONTENT (%) Wc=
-200 SIEVE (%) -200=
ORGANIC CONTENT (%) OC=
N-VALUE EQUIVALENT (NOTE 2) *N

FINE SAND (A-3)

SILTY FINE SAND (A-2-4)

ORGANIC SAND (A-3/A-2-4)

AASHTO SOIL CLASSIFICATION GROUP SYMBOL (A-3)

AUTOMATIC HAMMER

GRANULAR MATERIALS RELATIVE DENSITY	SPT (BLOWS/12 IN.)	SILTS AND CLAYS CONSISTENCY	SPT (BLOWS/12 IN.)
VERY LOOSE	LESS THAN 3	VERY SOFT	LESS THAN 1
LOOSE	3 - 8	SOFT	1 - 3
MEDIUM DENSE	8 - 24	FIRM	3 - 6
DENSE	24 - 40	STIFF	6 - 12
VERY DENSE	GREATER THAN 40	VERY STIFF	12 - 24
		HARD	GREATER THAN 24

SPLIT-SPOON:
INSIDE DIAMETER: 1.375 in.
OUTSIDE DIAMETER: 2.0 in.
AVG. HAMMER DROP: 30.0 in.
HAMMER WEIGHT: 140 lbs.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MYRON L. HAYDEN, P.E.
P.E. NO.: 34067
ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.
104 NORTH MAGNOLIA DRIVE
TALLAHASSEE, FLORIDA 32301
CERTIFICATE OF AUTHORIZATION 6222

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

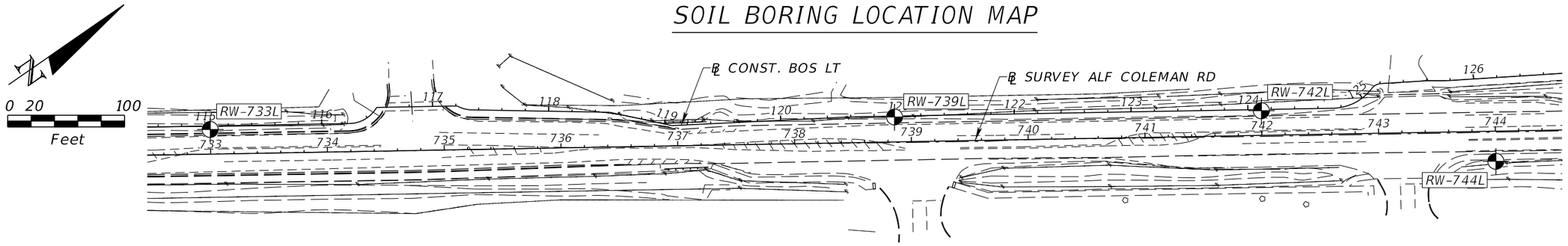
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-1-52-01

REPORT OF WALL BORINGS
(1 OF 2)

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$

SOIL BORING LOCATION MAP

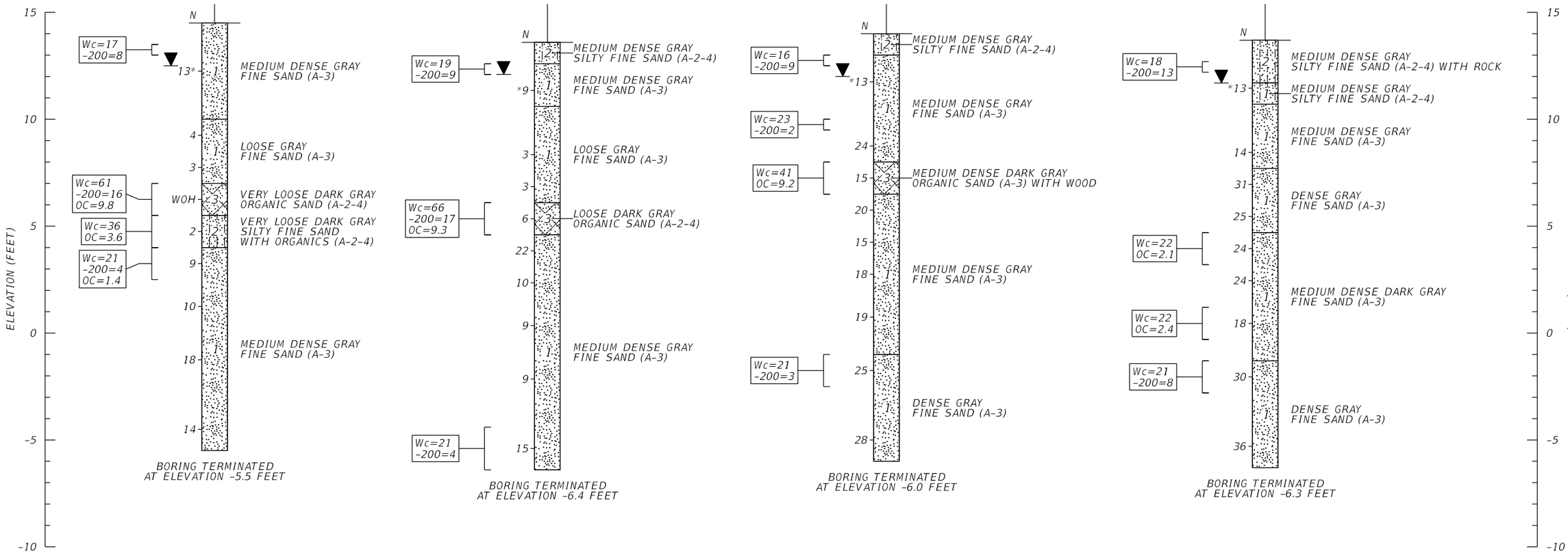


BOR # RW-733L
STA. 733+00
REF. ℄ SURVEY ALF COLEMAN RD
OFF. 21 FEET LEFT
ELEV. 14.5 FEET
DATE 6/5/2019
DRILLER B. GUERRA
HAMMER AUTOMATIC
RIG D-25

BOR # RW-739L
STA. 738+86
REF. ℄ SURVEY ALF COLEMAN RD
OFF. 21 FEET LEFT
ELEV. 13.6 FEET
DATE 6/4/2019
DRILLER B. GUERRA
HAMMER AUTOMATIC
RIG D-25

BOR # RW-742L
STA. 742+00
REF. ℄ SURVEY ALF COLEMAN RD
OFF. 29 FEET LEFT
ELEV. 14.0 FEET
DATE 6/4/2019
DRILLER B. GUERRA
HAMMER AUTOMATIC
RIG D-25

BOR # RW-744R
STA. 744+00
REF. ℄ SURVEY ALF COLEMAN RD
OFF. 26 FEET RIGHT
ELEV. 13.7 FEET
DATE 6/4/2019
DRILLER B. GUERRA
HAMMER AUTOMATIC
RIG D-25



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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MYRON L. HAYDEN, P.E.
P.E. NO.: 34067
ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.
104 NORTH MAGNOLIA DRIVE
TALLAHASSEE, FLORIDA 32301
CERTIFICATE OF AUTHORIZATION 6222

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

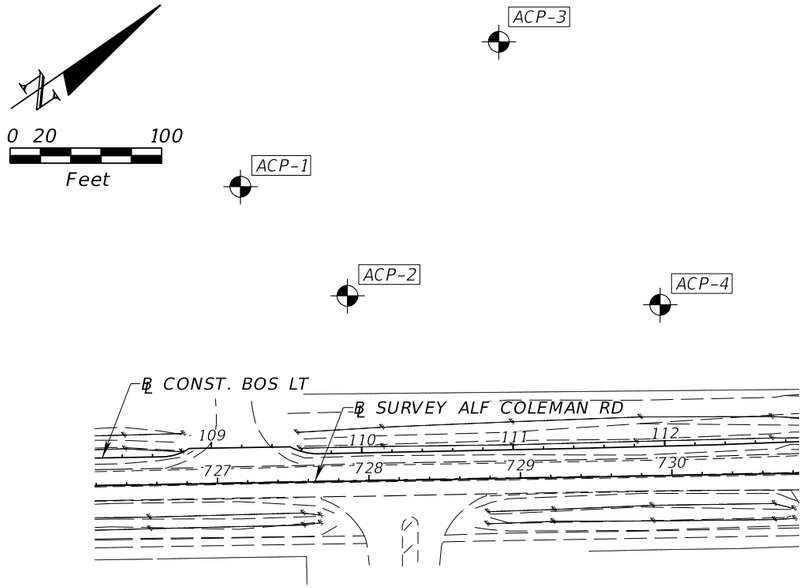
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-1-52-01

REPORT OF WALL BORINGS
(2 OF 2)

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$

SOIL BORING LOCATION MAP



LEGEND

SPT SOIL BORING LOCATION

MEASURED WATER LEVEL

LABORATORY TESTING RESULTS

WATER CONTENT (%) Wc=
-200 SIEVE (%) -200=
ORGANIC CONTENT (%) OC=
N-VALUE EQUIVALENT (NOTE 2) *N

CRUSHED LIMESTONE

FINE SAND (A-3)

SILTY FINE SAND (A-2-4)

ORGANIC SAND (A-3)

AASHTO SOIL CLASSIFICATION GROUP SYMBOL (A-3)

NOTES

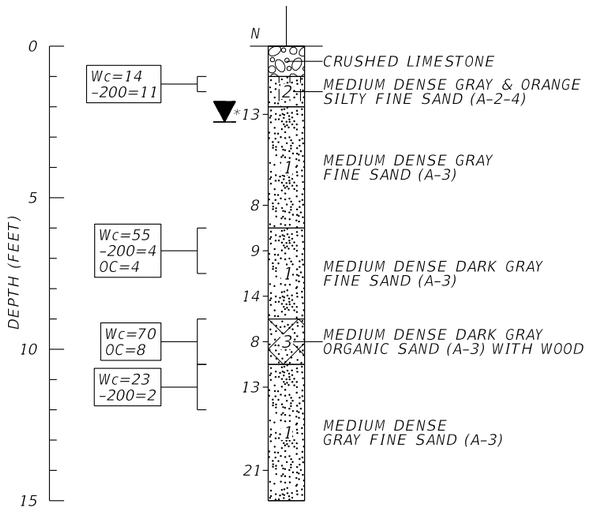
1. NUMBERS LEFT OF BORING INDICATE STANDARD PENETRATION TEST (SPT) N-VALUES FOR 12 INCH PENETRATION (UNLESS OTHERWISE NOTED).
2. N-VALUES DENOTED WITH AN ASTERISK (*) WERE DERIVED FROM HAND STATIC CONE PENETROMETER TESTS.
3. NUMBERS IN CENTER OF BORING INDICATE THE STRATUM NUMBER. REFER TO ROADWAY SOIL SURVEY SHEET FOR ADDITIONAL STRATUM PROPERTIES.
4. MEASURED WATER LEVEL SHOWN IS THE WATER LEVEL ENCOUNTERED DURING THE SUBSURFACE INVESTIGATION. WATER LEVEL FLUCTUATIONS SHOULD BE ANTICIPATED.
5. ELEVATIONS UNAVAILABLE AT TIME OF REPORT.
6. SOIL DESCRIPTIONS, TEST DATA, AND STANDARD PENETRATION VALUES SHOWN ARE FOR THE SOIL BORING ONLY AND MAY NOT APPLY TO ANY OTHER LOCATIONS EXCEPT AT THE LOCATIONS OF THE SOIL BORING. EXTRAPOLATION OF THE SOIL DATA TO OTHER LOCATIONS IS THE SOLE RESPONSIBILITY OF THE PERSON PERFORMING THE EXTRAPOLATION.

AUTOMATIC HAMMER

GRANULAR MATERIALS RELATIVE DENSITY	SPT (BLOWS/12 IN.)	SILTS AND CLAYS CONSISTENCY	SPT (BLOWS/12 IN.)
VERY LOOSE	LESS THAN 3	VERY SOFT	LESS THAN 1
LOOSE	3 - 8	SOFT	1 - 3
MEDIUM DENSE	8 - 24	FIRM	3 - 6
DENSE	24 - 40	STIFF	6 - 12
VERY DENSE	GREATER THAN 40	VERY STIFF	12 - 24
		HARD	GREATER THAN 24

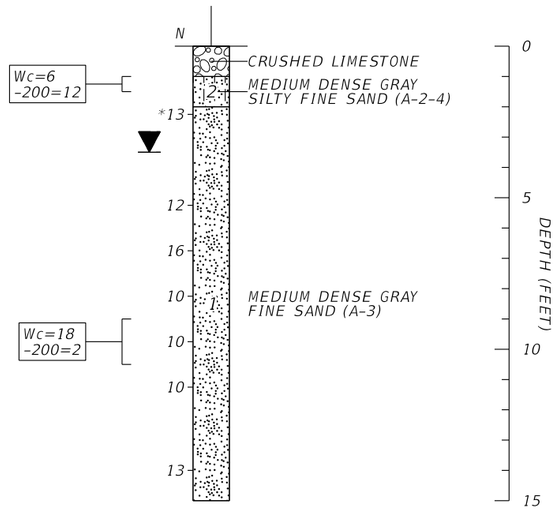
SPLIT-SPOON:
INSIDE DIAMETER: 1.375 in.
OUTSIDE DIAMETER: 2.0 in.
AVG. HAMMER DROP: 30.0 in.
HAMMER WEIGHT: 140 lbs.

BOR # ACP-1
STA. 727+19
REF. ℄ SURVEY ALF COLEMAN RD
OFF. 196 FEET LEFT
ELEV. N/A
DATE 6/3/2019
DRILLER B. GUERRA
HAMMER AUTOMATIC
RIG D-25



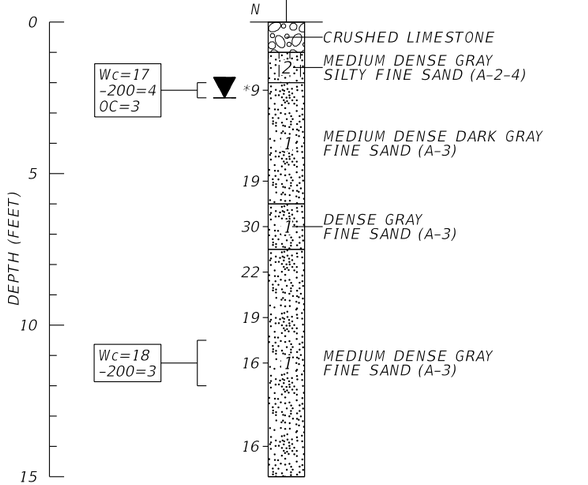
BORING TERMINATED AT A DEPTH OF 15 FEET

BOR # ACP-2
STA. 727+88
REF. ℄ SURVEY ALF COLEMAN RD
OFF. 122 FEET LEFT
ELEV. N/A
DATE 6/3/2019
DRILLER B. GUERRA
HAMMER AUTOMATIC
RIG D-25



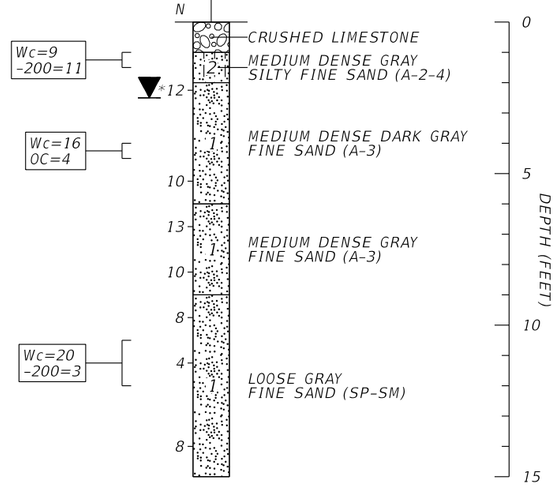
BORING TERMINATED AT A DEPTH OF 15 FEET

BOR # ACP-3
STA. 728+91
REF. ℄ SURVEY ALF COLEMAN RD
OFF. 288 FEET LEFT
ELEV. N/A
DATE 6/3/2019
DRILLER B. GUERRA
HAMMER AUTOMATIC
RIG D-25



BORING TERMINATED AT A DEPTH OF 15 FEET

BOR # ACP-4
STA. 729+94
REF. ℄ SURVEY ALF COLEMAN RD
OFF. 113 FEET LEFT
ELEV. N/A
DATE 6/3/2019
DRILLER B. GUERRA
HAMMER AUTOMATIC
RIG D-25



BORING TERMINATED AT A DEPTH OF 15 FEET

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MYRON L. HAYDEN, P.E.
P.E. NO.: 34067
ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.
104 NORTH MAGNOLIA DRIVE
TALLAHASSEE, FLORIDA 32301
CERTIFICATE OF AUTHORIZATION 6222

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-1-52-01

$USERS $DATES $TIMES $FILES

REPORT OF POND BORINGS

SHEET NO.

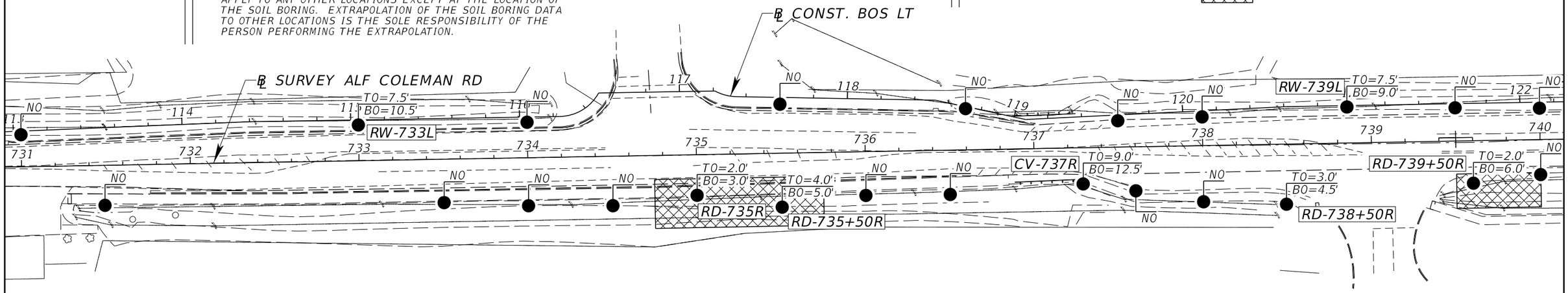
NOTES

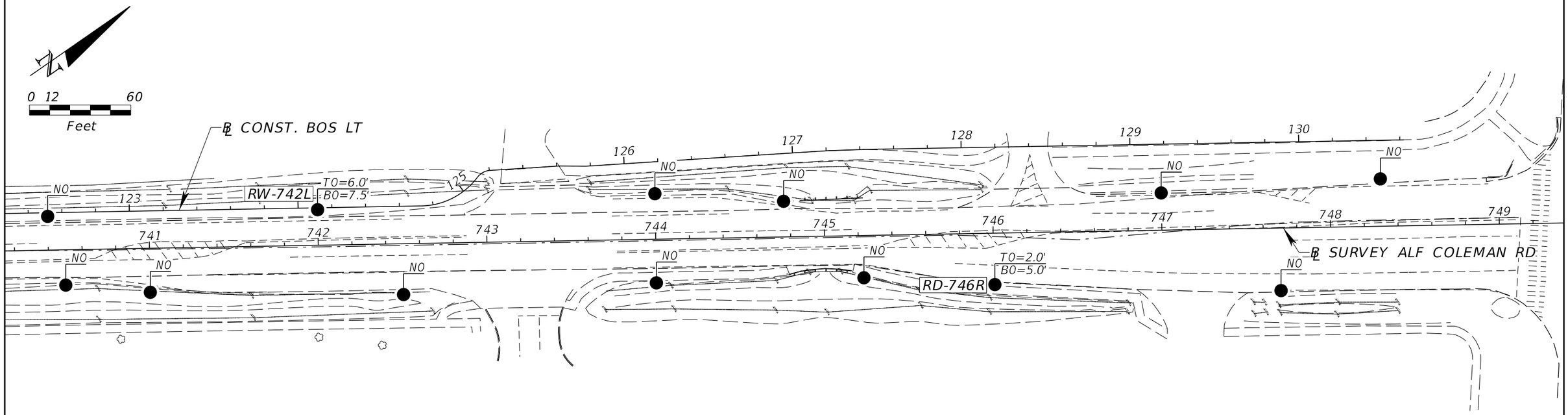
1. WORK THESE SHEETS WITH ROADWAY CROSS SECTIONS FOR APPROXIMATE LIMIT OFSUBSOIL EXCAVATION. REFER TO ROADWAY SOIL SURVEY FOR ADDITIONAL SOILS DATA.
2. "ORGANIC MATERIAL" REFERS TO SOILS THAT HAVE AN AVERAGE ORGANIC CONTENT OF FIVE (5) PERCENT OR GREATER.
3. "NO ORGANIC" DESIGNATION MEANS ORGANIC MATERIAL OF FIVE (5) PERCENT OR GREATER WAS NOT ENCOUNTERED WITHIN THE VERTICAL EXTENT OF SOIL BORING.
4. EXTENT OF ORGANIC MATERIAL IS APPROXIMATE AND MAY NOT APPLY TO ANY OTHER LOCATIONS EXCEPT AT THE LOCATION OF THE SOIL BORING. EXTRAPOLATION OF THE SOIL BORING DATA TO OTHER LOCATIONS IS THE SOLE RESPONSIBILITY OF THE PERSON PERFORMING THE EXTRAPOLATION.

LEGEND

SOIL BORING LOCATION	●
DEPTH TO TOP OF ORGANIC MATERIAL	TO
DEPTH TO BOTTOM OF ORGANIC MATERIAL	BO
NO ORGANICS ENCOUNTERED	NO
RECOMMENDED SUBSOIL EXCAVATION	▨

0 12 60
Feet





REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MYRON L. HAYDEN, P.E.
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CERTIFICATE OF AUTHORIZATION 6222

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
N/A	BAY	441742-1-52-01

APPROXIMATE LIMITS OF ORGANIC MATERIAL

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$

APPENDIX C

SOIL BORING LOGS

ROADWAY SOIL BORINGS

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.
104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-719R
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: 2.5' **24 HR:** N/M **CAVING:** NONE

HAMMER TYPE: HAND
STATIONING: 719+00
OFFSET: 25 FEET RIGHT
ELEVATION (FEET): 17.4
DATE: 6/6/2019
FLUID LOSS: NONE

DEPTH (FEET)	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N
0 – 2	MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4	-200%=11	5	
				4	9
2 – 5.5	MEDIUM DENSE GRAY FINE SAND	A-3	-200%=2	26	13
				29	14
				26	13
				27	10

Wc (%) — N-Value

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-720L
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 3.0' **24 HR:** ▽ N/M
HAMMER TYPE: HAND
STATIONING: 720+00
OFFSET: 24 FEET LEFT
ELEVATION (FEET): 17.4
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4	-200%=16	8		
							8	12	
	2			MEDIUM DENSE GRAY FINE SAND	A-3		10	13	
1							18	15	
	4						24	13	
							21	12	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%): 10 20 30 40 60
N-Value: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-721R
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.5' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 721+00
OFFSET: 22 FEET RIGHT
ELEVATION (FEET): 17.2
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0								
				MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4		6		
							7	13	
	2					-200%=6	16	15	
	▽								
1				MEDIUM DENSE GRAY FINE SAND	A-3		23	13	
	4						30	10	
							32	10	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%): 10 20 30 40 60

N-Value: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-722+50L
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.5' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 722+50
OFFSET: 15 FEET LEFT
ELEVATION (FEET): 17.7
DATE: 6/6/2019
FLUID LOSS: NONE
CAVING: ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0								
				MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4	-200%=11	20	14	
	2						11		
		▽					15	13	
1				LOOSE GRAY FINE SAND	A-3		20	5	
	4						23	3	
							21	4	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%) scale: 10, 20, 30, 40, 60
N-Value scale: 10, 20, 30, 40, 60, 80

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-723R
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 3.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 723+00
OFFSET: 16 FEET RIGHT
ELEVATION (FEET): 17.4
DATE: 6/6/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4	-200%=12	14		
							18	13	
	2			MEDIUM DENSE GRAY FINE SAND	A-3		15	14	
1							18	13	
	4						20	15	
							19	13	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%): 10 20 30 40 60

N-Value: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-725R
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▼ N/M

HAMMER TYPE: HAND
STATIONING: 725+00
OFFSET: 16 FEET RIGHT
ELEVATION (FEET): 16.7
DATE: 6/6/2019
FLUID LOSS: NONE
CAVING: ⊂ 5.0'

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4		12		
							11	13	
	2 ▽					-200%=3	28	13	
1				MEDIUM DENSE GRAY FINE SAND	A-3		30	8	
	4						20	9	
	⊂						23	13	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%) scale: 10, 20, 30, 40, 60
N-Value scale: 10, 20, 30, 40, 60, 80

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-727R
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▼ N/M

HAMMER TYPE: HAND
STATIONING: 727+00
OFFSET: 15 FEET RIGHT
ELEVATION (FEET): 16.3
DATE: 6/6/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0								
							16		
						-200%=6	15	13	
	▽								
				MEDIUM DENSE GRAY FINE SAND	A-3		26	9	
1							27	10	
	4						23	12	
							25	10	
	6								
2									
	8								
3	10								
	12								
4									
	14								

Wc (%): 10 20 30 40 60

N-Value: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-728+50L
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.5' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 728+50
OFFSET: 15 FEET LEFT
ELEVATION (FEET): 16.3
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0								
				MEDIUM DENSE GRAY FINE SAND	A-3	-200%=3	15		
							14	9	
	2	▽					20	9	
1				LOOSE GRAY FINE SAND	A-3		25	7	
	4						23	3	
							22	3	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%) scale: 10, 20, 30, 40, 60
N-Value scale: 10, 20, 30, 40, 60, 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-729+50R
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 729+50
OFFSET: 15 FEET RIGHT
ELEVATION (FEET): 15.6
DATE: 6/6/2019
FLUID LOSS: NONE
CAVING: ⊂ 4.5'

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N	N-Value
0	0							10 20 30 40 60		10 20 30 40 60 80
							16			
						-200%=8	12		13	
	2 ▽						22		12	
				MEDIUM DENSE GRAY FINE SAND	A-3		24		13	
	4 ⊂						30		15	
							29		13	
1	6									
2	8									
3	10									
	12									
4	14									

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-731L
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 731+00
OFFSET: 19 FEET LEFT
ELEVATION (FEET): 15.4
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0								
				MEDIUM DENSE GRAY FINE SAND	A-3	-200%=3	21		
							19	9	
	2 ▽						20	13	
1							15	12	
	4			LOOSE GRAY FINE SAND	A-3		24	7	
							22	7	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%): 10 20 30 40 60

N-Value: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-731+50R
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 1.5' **24 HR:** ▽ N/M **CAVING:** ◡ 3.0'

HAMMER TYPE: HAND
STATIONING: 731+50
OFFSET: 25 FEET RIGHT
ELEVATION (FEET): 14.7
DATE: 6/6/2019
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0						16		
						-200%=2	29	8	
	2						22	9	
1				MEDIUM DENSE GRAY FINE SAND	A-3		16	12	
	4						24	13	
							22	15	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-733+50R
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 733+50
OFFSET: 26 FEET RIGHT
ELEVATION (FEET): 14.5
DATE: 6/6/2019
FLUID LOSS: NONE
CAVING: ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N	N-Value
0	0			MEDIUM DENSE TAN SILTY FINE SAND	A-2-4		16			
				MEDIUM DENSE DARK GRAY FINE SAND WITH ORGANICS	A-3	-200%=9 ORG%= 4.3 ORG%= 2.8	32 31		8 10	
1	4			MEDIUM DENSE GRAY FINE SAND			25		12	
				LOOSE GRAY FINE SAND	A-3		23 21		7 5	
2	6									
	8									
3	10									
	12									
4	14									

Wc (%) axis: 10 20 30 40 60

N-Value axis: 10 20 30 40 60 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-734L
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 1.5' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 734+00
OFFSET: 21 FEET LEFT
ELEVATION (FEET): 14.2
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE TAN FINE SAND	A-3	-200%=5	12 13	13	
	2			MEDIUM DENSE GRAY FINE SAND		ORG%= 1.1	14 14	12 13	
1	4			LOOSE DARK GRAY FINE SAND	A-3	ORG%= 3.1	24 22	7 8	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-734R
DRILLER: S. ADKISON
DEPTH TO WATER: INITIAL: ▽ 1.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 734+00
OFFSET: 28 FEET RIGHT
ELEVATION (FEET): 13.9
DATE: 8/10/2019
FLUID LOSS: NONE
CAVING: ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			LOOSE TAN SILTY FINE SAND	A-2-4		20		
	▽			LOOSE TAN FINE SAND		-200%=5	16	5	
	2			LOOSE DARK GRAY FINE SAND WITH ORGANICS		ORG%= 4.3	29	5	
1					A-3	ORG%= 2.2	20	8	
	4			LOOSE DARK GRAY FINE SAND			22	7	
						ORG%= 1.9	26	8	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%) scale: 10, 20, 30, 40, 60
N-Value scale: 10, 20, 30, 40, 60, 80

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-734+50R
DRILLER: S. ADKISON
DEPTH TO WATER: INITIAL: ▽ 1.0' **24 HR:** ▼ N/M

HAMMER TYPE: HAND
STATIONING: 734+50
OFFSET: 29 FEET RIGHT
ELEVATION (FEET): 14.0
DATE: 8/10/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0						26		
	▽			LOOSE TAN SILTY FINE SAND	A-2-4	-200%=15	20	5	
	2			LOOSE DARK GRAY FINE SAND WITH ORGANICS		ORG%= 3.1	31	8	
1						ORG%= 1.2	20	7	
	4			LOOSE DARK GRAY FINE SAND	A-3		21	5	
						ORG%= 1.8	30	7	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-735R
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 1.5' **24 HR:** ▼ N/M

HAMMER TYPE: HAND
STATIONING: 735+00
OFFSET: 24 FEET RIGHT
ELEVATION (FEET): 14.8
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4		10		
							14	13	
	2			VERY SOFT BLACK MUCK	A-8	-200%=38 ORG%= 27.0	153	1	
1						ORG%= 1.2	23	13	
	4			MEDIUM DENSE GRAY FINE SAND	A-3		23	12	
							23	8	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%) scale: 10, 20, 30, 40, 60
N-Value scale: 10, 20, 30, 40, 60, 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-735+50L
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 1.5' **24 HR:** ▽ N/M **CAVING:** ⊂ 3.5'

HAMMER TYPE: HAND
STATIONING: 735+50
OFFSET: 29 FEET LEFT
ELEVATION (FEET): 14.8
DATE: 6/5/2019
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4		27		
						-200%=4	14	13	
	2			MEDIUM DENSE TAN FINE SAND	A-3		17	10	
1		⊂					21	10	
	4					ORG%= 3.1	29	3	
							37	3	
	6			LOOSE DARK GRAY FINE SAND WITH ORGANICS	A-3	ORG%= 4.6	35	3	
2							30	7	
	8					ORG%= 2.9	33	8	
3	10								
	12								
4	14								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-735+50R
DRILLER: S. ADKISON
DEPTH TO WATER: INITIAL: ▽ 1.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 735+50
OFFSET: 32 FEET RIGHT
ELEVATION (FEET): 13.4
DATE: 8/10/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			LOOSE TAN SILTY FINE SAND	A-2-4	-200%=11	27		
							18	5	
	2			LOOSE GRAY FINE SAND	A-3		18	4	
1				LOOSE DARK GRAY FINE SAND			21	3	
	4			LOOSE DARK GRAY ORGANIC SAND	A-3	ORG%= 6.3	42	4	
				LOOSE DARK GRAY FINE SAND	A-3	ORG%= 1.4	24	7	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%): 10 20 30 40 60

N-Value: 10 20 30 40 60 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-736R
DRILLER: S. ADKISON
DEPTH TO WATER: INITIAL: ▽ 1.5' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 736+00
OFFSET: 26 FEET RIGHT
ELEVATION (FEET): 14.1
DATE: 8/10/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			LOOSE TAN SILTY FINE SAND	A-2-4	-200%=12	21 12	7	
	2			LOOSE GRAY FINE SAND	A-3		16	5	
1				LOOSE DARK GRAY FINE SAND		ORG%= 2.1	17	5	
	4			MEDIUM DENSE DARK GRAY FINE SAND	A-3	ORG%= 1.4	20	9	
						ORG%= 2.4	22	8	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%) scale: 10 20 30 40 60
N-Value scale: 10 20 30 40 60 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-736+50R
DRILLER: S. ADKISON
DEPTH TO WATER: INITIAL: ▽ 1.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 736+50
OFFSET: 26 FEET RIGHT
ELEVATION (FEET): 13.7
DATE: 8/10/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE DARK GRAY SILTY FINE SAND	A-2-4	-200%=14 ORG%= 2.3	29 19	8	
1	4			LOOSE DARK GRAY FINE SAND	A-3	ORG%= 1.8 ORG%= 2.4	22 28 25 23	7 7 5 5	
2	6								
3	10								
4	12								
	14								

Wc (%): 10 20 30 40 60
N-Value: 10 20 30 40 60 80

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-737+50L
DRILLER: S. ADKISON
DEPTH TO WATER: INITIAL: ▽ 1.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 737+50
OFFSET: 16 FEET LEFT
ELEVATION (FEET): 14.2
DATE: 8/10/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0						31		
	▽			LOOSE DARK GRAY SILTY FINE SAND	A-2-4	-200%=14 ORG%= 2.4	20	3	
	2						16	5	
1				LOOSE DARK GRAY FINE SAND	A-3	ORG%= 1.4	13	4	
	4					-200%=6	25	4	
						ORG%= 1.3	14	4	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%) scale: 10, 20, 30, 40, 60
N-Value scale: 10, 20, 30, 40, 60, 80

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-737+50R
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 737+60
OFFSET: 26 FEET RIGHT
ELEVATION (FEET): 14.1
DATE: 6/6/2019
FLUID LOSS: NONE
CAVING: ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK	A-2-4	-200%=16	8	10 20 30 40 60		10 20 30 40 60 80
							9		13	
	2 ▽			MEDIUM DENSE GRAY FINE SAND			19		13	
1					A-3	ORG%= 2.1	23		9	
	4			MEDIUM DENSE DARK GRAY FINE SAND			18		12	
							23		10	
2	6									
	8									
3	10									
	12									
4	14									

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-738L
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 738+00
OFFSET: 17 FEET LEFT
ELEVATION (FEET): 14.2
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: ◡ 4.5'

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N
0	0			MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK	A-2-4	-200%=16	18 23	8
	2 ▽			MEDIUM DENSE GRAY FINE SAND	A-3		16	9
1							16	6
	4 ◡			LOOSE GRAY FINE SAND	A-3		23	5
							12	7
2	6							
	8							
3	10							
	12							
4	14							

Wc (%): 10 20 30 40 60

N-Value: 10 20 30 40 60 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-738R
DRILLER: S. ADKISON
DEPTH TO WATER: INITIAL: ▽ 1.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 738+00
OFFSET: 33 FEET RIGHT
ELEVATION (FEET): 14.1
DATE: 8/10/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0								
				LOOSE TAN SILTY FINE SAND	A-2-4	-200%=20	30 24	4	
	2						23	2	
1				VERY LOOSE DARK GRAY FINE SAND	A-3	ORG%= 1.2	15	2	
	4						17	2	
						ORG%= 1.3	18	2	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-738+50R
DRILLER: S. ADKISON
DEPTH TO WATER: INITIAL: ▽ 1.5' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 738+50
OFFSET: 36 FEET RIGHT
ELEVATION (FEET): 14.3
DATE: 8/10/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0						27		
				LOOSE DARK GRAY SILTY FINE SAND WITH ORGANICS	A-2-4	-200%=15 ORG%= 3.2	32	7	
	2					ORG%= 4.2	31	4	
1				LOOSE DARK GRAY ORGANIC SAND	A-2-4	ORG%= 8.1	56	4	
	4					-200%=16 ORG%= 6.8	46	3	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%): 10 20 30 40 60

N-Value: 10 20 30 40 60 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-739+50L
DRILLER: S. ADKISON
DEPTH TO WATER: INITIAL: ▽ 1.5' **24 HR:** ▼ N/M

HAMMER TYPE: HAND
STATIONING: 739+50
OFFSET: 20 FEET LEFT
ELEVATION (FEET): 13.9
DATE: 8/10/2019
FLUID LOSS: NONE
CAVING: ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK	A-2-4		20		
				MEDIUM DENSE GRAY FINE SAND WITH ROCK	A-3	-200%=10	15	8	
	2			MEDIUM DENSE GRAY FINE SAND			14	9	
1						ORG%= 2.2	23	5	
	4			LOOSE GRAY FINE SAND	A-3		20	4	
							21	4	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%): 10 20 30 40 60

N-Value: 10 20 30 40 60 80

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-739+50R
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 739+60
OFFSET: 15 FEET RIGHT
ELEVATION (FEET): 14.2
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4		11		
				MEDIUM DENSE GRAY FINE SAND	A-3	-200%=6	9	13	
	▽2			VERY SOFT BLACK MUCK	A-8	ORG%= 25.1	113	1	
1						ORG%= 2.1	21	12	
	4			MEDIUM DENSE DARK GRAY FINE SAND	A-3		19	8	
				LOOSE DARK GRAY ORGANIC SAND	A-3	ORG%= 9.6	56	3	
	6			LOOSE DARK GRAY FINE SAND	A-3	-200%=9 ORG%= 2.1	24	7	
2	8								
3	10								
	12								
4	14								

Wc (%): 10 20 30 40 60

N-Value: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-740L
DRILLER: S. ADKISON
DEPTH TO WATER: INITIAL: ▽ 1.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 740+00
OFFSET: 19 FEET LEFT
ELEVATION (FEET): 14.2
DATE: 8/10/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			LOOSE GRAY SILTY FINE SAND WITH ROCK			28		
	▽			LOOSE DARK GRAY SILTY FINE SAND WITH ROCK		-200%=15	17	4	
	2					ORG%= 2.3	21	4	
1				LOOSE DARK GRAY SILTY FINE SAND	A-2-4		18	3	
	4					-200%=29 ORG%= 2.1	18	3	
				LOOSE DARK GRAY SILTY FINE SAND WITH ORGANICS		ORG%= 3.2	27	3	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-740R
DRILLER: S. ADKISON
DEPTH TO WATER: INITIAL: ▽ 1.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 740+00
OFFSET: 21 FEET RIGHT
ELEVATION (FEET): 14.3
DATE: 8/10/2019
FLUID LOSS: NONE
CAVING: ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N	N-Value
								10 20 30 40 60		10 20 30 40 60 80
0	0			MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK	A-2-4		19			
	▽			MEDIUM DENSE DARK GRAY SILTY FINE SAND WITH ROCK		-200%=14	12		8	
	2			MEDIUM DENSE DARK GRAY SILTY FINE SAND		ORG%= 1.3	14		9	
1							14		9	
	4			LOOSE DARK GRAY SILTY FINE SAND	A-2-4		14		3	
						ORG%= 2.1	18		3	
2	6									
	8									
3	10									
	12									
4										
	14									

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-740+50L
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 740+40
OFFSET: 20 FEET LEFT
ELEVATION (FEET): 14.0
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4		18		
				MEDIUM DENSE GRAY FINE SAND		-200%=9	12	13	
	2 ▽						11	12	
1				MEDIUM DENSE GRAY FINE SAND	A-3		11	8	
	4						21	8	
							16	10	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%): 10 20 30 40 60

N-Value: 10 20 30 40 60 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-740+50R
DRILLER: S. ADKISON
DEPTH TO WATER: INITIAL: ▽ 1.5' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 740+50
OFFSET: 21 FEET RIGHT
ELEVATION (FEET): 14.0
DATE: 8/10/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0								
				LOOSE TAN SILTY FINE SAND WITH ROCK	A-2-4	-200%=23	26 19	8	
	2			LOOSE DARK GRAY FINE SAND WITH ROCK	A-3	ORG%=1.1	20 14	7 6	
1	4			LOOSE DARK GRAY FINE SAND		ORG%=1.3	21 20	4 4	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%): 10 20 30 40 60

N-Value: 10 20 30 40 60 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-741R
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 741+00
OFFSET: 26 FEET RIGHT
ELEVATION (FEET): 13.5
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK	A-2-4		24		
				MEDIUM DENSE DARK GRAY FINE SAND WITH ORGANICS		-200%=8 ORG%= 4.1	17	13	
	2 ▽			MEDIUM DENSE DARK GRAY FINE SAND		ORG%= 2.1	17	14	
1					A-3		16	13	
	4			MEDIUM DENSE GRAY FINE SAND			16	16	
							18	12	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%) axis: 10 20 30 40 60
N-Value axis: 10 20 30 40 60 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-742+50R
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 742+50
OFFSET: 30 FEET RIGHT
ELEVATION (FEET): 13.8
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4		17		
							12	12	
	2 ▽			MEDIUM DENSE DARK GRAY FINE SAND WITH ORGANICS	A-3	-200%=9 ORG%= 4.3	28	11	
1							11	13	
	4			MEDIUM DENSE GRAY FINE SAND			19	14	
							19	13	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-744L
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 744+00
OFFSET: 27 FEET LEFT
ELEVATION (FEET): 13.6
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK	A-2-4	-200%=16	21 11	13	
	2 ▽			MEDIUM DENSE GRAY FINE SAND	A-3		23 13	10 13	
1	4			LOOSE GRAY FINE SAND	A-3		16 18	4 3	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%): 10 20 30 40 60

N-Value: 10 20 30 40 60 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-746R
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 2.5' **24 HR:** ▼ N/M

HAMMER TYPE: HAND
STATIONING: 746+00
OFFSET: 38 FEET RIGHT
ELEVATION (FEET): 14.3
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N	N-Value
0	0			LOOSE GRAY FINE SAND	A-3	-200%=8	15	10 20 30 40 60	8	10 20 30 40 60 80
							25			
	2			LOOSE DARK GRAY ORGANIC SAND	A-2-4	ORG%= 9.8	73		5	
1						ORG%= 3.2	27		3	
	4			LOOSE DARK GRAY SILTY FINE SAND WITH ORGANICS	A-2-4	-200%=26 ORG%= 4.1	24		3	
				MEDIUM DENSE GRAY FINE SAND	A-3		19		13	
2	6									
	8									
3	10									
	12									
4	14									

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-747L
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 3.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 747+00
OFFSET: 22 FEET LEFT
ELEVATION (FEET): 14.7
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY FINE SAND	A-3		15		
							16	13	
	2			MEDIUM DENSE DARK GRAY FINE SAND	A-3	-200%=8 ORG%= 2.1	11	13	
1	▽					ORG%= 1.4	13	13	
	4			LOOSE GRAY FINE SAND	A-3		20	7	
							24	3	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%) scale: 10 20 30 40 60

N-Value scale: 10 20 30 40 60 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-747+50R
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 3.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 747+70
OFFSET: 37 FEET RIGHT
ELEVATION (FEET): 14.7
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N	N-Value
								10 20 30 40 60		10 20 30 40 60 80
0	0						13			
				MEDIUM DENSE GRAY FINE SAND		-200%=7	13		13	
	2				A-3		12		9	
1	▽					ORG%= 2.1	19		8	
	4			MEDIUM DENSE DARK GRAY FINE SAND			21		13	
				LOOSE DARK GRAY FINE SAND	A-3		20		4	
2	6									
	8									
3	10									
	12									
4	14									

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RD-748+50L
DRILLER: B. MICHAEL
DEPTH TO WATER: INITIAL: ▽ 3.0' **24 HR:** ▽ N/M

HAMMER TYPE: HAND
STATIONING: 748+30
OFFSET: 28 FEET LEFT
ELEVATION (FEET): 14.7
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0						10		
						-200%=4	10	11	
	2						13	13	
1				MEDIUM DENSE GRAY FINE SAND	A-3		13	12	
	4						23	8	
							21	8	
2	6								
	8								
3	10								
	12								
4	14								

Wc (%): 10 20 30 40 60
N-Value: 10 20 30 40 60 80

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

CULVERT SOIL BORINGS

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: CV-736+50L
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 1.0' **24 HR:** ▽ N/M

HAMMER TYPE: AUTOMATIC
STATIONING: 736+60
OFFSET: 24 FEET LEFT
ELEVATION (FEET): 14.4
DATE: 5/29/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			LOOSE GRAY SILTY FINE SAND	A-2-4	-200%=11	22, 24		
	4			LOOSE GRAY FINE SAND	A-3	-200%=7	20, 21	4, 3	
2				LOOSE DARK GRAY FINE SAND		ORG%=1.3 ORG%=2.2	23, 19	4, 3	
4	8			MEDIUM DENSE GRAY FINE SAND	A-3	ORG%=1.1	21, 20, 21, 20	10, 11, 10, 9	
6	16					-200%=2	23, 22, 25, 32	17, 19, 23, 19	
8	28								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: CV-737R
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 1.0' **24 HR:** ▽ N/M

HAMMER TYPE: AUTOMATIC
STATIONING: 737+28
OFFSET: 21 FEET RIGHT
ELEVATION (FEET): 14.4
DATE: 5/29/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			LOOSE GRAY SILTY FINE SAND	A-2-4	-200%=12 ORG%= 3.1	23		
							20		
				LOOSE DARK GRAY SILTY FINE SAND WITH ORGANICS		ORG%= 2.6	18	5	
	4						20		
2				LOOSE GRAY FINE SAND	A-3	-200%=9	18		
							27	5	
							24	4	
	8						29	3	
				LOOSE DARK GRAY ORGANIC SAND WITH WOOD	A-3	ORG%= 9.7	97	3	
				LOOSE DARK GRAY FINE SAND WITH ORGANICS	A-3	-200%=5 ORG%= 4.2	33	6	
4	12			MEDIUM DENSE DARK GRAY FINE SAND	A-3	ORG%= 1.3	23	15	
							23	15	
6	16			MEDIUM DENSE GRAY FINE SAND			22	14	
	20					-200%=1	27	16	
	24						24	24	
8	28								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: CV-745L
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 1.0' **24 HR:** ▽ N/M

HAMMER TYPE: AUTOMATIC
STATIONING: 744+76
OFFSET: 21 FEET LEFT
ELEVATION (FEET): 14.0
DATE: 5/29/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N
0	0			LOOSE GRAY SILTY FINE SAND	A-2-4	-200%=16 ORG%= 1.2	16, 18	
				LOOSE GRAY FINE SAND	A-3		13, 15	8, 7
2	4			MEDIUM DENSE GRAY FINE SAND			17, 23, 21	11, 19, 21
	8			MEDIUM DENSE DARK GRAY FINE SAND	A-3	-200%=3 ORG%= 2.3 ORG%= 1.4	26, 23	16, 16
4	12			MEDIUM DENSE GRAY FINE SAND			28, 24	11, 16
6	20			DENSE GRAY FINE SAND	A-3	-200%=3	22, 22, 26	35, 31, 28
8	28							

Wc (%) scale: 10, 20, 30, 40, 60
N-Value scale: 10, 20, 30, 40, 60, 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: CV-745R
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 1.0' **24 HR:** ▽ N/M

HAMMER TYPE: AUTOMATIC
STATIONING: 745+23
OFFSET: 25 FEET RIGHT
ELEVATION (FEET): 13.8
DATE: 5/29/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			LOOSE GRAY SILTY FINE SAND	A-2-4	-200%=16	23 21	6	
				MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4		22	8	
	4						14	16	
							13	14	
2				MEDIUM DENSE GRAY FINE SAND	A-3		20	17	
	8						17	24	
						-200%=8	21	13	
	12						20	21	
4							25	24	
	16			DENSE GRAY FINE SAND	A-3		23	29	
							24	31	
6	20						26	56	
				VERY DENSE GRAY FINE SAND	A-3	-200%=9			
	24						25	60	
8									
	28								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

RETAINING WALL SOIL BORINGS

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RW-721L
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 1.5' **24 HR:** ▽ N/M

HAMMER TYPE: AUTOMATIC
STATIONING: 721+00
OFFSET: 27 FEET LEFT
ELEVATION (FEET): 15.9
DATE: 6/4/2019
FLUID LOSS: NONE
CAVING: ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4	-200%=17	18	10 20 30 40 60		10 20 30 40 60 80
							16			
							18		13	
	4						20			
							22			
							22		9	
2						-200%=3	22		9	
	8						22		8	
				MEDIUM DENSE GRAY FINE SAND	A-3	ORG%= 2.3	25		10	
							25		13	
4	12						29		13	
						-200%=4	29		14	
	16									
						ORG%= 2.1	28		18	
6	20									
	24									
8										
	28									

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RW-724L
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▽ N/M

HAMMER TYPE: AUTOMATIC
STATIONING: 724+00
OFFSET: 23 FEET LEFT
ELEVATION (FEET): 16.0
DATE: 6/4/2019
FLUID LOSS: NONE
CAVING: ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			LOOSE GRAY SILTY FINE SAND	A-2-4		21		
						-200%=6	19		
							26	5	
	4			LOOSE GRAY FINE SAND	A-3		26		
							24		
							22	6	
2							23	8	
	8					-200%=4	24	13	
							23	18	
							24	17	
	12								
4				MEDIUM DENSE GRAY FINE SAND	A-3		25	23	
						-200%=9	24	21	
	16								
							22	19	
6	20								
	24								
8									
	28								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RW-726L
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 2.5' **24 HR:** ▼ N/M

HAMMER TYPE: AUTOMATIC
STATIONING: 726+25
OFFSET: 16 FEET LEFT
ELEVATION (FEET): 16.8
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK	A-2-4	-200%=14	14 14		
	▽			MEDIUM DENSE GRAY FINE SAND	A-3		19 22	13	
	4			LOOSE GRAY FINE SAND	A-3		24 23	4	
2						-200%=3	23	10	
	8						24	14	
							25	12	
							25	11	
4	12			MEDIUM DENSE GRAY FINE SAND	A-3		23	10	
	16						23	11	
6						-200%=5	25	17	
	20								
	24								
8									
	28								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

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Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RW-730L
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 1.5' **24 HR:** ▽ N/M

HAMMER TYPE: AUTOMATIC
STATIONING: 730+00
OFFSET: 18 FEET LEFT
ELEVATION (FEET): 15.2
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY FINE SAND	A-3	-200%=9	17		
							17		
							19	13	
							21		
	4						22		
							20	8	
2							23	17	
	8					-200%=6	24	16	
							23	16	
							22	17	
	12								
4				DENSE GRAY FINE SAND	A-3	-200%=6	23	30	
	16						23	32	
				VERY DENSE GRAY FINE SAND	A-3		24	42	
6	20								
	24								
8									
	28								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

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Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RW-733L
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▽ N/M

HAMMER TYPE: AUTOMATIC
STATIONING: 733+00
OFFSET: 21 FEET LEFT
ELEVATION (FEET): 14.5
DATE: 6/5/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY FINE SAND	A-3	-200%=8	16		
							17		
							15	13	
							13		
	4					ORG%= 1.2	17		
				LOOSE GRAY FINE SAND	A-3		21	4	
2							21	3	
	8			VERY LOOSE DARK GRAY ORGANIC SAND	A-2-4	-200%=16 ORG%= 9.8	61	WOH	WOH
				VERY LOOSE DARK GRAY SILTY FINE SAND WITH ORGANICS	A-2-4	ORG%= 3.6	36	2	
4						-200%=4 ORG%= 1.4	21	9	
	12						20	10	
				MEDIUM DENSE GRAY FINE SAND	A-3		22	18	
6	16								
							22	14	
	20								
8	24								
	28								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RW-739L
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 1.5' **24 HR:** ▽ N/M

HAMMER TYPE: AUTOMATIC
STATIONING: 738+86
OFFSET: 21 FEET LEFT
ELEVATION (FEET): 13.6
DATE: 6/4/2019
FLUID LOSS: NONE
CAVING: ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4		23		
						-200%=9	19		
				MEDIUM DENSE GRAY FINE SAND	A-3		14	9	
						ORG%= 1.1	14		
	4			LOOSE GRAY FINE SAND	A-3		21		
							22	3	
2							20	3	
	8			LOOSE DARK GRAY ORGANIC SAND	A-2-4	-200%=17 ORG%= 9.3	66	6	
						ORG%= 1.4	22	22	
							27	10	
	12								
4						ORG%= 1.6	22	9	
				MEDIUM DENSE GRAY FINE SAND	A-3				
							22	9	
	16								
						-200%=4	21	15	
6	20								
	24								
8									
	28								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

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NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

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Tallahassee, Florida 32301
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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RW-742L
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▽ N/M

HAMMER TYPE: AUTOMATIC
STATIONING: 742+00
OFFSET: 29 FEET LEFT
ELEVATION (FEET): 14.0
DATE: 6/4/2019
FLUID LOSS: NONE
CAVING: ℄ NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N
0	0			MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4		25	
						-200%=9	16	
							15	13
				MEDIUM DENSE GRAY FINE SAND	A-3		25	
	4					-200%=2	23	
							22	24
2				MEDIUM DENSE DARK GRAY ORGANIC SAND WITH WOOD	A-3	ORG%= 9.2	41	15
	8						23	20
						ORG%= 1.3	22	15
				MEDIUM DENSE GRAY FINE SAND	A-3		22	18
4	12					ORG%= 1.4	25	19
						-200%=3	21	25
	16			DENSE GRAY FINE SAND	A-3			
6	20						20	28
	24							
8	28							

N-Value

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

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Tallahassee, Florida 32301
Office #: (850) 386-1253
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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: RW-744R
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 2.0' **24 HR:** ▽ N/M

HAMMER TYPE: AUTOMATIC
STATIONING: 744+00
OFFSET: 26 FEET RIGHT
ELEVATION (FEET): 13.7
DATE: 6/4/2019
FLUID LOSS: NONE
CAVING: C NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK	A-2-4	-200%=13	29		
							18		
	▽			MEDIUM DENSE GRAY SILTY FINE SAND			19	13	
							13		
	4			MEDIUM DENSE GRAY FINE SAND	A-3		11		
							19	14	
2				DENSE GRAY FINE SAND	A-3		20	31	
	8						22	25	
				MEDIUM DENSE DARK GRAY FINE SAND	A-3	ORG%= 2.1	22	24	
						ORG%= 1.6	22	24	
4	12					ORG%= 2.4	22	18	
				DENSE GRAY FINE SAND	A-3	-200%=8	21	30	
	16								
							23	36	
6	20								
	24								
8									
	28								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

POND SOIL BORINGS

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: ACP-1
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 2.5' **24 HR:** ▽ N/M **CAVING:** ℄ NONE

HAMMER TYPE: AUTOMATIC
STATIONING: 727+19
OFFSET: 196 FEET LEFT
ELEVATION (FEET): N/A
DATE: 6/3/2019
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			CRUSHED LIMESTONE	--		--		
				MEDIUM DENSE GRAY & ORANGE SILTY FINE SAND	A-2-4	-200%=11	14		
							19	13	
				MEDIUM DENSE GRAY FINE SAND	A-3		20		
	4						20		
							21	8	
2				MEDIUM DENSE DARK GRAY FINE SAND WITH ORGANICS		-200%=4 ORG%= 4.8	55	9	
	8						22	14	
				MEDIUM DENSE DARK GRAY ORGANIC SAND WITH WOOD	A-3	ORG%= 8.6	70	8	
				MEDIUM DENSE GRAY FINE SAND	A-3	-200%=2	23	13	
4	12						22	21	
6	16								
	20								
	24								
8	28								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: ACP-2
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 3.5' **24 HR:** ▽ N/M **CAVING:** C NONE

HAMMER TYPE: AUTOMATIC
STATIONING: 727+88
OFFSET: 122 FEET LEFT
ELEVATION (FEET): N/A
DATE: 6/3/2019
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			CRUSHED LIMESTONE	--		--		
				MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4	-200%=12	6		
							6	13	
	▽ 4						10		
							19		
							16	12	
2							16	16	
	8			MEDIUM DENSE GRAY FINE SAND	A-3		20	10	
						-200%=2	18	10	
							25	10	
	12								
4							14	13	
	16								
6	20								
	24								
8	28								

Wc (%) scale: 10, 20, 30, 40, 60
N-Value scale: 10, 20, 30, 40, 60, 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

104 North Magnolia Drive
Tallahassee, Florida 32301
Office #: (850) 386-1253
Fax #: (850) 385-8050

PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: ACP-3
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 2.5' **24 HR:** ▽ N/M **CAVING:** ℄ NONE

HAMMER TYPE: AUTOMATIC
STATIONING: 728+91
OFFSET: 288 FEET LEFT
ELEVATION (FEET): N/A
DATE: 6/3/2019
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
	0			CRUSHED LIMESTONE	--		--		
				MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4		4		
						-200%=4 ORG%= 2.9	17	9	
				MEDIUM DENSE DARK GRAY FINE SAND WITH ORGANICS	A-3		16		
0							19		
	4			MEDIUM DENSE DARK GRAY FINE SAND			19	19	
				DENSE GRAY FINE SAND	A-3		17	30	
2	8						19	22	
							15	19	
				MEDIUM DENSE GRAY FINE SAND	A-3	-200%=3	18	16	
4	12								
							18	16	
	16								
6	20								
	24								
8	28								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

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PROJECT: ALF COLEMAN RD - ROADWAY IMPROVEMENTS
CLIENT: GPI SOUTHEAST
PROJECT NO.: 37-63-18-01
PROJECT LOCATION: BAY COUNTY, FLORIDA
BORING NO.: ACP-4
DRILLER: B. GUERRA
DEPTH TO WATER: INITIAL: ▽ 2.5' **24 HR:** ▽ N/M **CAVING:** C NONE

HAMMER TYPE: AUTOMATIC
STATIONING: 729+94
OFFSET: 113 FEET LEFT
ELEVATION (FEET): N/A
DATE: 6/3/2019
FLUID LOSS: NONE

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	N	N-Value
0	0			CRUSHED LIMESTONE	--		--		
				MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4	-200%=11	9		
							16	12	
				MEDIUM DENSE DARK GRAY FINE SAND			15		
	4					ORG%= 4.1	16		
				MEDIUM DENSE DARK GRAY FINE SAND WITH ORGANICS	A-3		19	10	
2						ORG%= 1.2	18	13	
	8			MEDIUM DENSE GRAY FINE SAND			22	10	
							16	8	
						-200%=3			
				LOOSE GRAY FINE SAND	A-3		20	4	
4	12								
							20	8	
	16								
6	20								
	24								
8									
	28								

Wc (%) axis: 10, 20, 30, 40, 60
N-Value axis: 10, 20, 30, 40, 60, 80

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

NOTES: N/A MEANS NOT AVAILABLE
N/M MEANS NOT MEASURED

APPENDIX D

SOIL CLASSIFICATION DATA

ROADWAY SOIL BORINGS

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-719R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	5												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	4	100	86	76	58	28	18	11				9	A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
2.0-2.5	26											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	29											14	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	26	100	100	100	96	30	13	2				13	A-3	1	MEDIUM DENSE GRAY FINE SAND
5.0-5.5	27											10	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-720L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	8												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	8	100	99	97	84	54	29	16				12	A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
2.0-2.5	10											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	18											15	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	24											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
5.0-5.5	21											12	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-721R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	6												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	7											13	A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
2.0-2.5	16	100	98	98	94	35	8	6				15	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	23											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	30											10	A-3	1	MEDIUM DENSE GRAY FINE SAND
5.0-5.5	32											10	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-722+50L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	20												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	11	100	90	89	80	55	13	11				14	A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
2.0-2.5	15											13	A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
3.0-3.5	20											5	A-3	1	LOOSE GRAY FINE SAND
4.0-4.5	23											3	A-3	1	LOOSE GRAY FINE SAND
5.0-5.5	21											4	A-3	1	LOOSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-723R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	14												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	18	100	92	90	85	34	18	12				13	A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
2.0-2.5	15											14	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	18											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	20											15	A-3	1	MEDIUM DENSE GRAY FINE SAND
5.0-5.5	19											13	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-725R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	12												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	11											13	A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
2.0-2.5	28	100	100	100	92	31	14	3				13	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	30											8	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	20											9	A-3	1	MEDIUM DENSE GRAY FINE SAND
5.0-5.5	23											13	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-727R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	16												A-3	1	MEDIUM DENSE GRAY FINE SAND
1.0-1.5	15	100	100	100	95	29	7	6				13	A-3	1	MEDIUM DENSE GRAY FINE SAND
2.0-2.5	26											9	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	27											10	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	23											12	A-3	1	MEDIUM DENSE GRAY FINE SAND
5.0-5.5	25											10	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-728+50L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	15												A-3	1	MEDIUM DENSE GRAY FINE SAND
1.0-1.5	14	100	98	97	94	32	5	3				9	A-3	1	MEDIUM DENSE GRAY FINE SAND
2.0-2.5	20											9	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	25											7	A-3	1	LOOSE GRAY FINE SAND
4.0-4.5	23											3	A-3	1	LOOSE GRAY FINE SAND
5.0-5.5	22											3	A-3	1	LOOSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-729+50R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	16												A-3	1	MEDIUM DENSE GRAY FINE SAND
1.0-1.5	12	100	98	98	95	37	10	8				13	A-3	1	MEDIUM DENSE GRAY FINE SAND
2.0-2.5	22											12	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	24											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	30											15	A-3	1	MEDIUM DENSE GRAY FINE SAND
5.0-5.5	29											13	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-731L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	21												A-3	1	MEDIUM DENSE GRAY FINE SAND
1.0-1.5	19											9	A-3	1	MEDIUM DENSE GRAY FINE SAND
2.0-2.5	20	100	98	97	94	35	16	3				13	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	15											12	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	24											7	A-3	1	LOOSE GRAY FINE SAND
5.0-5.5	22											7	A-3	1	LOOSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-731+50R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	16												A-3	1	MEDIUM DENSE GRAY FINE SAND
1.0-1.5	29	100	98	98	92	35	4	2				8	A-3	1	MEDIUM DENSE GRAY FINE SAND
2.0-2.5	22											9	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	16											12	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	24											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
5.0-5.5	22											15	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-733+50R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	16												A-2-4	2	MEDIUM DENSE TAN SILTY FINE SAND
1.0-1.5	32	100	99	97	85	41	16	9			4.3	8	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND WITH ORGANICS
2.0-2.5	31										2.8	10	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND WITH ORGANICS
3.0-3.5	25											12	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	23											7	A-3	1	LOOSE GRAY FINE SAND
5.0-5.5	21											5	A-3	1	LOOSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-734L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	12												A-3	1	MEDIUM DENSE TAN FINE SAND
1.0-1.5	13	100	99	84	57	30	12	5				13	A-3	1	MEDIUM DENSE TAN FINE SAND
2.0-2.5	14											12	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	14										1.1	13	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	24										3.1	7	A-3	1	LOOSE DARK GRAY FINE SAND
5.0-5.5	22											8	A-3	1	LOOSE DARK GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-734R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	20												A-2-4	2	LOOSE TAN SILTY FINE SAND
1.0-1.5	16	100	100	88	51	26	11	5				5	A-3	1	LOOSE TAN FINE SAND
2.0-2.5	29										4.3	5	A-3	1	LOOSE DARK GRAY FINE SAND WITH ORGANICS
3.0-3.5	20										2.2	8	A-3	1	LOOSE DARK GRAY FINE SAND
4.0-4.5	22											7	A-3	1	LOOSE DARK GRAY FINE SAND
5.0-5.5	26										1.9	8	A-3	1	LOOSE DARK GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-734+50R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	26												A-2-4	2	LOOSE TAN SILTY FINE SAND
1.0-1.5	20	100	100	96	74	49	25	15				5	A-2-4	2	LOOSE TAN SILTY FINE SAND
2.0-2.5	31										3.1	8	A-3	1	LOOSE DARK GRAY FINE SAND WITH ORGANICS
3.0-3.5	20										1.2	7	A-3	1	LOOSE DARK GRAY FINE SAND
4.0-4.5	21											5	A-3	1	LOOSE DARK GRAY FINE SAND
5.0-5.5	30										1.8	7	A-3	1	LOOSE DARK GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-735R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	10												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	14											13	A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
2.0-2.5	153	100	98	92	84	68	47	38			27.0	1	A-8	4	VERY SOFT BLACK MUCK
3.0-3.5	23										1.2	13	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	23											12	A-3	1	MEDIUM DENSE GRAY FINE SAND
5.0-5.5	23											8	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-735+50L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	27												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	14	100	99	82	52	28	9	4				13	A-3	1	MEDIUM DENSE TAN FINE SAND
2.0-2.5	17											10	A-3	1	MEDIUM DENSE TAN FINE SAND
3.0-3.5	21											10	A-3	1	MEDIUM DENSE TAN FINE SAND
4.0-4.5	29										3.1	3	A-3	1	LOOSE DARK GRAY FINE SAND WITH ORGANICS
5.0-5.5	37											3	A-3	1	LOOSE DARK GRAY FINE SAND WITH ORGANICS
6.0-6.5	35										4.6	3	A-3	1	LOOSE DARK GRAY FINE SAND WITH ORGANICS
7.0-7.5	30											7	A-3	1	LOOSE DARK GRAY FINE SAND WITH ORGANICS
8.0-8.5	33										2.9	8	A-3	1	LOOSE DARK GRAY FINE SAND WITH ORGANICS

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-735+50R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	27												A-2-4	2	LOOSE TAN SILTY FINE SAND
1.0-1.5	18	100	99	98	80	40	20	11				5	A-2-4	2	LOOSE TAN SILTY FINE SAND
2.0-2.5	18											4	A-3	1	LOOSE GRAY FINE SAND
3.0-3.5	21											3	A-3	1	LOOSE DARK GRAY FINE SAND
4.0-4.5	42										6.3	4	A-3	3	LOOSE DARK GRAY ORGANIC SAND
5.0-5.5	24										1.4	7	A-3	1	LOOSE DARK GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-736R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	21												A-2-4	2	LOOSE TAN SILTY FINE SAND
1.0-1.5	12	100	100	98	69	45	21	12				7	A-2-4	2	LOOSE TAN SILTY FINE SAND
2.0-2.5	16											5	A-3	1	LOOSE GRAY FINE SAND
3.0-3.5	17										2.1	5	A-3	1	LOOSE DARK GRAY FINE SAND
4.0-4.5	20										1.4	9	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
5.0-5.5	22										2.4	8	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-736+50R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	29												A-2-4	2	MEDIUM DENSE DARK GRAY SILTY FINE SAND
1.0-1.5	19	100	99	98	63	39	22	14			2.3	8	A-2-4	2	MEDIUM DENSE DARK GRAY SILTY FINE SAND
2.0-2.5	22											7	A-3	1	LOOSE DARK GRAY FINE SAND
3.0-3.5	28										1.8	7	A-3	1	LOOSE DARK GRAY FINE SAND
4.0-4.5	25											5	A-3	1	LOOSE DARK GRAY FINE SAND
5.0-5.5	23										2.4	5	A-3	1	LOOSE DARK GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-737+50L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	31												A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND
1.0-1.5	20	100	100	98	90	35	17	14			2.4	3	A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND
2.0-2.5	16											5	A-3	1	LOOSE DARK GRAY FINE SAND
3.0-3.5	13										1.4	4	A-3	1	LOOSE DARK GRAY FINE SAND
4.0-4.5	25	100	100	100	91	24	7	6				4	A-3	1	LOOSE DARK GRAY FINE SAND
5.0-5.5	14										1.3	4	A-3	1	LOOSE DARK GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-737+50R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	8												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK
1.0-1.5	9	71	61	56	52	35	18	16				13	A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK
2.0-2.5	19											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	23										2.1	9	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
4.0-4.5	18											12	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
5.0-5.5	23											10	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-738L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	18												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK
1.0-1.5	23	75	70	67	61	39	24	16				8	A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK
2.0-2.5	16											9	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	16											6	A-3	1	LOOSE GRAY FINE SAND
4.0-4.5	23											5	A-3	1	LOOSE GRAY FINE SAND
5.0-5.5	12											7	A-3	1	LOOSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-738R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	30												A-2-4	2	LOOSE TAN SILTY FINE SAND
1.0-1.5	24	100	98	95	74	48	27	20				4	A-2-4	2	LOOSE TAN SILTY FINE SAND
2.0-2.5	23											2	A-3	1	VERY LOOSE DARK GRAY FINE SAND
3.0-3.5	15										1.2	2	A-3	1	VERY LOOSE DARK GRAY FINE SAND
4.0-4.5	17											2	A-3	1	VERY LOOSE DARK GRAY FINE SAND
5.0-5.5	18										1.3	2	A-3	1	VERY LOOSE DARK GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-738+50R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	27												A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND WITH ORGANICS
1.0-1.5	32	88	86	84	52	31	18	15			3.2	7	A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND WITH ORGANICS
2.0-2.5	31										4.2	4	A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND WITH ORGANICS
3.0-3.5	56										8.1	4	A-2-4	3	LOOSE DARK GRAY ORGANIC SAND
4.0-4.5	46	95	95	92	74	42	21	16			6.8	3	A-2-4	3	LOOSE DARK GRAY ORGANIC SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-739+50L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	20												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK
1.0-1.5	15	89	88	86	70	34	13	10				8	A-3	1	MEDIUM DENSE GRAY FINE SAND WITH ROCK
2.0-2.5	14											9	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	23										2.2	5	A-3	1	LOOSE GRAY FINE SAND
4.0-4.5	20											4	A-3	1	LOOSE GRAY FINE SAND
5.0-5.5	21											4	A-3	1	LOOSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-739+50R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	11												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	9	100	88	85	62	26	10	6				13	A-3	1	MEDIUM DENSE GRAY FINE SAND
2.0-2.5	113										25.1	1	A-8	4	VERY SOFT BLACK MUCK
3.0-3.5	21										2.1	12	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
4.0-4.5	19											8	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
5.0-5.5	56										9.6	3	A-3	3	LOOSE DARK GRAY ORGANIC SAND
6.0-6.5	24	100	100	99	88	41	16	9			2.1	7	A-3	1	LOOSE DARK GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-740L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	28												A-2-4	2	LOOSE GRAY SILTY FINE SAND WITH ROCK
1.0-1.5	17	94	91	89	76	36	19	15				4	A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND WITH ROCK
2.0-2.5	21										2.3	4	A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND
3.0-3.5	18											3	A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND
4.0-4.5	18	100	99	99	79	45	31	29			2.1	3	A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND
5.0-5.5	27										3.2	3	A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND WITH ORGANICS

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-740R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	19												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK
1.0-1.5	12	90	80	75	58	31	27	14				8	A-2-4	2	MEDIUM DENSE DARK GRAY SILTY FINE SAND WITH ROCK
2.0-2.5	14										1.3	9	A-2-4	2	MEDIUM DENSE DARK GRAY SILTY FINE SAND
3.0-3.5	14											9	A-2-4	2	MEDIUM DENSE DARK GRAY SILTY FINE SAND
4.0-4.5	14											3	A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND
5.0-5.5	18										2.1	3	A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-740+50L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	18												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	12	100	91	88	73	29	12	9				13	A-3	1	MEDIUM DENSE GRAY FINE SAND
2.0-2.5	11											12	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	11											8	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	21											8	A-3	1	MEDIUM DENSE GRAY FINE SAND
5.0-5.5	16											10	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-740+50R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	26												A-2-4	2	LOOSE TAN SILTY FINE SAND WITH ROCK
1.0-1.5	19	65	60	56	51	37	28	23				8	A-2-4	2	LOOSE TAN SILTY FINE SAND WITH ROCK
2.0-2.5	20											7	A-3	1	LOOSE DARK GRAY FINE SAND WITH ROCK
3.0-3.5	14										1.1	6	A-3	1	LOOSE DARK GRAY FINE SAND
4.0-4.5	21										1.3	4	A-3	1	LOOSE DARK GRAY FINE SAND
5.0-5.5	20											4	A-3	1	LOOSE DARK GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-741R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	24												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK
1.0-1.5	17	85	76	70	60	31	12	8			4.1	13	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND WITH ORGANICS
2.0-2.5	17										2.1	14	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
3.0-3.5	16											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	16											16	A-3	1	MEDIUM DENSE GRAY FINE SAND
5.0-5.5	18											12	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-742+50R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	17												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	12											12	A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
2.0-2.5	28	100	99	98	90	41	11	9			4.3	11	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND WITH ORGANICS
3.0-3.5	11											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	19											14	A-3	1	MEDIUM DENSE GRAY FINE SAND
5.0-5.5	19											13	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-744L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	21												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK
1.0-1.5	11	81	75	71	62	30	19	16				13	A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK
2.0-2.5	23											10	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	13											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	16											4	A-3	1	LOOSE GRAY FINE SAND
5.0-5.5	18											3	A-3	1	LOOSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-746R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	15												A-3	1	LOOSE GRAY FINE SAND
1.0-1.5	25	92	89	87	71	34	13	8				8	A-3	1	LOOSE GRAY FINE SAND
2.0-2.5	73										9.8	5	A-2-4	3	LOOSE DARK GRAY ORGANIC SAND
3.0-3.5	27										3.2	3	A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND WITH ORGANICS
4.0-4.5	24	100	100	99	88	45	28	26			4.1	3	A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND WITH ORGANICS
5.0-5.5	19											13	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-747+50R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	13												A-3	1	MEDIUM DENSE GRAY FINE SAND
1.0-1.5	13	100	100	99	87	40	13	7				13	A-3	1	MEDIUM DENSE GRAY FINE SAND
2.0-2.5	12											9	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	19										2.1	8	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
4.0-4.5	21											13	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
5.0-5.5	20											4	A-3	1	LOOSE DARK GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-747L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	15												A-3	1	MEDIUM DENSE GRAY FINE SAND
1.0-1.5	16											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
2.0-2.5	11	100	97	96	83	34	12	8			2.1	13	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
3.0-3.5	13										1.4	13	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
4.0-4.5	20											7	A-3	1	LOOSE GRAY FINE SAND
5.0-5.5	24											3	A-3	1	LOOSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RD-748+50L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	10												A-3	1	MEDIUM DENSE GRAY FINE SAND
1.0-1.5	10	100	99	99	88	31	6	4				11	A-3	1	MEDIUM DENSE GRAY FINE SAND
2.0-2.5	13											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	13											12	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	23											8	A-3	1	MEDIUM DENSE GRAY FINE SAND
5.0-5.5	21											8	A-3	1	MEDIUM DENSE GRAY FINE SAND

CULVERT SOIL BORINGS

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: CV-736+50L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	22												A-2-4	2	LOOSE GRAY SILTY FINE SAND
1.0-1.5	24	100	100	97	82	35	15	11					A-2-4	2	LOOSE GRAY SILTY FINE SAND
2.0-2.5	20											4	A-3	1	LOOSE GRAY FINE SAND
3.0-4.5	21											3	A-3	1	LOOSE GRAY FINE SAND
4.5-6.0	23	100	100	100	83	26	8	7			1.3	4	A-3	1	LOOSE DARK GRAY FINE SAND
6.0-7.5	19										2.2	3	A-3	1	LOOSE DARK GRAY FINE SAND
7.5-9.0	21										1.1	10	A-3	1	MEDIUM DENSE GRAY FINE SAND
9.0-10.5	20											11	A-3	1	MEDIUM DENSE GRAY FINE SAND
10.5-12.0	21											10	A-3	1	MEDIUM DENSE GRAY FINE SAND
12.5-14.0	20											9	A-3	1	MEDIUM DENSE GRAY FINE SAND
15.0-16.5	23											17	A-3	1	MEDIUM DENSE GRAY FINE SAND
17.5-19.0	22	100	100	100	97	37	3	2				19	A-3	1	MEDIUM DENSE GRAY FINE SAND
20.0-21.5	25											23	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: CV-736+50L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
23.0-25.0	32											19	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: CV-737R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	23												A-2-4	2	LOOSE GRAY SILTY FINE SAND
1.0-1.5	20	99	98	97	87	37	16	12			3.1		A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND WITH ORGANICS
2.0-2.5	18										2.6	5	A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND WITH ORGANICS
3.0-3.5	20												A-2-4	2	LOOSE DARK GRAY SILTY FINE SAND WITH ORGANICS
4.0-4.5	18												A-3	1	LOOSE GRAY FINE SAND
4.5-6.0	27	100	95	94	83	37	12	9				5	A-3	1	LOOSE GRAY FINE SAND
6.0-7.5	24											4	A-3	1	LOOSE GRAY FINE SAND
7.5-9.0	29											3	A-3	1	LOOSE GRAY FINE SAND
9.0-10.5	97										9.7	3	A-3	3	LOOSE DARK GRAY ORGANIC SAND WITH WOOD
10.5-12.0	33	100	100	99	89	40	8	5			4.2	6	A-3	1	LOOSE DARK GRAY FINE SAND WITH ORGANICS
12.5-14.0	23										1.3	15	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
15.0-16.5	23											15	A-3	1	MEDIUM DENSE GRAY FINE SAND
17.5-19.0	22											14	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: CV-737R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
20.0-21.5	27	100	100	100	97	31	3	1				16	A-3	1	MEDIUM DENSE GRAY FINE SAND
23.0-25.0	24											24	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: CV-745L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	16												A-2-4	2	LOOSE GRAY SILTY FINE SAND
1.0-1.5	18	100	89	85	72	45	26	16			1.2		A-2-4	2	LOOSE GRAY SILTY FINE SAND
2.0-2.5	13											8	A-3	1	LOOSE GRAY FINE SAND
3.0-4.5	15											7	A-3	1	LOOSE GRAY FINE SAND
4.5-6.0	17											11	A-3	1	MEDIUM DENSE GRAY FINE SAND
6.0-7.5	23											19	A-3	1	MEDIUM DENSE GRAY FINE SAND
7.5-9.0	21											21	A-3	1	MEDIUM DENSE GRAY FINE SAND
9.0-10.5	26	100	100	100	91	32	5	3			2.3	16	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
10.5-12.0	23										1.4	16	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
12.5-14.0	28											11	A-3	1	MEDIUM DENSE GRAY FINE SAND
15.0-16.5	24											16	A-3	1	MEDIUM DENSE GRAY FINE SAND
17.5-19.0	22											35	A-3	1	DENSE GRAY FINE SAND
20.0-21.5	22											31	A-3	1	DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: CV-745L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
23.0-25.0	26	100	100	100	96	59	6	3				28	A-3	1	DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: CV-745R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	23												A-2-4	2	LOOSE GRAY SILTY FINE SAND
1.0-1.5	21	92	86	80	69	42	22	16				6	A-2-4	2	LOOSE GRAY SILTY FINE SAND
2.0-2.5	22											8	A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
3.0-4.5	14											16	A-3	1	MEDIUM DENSE GRAY FINE SAND
4.5-6.0	13											14	A-3	1	MEDIUM DENSE GRAY FINE SAND
6.0-7.5	20											17	A-3	1	MEDIUM DENSE GRAY FINE SAND
7.5-9.0	17											24	A-3	1	MEDIUM DENSE GRAY FINE SAND
9.0-10.5	21	100	100	100	88	42	10	8				13	A-3	1	MEDIUM DENSE GRAY FINE SAND
10.5-12.0	20											21	A-3	1	MEDIUM DENSE GRAY FINE SAND
12.5-14.0	25											22	A-3	1	MEDIUM DENSE GRAY FINE SAND
15.0-16.5	23											29	A-3	1	DENSE GRAY FINE SAND
17.5-19.0	24											31	A-3	1	DENSE GRAY FINE SAND
20.0-21.5	26											56	A-3	1	VERY DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: CV-745R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
23.0-25.0	25	100	100	100	97	71	14	9				60	A-3	1	VERY DENSE GRAY FINE SAND

RETAINING WALL SOIL BORINGS

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RW-721L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	18												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	16	100	100	100	94	45	18	17					A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
2.0-2.5	18											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	20												A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	22												A-3	1	MEDIUM DENSE GRAY FINE SAND
4.5-6.0	22											9	A-3	1	MEDIUM DENSE GRAY FINE SAND
6.0-7.5	22	100	100	100	91	44	7	3				9	A-3	1	MEDIUM DENSE GRAY FINE SAND
7.5-9.0	22											8	A-3	1	MEDIUM DENSE GRAY FINE SAND
9.0-10.5	25										2.3	10	A-3	1	MEDIUM DENSE GRAY FINE SAND
10.5-12.0	25											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
12.5-14.0	29											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
15.0-16.5	29	100	100	100	95	30	7	4				14	A-3	1	MEDIUM DENSE GRAY FINE SAND
18.0-20.0	28										2.1	18	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RW-724L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	21												A-2-4	2	LOOSE GRAY SILTY FINE SAND
1.0-1.5	19	100	100	100	95	45	9	6					A-3	1	LOOSE GRAY FINE SAND
2.0-2.5	26											5	A-3	1	LOOSE GRAY FINE SAND
3.0-3.5	26												A-3	1	LOOSE GRAY FINE SAND
4.0-4.5	24												A-3	1	LOOSE GRAY FINE SAND
4.5-6.0	22											6	A-3	1	LOOSE GRAY FINE SAND
6.0-7.5	23											8	A-3	1	LOOSE GRAY FINE SAND
7.5-9.0	24	100	100	100	92	47	6	4				13	A-3	1	MEDIUM DENSE GRAY FINE SAND
9.0-10.5	23											18	A-3	1	MEDIUM DENSE GRAY FINE SAND
10.5-12.0	24											17	A-3	1	MEDIUM DENSE GRAY FINE SAND
12.5-14.0	25											23	A-3	1	MEDIUM DENSE GRAY FINE SAND
15.0-16.5	24	100	100	100	98	43	12	9				21	A-3	1	MEDIUM DENSE GRAY FINE SAND
18.0-20.0	22											19	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RW-726L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	14												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK
1.0-1.5	14	94	89	84	61	35	18	14					A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK
2.0-2.5	19											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	22												A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	24												A-3	1	LOOSE GRAY FINE SAND
4.5-6.0	23											4	A-3	1	LOOSE GRAY FINE SAND
6.0-7.5	23	100	100	100	94	34	5	3				10	A-3	1	MEDIUM DENSE GRAY FINE SAND
7.5-9.0	24											14	A-3	1	MEDIUM DENSE GRAY FINE SAND
9.0-10.5	25											12	A-3	1	MEDIUM DENSE GRAY FINE SAND
10.5-12.0	25											11	A-3	1	MEDIUM DENSE GRAY FINE SAND
12.5-14.0	23											10	A-3	1	MEDIUM DENSE GRAY FINE SAND
15.0-16.5	23											11	A-3	1	MEDIUM DENSE GRAY FINE SAND
18.0-20.0	25	100	100	100	94	39	6	5				17	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RW-730L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	17												A-3	1	MEDIUM DENSE GRAY FINE SAND
1.0-1.5	17												A-3	1	MEDIUM DENSE GRAY FINE SAND
2.0-2.5	19	100	100	99	96	48	11	9				13	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	21												A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	22												A-3	1	MEDIUM DENSE GRAY FINE SAND
4.5-6.0	20											8	A-3	1	MEDIUM DENSE GRAY FINE SAND
6.0-7.5	23											17	A-3	1	MEDIUM DENSE GRAY FINE SAND
7.5-9.0	24	100	100	100	91	44	8	6				16	A-3	1	MEDIUM DENSE GRAY FINE SAND
9.0-10.5	23											16	A-3	1	MEDIUM DENSE GRAY FINE SAND
10.5-12.0	22											17	A-3	1	MEDIUM DENSE GRAY FINE SAND
12.5-14.0	23											30	A-3	1	DENSE GRAY FINE SAND
15.0-16.5	23	100	100	100	99	36	8	6				32	A-3	1	DENSE GRAY FINE SAND
18.0-20.0	24											42	A-3	1	VERY DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RW-733L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	16												A-3	1	MEDIUM DENSE GRAY FINE SAND
1.0-1.5	17	100	100	95	79	31	10	8					A-3	1	MEDIUM DENSE GRAY FINE SAND
2.0-2.5	15											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	13												A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	17										1.2		A-3	1	MEDIUM DENSE GRAY FINE SAND
4.5-6.0	21											4	A-3	1	LOOSE GRAY FINE SAND
6.0-7.5	21											3	A-3	1	LOOSE GRAY FINE SAND
7.5-9.0	61	100	99	98	85	47	19	16			9.8	WOH	A-2-4	3	VERY LOOSE DARK GRAY ORGANIC SAND
9.0-10.5	36										3.6	2	A-2-4	2	VERY LOOSE DARK GRAY SILTY FINE SAND WITH ORGANICS
10.5-12.0	21	100	100	100	92	36	6	4			1.4	9	A-3	1	MEDIUM DENSE GRAY FINE SAND
12.5-14.0	20											10	A-3	1	MEDIUM DENSE GRAY FINE SAND
15.0-16.5	22											18	A-3	1	MEDIUM DENSE GRAY FINE SAND
18.0-20.0	22											14	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RW-739L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	23												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	19	100	97	95	85	39	11	9					A-3	1	MEDIUM DENSE GRAY FINE SAND
2.0-2.5	14											9	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	14										1.1		A-3	1	LOOSE GRAY FINE SAND
4.0-4.5	21												A-3	1	LOOSE GRAY FINE SAND
4.5-6.0	22											3	A-3	1	LOOSE GRAY FINE SAND
6.0-7.5	20											3	A-3	1	LOOSE GRAY FINE SAND
7.5-9.0	66	100	99	98	86	37	19	17			9.3	6	A-2-4	3	LOOSE DARK GRAY ORGANIC SAND
9.0-10.5	22										1.4	22	A-3	1	MEDIUM DENSE GRAY FINE SAND
10.5-12.0	27											10	A-3	1	MEDIUM DENSE GRAY FINE SAND
12.5-14.0	22										1.6	9	A-3	1	MEDIUM DENSE GRAY FINE SAND
15.0-16.5	22											9	A-3	1	MEDIUM DENSE GRAY FINE SAND
18.0-20.0	21	100	100	99	86	30	5	4				15	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RW-742L **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	25												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	16	99	98	97	82	32	11	9					A-3	1	MEDIUM DENSE GRAY FINE SAND
2.0-2.5	15											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	25												A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	23	100	100	99	84	37	3	2					A-3	1	MEDIUM DENSE GRAY FINE SAND
4.5-6.0	22											24	A-3	1	MEDIUM DENSE GRAY FINE SAND
6.0-7.5	41										9.2	15	A-3	3	MEDIUM DENSE DARK GRAY ORGANIC SAND WITH WOOD
7.5-9.0	23											20	A-3	1	MEDIUM DENSE GRAY FINE SAND
9.0-10.5	22										1.3	15	A-3	1	MEDIUM DENSE GRAY FINE SAND
10.5-12.0	22											18	A-3	1	MEDIUM DENSE GRAY FINE SAND
12.5-14.0	25										1.4	19	A-3	1	MEDIUM DENSE GRAY FINE SAND
15.0-16.5	21	98	97	96	88	35	7	3				25	A-3	1	DENSE GRAY FINE SAND
18.0-20.0	20											28	A-3	1	DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: RW-744R **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-0.5	29												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK
1.0-1.5	18	62	58	55	51	31	19	13					A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND WITH ROCK
2.0-2.5	19											13	A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
3.0-3.5	13												A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	11												A-3	1	MEDIUM DENSE GRAY FINE SAND
4.5-6.0	19											14	A-3	1	MEDIUM DENSE GRAY FINE SAND
6.0-7.5	20											31	A-3	1	DENSE GRAY FINE SAND
7.5-9.0	22											25	A-3	1	DENSE GRAY FINE SAND
9.0-10.5	22										2.1	24	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
10.5-12.0	22										1.6	24	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
12.5-14.0	22										2.4	18	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
15.0-16.5	21	100	100	100	88	45	12	8				30	A-3	1	DENSE GRAY FINE SAND
18.0-20.0	23											36	A-3	1	DENSE GRAY FINE SAND

POND SOIL BORINGS

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: ACP-1 **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-1.0	--												--	--	CRUSHED LIMESTONE
1.0-1.5	14	99	98	97	90	51	18	11					A-2-4	2	MEDIUM DENSE GRAY & ORANGE SILTY FINE SAND
2.0-2.5	19											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	20												A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	20												A-3	1	MEDIUM DENSE GRAY FINE SAND
4.5-6.0	21											8	A-3	1	MEDIUM DENSE GRAY FINE SAND
6.0-7.5	55	100	99	98	89	36	6	4			4.8	9	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND WITH ORGANICS
7.5-9.0	22											14	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND WITH ORGANICS
9.0-10.5	70										8.6	8	A-3	3	MEDIUM DENSE DARK GRAY ORGANIC SAND WITH WOOD
10.5-12.0	23	100	100	100	92	35	4	2				13	A-3	1	MEDIUM DENSE GRAY FINE SAND
13.0-15.0	22											21	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: ACP-2 **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-1.0	--												--	--	CRUSHED LIMESTONE
1.0-1.5	6	100	100	99	88	55	20	12					A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
2.0-2.5	6											13	A-3	1	MEDIUM DENSE GRAY FINE SAND
3.0-3.5	10												A-3	1	MEDIUM DENSE GRAY FINE SAND
4.0-4.5	19												A-3	1	MEDIUM DENSE GRAY FINE SAND
4.5-6.0	16											12	A-3	1	MEDIUM DENSE GRAY FINE SAND
6.0-7.5	16											16	A-3	1	MEDIUM DENSE GRAY FINE SAND
7.5-9.0	20											10	A-3	1	MEDIUM DENSE GRAY FINE SAND
9.0-10.5	18	100	100	100	91	33	12	2				10	A-3	1	MEDIUM DENSE GRAY FINE SAND
10.5-12.0	25											10	A-3	1	MEDIUM DENSE GRAY FINE SAND
13.0-15.0	14											13	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: ACP-3 **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-1.0	--												--	--	CRUSHED LIMESTONE
1.0-1.5	4												A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
2.0-2.5	17	100	100	100	98	48	15	4			2.9	9	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND WITH ORGANICS
3.0-3.5	16												A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
4.0-4.5	19												A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
4.5-6.0	19											19	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
6.0-7.5	17											30	A-3	1	DENSE GRAY FINE SAND
7.5-9.0	19											22	A-3	1	MEDIUM DENSE GRAY FINE SAND
9.0-10.5	15											19	A-3	1	MEDIUM DENSE GRAY FINE SAND
10.5-12.0	18	100	100	100	93	36	5	3				16	A-3	1	MEDIUM DENSE GRAY FINE SAND
13.0-15.0	18											16	A-3	1	MEDIUM DENSE GRAY FINE SAND

SOIL CLASSIFICATION DATA

Project: ALF COLEMAN RD - ROADWAY IMPROVEMENTS

Client: GPI SOUTHEAST **Project No.: 37-63-18-01**

Boring: ACP-4 **Location: BAY COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Mat. No.	Description
0.0-1.0	--												--	--	CRUSHED LIMESTONE
1.0-1.5	9	100	100	96	79	61	33	11					A-2-4	2	MEDIUM DENSE GRAY SILTY FINE SAND
2.0-2.5	16											12	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
3.0-3.5	15												A-3	1	MEDIUM DENSE DARK GRAY FINE SAND
4.0-4.5	16										4.1		A-3	1	MEDIUM DENSE DARK GRAY FINE SAND WITH ORGANICS
4.5-6.0	19											10	A-3	1	MEDIUM DENSE DARK GRAY FINE SAND WITH ORGANICS
6.0-7.5	18										1.2	13	A-3	1	MEDIUM DENSE GRAY FINE SAND
7.5-9.0	22											10	A-3	1	MEDIUM DENSE GRAY FINE SAND
9.0-10.5	16											8	A-3	1	LOOSE GRAY FINE SAND
10.5-12.0	20	100	100	100	93	43	5	3				4	A-3	1	LOOSE GRAY FINE SAND
13.0-15.0	20											8	A-3	1	LOOSE GRAY FINE SAND

APPENDIX G

ADDENDA

(NOT INCLUDED UNTIL CONFORMED SET IS ISSUED AFTER PROJECT IS AWARDED)