CITY OF SAFETY HARBOR (THE CITY)
SAFETY HARBOR, FLORIDA

SOLICITATION, OFFER AND AWARD FORM
INVITATION FOR BID: IFB-2025-ENG-01

1. SOLICITATION NUMBER: IFB 2025-ENG-01

2. ISSUE DATE: JULY 15, 2025

3. FOR INFORMATION CONTACT:

NAME: Michelle C. Giuliani
Engineering Director

PHONE: 727-724-1555, **FAX:** 727-724-1566
Ext. 1706

E-MAIL: mgiuliani@cityofsafetyharbor.com

4. CAPITAL IMPROVEMENT PROJECT:
Seminole Park and Mapleway Water Main Replacement

5. CONFERENCE: There will be a MANDATORY PRE-BID Conference for this project on Tuesday, July 22, 2025, starting promptly at 10 AM, located at the City of Safety Harbor, Commission Chambers at 750 Main Street, Safety Harbor, FL 34695.

6. SUBMIT OFFER TO THE FOLLOWING ADDRESS:

IFB 2025-ENG-01
City of Safety Harbor
Attn: Engineering Department
750 Main Street
Safety Harbor, Florida 34695

7. OFFER SUBMISSION DUE DATE AND TIME:
Sealed Bids will be received up to 2:00 PM, Eastern Standard Time, on Tuesday, August 19, 2025, and will be publicly opened, and read aloud in the Commission Chambers in City Hall at 750 Main Street, Safety Harbor, FL 34695

8. SUBMIT WITH OFFER: Original offer including the exhibits and attachments listed on Page 2 of this form.

9. Offers will be publicly opened on Tuesday, August 19, 2025, at 2 PM, Eastern Standard Time.

10. FIRM OFFER PERIOD: Offers shall remain firm for a period of 180 calendar days from the date specified in Block 7, above.

11. This solicitation and any resulting contract, respectively, consists of this Form and the exhibits and documents designated with a symbol ● on Page 2 of this form.

OFFER - (To be completed by Offeror)

12. DISCOUNT FOR PROMPT PAYMENT: NOT APPLICABLE

13. If this offer is accepted within the period specified in Block 10, above, the offeror agrees to fully provide the goods and/or services covered by this solicitation at the prices and timelines specified in the solicitation.

14. ACKNOWLEDGEMENT OF AMENDMENTS: The offeror acknowledges receipt of the following solicitation amendments (write in all amendment numbers and amendment dates.

Amendment Number and Date		Amendment Number and Date		Amendment Number and Date	

15. OFFEROR'S NAME AND ADDRESS: (Type or Print)

16. NAME AND TITLE OF OFFEROR'S REPRESENTATIVE (PERSON AUTHORIZED TO EXECUTE CONTRACTS): (Type or Print)

TELEPHONE:

CELL PHONE:

E-MAIL:

FAX:

17. OFFEROR'S REPRESENTATIVE SIGNATURE & DATE:

AWARD - (To be completed by City)

18. ACCEPTED AS TO:	19. TOTAL AMOUNT OF AWARD:	20. CONTRACT NUMBER:
Schedule – Bid Forms		IFB 2025–ENG-01

21. SIGNATURE & CONTRACT AWARD DATE:

Signature: _____ Attest: _____ Date ___/___/___
Joe Ayoub, Mayor — Rachel Telesca, City Clerk

Approved As to Form: _____ City Attorney

	NAME	FORM DESCRIPTION	FORM #	SUBMIT WITH OFFER
●	Cover Sheet	Solicitation, Offer and Award Form	IFB 2025-ENG-01	YES
●	Schedule	Schedule – Bid Form for IFB 2025-ENG-01	BID FORM	YES
●	Attachment '1' to Schedule Bid Form	Attachment '1' to Schedule Bid Form		YES
●	Exhibit A	Representations and Certifications	A	YES
	NPDES Attachment to Exhibit A – National Pollutant Discharge Elimination System (NPDES) Document			YES
●	Exhibit B	Special Solicitation Instructions and Conditions	B	NO
●	Exhibit C	Solicitation Instructions and Conditions	C	NO
		Attachment '1' to Exhibit 'C'		YES
●	Exhibit D	Special Provisions	D	NO
●	Exhibit E	General Provisions	E	NO
●	Exhibit F	Specifications	F	NO
●	Exhibit G	Bid Bond		YES
●	Exhibit H	Payment Bond		WITHIN 10 DAYS OF AWARD
●	Exhibit I	Performance Bond		WITHIN 10 DAYS OF AWARD
		Definitions		
		PERMITS AS FOLLOWS:		
		Florida Department of Environmental Protection Notice of Acceptance of Use of a General Permit: Number 0126315-077-DSGP/02		Issued Date: March 5, 2025 Attached
		Florida Dept. of Transportation (FDOT) Utility Permit Number 2025-H-799-00184		Issued Date: June 5, 2025 Attached
		Pinellas County Right of Way Permit		In Progress
		FDEP Notice of Intent : Contractor responsible to obtain Florida Department of Environmental Protection (FDEP) Notice of Intent for NPDES Generic Permit for Stormwater Discharge from Large and Small Construction Activities (Rule 62-621.300 (4), F.A.C.)		To be submitted by awarded Contractor.
		REPORTS: Driggers Engineering Services, Inc. Geotechnical Engineering Services Report		Date: September 20, 2022 Attached
		PLANS – Bid Set		Attached

CITY OF SAFETY HARBOR (THE CITY)

SCHEDULE – BID FORM
Capital Improvement Project
Seminole Park and Mapleway Water Main Replacement Project
IFB-2025-ENG-01

CAUTION: A false statement in any offer submitted to the City may be a criminal OFFENSE.

NOTE: For Invitations for Bids the terms "Offer" and "Offeror" shall mean "Bid" and "Bidder", respectively; and for Request for Proposals the terms "Bid" and "Bidder" shall mean "Offer" and "Offeror", respectively, in this solicitation and any associated exhibits.

THE OFFEROR MUST SIGN AND DATE THIS SCHEDULE WHERE PROVIDED AND SUBMIT ALL PAGES WITH THE OFFER. REFERENCE ATTACHMENT '1' TO THE SCHEDULE BID FORM.

The line item unit price(s) must include all costs that the offeror intends to recover, such as, but not limited to: supervision, labor, equipment, materials, vehicle licensing, vehicle title, warehousing, freight, pick-up, financing, carrying charges, and all other such charges to accommodate the supplies/services and delivery requirements. No price adjustments will be made, unless specifically provided for by an additional provision included in this contract.

(A) - BASE BID

ITEM NO.	DESCRIPTION	QTY	UNIT	UNIT PRICE	EXTENDED PRICE
1	MOBILIZATION / DEMOBILIZATION (MAX. 5%)	1	LS	$	$
2	MAINTENANCE OF TRAFFIC & PEDESTRIAN CONTROLS (MAX 5%); Includes Main Street detour and submittal of an FDOT Certified detour plan.	1	LS	$	$
3	INSURANCE (3%)	1	LS	$	$
4	PERFORMANCE & PAYMENT BONDS	1	LS	$	$
5	VIDEO-AUDIO EXISTING CONDITIONS	1	LS	$	$
6	2" CERTA-LOK YELOMINE IPS PVC BY OPEN CUT	150	LF	$	$
7	4" C-900 PVC DR-18 WATER MAIN BY OPEN CUT	50	LF	$	$
8	6" C-900 PVC DR-18 WATER MAIN BY OPEN CUT	800	LF	$	$
9	2" CERTA-LOK YELOMINE IPS PVC WATER MAIN BY HDD	1,850	LF	$	$
10	4" CERTA-LOK C-900/RJ PVC WATER MAIN BY HDD	550	LF	$	$
11	6" CERTA-LOK C-900/RJ PVC WATER MAIN BY HDD	4,550	LF	$	$
12	DUCTILE IRON FITTINGS	3.5	TONS	$	$
13	1" SINGLE SERVICE CONNECTION (LONG SIDE)	21	EA	$	$
14	1" DOUBLE SERVICE CONNECTION (LONG SIDE)	19	EA	$	$
15	2" SINGLE SERVICE CONNECTION (LONG SIDE)	1	EA	$	$
16	2" DOUBLE SERVICE CONNECTION (LONG SIDE)	1	EA	$	$

17	1” SINGLE SERVICE CONNECTION (SHORT SIDE)	27	EA	$	$
18	1” DOUBLE SERVICE CONNECTION (SHORT SIDE)	20	EA	$	$
19	2” SINGLE SERVICE CONNECTION (SHORT SIDE)	1	EA	$	$
20	2” MANIFOLD SERVICE CONNECTION (SHORT SIDE)	1	EA	$	$
21	2” MJ RWGV	8	EA	$	$
22	4” MJ RWGV	1	EA	$	$
23	6” MJ RWGV	55	EA	$	$
24	CONCRETE DEADMAN/THRUST BLOCKS	20	EA	$	$
25	LOCATE STATIONS	15	EA	$	$
26	FIRE HYDRANT ASSEMBLIES WITH 6” RWGV; INCLUDING BLUE REFLECTIVE PAVEMENT MARKERS	8	EA	$	$
27	1.75-INCH MILL AND 1.75 INCH SP-9.5 ASPHALT – CITY ROW	1,000	SYD	$	$
28	2-INCH MILL AND 2-INCH SP-12.5 ASPHALT – PINELLAS COUNTY ROW	900	SYD	$	$
29	FDOT ROW ASPHALT RESTORATION	100	SYD	$	$
30	GROUT FILL AND ABANDONMENT OF EXISTING WATER MAINS (4-INCH THROUGH 6-INCH)	30	CYD	$	$
31	ABANDONMENT OF EXISTING 2-INCH WATER MAINS	1	LS	$	$
32	REMOVAL OF EXISTING FIRE HYDRANT AND CUT AND CAP WATER MAIN	1	LS	$	$
33	TEMPORARY SIDEWALK RESTORATION	500	SYD	$	$
34	EXCAVATABLE FLOWABLE FILL	210	CYD	$	$
35	ADA RAMP RESTORATION	20	EA	$	$
36	EXPORT OF UNSUITABLE MATERIALS	500	CYD	$	$
37	IMPORT OF SELECT FILL MATERIAL	600	CYD	$	$
38	SITE RESTORATION	1	LS	$	$
39	VARIABLE/CHANGEABLE MESSAGE BOARDS/SIGNS	2	EA	$	$
40	AS-NEEDED CONCRETE SIDEWALK	500	SYD	$	$
41	AS-NEEDED CONCRETE CURB/GUTTER	800	LF	$	$

TOTAL BASE BID = $_____

FAILURE OF THE OFFERER TO PROVIDE PRICES FOR ALL LINE ITEMS LISTED ON BASE BID FORM SHALL BE CAUSE OF REJECTION OF THE ENTIRE OFFER.

COMPLETE AND RETURN WITH BID:

NAME & TITLE OF OFFEROR'S REPRESENTATIVE:
(Print or type)

_____
(Name & Title)

_____
(Offeror's Name)

SIGNATURE & DATE:

_____ __/___/___
(Signature of Offeror's Representative)

Capital Improvement Project
Seminole Park and Mapleway Water Main Replacement Project
IFB-2025-ENG-01
Attachment '1' to the Schedule Bid Form

(a) Pay Items identified below directly correspond Item Numbers identified on the Schedule – Bid Form.

(b) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the Work and that it has investigated and satisfied itself as to the general and local conditions which can affect the Contract Work or its cost, including, but not limited to; (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, roads rights of way access to the work site and other lands made available by the City for this Project; (3) uncertainties of weather, flooding patterns and water drainage, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed prior to and during work performance. The Contractor acknowledges that its undertaking to complete the Contract within the Contract Schedule includes an allowance for the normal number of days in which contract work may be partially or totally delayed because of weather during the season and at the location the Contract will be performed and that the Contractor shall not be entitled to excusable delays or compensation for such delays. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, access to the site, and territory surrounding the site, including all exploratory work done by the City as well as from the drawings and specifications made a part of this Contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work or for proceeding to perform the work successfully without additional expense to the City.

(c) The City assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the City. Nor does the City assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers, employees, engineers or agents before the execution of this Contract, unless that understanding or representation is expressly stated in this contract.

THE FOLLOWING ARE PAY ITEM DESCRIPTIONS FOR THE BASE BID.

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. This section defines the Work included in each bid item. Payment will be made based on the specified items included in the description in this section for each pay item number.

B. All prices included in the Bid Form / Schedule of Prices of the Proposal will be full compensation for all labor, supervision, materials, tools, equipment, and incidentals necessary to complete the Work as shown on the Drawings and/or as specified in the Contract Documents. Actual quantities of each item bid on a unit price basis will be determined in the manner established for each item in this section. Payment for all items listed in the Schedule of Prices will constitute full compensation for all work shown and/or specified to be performed under this project.

C. Unless otherwise noted as a separate bid item, restoration is considered an integral part of the Work, and all bid prices shall include the cost of restoration necessitated by the Work related to that bid item. All existing structures and property including, but not limited to, paving, stabilized roads, drainage piping and ditches, catch basins, head walls, yard culverts, lawns, fences, trees, shrubs, ground areas, walkways, sidewalks, driveways, alleys, curbs, gutters and irrigation systems that are altered, removed or damaged during construction shall be restored to the same or better condition than existed prior to construction at no additional cost to the Owner. The bidder shall hereby be advised that cleanup is an integral part of the restoration process.

D. The Contractor shall exercise care to preserve and protect existing facilities during construction. All existing structures and private property, including, but not limited to paving, stabilized roads, drainage piping and ditches, catch basins, head walls, yard culverts, lawns, fences, trees, shrubs, ground areas, walkways, driveways, alleys, curbs, gutters and irrigations systems that are altered, removed or damaged during construction and are not included in the proposed alterations of the new work shall be restored to the same or better condition than existed prior to construction.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 MEASUREMENT AND PAYMENT AND LUMP SUM ITEMS

A. Mobilization /Demobilization (Bid Item #1)

1. This bid item shall include obtaining all permits, securing a staging area in proximity to the work if public lands are insufficient; moving onto the site all materials and equipment; furnishing and erecting temporary buildings, access roads and other items as necessary to complete the work; providing, temporary sanitary facilities and potable water facilities as required for the proper performance and completion of the work.

2. This bid item shall include tree protective barriers, erosion protection, and curb inlet filter socks that must be utilized during the entire project. If erosion, silt or sediment enters City storm inlets and storm sewer pipes during construction process, it's the Contractor's responsibility to clean all storm drains affected at completion of the project. City staff will inspect all storm drains.

3. Work under this contract item shall also include the furnishing of labor, material, tools, equipment, and services to perform those operations necessary for the movement of personnel, equipment, supplies and incidentals to and from the project site and for the establishment and removal of temporary offices, buildings, safety equipment, sanitary facilities and first aid supplies as required by the specifications, and state and local laws and regulations.

4. The cost of required permits unless otherwise stated in the Contract Documents, insurance, construction staking, erosion control, maintenance of traffic, coordination, and scheduling as necessary to the start and completion of the work shall also be included under this Line Item. The cost of all other work as shown and specified that is not specifically included under other line items shall also be included under this line item.

5. Bid price for mobilization shall not exceed 5% of the total base bid.

6. Payment for mobilization will be on an incremental basis in accordance with the following:

Percent of Original Contract Amount Earned	Allowable Percent of the Lump Sum Price for the Item
5	25
10	50
25	75
50	90
Submission of AutoCAD As-built Drawings Per Section 01720	100

B. Maintenance of Traffic and Pedestrian Controls (Bid Item #2)

1. This bid item shall include preparation of a Maintenance of Traffic and Pedestrian Control plans consistent with the Contractor's work schedule/plan and coordination with through the Project Representative with the Owner and County Traffic Control authority. It shall include the construction and maintenance of any necessary detour facilities, traffic control barriers; providing of necessary facilities for access to residences and businesses, etc. along the project; furnishing, installing and maintaining of traffic control and safety devices during construction, including placement and removal of temporary pavement markings, and signs; temporary wheelchair ramps and any other special requirements for safe and expeditious movement of both vehicular and pedestrian traffic.

2. Maintenance of Traffic and Pedestrian Controls shall be per FDOT Standard Specifications for Road and Bridge Construction and FDOT Design Standards, latest edition.

3. Contractor shall submit a certified FDOT Detour MOT plan for roadway closures within project area.

4. Contractor shall submit a certified FDOT Detour MOT plan for Main Street intersection/roadway closures.

5. Bid price for Maintenance of Traffic shall not exceed 5% of the total base bid.

6. Payment for Maintenance of Traffic shall be on an incremental basis in accordance with the following:

Percent of Original Contract Amount Earned	Allowable Percent of the Lump Sum Price for the Item
20	20
40	40
60	60
80	80
100	100

C. Insurance (Bid Item #3)

1. Insurance as required by Exhibit D Special Provisions, Contractor's Liability Insurance and Insurance Required, of the Contract Documents. Bid price for Insurance shall not exceed 3% of the total base bid.

2. Payment shall be Lump Sum (LS).

D. Performance and Payment Bonds (Bid Item #4)

1. A Performance and Payment Bond satisfactory to the City, executed by a surety company authorized to do business in the State of Florida or otherwise secured in a manner satisfactory to the City, in an amount equal to one hundred (100) percent of the Contract Price, as awarded, will be required from the Contractor insuring the faithful performance of the contract and protecting the City from suits for non-payment of debts which might be incurred by a contractor's performance for the City.

2. Payment shall be Lump Sum (LS).

E. Video-Audio Existing Conditions (Bid Item #5)

1. The Contractor shall provide a Video-Audio Route Survey of existing conditions prior to start of construction. Complete coverage shall include all surface features located within the public right-of-way, easement areas and adjacent private properties within the zone of influence of construction and shall be supported by appropriate audio

description made simultaneously with video coverage. Video shall be of high definition (HD) quality.

2. Payment shall be Lump Sum (LS).

F. 2" Certa-lok Yelomine IPS PVC, 4" and 6" C-900 PVC DR-18 Water Main by Open Cut (Bid Items #6, #7, and #8)

1. The Contractor shall provide all labor, equipment, and ancillary materials for installing water main pipe by the open cut method. The open cut installation of pipe shall include, but may not be limited to:

   a. Excavating the trench;
   b. Maintaining the trench, which shall include dewatering, sheeting, shoring and/or bracing where required;
   c. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
   d. Beveling field-cut joints and pipe shorts;
   e. Furnishing and installing pipe bedding;
   f. Furnishing and installing pipe;
   g. Furnishing and installing joint restraints complete with all tie rods and hardware;
   h. Excavating the existing section of water main to install restraints;
   i. Connecting piping to existing piping; including small diameter (2" or less) piping/fittings and ancillary appurtenances not included in any other bid item;
   j. Backfilling and compacting the trench;
   k. Materials, preparation, hauling, placing, grading, and compacting the approved road base along the width of the pipe trench;
   l. Stabilization and road base for open cut installation shall be included in this bid item.
   m. Performing compaction and density testing;
   n. Hydrostatic pressure testing, pigging/flushing, and cleaning the pipe;
   o. Disinfecting the potable water main pipe;
   p. Performing bacteriological testing of water main pipe where required;
   q. Cleaning up the job site which shall include removing excess materials and debris;

2. Water main testing shall be included in the pipe installation bid.

3. Contractor shall coordinate with City Public Works staff during construction for the shut down of the existing water mains for tie-ins.

4. Payment for installing pipe by the open cut method shall be based on the size and the horizontal distance in linear feet (LF) of water main pipe measured along the top centerline of the pipe in-place complete and acceptable to the Engineer, paid in accordance with the unit price provided on the bid form and/or agreed to in the Schedule of Values.

G. 2" Certa-lok Yelomine IPS PVC, 4" and 6" Certa-Lok C-900/RJ PVC Water Main by HDD (Bid Items #9, #10, and #11)

1. The Contractor shall provide all labor, equipment and materials to furnish and install a 2" Certa-lok Yelomine and the 4" and 6" Certa-Lok C-900 PVC water main pipe by horizontal directional drill (HDD) method. The HDD installation of pipe shall include, but may not be limited to:

   a. Performing all evaluations and calculations necessary for the proper implementation of the HDD.
   b. Preparing and implementing the HDD work plan, bentonite management and emergency spill plan;
   c. Excavating the launch, recovery, intermediate mud and exploratory pits;
   d. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
   e. Installing HDD pressure relief/sight wells along the centerline of the pipe alignment;
   f. Maintaining the pits, which shall include dewatering, barricading, sheeting, shoring, containment, berming and disposal of drill fluid as required or as directed by the Engineer;
   g. Furnishing the pipe, splines, couplings, O-rings, etc.
   h. Horizontal directional drilling of pilot bore and pullback of pipe;
   i. Furnishing and installing the locator wires on the pipe;
   j. Joining the pipe as required;
   k. Furnishing and installing adapters as necessary to connect Certa-Lok pipe to other pipe materials, fittings, and valves;

l. Backfilling and compaction of pits;
m. Hydrostatic pressure testing, pigging/flushing, and cleaning the pipe;
n. Disinfecting the potable water main pipe;
o. Performing bacteriological testing of water main pipe where required;
p. Cleaning up the job site which shall include removing excess materials and debris;
q. Connecting piping to existing piping; and
r. All other ancillary materials, equipment, labor, water, and power required for the complete installation of the piping by HDD method.

2. Water main testing shall be included in the pipe installation bid.

3. Contractor shall coordinate with City Public Works staff during construction for the shut down of the existing water mains for tie-ins.

4. Payment for installing pipe by the HDD method shall be based on the size and horizontal distance in linear feet (LF) of pipe measured along the top centerline of the installed and connected pipe, in place, complete and acceptable to the Engineer, paid in accordance with the unit price provided on the bid form and/or agreed to in the Schedule of Values.

H. Ductile Iron Fittings (Bid Item #12)

1. The Contractor shall provide all labor, equipment and materials to completely furnish and install ductile iron fittings including plugs, caps, bends, sleeves, reducers, tees, crosses, offsets, and mechanical joint restraints. Ductile iron fittings, including joint restraints, such as Megalugs, shall be covered under this bid item. The installation of ductile iron fittings shall include but not be limited to:

a. Excavating the trench/pit;
b. Maintaining the trench/pit which shall include dewatering and bracing and sheeting where required or as directed by the Engineer;
c. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;

d. Furnishing, installing and sealing the fittings with polyethylene encasement of not less than 8 mils thick;
e. Furnishing and installing restrained joints such as but not limited to wedge action, push on joint restraints, manufactured restrained joints;
f. Backfilling and compacting the trench/pit and;
g. All other ancillary materials, equipment, labor, and power required for the complete installation of the ductile iron fittings and joint restraints.

2. Payment shall be made per ton (TONS) for the total weight of fittings installed based on manufacturers standards of each size and type of fittings, less bolts, restraints, and accessories, installed complete with joint restraints and incorporated into the piping system, working, and operating to the satisfaction of the Engineer.

I. 1" Single/Double Service Connection (Long Side) (Bid Items #13, #14)

1. The Contractor shall provide all labor, equipment and ancillary materials for replacing long side water main service laterals.

Services will be connected to existing water meters per Specification Section 01030, 1.24, B.3. Note that in some instances, existing water meters may need to be relocated in order to comply with City Standard Detail.

If an existing service does not have an existing backflow assembly, a backflow assembly is required, and a new water meter box will be installed. If an existing service does have an existing backflow assembly, the existing backflow assembly must be used in the new water meter box.

The replacement of water main service laterals (long side) shall include, but may not be limited to:

a. Excavating the trench/pit;
b. Maintaining the trench/pit which shall include dewatering and bracing and sheeting where required;
c. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;

d. New meter boxes are required for all existing services being connected, per City standard detail.
e. Installing a service saddle on the new water main;
f. Installing the corporation stop, water service tubing, PVC pipe casing under the roadway, curb stop, meter box and ancillary materials as shown on details;
g. Removing the existing meter (if required), meter box and capping water service tubing;
h. Connecting the new water service tubing to the existing/new water meter, meter box and connecting the existing/new water meter to the customer's side piping by a Florida Licensed Plumber;
i. Backfilling and compacting the trench/pit including regrading the terrain;
j. Cleaning up the job site which shall include removing excess materials and debris;
k. Re-sodding areas disturbed by construction;
l. All other ancillary materials, equipment, labor, and power required for the complete installation of water service lateral piping.

2. Payment shall be made for each (EA) water main service lateral pipe installed complete, working, and operating to the satisfaction of the Engineer paid in accordance with the unit price provided on the bid form and/or agreed to in the Schedule of Values.

J. 2" Single/Double Service Connection (Long Side) (Bid Items #15 and #16)

1. The Contractor shall provide all labor, equipment and ancillary materials for replacing long side water main service laterals.

Services will be connected to existing water meters per Specification Section 01030, 1.24, B.3. Note that in some instances, existing water meters may need to be relocated in order to comply with City Standard Detail.

If an existing service does not have an existing backflow assembly, a backflow assembly is required, and a new water meter box will be installed. If an existing service does have an existing backflow assembly, the existing backflow assembly must be used in the new water meter box.

The replacement of water main service laterals (long side) shall include, but may not be limited to:

a. Excavating the trench/pit;
b. Maintaining the trench/pit which shall include dewatering and bracing and sheeting where required;
c. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
d. New meter boxes are required for all existing services being connected, per City standard detail.
e. Installing a service saddle on the new water main;
f. Installing the corporation stop, water service tubing, curb stop, meter box, new water meter, and ancillary materials as shown on details;
g. Removing the existing meter (if required), meter box and capping water service tubing;
h. Connecting the new water service tubing to the existing/new water meter, meter box and connecting the existing/new water meter to the customer's side piping by a Florida Licensed Plumber;
i. Backfilling and compacting the trench/pit including regrading the terrain;
j. Cleaning up the job site which shall include removing excess materials and debris;
k. Re-sodding areas disturbed by construction;
l. All other ancillary materials, equipment, labor, and power required for the complete installation of water service lateral piping.

2. Payment shall be made for each (EA) water main service lateral pipe installed complete, working, and operating to the satisfaction of the Engineer paid in accordance with the unit price provided on the bid form and/or agreed to in the Schedule of Values.

K. 1" Single/Double Service Connection, 2" Single Service Connection and 2" Manifold Service Connection (Short Side) (Bid Items #17, #18, #19 and #20)

1. The Contractor shall provide all labor, equipment and ancillary materials for replacing short side water main service laterals.

Services will be connected to existing water meters per Specification Section 01030, 1.24, B.3. Note that in some instances, existing water meters may need to be relocated in order to comply with City Standard Detail.

If an existing service does not have an existing backflow assembly, a backflow assembly is required, and a new water meter box will be installed. If an existing service does have an existing backflow assembly, the existing backflow assembly must be used in the new water meter box.

The replacement of water main service laterals (short side) shall include, but may not be limited to:

a. Excavating the trench/pit;
b. Maintaining the trench/pit which shall include dewatering and bracing and sheeting where required;
c. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
d. New meter boxes are required for all existing services being connected, per City standard detail.
e. Installing a service saddle on the new water main;
f. Installing the corporation stop, water service tubing, curb stop, meter box, new water meter, and ancillary materials as shown on details;
g. Removing the existing meter (if required), meter box and capping water service tubing;
h. Connecting the new water service tubing to the existing/new water meter, meter box and connecting the existing/new water meter to the customer's side piping by a Florida Licensed Plumber;
i. Backfilling and compacting the trench/pit including regrading the terrain;
j. Cleaning up the job site which shall include removing excess materials and debris;
k. Re-sodding areas disturbed by construction;
l. All other ancillary materials, equipment, labor, and power required for the complete installation of water service lateral piping.

2. Payment shall be made for each (EA) water main service lateral pipe installed complete, working, and operating to the satisfaction of the Engineer paid in accordance with the unit price provided on the bid form and/or agreed to in the Schedule of Values.

L. 2", 4" and 6" MJ RWGV (Bid Items #21, #22, and #23)

1. The Contractor shall provide all labor, equipment and certain materials to completely install all mechanical joint (MJ) resilient wedge gate valves (RWGV). The MJ RWGV installation shall include, but may not be limited to:

   a. Excavating the trench/pit;
   b. Maintaining the trench/pit which shall include dewatering and bracing and sheeting where required or as directed by the Engineer;
   c. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
   d. Furnishing and installing valves, valve boxes;
   e. Furnishing and installing mechanical joint restraints;
   f. Furnishing and installing valve extension rods where necessary;
   g. Connections to existing piping systems;
   h. Furnishing and installing brass valve identification tag and valve pad;
   i. Backfilling and compacting the trench/pit;
   j. Furnishing paint and painting valve cover and;
   k. All other ancillary materials, equipment, labor, and power required for the complete installation of valves and appurtenances.

2. Payment shall be made on a per each (EA) basis for the installation of MJ RWGV's installed complete, working, and operating to the satisfaction of the Engineer. Operating satisfactorily includes but is not limited to:

   a. The valve box and valve is plumb and the valve box is centered on the valve.
   b. City personnel can insert a valve key through the valve box and completely open and close the valve.

M. Concrete Deadman/Thrust Blocks (Bid Item #24)

1. The Contractor shall provide all labor, equipment and materials to completely furnish and install concrete deadman. The installation of concrete deadman shall include but not be limited to:

   a. Excavating the trench/pit;
   b. Maintaining the trench/pit which shall include dewatering and bracing and sheeting where required or as directed by the Engineer;
   c. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
   d. Joint restraints, materials, equipment, labor, and power required to furnish and install the reverse dead man/thrust blocks;
   e. Backfilling and compacting the trench/pit and;
   f. Restoration
   g. All other ancillary materials, equipment, labor, and power required for the complete installation of the concrete deadman/thrust blocks.

2. Payment shall be made for each (EA) concrete deadman/thrust block installed complete to the satisfaction of the Engineer.

N. Locate Stations (Bid Item #25)

1. The Contractor shall provide all labor, equipment and materials to completely furnish and install locate stations as shown on the Drawings. The installation of locate stations shall include but not be limited to:

   a. Excavating the trench/pit;
   b. Maintaining the trench/pit which shall include dewatering and bracing and sheeting where required or as directed by the Engineer;
   c. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;

d. Furnishing and installing the locate station at location directed by City Engineer;
e. Backfilling and compacting the trench/pit and;
f. All other ancillary materials, equipment, labor, and power required for the complete installation of the locate stations

2. Payment shall be made for each (EA) locate station installed complete, working, and operating to the satisfaction of the Engineer.

O. Fire Hydrant Assemblies (with 6" RWGV) (Bid Item #26)

1. The Contractor shall provide all labor, equipment and certain materials to completely install fire hydrant assemblies. The fire hydrant assembly installation shall include, but may not be limited to:

a. Excavating the trench/pit;
b. Maintaining the trench/pit, which shall include dewatering and bracing and sheeting where required or as directed by the Engineer;
c. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
d. Furnishing and installing the fire hydrant assemblies including the RWGV, reflective pavement marker(s), surrounding bollards, etc. as shown on the detail drawings
e. Backfilling and compacting the trench/pit and;
f. All other ancillary materials, equipment, labor, and power required for the complete installation of fire hydrant assemblies.
g. The RWGV shall be included in this bid item.

2. Payment shall be made for the number of each (EA) fire hydrant assembly installed and incorporated into the piping system complete, working, and operating to the satisfaction of the Engineer

P. 1.75-inch Mill and 1.75-inch SP-9.5 Asphalt - City ROW (Bid Item #27)

1. The Contractor shall furnish all labor, equipment, and materials to mill, and resurface the roadway with asphalt pavement. The milling and asphalt shall include but may not be limited to:

a. Milling for all lanes impacted by construction as shown on the plans;

b. Removal of excess road base, and re-compacting and the road base.
c. Materials, preparation, hauling, and placing approved SP-9.5 asphalt pavement in layers over milled area as shown in the Drawings or as specified in the Technical Specifications;
d. Installing temporary and permanent pavement markings/thermoplastic striping and signing;
e. All other ancillary materials, equipment, labor, and power required for the complete asphalt restoration of all roads disturbed or damaged by construction.

2. Advanced notification for milling and resurfacing operations is required. Proper MOT shall be implemented during milling and paving operations in accordance with Traffic Control Plans.

3. Temporary striping shall be paint. Final permanent striping shall be thermoplastic.

4. Payment shall be made for the number of square yards (SYD) of roadway milled and resurfaced complete, in place and accepted by the Engineer, paid in accordance with the unit price provided on the bid form and/or agreed to in the Schedule of Values.

Q. 2-inch Mill and 2-inch SP-12.5 Asphalt – Pinellas County ROW (Bid Item #28)

1. The Contractor shall furnish all labor, equipment, and materials to mill, and resurface the roadway with asphalt pavement. The milling and asphalt shall include but may not be limited to:

a. Milling for all lanes impacted by construction as shown on the plans;
b. Removal of excess road base, and re-compacting and the road base.
c. Materials, preparation, hauling, and placing approved SP-12.5 asphalt pavement in layers over milled area as shown in the Drawings or as specified in the Technical Specifications;
d. Installing temporary and permanent pavement markings/thermoplastic striping and signing;
e. All other ancillary materials, equipment, labor, and power required for the complete asphalt restoration of all roads disturbed or damaged by construction.

2. Advanced notification for milling and resurfacing operations is required. Proper MOT shall be implemented during milling and paving operations in accordance with Traffic Control Plans.

3. Temporary striping shall be paint. Final permanent striping shall be thermoplastic.

4. Payment shall be made for the number of square yards (SYD) of roadway milled and resurfaced complete, in place and accepted by the Engineer, paid in accordance with the unit price provided on the bid form and/or agreed to in the Schedule of Values.

R. FDOT ROW Asphalt Restoration (Bid Item #29)

1. The Contractor shall furnish all labor, equipment, and materials to mill, and resurface the roadway with asphalt pavement based on the FDOT roadway restoration (see FDOT construction note 23 on sheet G1.01). Flowable fill for restoration within FDOT ROW shall be included in this bid item. The FDOT ROW asphalt restoration shall include but may not be limited to:

   a. Milling for all lanes impacted by construction as shown on the plans;
   b. Removal of excess road base, and re-compacting and the road base.
   c. Materials, preparation, hauling, and placing approved SP-12.5 and SP-9.5 asphalt pavement in layers over milled area as shown in the Drawings or as specified in the Technical Specifications;
   d. Installing temporary and permanent pavement markings/thermoplastic striping and signing;
   e. All other ancillary materials, equipment, labor, and power required for the complete asphalt restoration of all roads disturbed or damaged by construction.

2. Advanced notification for milling and resurfacing operations is required. Proper MOT shall be implemented during milling and paving operations in accordance with Traffic Control Plans.

3. Temporary striping shall be paint. Final permanent striping shall be thermoplastic.

4. Payment shall be made for the number of square yards (SYD) of roadway milled and resurfaced complete, in place and accepted by

the Engineer, paid in accordance with the unit price provided on the bid form and/or agreed to in the Schedule of Values.

S. Grout Fill and Abandonment of Existing Water Mains (4-Inch through 6-inch) (Bid Item #30)

1. The Contractor shall provide all labor, equipment and materials to abandon existing 4-inch through 6-inch water mains by grout filling. The abandonment of existing water mains shall include, but may not be limited to:

   a. Disposal of all water in the abandoned line;
   b. Existing valve boxes on lines to be abandoned shall be removed and restoration within removal area shall be included. City staff shall inspect restoration area.
   c. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
   d. Materials and equipment to cut, cap, plug existing water main ends and removal of valve and valve boxes;
   e. Materials, equipment, labor, and power required to furnish and install flowable fill into the abandoned water mains;
   f. All other ancillary materials, equipment, labor, water, and power required for the complete abandonment of the existing water mains.

2. Payment for abandonment of water mains shall be on a per cubic yard (CYD) basis of grout that is pump into the abandoned water main complete to the satisfaction of the Engineer.

T. Abandonment of Existing 2-inch Water Mains (Bid Item #31)

1. The Contractor shall provide all labor, equipment and materials to abandon existing 2- inch water mains. The abandonment of existing water mains shall include, but may not be limited to:

   a. Disposal of all water in the abandoned line;
   b. Existing valve boxes on lines to be abandoned shall be removed and restoration within removal area shall be included. City staff shall inspect restoration area.
   c. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment

basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;

d. Materials and equipment to cut, cap, plug existing water main ends and removal of valve and valve boxes;

e. All other materials, equipment, labor, water, and power required for the complete abandonment of the existing water mains.

2. Payment for abandonment of water mains shall be made on a percent complete basis according to the lump sum (LS) price provided on the bid form and/or agreed to in the Schedule of Values.

U. Removal of Existing Fire Hydrant and Cut and Cap Water Main (Bid Item #32)

1. The Contractor shall provide all labor, equipment and materials to remove the existing Fire Hydrant and cut and cap the water main. The removal of the existing Fire Hydrant shall include, but may not be limited to: Reference Plan Sheet G2.00.

a. Disposal of all water in the abandoned line;

b. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;

c. Materials and equipment to remove the fire hydrant and cut, cap, plug existing water main ends and removal of valve and valve boxes; restoration of removal area will be required. City staff shall inspect restoration area.

d. All other ancillary materials, equipment, labor, water, and power required for the complete abandonment of the existing water mains.

2. Payment for removal of the existing fire hydrant(s) shall be made on lump sum (LS) basis according to the lump sum price provided on the bid form and/or agreed to in the Schedule of Values.

V. Temporary Sidewalk Restoration (Bid Item #33)

1. The Contractor shall furnish all labor, equipment, and materials to temporarily restore the sidewalk in the project area. The temporary sidewalk restoration shall include but may not be limited to:

a. Temporary installation of asphalt milling or concrete for sidewalks that are removed for greater than five (5) working days; temporary walkway must be ADA compliant. City staff will inspect temporary installation.
b. All other ancillary materials, equipment, labor, and power required for the temporary sidewalk restoration of all areas disturbed or damaged by construction which were not covered under any other bid items.

2. Payment shall be made as square yards (SYD) basis according to the Schedule of Values for the temporary sidewalk restoration.

W. Excavatable Flowable Fill (Bid Item #34)

1. The Contractor shall provide all labor, equipment, and materials to furnish and install flowable fill in areas of pipe conflicts. The installation of flowable fill shall include, but may not be limited to:

a. Hauling and placing 100 psi excavatable flowable fill meeting the requirements of "FDOT Road and Bridge Construction Specification 121" in areas of pipe conflicts where compaction cannot be performed.
b. All other ancillary materials, equipment, labor, and power required for the installation and placement of flowable fill in areas of pipe conflicts.

2. Installation of excavatable flowable fill shall be within areas where compaction of backfill cannot be performed, such as, when the water main is installed below an existing storm pipe.

3. Payment shall be made for the number of cubic yards (CYD) of flowable fill placed complete and accepted by the Engineer paid in accordance with the unit price provided on the bid form and/or agreed to in the Schedule of Values. The volume of flowable fill shall be documented with delivery tickets for each truckload.

X. ADA Ramp Restoration (Bid item #35)

1. The Contractor shall furnish all labor, equipment and materials to restore all ADA ramps. The ADA ramp restoration shall include but may not be limited to:

a. Removing all sidewalk and curb impacted by construction;
b. Formwork, reinforcement, and installation per details in the Drawings of concrete ADA ramps and ADA detectable

warning mats that were cut, removed or damaged during the course of the construction.

c. Pre-Pour inspection shall be conducted by City staff.

d. All other ancillary materials, equipment, labor, and power required for the complete restoration of all ADA Ramps disturbed or damaged by construction.

2. Payment shall be made for each (EA) number of ADA ramps restored, in place and accepted by the Engineer, paid in accordance with the unit price provided on the bid form and/or agreed to in the Schedule of Values.

Y. Export Unsuitable Materials (Bid Item #36)

1. The Contractor shall furnish all labor, equipment, and materials to export any material determined to be unsuitable for use as a fill material. The Export of Unsuitable Materials shall include but may not be limited to:

a. Excavation of the unsuitable materials;
b. Loading the unsuitable materials onto a hauling truck;
c. Hauling and disposing of the unsuitable materials;
d. All other ancillary materials, equipment, labor, and power required for the export of unsuitable materials.

2. Measurement will be based on the length and depth of the excavated unsuitable material, confirmed in the field with the City's representative. Payment shall be made based on the number of cubic yards (CYD) of unsuitable material hauled off the project site with the Engineer's concurrence, paid in accordance with the unit price provided on the bid form and/or agreed to in the Schedule of Values.

Z. Import of Select Fill Material (Bid Item #37)

1. The Contractor shall furnish all labor, equipment, and materials to import select fill for use as a fill material. The Import of Select Fill Material shall include but may not be limited to:

a. Hauling the select fill onto the project site;
b. All other required ancillary materials, equipment, labor, and power required to import select fill material.

2. Payment shall be made for the number of cubic yards (CYD) of select fill imported to the project site paid in accordance with the unit price provided on the bid form and/or agreed to in the Schedule of Values. The volume of select fill shall be documented with delivery tickets for each truckload. Payment for backfill, placing and compaction shall not be made under this bid item. Payment for backfilling, placing and compacting the trench shall be included in the unit price bid for installation of the water main.

AA. Site Restoration (Bid Item #38)

1. The Contractor shall furnish all labor, equipment, and materials to restore the entire project area and miscellaneous roadside site restoration. The entire construction site must be restored to an equal or better condition than that which existed prior to construction. The site restoration shall include but may not be limited to:

   a. Restoration of curb, sidewalk, driveways, sod, roadside restoration and restoration of private property damaged by construction activities;
   b. Restoring the roadside area and/or private property with approved sod shall include furnishing, grading, placing, fertilizing and water the sod per the Technical Specifications;
   c. Sidewalk damage and replacement from relief holes will be paid under this bid item.
   d. Formwork, reinforcement, and installation of concrete/asphalt driveways, curbs, gutters and sidewalks that were cut, removed or damaged during the course of the construction;
   e. Mailbox post resets, and relocations if necessary.
   f. Miscellaneous plants, shrubs, and other ornamental plants;
   g. All other ancillary materials, equipment, labor, and power required for the complete restoration of all areas disturbed or damaged by construction, which were not covered under any other bid items.

2. Payment shall be made on a lump sum (LS) basis according to the Schedule of Values for the complete restoration of all areas disturbed or damaged by construction activities.

BB. Variable/Changeable Message Boards/Signs (Bid Item #39)

1. This bid item shall be required for advance public notifications for work that affects traffic within the project area. Variable/Changeable Message Boards/Signs shall be placed in advance of construction at least one (1) week prior to start and remain until work is complete. This bid item is for furnishing and installing portable Variable/Changeable Message Boards/Signs necessary for the duration of the project. Variable/Changeable Message Boards/Signs shall not be used to display information other than regulatory, warning, and guidance information related to traffic control.

2. Portable Variable/Changeable Message Boards/Signs shall be temporary traffic control devices with the flexibility to display a variety of messages. Each message shall consist of either one or two phases. Typically, a phase shall consist of up to three lines of eight characters per line.

3. When signs are used for route diversion, they should be placed far enough in advance of the diversion to allow road users ample opportunity to exit the affected roadway. The signs should be sited and aligned to ensure legibility. Multiple signs should be placed on the same side of the roadway, separated from each other at distances based on Table 6C-1 of the Manual on Uniform Traffic Control Devices (MUTCD). Variable/Changeable Message Boards/Signs should be placed on the shoulder of the roadway or, if practical, further from the traveled lane. They should be delineated with retroreflective temporary traffic control devices or when within the clear zone, shielded with a barrier or crash cushion. When Variable/Changeable Message Boards/Signs are not being used, they should be removed; if not removed, they should be shielded; or if the previous two options are not feasible, they should be delineated with retroreflective temporary traffic control devices.

4. Payment shall be made for each (EA) Variable/Changeable Message Boards/Signs needed for the project duration.

CC. As-needed Concrete Sidewalk (Bid item #40)

1. The Contractor shall furnish all labor, equipment and materials to remove and replace sidewalk on an as-needed basis at the request of the Owner. Note that this bid item is not for sidewalks damaged due to construction activities. Sidewalks removed, cut, damage by construction activities shall be measured and paid by the Site Restoration Bid Item No. 38. The removal and replacement of sidewalks on an as-needed basis shall include but may not be limited to:

    a. Contractor to review and perform site walk with City staff to identify as-needed concrete sidewalk area;
    b. Demolition and removal of existing sidewalk;
    c. Materials, preparation/grading, formwork, reinforcement and installation of sidewalk as shown in the Drawings or as specified in the Technical Specifications per Section 02530;
    d. All other ancillary materials, equipment, labor, and power required for the complete replacement of miscellaneous sidewalk requested by the City.

2. Payment shall be made for the number of square yards (SYD) of sidewalk complete, in place and accepted by the Engineer, paid in accordance with the unit price provided on the bid form and/or agreed to in the Schedule of Values.

DD. As-Needed Concrete Curb/Gutter Curb (Bid item #41)

1. The Contractor shall furnish all labor, equipment and materials to remove and replace concrete curb/gutter on an as-needed basis at the request of the Owner. Note that this bid item is not for curbs/gutters damaged due to construction activities. Curbs/gutters removed, cut, damage by construction activities shall be measured and paid by the Site Restoration Bid Item No. 38. The removal and replacement of curbs/gutters on an as-needed basis shall include but may not be limited to:

    a. Contractor to review and perform site walk with City staff to identify as-needed concrete curb/gutter;
    b. Demolition and removal of existing curb/gutter;
    c. Materials, preparation/grading, formwork, reinforcement and installation of curb/gutter as shown in the Drawings or as specified in the Technical Specifications per Section 02530;
    d. All other ancillary materials, equipment, labor, and power required for the complete replacement of miscellaneous curb/gutter requested by the City.

2. Payment shall be made for the number of linear feet (LF) of curb/gutter complete, in place and accepted by the Engineer, paid in accordance with the unit price provided on the bid form and/or agreed to in the Schedule of Values.

END OF SECTION

NAME & TITLE OF OFFEROR'S REPRESENTATIVE: (Print or type) **SIGNATURE & DATE:**

_____/___/___

(Name & Title) (Signature of Offeror's Representative)

_____
(Offeror's Name)

CITY OF SAFETY HARBOR (THE CITY)

EXHIBIT A
REPRESENTATIONS AND CERTIFICATIONS

** NOTE: THIS FORM MUST BE COMPLETED AND RETURNED WITH THE OFFER **

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REPRESENTATIONS

1. Prohibition Against Contingent Fee

Except for full-time bona fide employees working solely for the Offeror, the Offeror represents as part of its offer that it (Mark one with an "X"):

□ has □ has not

been employed or retained any company or persons to solicit or obtain this contract, and (Mark one with an "X"):

□ has □ has not

paid or agreed to pay any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

2. Interest of Public Officers/Covenant against Gratuities

The Offeror represents as part of its offer that no employee, official, or City Commissioner is or will be pecuniarily interested or benefited directly or indirectly in this contract. The Offeror further represents and warrants that it has not offered or given gratuities (in the form of entertainment, gifts, or otherwise) to any employee, official, or City Commissioner with a view toward securing favorable treatment in the awarding, amending, or evaluating the performance of any contract resulting from the solicitation. For breach of any representation or warranty in this clause, the City shall have the right to terminate this contract without liability and/or have recourse to any other remedy it may have at law.

3. Parent Company and Identifying Data

(a) The Offeror represents as part of its offer that it (Mark one with an "X"):

□ is □ is not

owned or controlled by a parent company. A parent company, for the purpose of this provision, is one that owns or controls the activities and basic business policies of the Offeror. To own the Offeror means that the parent company must own more than 50 percent of the voting rights in the Offeror. A company may control an Offeror as a parent even though not meeting the requirements for such ownership if the company is able to formulate, determine, or veto basic policy decisions of the Offeror through the use of dominant minority voting rights, use of proxy voting, or otherwise.

(b) If the Offeror is not owned or controlled by a parent company, it shall insert its own Employer's Identification Number below:

(c) If the Offeror is owned or controlled by a parent company, it shall enter in the blocks below the name and main office address of the parent company, and the parent company's Employer's Identification Number.

NAME OF PARENT COMPANY AND MAIN OFFICE ADDRESS (INCLUDE ZIP AND PHONE):

PARENT COMPANY'S EMPLOYER'S IDENTIFICATION #:

4. Type of Business

(a) The Offeror represents as part of its offer that it operates as (Mark one with an "X"):

□ an individual □ a sole proprietorship

□ a partnership □ a corporation

□ another entity _____.

(b) If incorporated, under the laws of the State of:

(c) Age of the Offeror: __ years, __ months

(d) Previous year's annual gross receipts:

□ less than $500K □ $500K - $2 mil. □ $2 mil. - $5 mil. □ more than $5 mil.

CERTIFICATIONS

5. Certification of Independent Price Determination

(a) By submission of this offer, the Offeror certifies, and in the case of a joint offer, each party thereto certifies as to its own organization, that in connection with this procurement:

(1) The prices in this offer have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other Offeror or with any competitor.

(2) Unless otherwise required by law, the prices which have been quoted in this offer have not been knowingly disclosed by the Offeror and will not knowingly be disclosed by the Offeror prior to the opening (in the case of an advertised procurement) or prior to award (in the case of a negotiated procurement), directly or indirectly to any other Offeror or to any competitor; and

(3) No attempt has been made or will be made by the Offeror to induce any other person or firm to submit or not to submit an offer for the purpose of restricting competition.

(b) Each person signing this offer certifies that:

(1) He/she is the person in the Offeror's organization responsible within that organization for the decision as to the prices being offered herein and that he has not participated, and will not participate, in any action contrary to (a)(1) through (a)(3) above; or

(2) He/she: (i) is not the person in the Offeror's organization responsible within that organization for the decision as to the prices being offered herein but that he has been authorized in writing to act as an agent for the persons responsible for such decision in certifying that such persons have not participated, and will not participate, in any action contrary to (a)(1) through (a)(3) above, and as their agent does hereby so certify; and (ii) has not participated, and will not participate, in any action contrary to (a)(1) through (a)(3) above.

6. Collusion & Interest of Offeror

By offering a submission to this request the Offeror certifies:

(a) No attempt has been made or will be made by the Offeror to induce any other person or entity to submit or not to submit an offer for the purpose of restricting competition;

(b) The only person interested in this contract as principal or principals is/are named therein and that no person other than therein mentioned has any interest in this contract to be entered into; and

(c) The Offeror warrants that he or she has not employed or retained any company or person, other than a bona fide employee working solely for the Offeror, to solicit or secure this agreement and that it has not paid or agreed to pay any person, company, corporation, individual, or firm, other than a bona fide employee working solely for the Offeror, any fee, commission, percentage, gift or other consideration contingent upon or resulting from the award or making of this agreement.

7. Communication Policy and Certification

(a) All oral and written communications with the City regarding this solicitation should be exclusively with the Contracting Officer identified in this solicitation, or with his or her designee. Discussions or communications with any other person could result in disclosure of proprietary or other competitive sensitive information or otherwise create the appearance of impropriety or unfair competition and, thereby, compromise the integrity of the City's procurement system.

(b) By submission of this offer, the Offeror certifies that it has not, and will not prior to contract award, communicate orally or in writing with any City employee or other representative (including contractors, or consultants) other than the Contracting Officer listed in the solicitation or his or her designee, except as described below: (CHECK "NONE" IF NONE EXISTS.)

☐ **NONE**

Name of City Representative	Date and Subject of Communication

(c) This certification concerns a material representation of fact upon which reliance will be placed in awarding a contract. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to any other remedies the City may have, the City may terminate the contract resulting from this solicitation for default and/or recommend that the Offeror be debarred or suspended from doing business with the City and/or have recourse to any other remedy it may have at law.

(d) The Offeror shall provide immediate written notice to the City if, at any time prior to contract award, he/she learns that its certification was, or a subsequent communication makes, the certification erroneous.

8. Conflict of Interest Certification

By submission of this offer, I certify that:

(a) I have read and understand the Solicitation Instructions and Conditions clause entitled "Code of Ethics." that will be incorporated into any contract resulting from this solicitation. I further understand that the pecuniary interest in that clause includes employment relationships.

(b) The requirements of this certification have been passed through to all first-tier subcontractors or subconsultants anticipated to be used at the time of the submission of my offer.

9. Non-Discrimination Assurance

The Offeror certifies that it will not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The Offeror understands that it is required to insert such a certification in all subcontracts and purchase orders. Failure by the Offeror 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 City deems appropriate. The Offeror further agrees by submitting this offer that it will include this certificate, without modification, in all subcontracts and purchase orders.

10. Drug-Free Workplace

(a) Equal preference shall be given to vendors submitting a certification with their offer certifying that they have a drug-free workplace program in accordance with Section 287.087, Florida Statute.

(b) Whenever two or more offers are equal with respect to price, quality and services are received, an offer received from a business that certifies that it has implemented a Drug-Free Workplace Program shall:

(i) Publish a statement notifying employees that the unlawful manufacturer, 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;

(ii) Inform employees about the dangers of drug abuse in the workplace, the business' policy of maintaining a drug-free workplace, and any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations;

(iii) Give each employee engaged in providing the commodities or contractual services that are under solicitation, a copy of the statement specified in paragraph (a);

(iv) In the statement specified in paragraph (a), notifying the employees that, as a condition of working on the commodities or contractual services that are under solicitation, 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 no later than five (5) days after such conviction;

(v) Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by an employee who is so convicted; and

(vi) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

(c) As the person authorized to sign this statement, I certify and state under oath that this firm complies fully with the above requirements.

11. The Offeror affirms and declares:

(a) That the Offeror is licensed to do business within the State of Florida and the City of Safety Harbor, Florida.

(b) That the Offeror is registered with the Pinellas County Construction Licensing Board in the areas required to construct the project.

(c) That the Offeror has the capability to assure completion of the required services within the time specified under this contract.

(d) That the Offeror presently has necessary facilities, financial resources and licenses to complete the work in a satisfactory manner and within the required time.

(e) The Offeror will perform a minimum of fifty percent (50%) of the contracted work with its own workforce.

(f) That the Offeror is of lawful age and that no other person, firm or corporation has any interest in this solicitation or any impending contract thereof.

(g) That the Offeror is not in arrears to the City upon debt or contract and is not defaulting as surety or otherwise upon any obligation to the City.

(h) Upon award of this solicitation, the Offeror acknowledges and agrees that its signature on all required forms constitutes a binding contract on the terms stated herein effective upon award.

12. Compliance with Occupational Safety and Health Act (O.S.H.A.)

In instances where such is applicable due to the nature of the work with which this Contract is concerned, all material, equipment, etc., as proposed, offered, and utilized in performance of the contract by the Offeror must meet and conform to all O.S.H.A. requirements; the Offeror's signature upon the bid form submitted is hereby considered a certification of such fact.

13. National Pollutant Discharge Elimination System (NPDES).

The Offeror represents and warrants that it has received and agrees to be bound by the NPDES best management practices contractor education and training as set forth and distributed by the City, which may be amended by the City from time to time. Refer to NPDES Attachment to Exhibit 'A'. Must be signed by Contractor.

14. Florida Trench Safety Act

The undersigned acknowledges the requirements of the Florida TRENCH Safety Act, Section 553.60 *et. seq.* and hereby commits the Offeror to the following in the performance of the work in the event that the subject contract involves dredging a trench of more than five (5) feet.
(a) The Offeror further acknowledges that the Florida Trench Safety Act establishes the federal excavation safety standards set forth at 29 CFT Part 1926, Subpart P, as the state standard.

(b) The Offeror shall comply with all applicable excavation/trench safety standards.

(c) The Offeror shall consider the geotechnical data available from the City, if any, the Offeror's own sources, and all other relevant information in its design of the trench safety system to be employed on the subject project. The Offeror acknowledges sole responsibility for the selection of the data on which it relies in designing the safety system, as well as for the system itself.

(d) The amount that the Offeror has set forth for pipe installation includes the following excavation/trench safety measures and the linear feet of trench excavated under each safety measure. These units, costs, and unit prices shall be disclosed solely for the purpose of compliance with procedural requirements of the Act. No adjustment to the Contract time or price shall be made for any difference in the number of linear feet of trench excavation, except as may be otherwise provided in this Contract.

	Trench Safety Measure (Description)	Units of Measure (LF, SF)	Unit (Quantity)	Unit Cost	Extended Cost
(i)					
(ii)					
(iii)					
(iv)					

(e) For Information Only, Not for Payment Purposes $_____. Failure to complete the above may result in the bid being declared non-responsive. This cost disclosure may be supplemented as necessary.

(f) The amount disclosed as the cost of compliance with the applicable trench safety requirements does not constitute the extent of the Offeror's obligation to comply with said standards. Offeror shall expend additional sums at no additional cost to the City, if necessary, to comply with the Florida TRENCH Safety Act (except as may otherwise be provided).

(g) Acceptance of the offer to which this certification and disclosure applies in no way represents that the City or its representatives have evaluated and thereby determined that the above costs are adequate to comply with the applicable trench safety requirements nor does it in any way relieve the Offeror of its sole responsibility to comply with the applicable trench safety requirements.

15. U.S. Department of Homeland Security Employment Eligibility

Effective January 1, 2021, the Contractor shall use the U.S. Department of Homeland Security's E-verify system to verify the employment eligibility of all new employees hired by offeror during the contract term who perform employment duties under any resulting contract to this solicitation and that any subcontracts will include an express requirement that subcontractors performing work or providing services pursuant to any resulting contract to this solicitation utilize the E-verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term.

16. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion

(1) The offeror certifies to the best of its knowledge and belief that it and its principals:

(i) are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any governmental department or agency;

(ii) have not within a three-year period preceding this offer been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) 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;

(iii) 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 (1)(ii) of this certification; and

(iv) have not within a three-year period preceding this offer had one or more public transactions (federal, state, or local) terminated for cause or default.

(2) Where the offeror is unable to certify to any of the statements in this certification, the offeror shall attach an explanation.

17. Scrutinized Companies Certification

By executing this certification, the contract associated with this solicitation and each and every renewal thereof (if renewal is separately provided for herein), pursuant to section 287.135, Florida Statutes, the offeror certifies, represents, and warrants that: (a) it is not on the Scrutinized Companies with Activities in Sudan List, (b) it is not on the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, (c) that it does not have business operations in Cuba or Syria, and (d) that it is not participating in a boycott of Israel, and that all such certifications are true as of the time offeror submitted its bid or proposal and as of the effective date of any renewal. Notwithstanding anything contained in this solicitation to the contrary, the City may terminate the contract resulting from this solicitation immediately if: (1) the offeror is found to have submitted a false certification regarding (a) – (d) above in accordance with section 287.135(5), Florida Statutes, or (2) the offeror is found to have been placed on the Scrutinized Companies that Boycott Israel List as that term is defined and such list is maintained pursuant to Section 287.135, Florida Statutes, or is otherwise engaged in a boycott of Israel. Such termination shall be in addition to any and all remedies available to the City at law. The provisions of this section shall only apply if the contract total is in excess of one million U.S. dollars ($1,000,000.00).

****

SIGNATURE BLOCK FOR ALL REPRESENTATIONS & CERTIFICATIONS

****

NAME OF OFFEROR & ADDRESS (INCLUDE ZIP & PHONE)

Signature:

TYPE NAME:

DATE: | |

OFFERORS MUST SET FORTH FULL, ACCURATE AND COMPLETE INFORMATION AS REQUIRED BY THIS SOLICITATION (INCLUDING THIS ATTACHMENT). FAILURE TO DO SO MAY RENDER THE OFFER NONRESPONSIVE OR UNACCEPTABLE.

(Acknowledgement of Offeror, if a Corporation)

STATE OF _____)
SS:
_____ COUNTY)

On this ____ day of _____,20____, the undersigned personally appeared before me, by means of (check one) □ physical presence or □ online notarization, who is personally known to me or who has produced _____as identification.

WITNESS my hand and official stamp the date aforesaid._____
Notary Public, State of _____ at

Large: _____

No._____

My Commission Expires: _____

(Acknowledgement of Offeror, if a Partnership)

STATE OF _____)
SS:
_____ COUNTY)

On this ____day of_____, 20____, the undersigned personally appeared before me, by means of (check one) □ physical presence or □ online notarization, unknown to me but identified by _____. The individual who executed the foregoing instrument as one of the members of the firm of _____, and he acknowledged to me that he executed the same, as and for the act and deed of said firm, for the uses and purposes therein expressed.

WITNESS my hand and official stamp the date aforesaid._____
Notary Public, State of _____ at

Large: _____

No._____

My Commission Expires: _____

(Acknowledgement of Offeror, if an Individual)

STATE OF _____)
SS:
PINELLAS _____)

On this____ day of_____, 20____, the undersigned personally appeared before me, by means of □ physical presence or □ online notarization, unknown to me but identified by _____. The person who executed the foregoing instrument and acknowledged that he executed the same for the uses and purposes therein expressed.

WITNESS my hand and official stamp the date aforesaid._____
Notary Public, State of _____ at

Large: _____

No._____

My Commission Expires: _____

National Pollutant Discharge Elimination System (NPDES)

Best Management Practices

CONTRACTOR EDUCATION & TRAINING

In concurrence with the National Pollutant Discharge Elimination System (NPDES), Municipal Separate Storm Systems (MS4) requirements, the City of Safety Harbor is providing the contractor, within this document, information and training materials on the topic of erosion and sediment control, illicit discharges, along with spill prevention and response.

All Contractor's working for the City of Safety Harbor shall be trained and become familiar with the Florida Department of Environmental Protection's Best Management Practices for Stormwater.

All site inspection and site operators must be certified through the Florida Stormwater, Erosion and Sedimentation Control Inspector Training and certification program or an equivalent program approved by the Florida Department of Environmental Protection (FDEP). All certification documents and copies of licenses must be provided to the City of Safety Harbor prior to issuance of Notice to Proceed.

Florida's stormwater regulatory program requires the use of Best Management Practices (BMPs) during and after construction to minimize erosion and sedimentation, and to properly manage runoff for both stormwater quantity and quality. BMPs are control practices that are used for a given set of conditions to achieve satisfactory water quality and quantity enhancement at a minimal cost. Each BMP has specific application, installation, and maintenance requirements that should be followed to control erosion and sedimentation effectively.

Illicit discharges include any discharge into a storm drain system that is not entirely composed of stormwater. The exceptions include water from firefighting activities and discharges from facilities already under an NPDES permit. Illicit discharges are a problem because, unlike wastewater, which flows to a treatment plant, stormwater generally flows to waterways without any additional treatment. Illicit discharges often contain pathogens, nutrients, surfactants, and various toxic pollutants.

An effective illicit discharge program needs to be both reactive and proactive. The program is reactive in addressing spills and other illicit discharges to the storm drain system that are found. The program must also be proactive in preventing and eliminating illicit discharges through education, training, and enforcement.

According to the Florida Department of Environmental Protection (FDEP) Phase II Rule, small municipal separate storm systems (MS4s) owners and operators must reduce pollutants in storm water to the maximum extent practicable (MEP) to protect water quality.

This primarily includes developing:

- a storm sewer system map,
- an ordinance prohibiting illicit discharges,
- a plan to detect and address these illicit discharges, and
- an education program on the hazards associated with illicit discharges.

All Contractors shall become familiar with the following websites and video links:

Illicit Discharges:

Illicit Discharges Training Video - Part 1 : https://www.youtube.com/watch?v=Z09Yz_qS1f4
Illicit Discharge Training Video - Part 2 : https://www.youtube.com/watch?v=Qmyh_rL4Ks0

Construction Activities & BMPs:

Construction Site Stormwater Runoff Control :
https://www.epa.gov/sites/production/files/2015-11/documents/fact2-6_0.pdf
Construction BMP Inspection and Maintenance :
https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#ill

Erosion and Sedimentation Control:
http://www.dep.state.fl.us/water/nonpoint/docs/erosion/erosion-inspectors-manual.pdf

Spill Prevention and Control:
http://www.dep.state.fl.us/water/stormwater/npdes/docs/Construction_Site_Storm_Water_Runoff_Control.pdf

Local resources:
Pinellas County Watershed Management - Stormwater Runoff
http://www.pinellascounty.org/environment/watershed/stormwater.htm

Pinellas County Watershed Management
http://www.pinellascounty.org/environment/watershed/default.htm

For additional information and questions, contact:

City of Safety Harbor
Public Works Department
1200 Railroad Avenue
City of Safety Harbor, Florida 34695
Phone: 727-724-1550 * Fax 727-724-1510
http://www.cityofsafetyharbor.com/50/Public-Works

Acknowledgment and Acceptance of Document

Company Name: _____

Signature: _____

Name/Title: _____

Date: _____

ADDITIONAL INFORMATION:

What is Stormwater?

Stormwater runoff occurs when precipitation from rain flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.

Why is there a concern about Stormwater quality?

Stormwater can pick up debris, chemicals, dirt and other pollutants and flow into a storm sewer system that discharges to local waterbodies. The City is mandated to annually report to the Florida Department of Environmental Protection on Stormwater protection, treatment, and water quality.

What does lawn care and pet waste have to do with Stormwater pollution?

Excess fertilizers and pesticides applied to lawns and gardens wash off, are carried through the storm sewer system, and pollute the waterbodies. Yard clippings (grass, brush, etc.) and leaves can wash into storm drains and can choke, suffocate, or disable aquatic life. Be sure to cover piles of dirt or mulch being used in landscaping projects. Do not over fertilize or use pesticides during a forecasted rain event. Leaving pet waste on the ground increase public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies. Pinellas County does have a Fertilizer Ordinance that bans the sale and use of certain fertilizers from June 1st – September 30th.

I am a commercial property owner and only have concrete sidewalks and an asphalt parking lot; do any of the Stormwater issues really affect me?

Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and enter local waterbodies. Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains. Cover grease storage and dumpsters and keep them clean to avoid leaks. Do not wash off floors or decks, kitchen equipment, or dump mop buckets or other chemicals onto paved surfaces as this contaminates water is washed into the storm sewer system and enters local waterbodies.

How can washing my car affect Stormwater runoff?

Washing your car on an impervious surface (i.e. concrete and asphalt) can send detergents and other contaminants through the storm sewer system. Use a commercial car wash as their water is drained to a waste water treatment facility, or wash your car on your yard so the water infiltrates into the ground.

Why can't I drain my pool into the street?

The chemicals in chlorinated and saltwater pools can kill fish and pollute the water. Drain treated pool water onto a grassy or planted area where the water can be absorbed by the soil and dechlorinate the water. Any pool care company can test and neutralize the pool water.

What is an illicit discharge and what are the consequences?

An illicit discharge is the discharge of pollutants or non-storm water materials into a storm sewer system via overland flow, direct dumping, or illicit connections. This means that pollutants of any kind, including leaves, grass clippings, tree trimmings and other yard waste may not be blown or swept to the street, gutter or storm drain. There are exceptions, such as water used for firefighting. City of Safety Harbor Code of Ordinances, Chapter 24, Article VII, Section 24.69, 24.70 & 24.72 and Chapter I, Section 1.12 provides for definitions of illicit discharge and states fines may be incurred up to $500 per day. The City also falls under Pinellas County Stormwater Regulation. Pinellas County's Stormwater ordinance, Article VI, Chapter 58, is intended to protect water quality and natural habitats. Under the County's ordinance, violators may be fined up to $10,000 per day, and payment for cleanup costs may be required.

Who can I call to report an illicit discharge?

Contact City of Safety Harbor Code Enforcement at 727.724.1555. You may also call Pinellas County's Watershed Management automated stormwater watch line at 727.464.5060.

Where can I find more information?

Information can be found at the following websites:

City of Safety Harbor - Stormwater Information
Pinellas County - Watershed
Pinellas County - Fertilizer FAQs
FDEP - Stormwater
EPA - NPDES Information
Tampa Bay Estuary
SWFWMD
Florida Friendly Landscaping
Bay Soundings

Always Remember…..**When it Rains, It Drains.**

CITY OF SAFETY HARBOR (THE CITY)

EXHIBIT B
SPECIAL SOLICITATION INSTRUCTIONS and CONDITIONS

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2. Evaluation and Basis for Award 1
3. Brand Name, Equal Brand Name and Generic Specifications. 2
4. Bid Bond 2
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1. Introduction

(a) The City of Safety Harbor is requesting offers for the Capital Improvement Project, Seminole Park and Mapleway Water Main Replacement Project, which include, but not limited to, in general the following work as set forth more fully in the scope of work and specifications in this solicitation: Reference Contract Documents, Specifications, and Plans:

- Installation of 2-inch Certa-Lok Yelomine IPS PVC by open cut;
- Installation of 2-inch Certa-Lok Yelomine IPS PVC by horizontal directional drill (HDD);
- Installation of 4-inch C-900 PVC DR-18 water main by open cut;
- Installation of 4-inch C-900/RJ PVC water main by horizontal directional drill (HDD);
- Installation of 6-inch C-900 PVC DR-18 water main by open cut;
- Installation of 6-inch Certa-Lok C-900/RJ PVC water main by horizontal directional drill (HDD);
- Installation of locate stations;
- Installation of service connections;
- Installation of fire hydrant assemblies;
- Abandonment of existing water main;
- Grout filling of existing water mains;
- Restoration of private property and City Right-of-Ways, included, but not limited to, landscaping, irrigation, curb, driveways, sidewalks and site restoration, and other miscellaneous restoration;
- Installation of road base, asphalt pavement, and concrete sidewalk and curbing;
- Maintenance of Traffic;
- FDOT certified detour plan;
- Pressure Testing, Disinfection, and Bacteriological Testing of the water mains;
- Coordination with the City to obtain FDEP partial clearances and final clearance for the new water mains;
- Connecting existing water main(s) and service piping to the new water main(s) and service laterals.
- Sidewalk and concrete curb installation
- ADA ramp installation

(b) The estimated cost for the Capital Improvement Project, Seminole Park and Mapleway Water Main Replacement Project, including all pay item descriptions is $1,900,000.

(c) The City was incorporated on June 17, 1917 and is located in the Tampa Bay area. The City currently occupies approximately five (5) square miles and serves a population of approximately 17,000. The City provides a full range of municipal services normally associated with a municipality including fire protection, street construction and maintenance, planning, zoning and redevelopment, recreation and parks, library services, storm water management and general administrative services.

2. Evaluation and Basis for Award

(a) **Number of Awards.**

In the event the City elects to award this contract, only one contract award may be made for this project. The intent to award one contract shall not be construed as a waiver of the City's discretion to accept or reject any or all offers.

(b) **All or None Pricing**

i. The line item unit price(s) must include all costs that the Offeror intends to recover, such as, but not limited to supervision, labor, equipment, materials, vehicle pickup and return, financing, carrying charges, and all other such charges to accommodate the services and delivery requirements.

ii. Failure of the Offeror to provide prices for all line items listed on the Schedule shall be cause for rejection of the entire offer. However, the Offeror may enter “No Cost” in the unit price and extended amount columns to indicate that the item is being offered at “No Cost.”

iii. Offers are required to state exactly what they intend to furnish, otherwise they shall be required to furnish the items as specified.

iv. Evaluation of Offers Inclusive of Options. The City shall evaluate offers for award purposes by including the total price for the basic requirement together with any option pricing, i.e., option pricing will be included in the evaluation for award purposes. The City is under no obligation to purchase optional items, and reserves the right to refuse purchase of any options offered.

(c) **Detailed Description of Supplies/Services Not in Schedule.**

Item descriptions in the Schedule are not intended as complete descriptions of the required supplies and/or services to be purchased under this solicitation. Complete descriptions are provided in the Specifications and/or Statement of Work exhibits in this solicitation document.

(d) **Description of Supplies.**

i. Any manufacturer’s names, trade names, brand name, or catalog used in the specifications are for the purpose of describing and establishing general quality levels. Such references are not intended to be restrictive. Offers will be considered for any brand which meets the quality of the Specifications listed for any items. No substitutions will be permitted after opening of offers.

ii. Offerors will submit, with their offers, data necessary to evaluate and determine the quality of the items(s) they are offering.

iii. If required by the specifications, Offerors must submit with their offer cut sheets, sketches, descriptive literature and/or complete specifications relative to the items proposed and offered. Reference to previously submitted materials on prior offers are not be acceptable.

(e) **Right to Reject Offers.**

The City reserves the right to reject any and all offers in its sole and absolute discretion.

3. <u>Brand Name, Equal Brand Name and Generic Specifications.</u>

Some items called for in this solicitation are specified by brand name only; or by brand name(s) with a listing of salient characteristics (brand name or equal brand name); or by generic description without mention of a brand name.

(1) Offers for items specified as "Brand Name Only" shall be accepted only for the brand names and part number specified by the City.

(2) The brand name identifications associated with items described as "Brand Name or Equal Brand Name" are not intended to be restrictive. The salient characteristics provided for each item are the minimum criteria that shall be acceptable to the City. Items offered must be the same brand names specified or different brand names that meet or exceed the salient characteristics listed. Offers for items that do not satisfy the required salient characteristics shall not be considered for award. The City reserves the right, in its sole and absolute discretion, to determine if items meet or exceed the salient characteristics. Offers for "Equal Brand Name" items shall be considered for award if such items are clearly identified in the offer, and are determined by the City to satisfy the stipulated salient characteristics.

(3) Other items called for in this solicitation are identified by generic description without mention of a brand name. Throughout the specifications, all described features and other requirements are the minimum criteria that shall be acceptable to the City for these generic items. Items offered must meet or exceed the minimum criteria. Offers for items that do not satisfy the minimum criteria shall not be considered for award. The City reserves the right to determine if items offered meet or exceed the minimum criteria.

4. Bid Bond

(a) A Bid Bond on the form accompanying this solicitation (or a certified check or cashier's check payable to the City from a bank acceptable to the City) in an amount equal to 5% of the total offer/bid price must be submitted by each Offeror prior to the deadline set by the City for bid submission. The Bid Bond must be executed strictly in accordance with the instructions printed thereon. Failure to comply with the requirements for a Bid Bond may render an Offeror ineligible for further consideration for award.

(b) The Bid Bond must be submitted to the City in duplicate. The duplicate copy must be a photographic reproduction of the completed form set forth in the Contract Documents and clearly marked "Copy". Certified checks or cashier's checks shall be drawn on a solvent bank or trust company to the order of the City of Safety Harbor and shall have all necessary documentary revenue stamps attached, if required by law.

(c) The surety on all Bid Bonds shall be a duly authorized surety company authorized to do business in the State of Florida; all such bonds being issued or countersigned by a local producing agent who is a resident of the State of Florida and satisfactory evidence of the authority of the person or persons executing such bond being submitted with the bond. Personal checks shall not be acceptable to the City.

5. Payment and Performance Bonds

When required, the Offeror shall include only the actual costs of payment and performance bonds in the line item on the Schedule. The City will not consider any amount in excess of the actual costs of these bonds. The City reserves the right to request documentation from the Offeror as to the amount actually paid for these bonds.

CITY OF SAFETY HARBOR (THE CITY)

EXHIBIT C
SOLICITATION INSTRUCTIONS AND CONDITIONS

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1. Heading and Section References

The headings and section references in the Contract Documents are inserted only for the purpose of convenience and shall not be construed to expand or limit the provisions contained in such sections.

2. Acknowledgment of Addenda

This solicitation shall only be amended by written addendum issued by the City.

(a) If this Solicitation is amended through the issuance of an addendum, then all terms and conditions which are not modified remain unchanged.

(b) No interpretation of the meaning of the plans, specifications, or other Contract Documents will be valid unless set forth in writing by the City. All requests for such interpretation must be in writing addressed to the Contracts Specialist. The Offeror submitting the request will be responsible for the prompt delivery of any such requests. To be given consideration, such request must be received at least five (5) working days prior to the date and time established for receipt of offers. Any and all such interpretations and any supplemental instructions will be in the form of an addendum. The City will endeavor to provide any such addendum to Offerors no later than three (3) days prior to the date and time established for receipt of offers.

(c) The City will not be responsible for any other explanation or interpretation of this Solicitation made or given prior to the award of the contract. Failure of any Offeror to receive any such addendum shall not relieve said Offeror from any obligation under his submitted offer.

(d) Offerors shall acknowledge receipt of any addendum to this Solicitation: (1) by signing and returning the addendum; or (2) by identifying the addendum number and date in the space provided for this purpose on the Solicitation, Offer and Award Form. The City must receive the acknowledgment by the time and at the place specified for receipt of offers.

(e) All addenda so issued shall become a part of the Contract Documents. Any objections to this Solicitation or any addenda thereto must be filed in writing with the City prior to the date and time set for receipt of offers.

3. City-Furnished Property

No material, labor, or facilities will be furnished by the City unless otherwise provided for in this Solicitation.

4. Exceptions/Deviations

Exceptions to, or variances from, any portion of the Solicitation, including but not limited to the Statement of Work/Specification, contract terms and conditions, contained in a submitted offer shall not be considered. Offerors are strongly encouraged to contact the person identified in Block 3 of the Solicitation, Offer and Award Form well in advance of the deadline for receipt of offers with any proposed changes to the City's terms and conditions.

5. Bid Opening and Public Review

Every bid properly delivered within the time fixed for receiving bids will be opened and the name of each bidder and bid amount shall be publicly read aloud. The public may attend the bid opening, but may not immediately review any bids submitted until the City provides a notice of intended decision or thirty (30) days after the opening of the bids, whichever occurs first. After such time, all bids submitted are public records subject to production unless specifically exempted by Florida Statutes. Bids which contain information that is "trade secret" as defined in Section 812.081, Florida Statutes, or that is otherwise confidential or exempt by Florida Statutes shall be designated as such by the Offeror and the trade secret, confidential, or exempt information shall be specifically identified by the Offeror. However, any information marked as "trade secret," "confidential," or "exempt" may be produced by the City in response to a public records request if the City determines that the information does not meet the definition of "trade secret" in Section 119.0715, Florida Statutes, or is not otherwise confidential or exempt under Florida Statutes.

6. Award of Contract

(a) The contract will be awarded to the Offeror whose offer, conforming to the Solicitation requirements is most advantageous to the City, price and other factors considered. Nothing contained herein shall be construed as creating any entitlement to award or property interest to the low-bidder. The City shall have the sole discretion to determine which Offeror, if any shall be awarded the contract.

(b) The contract will be awarded to the Offeror who submitted the most responsive and responsible offer for the City which conforms to the requirements imposed by this Solicitation, provided said request is considered (within the sole discretion of the City) reasonable and in the best interest of the City to accept. A responsible Offeror is one who affirmatively demonstrates to the City that the Offeror has adequate financial resources and the requisite capacity, capability, and facilities to perform the contract within the delivery period or period of performance, has a satisfactory record of performance on other comparable projects, has a satisfactory record of integrity and business ethics, and is otherwise qualified and eligible to receive award under the solicitation and laws or regulations applicable to the procurement. The City in its sole discretion, will determine whether or not an Offeror is a responsible Offeror.

(c) The contract will be awarded by the City to the Offeror submitting the best offer for the City, as determined solely by the City, and in compliance with the Specifications, and other requirements imposed by this Solicitation, provided said offer is considered (within the sole discretion of said City) reasonable and in the best interest of the City to accept.

(d) The City reserves the right to reject any or all offers in part or in total for any reason, with or without cause, to accept any offer if considered best for its interest, and to waive informalities and minor irregularities in offers received.

(e) The City may accept any item or group of items of any offer, unless the Offeror qualifies the offer by specific limitations. Unless otherwise provided in this Solicitation, offers may be submitted for any quantities less than those specified, and the City reserves the right to make an award on any item for a unit quantity less than the quantity offered at the unit prices offered unless the Offeror specifies otherwise in the offer.

(f) A written award (or acceptance of offer) which is mailed, e-mailed or otherwise furnished to the successful Offeror within the time for acceptance specified in the Solicitation shall be deemed to result in a binding contract without further action by either party.

(g) The City may, within the time specified therein, accept any offer or part thereof, as provided in (c) above, whether or not there are negotiations subsequent to its receipt, unless the offer is withdrawn by written notice received by the City prior to award. If subsequent negotiations are conducted, they shall not constitute a rejection or counter offer on the part of the City.

(h) The City may award a contract based on the initial price received from the highest evaluated Offeror without discussion.

(i) Any financial data submitted with any offer hereunder or any representation concerning facilities or financing will not form a part of any resulting contract; provided, however, that if the resulting contract contains a clause providing for price reduction for defective cost or pricing data, the contract price will be subject to reduction if cost or pricing data furnished hereunder is incomplete, inaccurate, or not current.

7. Rights of PSTA in Invitation for Bid Process

The City may investigate the qualifications of any Offer under consideration. The City may require confirmation of information furnished by a Offeror, and require additional evidence of qualifications to perform the work described in this solicitation. In addition to any rights conveyed by Florida law, the City specifically reserves the right to:

- Disqualify any Offeror
- Reject any or all of the Offers, in its sole and absolute discretion
- Remedy errors in this solicitation
- Cancel the entire solicitation
- Issue subsequent solicitations
- Rank firms and negotiate with the highest ranking firms
- Select the offer(s) it believes will serve the best interest of the City
- Appoint evaluation committees to review offers
- Seek the assistance of outside technical experts to review offers
- Approve or disapprove the use of particular Subcontractors and Suppliers
- Establish a short list of Offerors eligible for discussions after review of written offers
- Solicit best and final offers (BAFO) from all or some of the Offerors
- Determine whether or not a Offeror is a responsible offeror
- Reject any part of a bid
- Negotiate with any, all, or none of the Offerors
- Award a contract to one or more Offerors
- Accept other than the lowest priced offer
- Request any necessary clarifications or offer data without changing the terms
- Disqualify the Offeror upon evidence of collusion with intent to defraud or other illegal practices on the part of the Offerors
- Waive any informalities or irregularities in any offer, to the extent permitted by law
- Make selection of the Offeror to perform the services required on the basis of the original bids without negotiation

This solicitation does not bind or commit the City to enter into a contract with any of the Offerors and does not create any property interest or expectation of any award.

8. Qualification of Subcontractors, Material Men, and Suppliers

(a) Each Offeror shall submit to the City an executed Summary of Subcontractor(s)/Subconsultant(s)/Supplier(s) (Attachment 1 to Exhibit C) form listing each proposed subcontractor when the initial offer to the City's solicitation is due. The submission of this information is considered an issue of responsibility, and the City will not award a contract to any Offeror who has not supplied this documentation. The City will notify the Offeror in writing if the City, after due investigation, has reasonable objection to any subcontractor, person or organization on such list. Acceptance of any

such subcontractor, person or organization shall not constitute a waiver of any right of the City to reject defective work, material or equipment, or work, material or equipment not in conformance with the requirements of the contract.

(b) The Summary of Subcontractor(s)/Subconsultant(s)/Supplier(s) (Attachment 1 to Exhibit C) form listing each proposed subcontractor shall constitute a representation by the Offeror to the City that it believes such firm is ready, willing, and able to perform the work indicated. It shall also represent a commitment by the Offeror that if it is awarded the contract, it will enter into a subcontract with such subcontractor for the work described at the approximate price set forth in the Summary of Subcontractor(s)/Subconsultant(s)/Supplier(s) (Attachment 1 to Exhibit C) form.

(c) Except as authorized by the City, the successful Offeror shall enter into formal agreements with the subcontracting firms shown in the submitted Summary of Subcontractor(s)/Subconsultant(s)/Supplier(s) form(s) within ten (10) business days after receipt of a contract executed by the City.

(d) The subcontractor listed on the Summary of Subcontractor(s)/Subconsultant(s)/Supplier(s) form is required to perform the work indicated with its own work force.

(e) The Offeror shall be required to perform or exercise responsibility for at least fifty (50) percent of the total cost of its contract with its own workforce. No qualification of subcontractors shall be construed to alter this requirement.

9. Cancellation of Solicitation

This Solicitation may be cancelled by the City at any time prior to award, whether before or after receipt of offers.

10. Discounts

Prompt payment discounts will not be considered in evaluating offers for award.

11. Late Submissions, Modifications, and Withdrawals of Offers

(a) Under no circumstances will offers or modification of offers delivered after the delivery time and date specified for receipt of offers be considered. Late offers will be returned to the Offeror unopened with the notation: “This offer was received after the delivery time and date designated for receipt of offers for this solicitation.”

Any offer received at the office designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made, and it was timely delivered to the City in accordance with delivery instructions in this Solicitation and it is determined by the City that the late receipt was due solely to mishandling by the City after receipt at the City's offices.

(b) The only acceptable evidence to establish the time of receipt at the City is the time-date stamp of the City on the wrapper or other documentary evidence of receipt maintained by the City.

(c) Offers may be withdrawn by written or telegraphic notice received at any time before the exact time set for receipt of offers. An offer may be withdrawn in person by an Offeror or the Offeror's authorized representative before the exact time set for receipt of offers, provided the identity of the person requesting withdrawal is established and the person signs a receipt for the offer.

(d) Negligence on the part of the Offeror in preparing his offer confers no right of withdrawal or modification of his offer after such offer has been opened by the City at the appointed time and place. Offers must remain open for a period of sixty (60) days after the time and date set for receipt of offers. Offerors may not assign or otherwise transfer their offer prior to or after the time and date set for receipt of offers.

12. Multiple or Alternate Offers Not Accepted

(a) Definitions.

(1) “Multiple offers” means more than one offer submitted, each satisfying the specific stated requirements of the solicitation.

(2) “Alternate offers” means an offer submitted that may depart from the specific stated requirements of the solicitation.

(b) Unless otherwise specified in this solicitation, multiple or alternate offers shall not be accepted in response to this solicitation. All multiple or alternate offers shall be rejected; provided however, that if the Offeror clearly identifies a primary offer, it shall be evaluated and considered for award as though it were the only offer submitted.

13. Pre-Submission Conference and Questions Concerning the Solicitation

A pre-submission conference, if desired by the City, is scheduled for all interested parties to discuss the solicitation requirements at a date, time and location as identified on the Solicitation, Offer and Award Form.

14. Preparation of Offers

(a) Any potential Offeror that is presently engaged in litigation with the City or has made a claim that is unresolved where the claim or the litigation involves a prior project with the City will be ineligible to receive this solicitation. No offer will be received from any such Offeror.

(b) Prior to submission of offer, Offerors shall carefully examine the site of the proposed work and make all necessary examinations and investigations to inform themselves thoroughly as to all difficulties involved in the completing of all work required pursuant to the mandates of this solicitation with its requirements. No plea of ignorance or condition or difficulties that may be encountered in the execution of the work under this Contract as a result of failure to make the necessary examinations and investigations, will be accepted as an excuse for any failure or omission on the part of the Offeror to fulfill, in every detail, all of the requirements of the Contract Documents, nor will they be accepted as a basis for any claims whatsoever for extra compensation or for an extension of time

(c) Offerors are expected to examine the Schedule, Solicitation Instructions, Special Provisions, General Provisions, all drawings, specifications, the statement of work, and all other provisions of, and Exhibits to, the solicitation, whether incorporated by reference or otherwise, prior to the submission of offers. Failure to do so will be at the Offeror's risk.

(d) Each Offeror shall furnish the information required by the Solicitation. Offers shall be submitted on the bid form contained in the Solicitation. Offeror shall sign and print or type their name on the bid form and each continuation sheet on which they make an entry. Erasures or other changes must be initialed in ink by the person signing the offer. Offers signed by an agent of the Offeror (other than an officer or a partner of the Offeror) are to be accompanied by evidence of the agent's authority (unless such evidence has been previously furnished to the City).

(e) All blanks on the bid form shall be filled in by typewriter or printed in ink with a firm fixed unit price for items offered. Unit prices shall include packing unless otherwise specified. In case of any discrepancy between a unit price and any extended or total price required by the bid form, the unit price will be presumed to be correct, subject, however, to correction to the same extent and in the same manner as any other mistake.

(f) The City, as a Florida municipal corporation, is exempt from the payment of Florida sales tax to its vendors under Chapter 212, Florida Statutes. Corporations, individuals, and other entities may be impacted by Chapter 212, Florida Statutes, according to the type of service, sale of commodity or other contractual arrangement with the City. By submitting an offer, the Offeror is acknowledging that he is aware of his statutory responsibility for sales tax under Chapter 212, Florida Statutes.

(g) Offers for property or services other than those specified in the Schedule will not be considered unless specifically authorized in the solicitation. Any condition, qualification, or limitation of the offer will be a basis for rejection of the offer as nonresponsive.

(h) The Offeror must state a definite time for delivery of property or for performance of services unless otherwise specified in the solicitation. All measurements shall be in the system of weights and measures in common usage in the United States, and pricing shall be in U.S. dollars.

15. Computation of Time

In computing any period of time for the solicitation or any resulting contract, "days" means calendar days, and the day of the event from which the designated period of time begins to run shall not be included, but the last day shall be included unless it is a Saturday, Sunday, or federal or State of Florida holiday, in which event the period shall run to the end of the next business day.

16. Contact with Offeror

(a) Offerors are cautioned that until this solicitation is either awarded or cancelled, they may have contact only with the Contracts Specialist or his or her designee. Discussions or communications regarding this solicitation with any other personnel associated in any capacity with the City, its consultants, and contractors are strictly prohibited, unless otherwise approved in writing by the City.

(b) Any violation of this restriction may result in the disqualification of the Offeror from further participation in this procurement, and from award of any contract or subcontract under this solicitation.

17. Code of Ethics

With respect to this offer, if any Offeror violates or is a party to a violation of Chapter 112, Part III, Florida Statutes, such Offeror may be disqualified from performing the work described in this solicitation or from furnishing the goods or services for which the offer is submitted and shall be further disqualified from submitting any future offers for work or for goods or services.

18. Submission of Offers

(a) Offers and modifications thereof shall be enclosed in sealed envelopes or sealed cartons and submitted to the City Clerk's Office, City of Safety Harbor, 750 Main Street, Florida 34695, prior to the time and date established for receipt of offers. Delivery of said offers to the City prior to the time and date stated in this Solicitation is solely and strictly the responsibility of the Offeror. The Offerors shall show the hour and date specified in the solicitation for receipt of offers, the solicitation number, and the Offeror's name, address, and telephone number on the face of the envelope or carton. All offers must be manually and duly signed by an authorized corporate officer, principal, or partner (as applicable). Attorneys-in-fact who sign bonds or other surety instruments must attach with each bond or surety instruments, if required.

(b) The City is not responsible for mail sent through the United States Postal Service, private couriers or messengers in regard to offers being delivered by the specified date and time so that they can be considered.

(c) Telegraphic or electronic (including but not limited to email and facsimile) offers will not be considered unless authorized by the Solicitation; however, offers may be modified or withdrawn by written, telegraphic or electronic notice, provided such notice is received prior to the hour and date specified for receipt of offers.

(d) Samples of items, when required, must be submitted within the time specified and, unless otherwise specified in the solicitation, at no expense to the City. If not destroyed by testing, samples will be returned at the Offeror's request and expense, unless otherwise specified in the solicitation.

(e) Each copy of the offer shall include the legal name of the Offeror and a statement whether the Offeror is a sole proprietorship, a corporation, or any other legal entity. An offer for a corporation shall further give the state of incorporation.

19. Omission

Notwithstanding the provision of drawings, technical specifications or other data by the City, the Offeror shall have the responsibility of supplying all details required to make an accurate proposal of services offered even though such details may not be specifically mentioned in the specifications.

20. Public Entity Crimes

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

(b) The City may make inquiries regarding alleged convictions of public entity crimes. The unreasonable failure of an Offeror to promptly supply information in connection with an inquiry may be grounds for rejection of the offer. Additionally, a conviction of a public entity crime may cause the rejection of the offer.

(c) Offers must be signed by the Offeror with his signature in full. When a firm submits an offer, the offer shall be signed by one or more of the firm's partners. When a corporation submits an offer, the officer signing shall set out the corporate name in full beneath which he shall sign his name and give title of his office. The offer shall also bear the seal of the corporation. Anyone signing the offer as agent must file with it legal evidence of his authority to do so. Offeror's who are nonresident corporations shall furnish to the City a duly certified copy of their permit to transact business in the State of Florida along with the Offer. Failure to promptly submit this evidence of qualification to do business in the State of Florida may be basis for rejection of the offer.

21. Legal Requirements

The Offeror's attention is directed to the fact that all applicable provisions of all federal, state, county, and local laws, ordinances, rules and regulations shall govern development, submittal, and evaluation of all offers received in response hereto and lack of knowledge by any Offeror shall not constitute a cognizable defense against compliance with all such laws, rules, and regulations in the submission of any offer or the legal effect thereof.

22. Contract Documents

Except for Titles, Subtitles, Headings, Running Headlines, Table of Contents, and Indexes (all of which are printed herein, merely for convenience), the following except for such portions thereof as may be specifically excluded, constitute the "Contract Documents":

(a) Solicitation, Offer and Award Form
(b) Schedule – Bid Form and any attachments thereto
(c) Exhibit A – Representations and Certifications
(d) Exhibit B – Special Solicitation Instructions and Conditions
(e) Exhibit C – Solicitation Instructions and Conditions
(f) Exhibit D – Special Provisions
(g) Exhibit E – General Provisions
(h) Exhibit F – Statement of Work/Specifications
(i) Exhibit G – Bid Bond Form
(j) Exhibit H – Payment Bond Form
(k) Exhibit I – Performance Bond Form
(l) Offeror's response
(m) Addenda

23. Order of Precedence

In the event of any inconsistency between the provisions of the resulting contract, the inconsistency shall be resolved by giving precedence in the following order:

(a) Schedule – Bid Form and any attachments thereto
(b) Solicitation Offer and Award Form;
(c) Addenda
(d) Exhibit A – Representation and Certifications
(e) Exhibit F - Statement of Work/Specifications
(f) Exhibit B - Special Solicitation Instructions and Conditions;
(g) Exhibit D - Special Provisions
(h) Exhibit E - General Provisions
(i) Exhibit C - Solicitation Instructions and Conditions
(j) Exhibit G – Bid Bond Form
(k) Exhibit H – Payment Bond Form
(l) Exhibit I – Performance Bond Form
(m) Offeror's response

CITY OF SAFETY HARBOR (CITY)

ATTACHMENT 1 TO EXHIBIT C
(SUMMARY OF SUBCONTRACTOR/SUBCONSULTANT/SUPPLIERS)

Offerors should provide information on **all** of their prospective subcontractor(s)/subconsultant(s)/suppliers who submit offers in support of this solicitation. Use additional sheets as necessary.

Capital Improvement Project Name: Seminole Park and Mapleway Water Main Replacement Project IFB 2025-ENG-01

Name of Prime Contractor: _____

NAMES AND ADDRESSES OF SUBCONTRACTOR(S)/SUBCONSULTANT(S)	TYPE OF WORK TO BE PERFORMED	PREVIOUS YEAR'S ANNUAL GROSS RECEIPTS	$ AMOUNT ON CONTRACT
NAME: ADDRESS: PHONE: FAX: E-MAIL: CONTACT PERSON:	TYPE OF WORK: AGE OF FIRM: IS THE FIRM A CERTIFIED MINORITY BUSINESS IN THE STATE OF FLORIDA? YES □ NO □	□ less than $500K □ $500K - $2 mil. □ $2 mil. - $5 mil. □ more than $5 mil.	
NAME: ADDRESS: PHONE: FAX: E-MAIL: CONTACT PERSON:	TYPE OF WORK: AGE OF FIRM: IS THE FIRM A CERTIFIED MINORITY BUSINESS IN THE STATE OF FLORIDA? YES □ NO □	□ less than $500K □ $500K - $2 mil. □ $2 mil. - $5 mil. □ more than $5 mil.	
NAME: ADDRESS: PHONE: FAX: E-MAIL: CONTACT PERSON:	TYPE OF WORK: AGE OF FIRM: IS THE FIRM A CERTIFIED MINORITY BUSINESS IN THE STATE OF FLORIDA? YES □ NO □	□ less than $500K □ $500K - $2 mil. □ $2 mil. - $5 mil. □ more than $5 mil.	

Print Name/Title of Person completing this form: _____

Signature_____Date_____

CITY OF SAFETY HARBOR (THE CITY)

EXHIBIT D
SPECIAL PROVISIONS

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1. Indefinite Quantity/Indefinite Delivery (Measurement and Payment) / Definite Quantity/Definite Delivery (Fixed-Firm-Price or Lump Sum)

Portions of this contract are Indefinite Quantity/Indefinite Delivery (Measurement and Payment).
Other portions of this contract are Definite Quantity/Definite Delivery (Firm-Fixed-Price or Lump Sum).
REFER TO SCHEDULE BID FORM, ATTACHMENT '1' TO SCHEDULE BID FORM AND SPECIFICATIONS.

a.) Indefinite Quantity/Indefinite Delivery (Measurement and Payment): All Line Items listed on the Schedule Bid Form with the exception of Lump Sum (LS) items shall be Indefinite Quantity/Indefinite Delivery (Measurement and Payment). The quantities of services specified in the Schedule are estimates only and are not purchased by this contract.

b.) Definite Quantity/Definite Delivery (Firm-Fixed-Price or Lump Sum): The quantities of supplies and services specified under all line items listed on the Schedule Bid Form with the exception of Measurement and Payment Items, shall be firm-fixed-price (lump sum) and shall be purchased under this contract. The City shall purchase the services specified under the Specifications and the Contractor shall deliver them in accordance with the terms and conditions stipulated in this contract. The City shall pay the exact fees specified in the Schedule upon the City's acceptance of the work. No additional amounts shall be paid to the Contractor, regardless of the effort/costs incurred by the Contractor.

2. Period of Performance

All work must be completed under the terms and conditions stated herein and the facilities ready for use within the "Contract Time" which shall be no later than 390 days from Notice to Proceed.

3. Notice to Proceed

The Contractor shall not proceed with any Contract Work without a written Notice to Proceed from the City. Any work performed or expenses incurred by the Contractor prior to the Contractor's receipt of Notice to Proceed shall be entirely at the Contractor's risk. The Contract shall start Work within ten (10) days following the date stated in the Notice to Proceed.

4. Installation

(a) The Contractor shall completely install, ready for use, all items covered by this contract.

(b) The Contractor shall deliver, assemble and install items in accordance with the manufacturer's recommendations and best commercial practices.

5. Hours of Construction Operation

(a) Section 15.03 (b) of the City Code provides the no construction shall be permitted between the hours of 6:00 p.m. and 7:00 a.m. Monday through Saturday and all day on Sunday.

(b) The normal work week shall be Monday through Friday, exclusive of City holidays. The normal work day shall be between the hours of 7:00 a.m. and 6:00 p.m. It is the Contractor's responsibility to schedule all work within these parameters. Any request for variation must be made to the City in writing 48 hours in advance. The Contractor must receive written approval from the City prior to varying the schedule. No response from the City shall be deemed a denial of the request. Only emergency work shall be performed between the hours of 6:00 p.m. and 7:00 a.m. Monday through Friday, on Saturdays, Sundays, and City Holidays.

(c) Delivery F.O.B. Destination. All deliveries shall be made F.O.B. destination to the City's premises. The term "F.O.B. destination, within the City's premises," as used in this clause, means free of expense or risk of loss to the City until delivered to and/or installed on the City's premises, including delivery to specific rooms within a building if so specified.

(d) All work performed during other than normal work hours and days, including emergency work, may be inspected by the City. The Contractor shall reimburse the City for the additional costs for the City's Project Representative to observe work during these periods. The costs shall be assessed against the contract, and shall include the normal over-time base salary rate plus sick leave, incentive and holiday pay applicable thereto, plus unemployment excise and payroll taxes, and contributions for social security, worker's compensation insurance, retirement benefits, and medical and other insurance benefits, company overhead, and profit as applicable.

6. New Material

Unless this contract specifies otherwise, the Contractor represents that the supplies and components (including any former property of the City identified in this contract) are new, including recycled (not used or reconditioned) and are not of such age or so deteriorated as to impair their usefulness or safety. If the Contractor believes that furnishing used or reconditioned supplies or components will be in the City's interest, the Contractor shall so notify the City in writing. The Contractor's notice shall include the reasons for the request along with a proposal for any consideration to the City for the use of used or reconditioned supplies or components.

7. Manufacturer's Warranty

Any and all standard manufacturer's warranties shall accrue to the benefit of the City. The manufacturer's warranties referenced herein shall be in addition to any contractual remedies set forth in this contract, and in addition to any and all other statutory remedies or warranties imposed on the Contractor for the benefit of the City.

8. Warranty of Supplies

(a) Definitions. "Acceptance," as used in this clause, means the act of an authorized representative of the City by which the City assumes for itself, or as an agent of another, ownership of existing supplies, or approves specific services as partial or complete performance of the contract.

"Correction," as used in this clause, means the elimination of a defect.

"Supplies," as used in this clause, means the end item furnished by the Contractor and related services required under the contract. The word does not include "data."

(b) Contractor's Obligations.

(1) Notwithstanding inspection and acceptance by the City of supplies furnished under this contract, or any condition of this contract concerning the conclusiveness thereof, the Contractor warrants that for two (2) years:

(i) all supplies furnished under this Contract will be free from defects in material or workmanship and will conform with all requirements of this Contract; and

(ii) the preservation, packaging, packing, and marking, and the preparation for and method of, shipment of such supplies will conform with the requirements of this Contract.

(2) When return, correction, or replacement is required, transportation charges and responsibility for the supplies while in transit shall be borne by the Contractor. However, the Contractor's liability for the transportation charges shall not exceed an amount equal to the cost of transportation by the usual commercial method of shipment between the place of delivery specified in this Contract and the Contractor's plant, and return.

(3) Any supplies or parts thereof, corrected or furnished in replacement under this clause, shall also be subject to the terms of this clause to the same extent as supplies initially delivered. The warranty, with respect to supplies or parts thereof, shall be equal in duration to that in paragraph (b) (1) of this clause and shall run from the date of delivery of the corrected or replaced supplies.

(c) Remedies Available to the City.

(1) The City shall give written notice to the Contractor of any breach of warranties in paragraph (b) of this clause.

(2) Within a reasonable time after the notice, the City may exercise one or more of the following options --

(i) require, by written notice, the prompt correction or replacement of any supplies or parts thereof (including preservation, packaging, packing, and marking) that do not conform with the requirements of this Contract within the meaning of paragraph (b) of this clause; or

(i) screen the supplies grouped for warranty action under this clause at the Contractor's expense and return all nonconforming supplies to the Contractor for correction or replacement;

(ii) require the Contractor to screen the supplies at locations designated by the City within the State of Florida and to correct or replace all nonconforming supplies;
(iii) return the supplies grouped for warranty action under this clause to the Contractor (irrespective of the f.o.b. point or the point of acceptance) for screening and correction or replacement; or

(i) retain such supplies and reduce the Contract Price by an amount equitable under the circumstances.

(3) If the Contract requires inspection of supplies by sampling procedures, conforming of supplies or components subject to warranty action shall be determined by the applicable sampling procedures in the Contract.

(4) The City may correct or replace the nonconforming supplies with similar supplies from another source and charge to the Contractor the cost occasioned to the City thereby if the Contractor --

(i) fails to make redelivery of the corrected or replaced supplies within the time established for their return; or

(ii) fails either to accept return of the nonconforming supplies or fails to make progress after their return to correct or replace them so as to endanger performance of the delivery schedule, and in either of these circumstances does not cure such failure within a period of 10 days (or such longer period as the Contracting Officer may authorize in writing) after receipt of notice from the Contracting Officer specifying such failure.

(5) Instead of correction or replacement by the City, the City may require an equitable adjustment of the Contract Price. In addition, if the Contractor fails to furnish timely disposition instructions, the Contracting Officer may dispose of the nonconforming supplies for the Contractor's account in a reasonable manner. The City is entitled to reimbursement from the Contractor, or from the proceeds of such disposal, for the reasonable expenses of the care and disposition of the nonconforming supplies, as well as for excess costs incurred or to be incurred.

(6) The rights and remedies of the City provided in this clause are in addition to and do not limit any rights afforded to the City by law, equity, or any other clause of this Contract.

(d) The provisions of this section shall survive the termination of the Contract, however terminated.

9. Non-Appropriation

In the event the City, in its sole discretion, determines that sufficient budgeted funds are not available to appropriate for the Contract Work, the City shall notify the Contractor of such occurrence and this Contract shall terminate as of the last day of the current fiscal year without any penalty to the City.

10. Contractor's Liability Insurance

(a) The Contractor shall purchase and maintain such insurance for claims under workmen's compensation laws, disability benefit laws or other similar worker's employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of his employee including claims insured by usual personal injury liability coverage from claims for injury to or destruction of tangible property including loss of use resulting there from any or all of which may arise out of or result from the Contractor's operations under the Contract Documents, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. This insurance shall be written for not less than any limits or liability specified below in the Contract Documents or required by law, whichever is greater, and shall include contractual liability insurance. Before starting the Work, the Contractor will fill with the City certificates of such insurance, acceptable to the City; these certificates shall contain a provision for cancellation as found in paragraph 5 of Section B immediately below.

(b) The Contractor shall provide the required certificates of insurance within (7) calendar days from Notice of Award.

11. Insurance Required

A. General

Before starting and until acceptance of the Work by the City, the Contractor shall procure and maintain insurance of the types and to the limits specified in paragraphs (1) through (4) inclusive below.

The Contractor shall require each of its subcontractors to procure and maintain, until the completion of that Subcontractor's work insurance of the types and to the limits specified in paragraphs (1) through (4) inclusive below. It shall be the responsibility of the Contractor to insure that all its subcontractors comply with all of the insurance requirements contained herein relating to such subcontractors.

B. Coverage

The amount and type of insurance shall conform to the following minimum requirements:

1) Worker's Compensation – Coverage to apply for all employees for statutory limits in compliance with the applicable state and federal laws. In addition, the policy must include the following:

(a) Employer's Liability with a limit of $100,000 each accident.

(b) Notice of Cancellation and/or Restriction – The policy must be endorsed to provide the City with thirty (30) days notice of cancellation and/or restriction.

2) Comprehensive General Liability – Coverage must be afforded on a form no more restrictive than the latest edition of the Comprehensive General Liability Policy filed by the insurance Services Office and must include:

(a) Minimum limits of $500,000 occurrence and $1,000,000 aggregate for Bodily Liability and Minimum limits of $500,000 per occurrence and $1,000,000 aggregate for Property Damage Liability.

(b) Premises and/or Operations.

(c) Independent Contractors.

(d) Products and/or Completed Operations.

(e) XCU Coverage.

(f) Broad Form Property Damage including Completed Operations.

(g) Contractual Coverage applicable to this specific contract including any hold harmless and/or indemnification agreement.

(h) Additional Insured – The City is to be specifically included as additional insureds.

(i) Notice of Cancellation and/or Restriction – The policy must be endorsed to provide the City with thirty (30) days' notice of cancellation and/or restriction.

3) Comprehensive Automobile Liability – Coverage must be afforded on a form no more restrictive than the latest edition of the Comprehensive Automobile Liability Policy filed by the Insurance Services Office and must include:

(a) Minimum limit of $1,000,000 per occurrence for Bodily Injury Liability and minimum limit of $1,000,000 per occurrence for Property Damage Liability.

(b) Owned Vehicles.

(c) Hired and Non-Owned Vehicles.

(d) Employee Non-Ownership.

(e) Notice of Cancellation and/or Restriction – The policy must be endorsed to provide the City with the thirty (30) days' notice of cancellation and/or restriction.

4) Certificates of Insurance and Copies of Policies – Certificates of Insurance in triplicate evidencing the insurance coverage specified in the previous paragraphs (1) through (3) inclusive, and shall be filed with the City before operations begin. The required Certificates of Insurance shall name the types of policies provided, refer specifically to this Contract, shall state that such insurance is required by such paragraphs of this Contract, shall reflect that the City is an Additional Insured, that the Contractor's policies are primary to the City's insurance policies, if any, and that any reduction of the policy limits increase in deductibles or cancellation of any said policies shall not be effective without first providing the City with thirty (30) days written notice. The certificates shall provide that the City will be given prior written notice of at least thirty (30) day of the cancellation of the respective policy.

If the initial insurance expires prior to the completion of the Contract, renewal Certificates of Insurance and required copies of policies shall be furnished thirty (30) days prior to the date of their expiration.

12. Dewatering

Dewatering is the responsibility of the Contractor. All costs associated with ground dewatering and surface water pumping shall be included in the appropriate contract price for items to which dewatering is incidental, as applicable, and no separate payment shall be made therefor.

Before commencing any excavation at the site of the work, the Contractor shall submit to the Engineer and obtain his approval of the methods and equipment and arrangement of facilities proposed for the removal and disposal of water at the site and of all water entering any excavation or other part of the work from any source whatsoever. Adequate standby facilities shall be provided to ensure that the excavation will be kept dry and bypass waters flow in the event of power failure or mechanical breakdown. Facilities for removal and disposal of water shall be of sufficient capacity to keep the excavation dry under all circumstances with one-half of the facilities out of service. If well points are used, provision shall be made for removing and resetting individual well points without taking the system of which they are a part out of service.

Contractor shall prepare several hundred feet ahead of construction area of well point dewatering to incrementally move pipe installation and prepare for open cuts on a timely schedule to minimize the time frame of any closures to residents. Contractor may utilize FDOT type sediment removal box system to treat water prior to discharge to manage turbidity.

13. Measurement and Payment

A. All work completed under the terms of this contract shall be measured according to United States Standard Measures.

B. The measured length of gravity sanitary sewers, regardless of pipe material, will include all fittings, short tunnels and manholes with no deductions for wyes, tees and the width of manholes. Deductions in the measured length of gravity sanitary sewers will be made for the width of structures, such as junction boxes, measured from the outside face to the outside face of the structure walls, plus one foot.

C. The measured length for sanitary or stormwater force mains will include all fittings and short tunnels with deductions for the laid length of valves.

D. No payment will be made for construction over a greater area than authorized, nor for material moved from outside of stakes and data shown on the plans, except when such work is performed upon instructions of the Engineer.

E. The Contractor shall accept compensation provided under the terms of this contract as full payment for furnishing all materials and for performing all work contemplated and embraced under this contract. Such compensation shall also be for any and all loss or damage arising out of the nature of the work or from the action of the elements, or from any unforeseen difficulties or obstructions encountered during the contract period until final acceptance by the City.

F. Whenever any change, or combination of changes, on the plans results in an increase or decrease in the original contract quantities, and the work added or decreased/eliminated is of the same general character as that called for on the plans, the Contractor shall accept payment in full at the original contract unit prices for the actual quantity of work performed, with no allowance for any loss of anticipated profits.

G. Any quantity item not indicated in the Bid Proposal List but shown on the Plans shall be included as part of the Lump Sum (LS) quantity for Mobilization.

H. It is the Contractor's responsibility to perform a detailed quantity take-off from the plans to determine actual quantities for ordering and delivery purposes. The City will not be responsible for quantities ordered in excess of those installed and constructed. The Contractor should be aware that some of the pay items may have contingency quantities. Payment shall be made only for final in-place quantities.

I. No payment shall be made for contingency quantities or additional work unless otherwise directed and approved in writing by the City.

14. Sheeting and Bracing

No separate payment shall be made for sheeting and bracing and the cost of such work shall be included in the applicable pay item unless otherwise provided under separate section of these Specifications.

15. Underground Utility Locations

The Contractor shall field verify by means of subsurface locating or other approved method all existing utilities to remain and conditions as may be required for the work area. This shall include all areas of potential conflicts with proposed storm, sanitary, force main and water main. The Contractor shall locate all existing utilities to remain at potential conflict locations prior to construction activities and before ordering any proposed structures.

The Contractor shall contact and coordinate with "Sunshine" as well the individual utilities prior to and during construction for utility locations, relocation and assistance while installing in potential conflict areas. All utility coordination and relocations shall be factored into the Contractor’s construction schedule at no additional cost to the City.

It shall be the Contractor's responsibility to avoid conflicts with other utilities. The Owner will not be responsible for additional costs incurred by the Contractor for incorrect installations, relocations and breaks due to service conflicts.

The cost of all labor, materials and incidentals required for the performance of any survey and utility location work shall be included under the pay item for Mobilization. A Florida registered land surveyor shall perform all survey work.

16. Survey and Layout by Contractor

The Contractor shall provide all lines, grades, boundaries and required survey and/or layout necessary to construct and inspect the project including before and after construction surveys. All right-of-way and easement boundaries and center-line control points shall be established and maintained through the Contract period by the Contractor as required for the construction.

The Contractor shall employ or retain the services of a Florida registered Professional Land Surveyor for the survey and layout.

Payment for this item shall be included under the pay item for Mobilization or under other applicable pay items.

17. Restoration

Payment for restoration shall be covered under the applicable restoration Pay Items as specified in the proposal. If a specific restoration Pay Item is not listed in the proposal, the cost of such work shall be included in the applicable Pay Item unless otherwise provided under separate restoration section or pay quantity of these Specifications.

18. Site Investigation

The Contractor acknowledges that it has satisfied itself as to the nature and location of the work; the general and local conditions, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials; availability of labor, water, electric power, roads; and uncertainties of weather, water stages, tides or similar physical conditions at the site; the conformation and conditions of the ground; the character of equipment and facilities needed preliminary to and during prosecution of the work.

The Contractor further acknowledges that it has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered, insofar as this information presented by the drawings and Specifications made a part of this contract.

The Contractor shall carefully review and adhere to conditions and recommendations made in the project geotechnical report for the project.

Any failure by the Contractor to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work.

The City assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the City. The City also assumes no responsibility for any understanding or representations made by its officers or agents during or prior to the execution of this Contract, unless (1) such understanding or interpretations are made in writing by the Engineer or are expressly stated in the Contract and (2) the Contract expressly provides that the responsibility therefore is assumed by the City.

19. Contractor/Subcontractor Work Experience and Qualifications

The Contractor or subcontractors shall have a minimum of five years' experience in their particular trade and shall provide a minimum of three references relating specifically to the type of work that shall be performed for this project.

The Contractor shall assure that all superintendents, foremen and workmen are competent, careful and reliable. All workmen must have sufficient skill and experience to properly perform the work assigned them. All workmen engaged on special concrete bases, pavements or structures, or in any trade, shall have had sufficient experience in such work to perform it properly and satisfactorily and to operate the equipment involved, and shall make due and proper effort to execute the work in the manner prescribed in the Specifications, or the Engineer may take action as prescribed below.

Whenever the Engineer has determined that any person is incompetent, unfaithful, intemperate, disorderly or insubordinate, such person shall upon notice, be discharged from the work and shall not again be employed on it except with the written consent of the Engineer. Should the Contractor fail to remove such person or persons the Engineer may withhold all estimates, which are or may become due, or may suspend the work until such orders are complied with.

Within ten days after the award of any subcontract, either by himself or a subcontractor, the Contractor shall deliver to the Engineer a statement setting forth the name and address of the subcontractor and a summary description of the work subcontracted.

The Contractor shall be as fully responsible to the City for acts and omissions of his subcontractor and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

20. Salvage

All existing pipe and appurtenances removed by the Contractor and which are not designated to be salvaged shall become the property of the Contractor and shall be removed from the site of the work to the Contractor's own place of disposal.

21. Protection of Trees and Shrubs

All trees and shrubs, except where otherwise shown or ordered, shall be adequately protected by boxes, fences, or otherwise carefully supported, as necessary, by the Contractor. Protective barricades shall be placed around all protected trees and shall remain in place until all potentially damaging construction activities are completed.

Beneath trees within the limits of the excavation, and where possible, pipelines shall be built in short tunnels, except as otherwise shown or specified. When the tree is outside the limits of the excavation but, where the distance from the centerline of the new pipeline to the trunk of any tree is such that, in the opinion of the Engineer, the excavation would result in serious damage to the tree, the pipeline shall be constructed in short tunnel or the root system shall be pruned, as ordered in writing by the Engineer. The Contractor shall be responsible for all damage to trees and shrubs as a result of his operations, whether the pipeline is placed on trench, tunnel, or other excavation.

The Contractor shall provide the services of an approved licensed tree professional when it is necessary to trim or cut a branch from a tree, or for required root pruning. The City's approved arborist shall be present for all activities associated with trees. The contractor shall trim necessary tree canopies and root prune within excavation areas the trees that are to remain to allow for construction activities with the City's approved arborist present during such activities.

The cost of protection of trees and shrubs, replacement or repair of trees or shrubs destroyed by the Contractor, short tunnels, cutting or trimming of tree branches, and root pruning shall be included in the various classified unit price Contract Items for pipelines, tree and root pruning, as applicable, and no separate payment will be made therefor.

22. Existing Sprinkler System

Existing sprinkler systems for lawns and/or shrubbery within the City right-of-way shall be protected or, if disturbed, replaced by the Contractor. All sprinkler systems shall be replaced with those of equal or better quality as approved by the Engineer. The replacement of sprinkler systems shall include all necessary parts, labor, equipment, etc., to complete the existing sprinkler system in operating condition.

All costs associated with any sprinkler system repaired or replaced within the described construction area shall be included under Mobilization or in various unit price items and no additional payment shall be made, thereof.

23. Indemnification Provision

To the fullest extent permitted by law, Contractor shall indemnify and hold harmless the City, its elected officials, officers and employees, from any and all liabilities, any and all claims, including claims for equitable or injunctive relief, damages, losses and costs, including but not limited to reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of Contractor, its employees, agents, officers, subcontractors and other persons employed or utilized by Contractor in the performance of this agreement. It is the specific intent of the parties hereto that the foregoing indemnification provision comply with section 725.08, Florida Statutes. It is further the specific intent and agreement of the parties that all the contract documents of any project for which Contractor provided services be hereby amended to include the foregoing indemnification. Contractor expressly agrees that it will not claim, and waives any claim, that this article violates section 725.08 Florida Statutes, or is unenforceable pursuant to section 725.08, Florida Statutes. This indemnification obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this section, including but not limited to any immunity from or limitation of liability to which the City is entitled to pursuant to the doctrine of sovereign immunity or section 768.28, Florida Statutes. This indemnification provision shall include claims made by an employee of Contractor against the City and Contractor waives any entitlement to immunity under section 440.11, Florida Statutes. This indemnification provision shall survive the termination of this agreement however terminated.

Subject to the limitations set forth in this paragraph and any other provision of law, Contractor shall assume control of the defense of any claim asserted by a third party against the City and, in connection with such defense, shall appoint lead counsel, in each case at the Contractor's expense. The City shall have the right, at its option to participate in the defense of any suit, without relieving Contractor of any of its obligations hereunder. If the Contractor assumes control of the defense of any third party claim in accordance with this paragraph, the Contractor shall obtain prior written consent of the City before entering into any settlement of such claim. Notwithstanding anything to the contrary in this Section, the Contractor shall not assume or maintain control of the defense of any third party claim, but shall pay the fees of counsel retained by the City and all expenses, including experts' fees, if (i) an adverse determination with respect to the third party claim would, in the good faith judgment of the City, be detrimental in any material respect to the City's reputation; (ii) the third party claim seeks an injunction or equitable relief against the City; or (iii) the Contractor has failed or is failing to prosecute or defend vigorously the third party claim. Each party shall cooperate, and cause its agents to cooperate, in the defense or prosecution of any third party claim and shall furnish or cause to be furnished such records and information, and attend such conferences, discovery proceedings, hearings, trials, or appeals, as may be reasonably requested in connection therewith.

CITY OF SAFETY HARBOR (THE CITY)

EXHIBIT E
GENERAL PROVISIONS
(CONSTRUCTION CONTRACT)

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1. Access to the Work

The City and its representatives shall at all times have access to the Work. The Contractor shall provide proper facilities for such access and observation of the Work and also for any inspection or testing thereof by others.

2. Accident Prevention

In performing the Work, the Contractor shall be responsible for protecting the lives and heath of all persons; preventing damage to property, materials, supplies, and equipment; and avoiding Work interruptions. For these purposes, the Contractor shall (a) designate a project superintendent who shall ensure the prevention of the occurrences listed in this paragraph; (b) provide appropriate safety barricades, signs and signal lights; and (c) ensure compliance with all safety standards required by federal, state, or local law and all ordinances, rules, and regulation as well as any additional safety standards customarily employed in connection with the type of Work being performed under this Contract or requested by the City. The City and the City's Project Manager will communicate directly with the Contractor's project superintendent and shall have no authority to direct, oversee, or instruct the Contractor's employees, subcontractors, or materialmen, or any other individuals performing the Work.

3. Administrative Control of Documents

(a) All notices, correspondence, transmittal letters, requests, demands, deliveries and other communications which are required or permitted under this Contract shall be forwarded in writing to the City and associated with this Contract. All communications shall be sequentially numbered by the Contractor prior to submission to the City for ease of control and cross referencing. Correspondence shall also refer to the Contract number identified on the cover sheet of this Contract. All notices required or made pursuant to this Contract shall be made in writing and shall be either hand delivered to the parties as listed below or and sent by certified U.S. mail, return receipt requested, addressed to the following:

To City:

City of Safety Harbor
Attn: Josh Stefancic, City Manager
750 Main Street
Safety Harbor, FL 34695

To Contractor:
_____
_____
_____
_____

With required copy to:

Sarah L. Johnston, City Attorney
Bryant Miller Olive P.A.
400 N Tampa Street, Suite 1600
Tampa, Florida 33602

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

4. Approval of Payments

The City shall appoint a "City Representative" to review and approve all payments requested in an application for payment. The approval shall constitute a representation by them to the City based on their on-site observations of the Work in progress as experienced and qualified professionals and on their review of the application for payment and supporting data, that the Work has progressed to the point indicated; that, to the best of their knowledge, information, and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning project upon substantial completion, and to the results of any subsequent tests called for in its approval); and that the Contractor is entitled to payment of the amount approved. However, by approving any such payment the City shall not thereby be deemed to have represented that it has made exhaustive or continuous on-site inspections to check the quality or the quantity of the Work, that it has reviewed the means, methods, techniques, sequences, and procedures of construction or that it has made any examination to ascertain how or for what purpose the Contractor has used the monies paid or to be paid under the Contract.

5. Availability of Lands

The City will provide the Contractor access to the lands owned by the City shown on the specifications and the Contract Documents. All other lands not depicted in the specifications or the Contract Documents necessary for completion of the Work shall be the sole responsibility of the Contractor to obtain access or any easements necessary for access.

6. Assignment

The terms and provisions of this Contract shall be binding upon the Parties and their respective partners, successors, heirs, executors, administrators, assigns and legal representatives. Notwithstanding the forgoing, Contractor's rights and obligations under this Contract, including entitlement to any monies due or to become due hereunder, may not be transferred, assigned, sublet, mortgaged, pledged or otherwise disposed of or encumbered in any way without the City's prior written consent. The City may assign its rights and obligations under this Contract to any successor to the rights and functions of the City or to any governmental agency to the extent required by applicable laws or governmental regulations or to the extent the City deems necessary or advisable under the circumstances.

7. Attorney's Fees

In the event of legal action or other proceeding arising under this Contract, the City shall be entitled to recover from the Contractor all its reasonable attorneys' fees and cost incurred by the City in the prosecution or defense of such action, or in any post-judgment or collection proceedings and whether incurred before suit, at the trial level or at the appellate level. This shall include any bankruptcy proceedings filed by or against the Contractor. The City shall also be entitled to recover any reasonable attorneys' fees and costs incurred in litigating the entitlement to attorneys' fees and costs, as well as in determining the amount of attorneys' fees and cost due to the City. The reasonable costs to which the City will be entitled include costs that are taxable under any applicable statute, rule, or guideline, as well as costs of investigation, copying costs, electronic discovery costs, mailing and delivery charges, costs of conducting legal research, consultant and expert witness fees, travel expenses, court reporter fees, and mediator fees, regardless of whether such costs are taxable under ay applicable stature, rule or guideline.

8. Business Tax Receipt Requirement

All contractors working in the City must be registered with the City. Businesses inside the City must pay a business tax to work within the City, unless such business falls within a statutory defined exception.

9. City's Right to Carry Out the Work

If the Contractor fails or refuses to carry out all or any part of the Work in accordance with the Contract requirements or within the Contract schedule and fails or refuses to correct such deficiency within seven (7) days of receipt of written notice thereof from the City, the City, in its sole discretion and without waiving any other rights it may have, may elect to correct such deficiencies and charge the Contractor the cost of such corrections. A Contract Modification shall be issued incorporating the necessary revisions in the Contract Documents, including an appropriate reduction in the Contract Price. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the City within seven (7) days of receipt of written notice thereof from the City. Nothing in this clause shall relieve the Contractor of its obligation to perform the remainder of the Work in accordance with the Contract.

10. Change Orders

(a) Notwithstanding anything contained in the Contract Documents, the City's Project Manager may at any time, by written order, make changes within the scope of the Work to be performed by Contractor under the Contract Documents. However, no such written order shall serve to increase the Contract Price, increase the Contract Time, or give the Contractor any claim for any compensation in addition to the Contract Price. If any such change would cause an increase in the Contract Price or increase the Contract Time, whether or not requested by the City or initiated by Contractor, such change shall only be authorized if approved by the City Commission at a duly noticed public meeting. In the event any change in the Work would result in any increase in the Contract Price or Contract Time, Contractor shall notify the City within seven (7) days in writing. The written notice shall state in all capital, bold letters that the change order would result in an increase in the Contract Price and/or Contract Time and shall include a statement outlining the reasons for the change, a complete description of the change, and detailed description of products to be purchased and any back-up detail and documentation supporting the request. Such notice must be submitted and approved by the City Commission at a duly noticed public meeting prior to performing any Work contemplated by the

change order. If Contractor proceeds with additional Work prior to such approval, Contractor shall not receive any additional compensation for such Work.

(b) No Stoppage of Work. Notwithstanding the foregoing, nothing in this clause shall excuse Contractor from proceeding with the Work as changed except for those changes which would increase the Contract Price or Contract Time.

(c) No Increase in Costs. No services for which an additional cost or fee will be charged by Contractor shall be furnished without the prior express written authorization of the City.

11. Clarification and Interpretations

The Contracting Officer will issue with reasonable promptness such written clarification or interpretation of the Contact Documents (in the form of Drawings or otherwise) as he or she may determine necessary, which shall be consistent with or reasonably inferable form the overall intent of the Contract Documents. It shall be deemed reasonable if the Contracting Officer responds to a request for written clarifications or interpretations of Contract Documents within fourteen (14) days of his or her receipt of the request from the Contractor. If the Contractor believes that a written clarification and interpretation entitles him to an increase in the Contract Price, he may make a claim therefore as provided in paragraph 10 above. However, the Contractor recognizes and acknowledges that the Contracting Officer has no authority to approve a change order or extra Work or to vary the Contract Documents. The Contractor must obtain a change order approved by the City Commission prior to performing any extra Work or Work for which the Contractor claims it is entitled to extra compensation.

12. Cleaning Up

(a) The Contractor shall at all times keep the Site, including storage areas, free from accumulations of waste materials. Before completing the Work, the Contractor shall remove from the Work and Site any rubbish, tools, scaffolding, equipment, and materials that are not the property of the City. The burning of rubbish on Site will not be permitted.

(b) The Contractor shall restore to their original condition those portions of the Site not designated for alteration by the Contract Documents. All clean dirt (as determined by the City) remaining after completion of the Work shall become the sole property of the City and the Contractor shall deliver it to a Site as directed by the City. Upon completing the Work, the Contractor shall leave the Site in a clean, neat, and orderly condition satisfactory to the City.

13. Compliance with all Law

The Contractor shall perform all Work hereunder in compliance with all applicable federal, state, and local laws, rules, regulations, and ordinances. The Contractor shall use only licensed personnel to perform Work required by law to be performed by such personnel. All such compliance shall be at the Contractor’s sole expense.

14. Composition of Contractor

If the Contractor hereunder is comprised of more than one legal entity, each such entity shall be jointly and severally liable hereunder.

15. Construction Schedule and Schedule of Values

(a) Within seven (7) days from Contract award, the Contractor shall meet with the City’s Project Manager to discuss project scheduling and, at that meeting, shall submit a practicable construction schedule showing the order in which the Contractor proposes to perform the Work and the dates on which the Contractor contemplates starting and completing the several salient features of the Work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a network analysis of suitable scale to indicate appropriately the percentage of the Contractor's Work breakdown schedule which will be completed by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the City may withhold approval of progress payments until the Contractor submits the required schedule or may terminate this Contract immediately upon written notice to the Contractor.

(b) The Contractor shall enter the actual progress on the schedule as directed by the City and, upon doing so, immediately shall deliver a copy of the annotated schedule to the City. If, in the opinion of the City, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the City, without additional cost to the City. In this circumstance, the City may require the Contractor to increase the number of shifts, overtime operations, days of Work, and/or the amount of construction

plans, and to submit for approval any supplementary schedule or schedules in chart form as the City deems necessary to demonstrate how the approved rate of progress will be regained.

(c) Within ten (10) days from Contract award, the Contractor shall submit a schedule of values of the Work including quantities and unit prices totaling the Contract Price. This schedule shall be satisfactory in form and substance to the City and shall subdivide the Work into component parts in sufficient detail to serve as the basis for progress payment during construction. Upon approval of the schedule of values by the City, it shall be incorporated into the form of application for payment prescribed by the City.

(d) Failure of the Contractor to comply with the requirements under this clause shall be grounds for a determination by the City that the Contractor is not prosecuting the Work with sufficient diligence to ensure completion within the time specified in the Contract. Upon making this determination, the City may terminate this Contract immediately upon written notice.

16. Differing Site Conditions

(a) The Contractor shall promptly, and before the conditions are disturbed, give written notice to the City of: (1) subsurface or latent physical conditions at the Site which differ materially from those indicated in this Contract; or (2) unknown physical conditions at the Site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as interfering in Work of the character provided for in the Contract.

(b) The City will endeavor to investigate the Site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the Work under this Contract, whether or not changed as a result of the conditions, the Contractor and the City may agree to a written equitable adjustment.

(c) No request by the Contractor for an equitable adjustment to the Contract under this clause shall be allowed unless the Contractor has given the written notice required prior to performing any Work on the Site after discovering the Site conditions

(d) No request by the Contractor for an equitable adjustment to the Contract Price or Time for differing Site conditions shall be allowed if made after final payment under this Contract or if additional Work has been performed after the Contractor knew or should have known that the Site condition differed.

17. Disputes

(a) Resolution of Disputes - In the event the Contractor has any controversy, claim or dispute arising out of or related to this Contract, whether such claim or dispute involves a claim by the Contractor for additional time or compensation, for a Change Order, or otherwise, the Contractor shall present a written Notice of Claim to the City within ten (10) days of the Contractor’s knowledge, whether actual knowledge or whether the Contractor should have known of the controversy, claim or dispute, or the facts out of which the controversy, claim, or dispute arises. This written Notice of Claim must specifically include, in bold type on the face of the notice that it is a “Notice of Claim” and whether the Contractor is seeking additional time, compensation or both. Additionally, the Contractor shall set forth in the Notice of Claim the nature of the controversy, claim or dispute, including all necessary facts. The Contractor shall waive any claim which the Contractor fails to present to the City within the time and in the manner provided herein. Disputes raised by Contractor, which are not resolved amicably by the Parties, shall be decided in writing by the City. If Contractor disagrees with the decision of the City, within ten (10) days from the date of the City’s decision, Contractor shall furnish a written appeal to the City Manager. In connection with any such appeal, Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the City Manager shall be binding upon Contractor and Contractor shall abide by the decision.

(b) Performance during Dispute - Unless otherwise directed by the City in writing, Contractor shall continue performance under the Contract while matters in dispute are being resolved.

(c) Claims for Damages - Should either party suffer injury or damage to person or property because of any act or omission of the other party or of any of its employees, agents or others for whose acts it is legally liable, a claim for damages therefore shall be made in writing to such other party within ten (10) days of when the party knew or should have known of such injury or damage, otherwise the party suffering the injury or damage will have waived its right to seek damages against the other party.

(d) Rights and Remedies -The duties and obligations imposed by the Contract Documents and the rights and remedies available hereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the City or Contractor shall constitute a waiver of

any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence of any breach hereunder except as may be specifically set forth in writing by the party to be charged.

18. Drug-Free Workplace Program

(a) As used in this clause:

(1) "Alcohol" means ethyl alcohol and any beverage containing ethyl alcohol.

(2) "Controlled substance(s)" means any substance defined as such under Florida Statutes, including but not limited to, marijuana, heroin, LSD, concentrated cannabis or cannabinoids, hashish or hash oil, morphine or its derivatives, mescaline, peyote, phencyclidine (PCP, Angel Dust), opium, opiates, methadone, cocaine, qualudes, amphetamines, "exotic/designer" drugs, benzodiazepines, Seconal, codeine, barbiturates, phenobarbital, or Valium.

(3) "Safety sensitive task" means each category of Work performed at a construction workplace which, if performed by a person impaired by the effects of alcohol or a controlled substance would pose a serious risk of death or personal injury to the employee or others in the vicinity.

(4) "Drug-free workplace" means a Site for the performance of Work done in connection with this Contract at which employees are prohibited from using alcohol or from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

(5) "Employee" means an employee of a Contractor or subcontractor who may be directly engaged in the performance of Work under this Contract.

(6) "Reasonable suspicion" means the presence or absence of specific criteria identified in the Contractor's drug-free workplace program (indicating the possibility that a person is under the influence of alcohol or a controlled substance) as observed by the Contractor's supervisory personnel with reasonable training in the identification of such criteria.

(b) The program shall provide for mandatory drug testing of employees who are to perform safety sensitive tasks under the following circumstances:

(1) All employees will be tested prior to assignment to this Contract to ascertain the use of controlled substances if the employee will be performing safety sensitive tasks; and

(2) When there is a reasonable suspicion that an employee is under the influence of alcohol or a controlled substance at the workplace; and

(3) When an employee has been involved in an accident or unsafe practice (as defined in the Contractor's safety program) at the workplace.

(c) The program may, at the Contractor's discretion, include mandatory employee drug testing under the following circumstances:

(1) As part of or as a follow-up to counseling or rehabilitation for controlled substance use; or

(2) As part of a voluntary employee drug testing program.

(d) A random testing procedure to detect the use of alcohol or a controlled substance by employees performing safety sensitive tasks is required as part of the Contractor's program for the purpose of preventing or deterring hazardous performance. The procedure shall require that, at a minimum, five percent (5%) of the Contractor's employees will be randomly tested within the Contract Time or within each year of the Contract Time, whichever period is shorter.

(e) All testing by or on behalf of the Contractor because of a requirement in this Contract shall be conducted only for employees engaged (or to be engaged) in safety sensitive tasks and only for use of alcohol or a controlled substance and shall be conducted in a manner and under written policies that minimize the intrusion on the employee's privacy and personal dignity. This provision shall not preclude the Contractor from adding its own additional testing requirements.

(f) The Contractor shall publish a statement notifying employees that the use of alcohol at the workplace or the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance by employees at any time is prohibited and specifying the actions that will be taken against employees for violations of such prohibition.

(g) The program must require each employee who will perform a safety sensitive task, prior to working under this Contract to:

(1) Acknowledge in writing the Contractor's drug-free workplace program; and

(2) Give advance written consent to any drug testing that may be conducted under the Contractor's program and the use of test results for decisions related to employment, disciplinary action, or continued employment. The Contractor will agree, in connection with the employee's consent, that the results of testing for alcohol and controlled substances will not be voluntarily referred to any law enforcement agency. If the Contractor is subject to a collective bargaining agreement:

(i) the procedure for obtaining the individual employee's acknowledgment and consent must be consistent with the Contractor's obligations under the collective bargaining agreement; and

(ii) employees shall have the right to be accompanied by a union representative when any specimen is obtained for testing.

(h) The Contractor will establish a drug-free awareness program to inform its employees about:

(1) The dangers of drug abuse in the workplace;

(2) The Contractor's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees who refuse to submit to required testing and for other violations of the drug-free workplace program including, but not limited to, being unable to remain employed at the Site until approval to return is obtained from the City.

(i) The Contractor's drug-free workplace program shall, at a minimum, include:

(1) Policies and procedures for specimen collection, chain of custody for specimens, laboratory qualification standards, laboratory analysis procedures, quality control requirements, and test result reporting procedures which substantially conform to the material requirements of the Mandatory Guidelines for Federal Workplace Drug Testing Programs promulgated by the U.S. Department of Health and Human Services in effect on the date of award of this Contract.

(2) Procedures for the Contractor's employees to report their use of prescription drugs used in the course of medical treatment or which have been prescribed and authorized for use by a licensed medical practitioner.

(3) The criteria the Contractor will use for "reasonable suspicion" testing.

(4) The levels of alcohol or controlled substances which will be used in conjunction with a determination that an employee is "under the influence" or is "impaired by the effects of" alcohol or controlled substance(s).

(j) The Contractor shall display a notice, prominently placed near each entrance to the workplace, stating that, by entering the premises, persons are consenting to an inspection of themselves and their property including, but not limited to, their clothing, vehicles, briefcases, lunch boxes, tool boxes, purses, and packages.

(k) The Contractor agrees to use its best efforts to establish and maintain a work environment free of use by employees of alcohol or controlled substances through implementation of paragraphs (b) through (j) of this clause. The Contractor shall prepare and maintain records in sufficient detail to demonstrate compliance with the requirements of this clause including, but not limited to, certifications from subcontractors and records of drug or alcohol tests conducted during performance of this Contract. Such records shall be subject to inspection and audit by the City, and the Contractor's noncompliance may authorize the City to withhold all or any portion of any payments due the Contractor until the Contractor demonstrates compliance or to terminate this Contract upon written notice to the Contractor.

(l) A Drug-Free Workplace Program clause identical to this clause (except for changes appropriate for designation of the parties), including this subparagraph (l), will be included in every subcontract entered into in connection with this Contract.

19. Emergencies

In emergencies affecting the safety of persons, the Work, or other property at the Site or adjacent thereto, the Contractor may act in his discretion to prevent threatened damage, injury or loss to the Work, the City's property or property of others. However, nothing contained herein shall relieve the Contractor from complying with Paragraph 10, Change Orders and subparagraph 17 (c), Disputes.

20. Entire Agreement; Amendment and Waiver

The Contract Documents constitute the entire agreement of the parties relating to the subject matter hereof. The Contract Documents, together with all exhibits hereto, supersede any and all prior negotiations and oral or written agreements heretofore made, relating to the subject matter hereof and, except for written agreements, if any, executed and delivered simultaneously with or subsequent to the date of this Contract. This Contract may not be altered or amended except by a Contract Modification signed by the parties hereto. No waiver of any of the terms or conditions of this Contract shall be effective unless in writing and executed by the party to be charged therewith. No waiver of any condition or of the breach of any term, covenant, representation, warranty or other provision hereof shall be deemed to be construed as a further or continuing waiver of any such condition or breach or a waiver of any other condition or of any breach of any other term, covenant, representation, warranty or other provision contained in this Contract.

21. Examination and Retention of Records

(a) The City shall have the audit and inspection rights described in the applicable paragraphs (b) and (c), below.

(b) If this is a cost reimbursement, incentive, time and materials, labor hour, or price redeterminable contract, or any combination thereof, the Contractor shall maintain, and the City and its representatives shall have the right to examine, all books, records, documents, and other evidence and accounting procedures and practices sufficient to reflect properly all direct and indirect costs of whatever nature claimed to have been incurred and anticipated to be incurred for the performance of this Contract. Such right of examination shall include inspection at all reasonable times at the Contractor's plants, or such parts thereof, as may be engaged in or maintain records in connection with the performance of this Contract.

(c) If the Contractor submitted certified cost or pricing data in connection with the pricing of this Contract or if the Contractor's cost of performance is relevant to any change or modification to this Contract, the City shall have the right to examine all books, records, documents, and other data of the Contractor related to the negotiation, pricing, or performance of such Contract, change, or modification for the purpose of evaluating the costs incurred and the accuracy, completeness, and currency of the cost or pricing data submitted. The right of examination shall extend to all documents necessary to permit adequate evaluation of the costs incurred and the cost or pricing data submitted, along with the computations and projections used therein.

(d) The materials described in (b) and (c), above, shall be made available at the office of the Contractor at all reasonable times for inspection, audit, or reproduction until the expiration of five (5) years from the date of final payment under this Contract, except that: (1)if this Contract is completely or partially terminated, the records relating to the Work terminated shall be made available for a period of five (5) years from the date of any final settlement; and (2) records which relate to appeals under the Disputes Clause of this Contract or litigation, or the settlement of claims arising out of the performance of this Contract, shall be made available until such appeals, litigation, or claims have been resolved.

(e) The Contractor shall insert a clause containing all the provisions of this clause, including this paragraph (e), in all subcontracts exceeding $10,000 hereunder, altered to reflect the proper identification of the contracting parties.

22. Facilities

The City reserves the right to inspect the Contractor's facilities at any reasonable time with prior notice.

23. Force Majeure

Neither party shall be liable for its non-performance or delayed performance if caused by Force Majeure. Force Majeure shall be defined as a fire, flood, act of God, war, terrorism, riot, national emergency, sabotage, civil disturbance, strike, labor dispute, governmental act, law, ordinance, rule or regulation, or events which are not the fault or are beyond the control of the party.

24. Governing Law; Consent to Jurisdiction

This Contract shall be governed by, construed and interpreted in accordance with the laws of the State of Florida. Contractor and the City consent to jurisdiction over them and agree that venue for any state action shall lie solely in the Sixth Judicial Circuit in and for Pinellas County, Florida, and for any federal actions shall lie solely in the U.S. District Court, Middle District of Florida, Tampa Division.

25. Independent Contractor

The Contractor at all times shall be an independent contractor. The Contractor shall be fully responsible for all acts and omissions of its employees, subcontractors, and their suppliers, and shall be specifically responsible for sufficient supervision and inspection to ensure compliance in every respect with the requirements of the Contract Documents. There shall be no contractual relationship between any subcontractor or supplier of the Contractor and the City by virtue of this Contract. No provision of this Contract shall be for the benefit of any party other than the City and the Contractor.

26. Inspection of Construction

(a) All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator or processors except as otherwise provided in this Contract.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the Work called for by this Contract conforms to all requirements of the Contract Documents. The Contractor shall maintain complete inspection records and make them available to the City or any public authority having jurisdiction. All Work shall be conducted under the general direction of the City and is subject to inspection and testing by the City or any public authority having jurisdiction at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of this Contract.

(c) Inspections and tests by the City are for the sole benefit of the City and do not: (1) relieve the Contractor of responsibility for providing adequate quality control measures; (2) relieve the Contractor of responsibility for damage to or loss of the material before acceptance; (3) constitute or imply acceptance; or (4) affect the continuing rights of the City after acceptance of the completed Work under paragraph (i) below.

(d) The presence or absence of an inspector from the City or any public authority having jurisdiction does not relieve the Contractor from any Contract requirement, nor is the inspector authorized to change any term or condition of the Contract Documents without the City's written authorization.

(e) The Contractor shall promptly furnish, without additional charge, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the City or any public authority having jurisdiction. The City or any public authority having jurisdiction may charge the Contractor any additional cost of inspection or test when Work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The City shall perform all inspections and tests in a manner that will not unnecessarily delay the Work. Special, full size and performance tests shall be performed as described in this Contract.

(f) The Contractor warrants and guarantees to the City that all Work will be of good quality, free from faults or defects and in accordance with the requirements of the Contract Documents and any inspections, tests or approvals shall be considered defective. Prompt notice of all defects shall be given to the Contractor. All defective Work whether or not in place, may be rejected, corrected or accepted as provided in this Exhibit.

(g) The Contracting Officer will have authority to disapprove or reject Work which is "defective" (which term is hereinafter used to describe Work that is unsatisfactory, faulty or defective; does not conform to the requirements of

the Contract Documents; or does not conform to the requirements of any inspection, test or approval referred to under paragraph (f) herein.

(h) The City may reject any and all Contract Work that it deems in its sole discretion to be unsatisfactory, faulty or not in compliance with the Contract Documents.

(i) The Contractor shall, without charge, replace or correct Work found by the City not to conform to the requirements of the Contract Documents, unless in the public interest the City consents to accept the Work with an appropriate downward adjustment in Contract Price. The Contractor shall promptly segregate and remove rejected material from the premises.

(j) If the Contractor does not promptly replace or correct rejected Work, the City may (1) by contract or otherwise, replace or correct the Work and charge the cost to the Contractor or (2) terminate this Contract for default.

(k) If any Work is covered contrary to the request of the City, it must if requested by the City, be uncovered for observation and replaced at the Contractors expense. If any Work has been covered which the City has not specifically requested to observe prior to its being covered, or if the City considers it necessary or advisable that covered Work be inspected or tested by others, the Contractor, at the City's request will uncover, expose or otherwise make available for observation, inspection or testing as the City may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, the Contractor will bear all expense of such uncovering, exposure, observation, inspection, and testing, and of satisfactory reconstruction.

(l) Unless otherwise specified in this Contract, the City will endeavor to accept, as promptly as practicable after completion and inspection, all Contract Work. Subject to the provisions of the "Warranty of Construction" clause hereof, acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the City's rights under any warranty or guarantee.

(m) Neither observations by the City nor inspections, tests or approvals by persons other than the Contractor shall relieve the Contractor from his obligations to perform the Contract Work in accordance with the requirements of the Contract Documents.

(n) The Contractor's obligation to perform the Contract Work and complete the Project in accordance with the Contract Documents shall be absolute. Neither approval of any progress or final payment by the City, the issuance of a Certificate of Substantial Completion, any payment the City to the Contractor under the Contract Documents, any use or occupancy of the Project or any part thereof by the City, any act of acceptance by the City, any failure to do so nor any correction of defective Work by the City shall constitute any acceptance of Work not in accordance with the Contract Documents.

27. Layout of Work

The Contractor is solely responsible for the means and methods of completing the Work. The Contractor shall provide the City with its plans for the Project based on the City-established base lines and bench marks indicated on the drawings (if applicable) and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the Work. The Contractor shall be responsible for executing the Work to the lines and grades that may be established or indicated by the City. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the City until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the City may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

28. Material and Workmanship

(a) The Contractor shall obtain the City's approval of the machinery and mechanical and other equipment to be incorporated into the Project. When requesting approval, the Contractor shall furnish to the City the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this Contract or by the City, the Contractor also shall obtain the City's approval of the material or articles which the Contractor contemplates incorporating into the Project. When requesting approval, the Contractor shall provide full information concerning the material or articles. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(b) All Contract Work under this Contract shall be performed in a skillful and Workmanlike manner. The City may require, in writing that the Contractor remove from the Work the City deems incompetent, careless, or otherwise objectionable.

29. No Damages for Delay

Unless otherwise specifically provided for by the Contract, the Contractor shall not be entitled to any damages of any type resulting from any hindrances, delays, or any other cause under this Contract even if caused by the acts of the City except when the Work is stopped or suspended by a written order signed by the City. The Contractor's only remedy for any delay addressed in this subsection shall be an extension of the Contract Time.

30. No Third Party Beneficiaries

Nothing contained in the Contract Documents shall be construed as creating any personal liability on the part of any elected official, officer, employee or agent of the City, nor shall it be construed as giving any rights or benefits to any third party, including the general public or other entity other than the Parties hereto, nor shall it be construed as enforceable by any third parties.

31. Notice of Labor Disputes

(a) If the Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this Contract, the Contractor immediately shall give notice, including all relevant information, to the City.

(b) The Contractor agrees to insert the substance of this clause, including this paragraph (b), in any subcontract under which a labor dispute may delay the timely performance of this Contract; except that each subcontract shall provide that in the event its timely performance is delayed or threatened by delay by any actual or potential labor dispute, the Subcontractor shall immediately notify the next higher tier Subcontractor or the Contractor, as the case may be, of all relevant information concerning the dispute.

32. Operations and Storage Areas

(a) The Contractor shall confine his equipment, the storage of materials and equipment, and the operations of his Workmen to the areas permitted by law, ordinances, permit or the requirements of this Contract Documents and shall not unreasonably encumber the Site with materials or equipment.

(b) The Contractor shall confine all operations including but not limited to, storage of materials on City premises to areas authorized or approved by the City. The Contractor shall indemnify, defend, hold and save the City, and its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

(c) Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the City and shall be built with labor and materials furnished by the Contractor without expense to the City. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the Work.

(d) The Contractor shall, under regulations prescribed by the City, use only established roadways or use temporary roadways constructed by the Contractor when and as authorized by the City. When materials are transported in prosecuting the Work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any federal, state, county or local law and of all ordinances, rules and regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

33. Other Contracts

(a) The City may undertake, or award other contracts for, additional Work at or near the Site of the Work under this Contract. The Contractor shall fully cooperate with the other contractors and with employees of the City and shall carefully adapt scheduling and performing the Work under this Contract to accommodate the additional Work, heeding any direction that may be provided by the City. The Contractor shall not commit or permit any act that will interfere with the performance of any Work by any other contractor or by employees of the City.

(b) The Contractor shall afford the other contractors who are parties to such direct contracts with the City, if it is performing the additional Work itself, reasonable opportunity for the introduction and storage of materials and equipment and execution of Work, and shall properly connect and coordinate the Contract Work with other Work.

(c) If any part of the Work depends upon the Work of any such other contractor or the City, the Contractor will inspect and promptly report to the City in writing any defects or deficiencies in such Work that render it unsuitable for such proper execution and results. The Contractor's failure to report shall constitute an acceptance of the other Work.

34. Ownership of Information

(a) All data, technical information, materials gathered, originated, developed, prepared, used or obtained in the performance of this Contract, including, but not limited to, all reports, surveys, plans, charts, literature, brochures, mailings, recordings (video and/or audio), pictures, drawings, analyses, graphic representations, software computer programs and accompanying documentation and print-outs, notes and memoranda, written procedures and documents, regardless of the state of completion, which are prepared for or are a result of the services required under this Contract shall be and remain the property of the City and shall be delivered to the City upon thirty (30) days written notice from the City or upon termination of this Contract, however terminated, whichever occurs sooner. With respect to software computer programs and/or source codes developed for the City, the Work shall be considered "Work for hire", i.e., the City, not the Contractor or Subcontractor, shall have full and complete ownership of all software computer programs and/or source codes developed. To the extent that any of such materials may not, by operation of law, be a Work made for hire in accordance with the terms of this Contract, contractor or subcontractor hereby assigns to the City all right, title and interest in and to any copyright, and the City shall have the right to obtain and hold in its own name any copyrights, registrations and any other proprietary rights that may be available.

(b) Should the Offeror anticipate bringing pre-existing intellectual property into the project, the intellectual property must be identified in the offer. Otherwise, the language in the first paragraph of this section prevails. If the proposer identifies such intellectual property ("Background IP") in its proposal, then the Background IP owned by the proposer on the date of the contract, as well as any modifications or adaptations thereto, remain the property of the proposer. Upon contract award, the proposer or contractor shall grant the City a non-exclusive, royalty free license to use any of the proposer's/contractor's Background IP delivered to the City for the purposes contemplated by the contract.

(c) The Contractor shall pay all royalties and license fees related to the completion of the Project. The Contractor shall defend all suits or claims for infringement of any patent rights, copy rights or other intellectual property rights and shall indemnify, defend, and save the City harmless from loss on account thereof, except when a particular invention, design, process, device or product of a particular manufacturer is specified by the City; provided, that, if the Contractor has reason to believe that the invention, design, process, device or product specified by the City infringes a patent, the Contractor shall be responsible for such loss unless it promptly gives such information to the City.

35. Payments

(a) The City shall pay the Contractor the Contract Price as provided in this Contract and in accordance with the Florida Prompt Payment Act, Section 218.70, Florida Statutes, et. Seq. In the event there is a conflict between this Contract and the Florida Prompt Payment Act, the Florida Prompt Payment Act shall control.

(b)Invoices shall be submitted once per month and shall conform to policies or regulations adopted from time to time by the City. Invoices shall be legible and shall contain, as a minimum, the following information: (1) the contract and order number (if any); (2) a complete itemization of all costs including quantities ordered and delivery order numbers (if any); (3) any discounts offered to the City under the terms of the Contract; (4) evidence of the acceptance of the supplies or services by the City; (5) unique traceable invoice number(s); and (6) any other information required by the Florida Prompt Payment Act, Section 218.70, Florida Statutes, et Seq., or other information necessary to demonstrate entitlement to payment under the terms of the Contract. Failure to provide the above critical information may result in the rejection and return of the invoice for resubmission with complete data.
To ensure timely processing of payments, all invoices must be sent to the following address:

For City of Safety Harbor:
Attention: Accounts Payable
750 Main Street
Safety Harbor, Florida 34695

(c) The City shall make progress payments monthly in accordance with paragraph (b) above as the Work proceeds, or at more frequent intervals as determined by the City, on estimates approved by the City upon the provision of receipt of a proper invoice. In the preparation of estimates, the City may authorize material delivered on the Site and preparatory Work done to be taken into consideration. Material delivered to the Contractor at locations other than the Site may also be taken into consideration if consideration is specifically authorized by this Contract and the Contractor

furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this Contract.

(d) In making progress payments, the City may retain up to ten (10) percent of each payment as retainage until final completion and acceptance of the Work by the City. Nothing contained in this paragraph shall be construed to require the City to pay or release any payment that is the subject of a good faith dispute, claim or demand by the City or the Contractor.

(e) All materials and Work covered by progress payment shall, at the time of the payment, become the sole property of the City, but this shall not be construed as relieving the Contractor from the sole responsibility for all material and Work upon which payments have been made or the restoration of any damaged Work, or waiving the right of the City to require the fulfillment of all of the terms of the Contract.

(f) The City shall, upon request, reimburse the Contractor for the entire amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements) when applicable after the Contractor furnishes evidence of full payment to the surety. Such reimbursement shall be part of, and not in addition to, the Contract Price.

(g) The City shall pay the amount due the Contractor under this Contract after: (1) completion and acceptance of all Work; (2) presentation of a properly executed voucher in the form prescribed by the City; and (3) presentation of a release of all claims against the City arising by virtue of this Contract.

(h) Concurrently with the submission of each invoice for a progress payment under this Contract, the Contractor shall certify that all due and payable bills with respect to the Contract Work either have been paid or will be paid with the proceeds of the current request for progress payment.

(i) The Contractor agrees to pay each subcontractor under this Contract for satisfactory performance of its contract no later than ten 10 calendar days from receipt of each payment the Contractor receives from the City. The Contractor agrees further to release retainage payments (if applicable) to each subcontractor within ten (10) calendar days after the subcontractor's work is satisfactorily completed and final payment has been made to the subcontractor. Any delay or postponement of payment from the above referenced time frames may occur only for good cause following written approval from the City.

(j) The City may withhold all or part of any progress payment otherwise due the Contractor if any one or more of the following conditions exist: (1) the Contractor fails to prosecute the Work to completion in a diligent, efficient, timely, and Workmanlike manner and in strict accordance with the provisions of the Contract; (2) the Contractor fails to use an adequate amount or quality of personnel or equipment to complete the Work without undue delay; (3) the Contractor fails to make prompt payments to its subcontractors, suppliers, materialmen, or laborers, as required in paragraph (i) above; (4) any part of such payment to the Contractor is attributable to Work which is defective or not performed in accordance with the Contract requirements; provided, however, such payment shall be made as to the part thereof attributable to Work which is performed in accordance with the requirements of the Contract Documents and is not defective; or (5) the Contractor is otherwise in default of any of its obligations under this Contract.

(k) Prior to final payment, the Contractor shall certify in writing that the entire Project is substantially complete and request that the City issue a Certificate of Substantial Completion. Within a reasonable time thereafter, the City and Contractor will make an inspection of the Project to determine the status of completion. If the City does not consider the Project substantially complete, it will notify the Contractor in writing giving the reasons therefore. If the City considers the Project substantially complete, a tentative Certificate of Substantial Completion will be issued. This certificate shall fix the date of substantial completion and the responsibilities between the City and the Contractor for maintenance and utilities. There shall be attached to the certificate a tentative list of items to be completed or corrected within the Contract Period of Performance. The City shall have the right to exclude the Contractor from the Project after the date of substantial completion but the City will allow the Contractor reasonable access to complete or correct items on the list of items to be completed or corrected.

(l) After the Contractor has completed any such corrections to the satisfaction of the City and delivered all maintenance and operating instructions, schedules, guarantees, bonds, Certificates of Inspection and other documents as required by the Contract Documents, he may make application for final payment following the procedures for progress payments. The final application for payment shall be accompanied by legally effective final releases or waivers of claims from the Contractor and all Subcontractors, sub-subcontractors, suppliers or materialmen which performed services for the Contractor pursuant to the Contract Documents and the Consent of Surety, if applicable, to final payment. These releases and waivers of claims are conditions precedent to final payment. The City may withhold amounts it deems necessary to cover any claims of which it has been notified, including but not limited to claims of Subcontractors, sub-subcontractors, materialmen, suppliers and others from final payment.

(m) If on the basis of observations and review of the Work during construction, the City's final inspection, and review of the final application for payment (all as required by the Contract Documents), the City is satisfied that the Work has been completed and the Contractor has fulfilled all of his obligations under the Contract Documents, the City will, within ten (10) days after receipt of the final application for payment, indicate in writing its approval. Otherwise, it will return the application to the Contractor, indicating in writing its reason for refusing to approve final payment, in which case the Contractor will make the necessary corrections and resubmit the application of payment.

(n) The Contractor warrants and guarantees that title to all Work, materials and equipment covered by an application for payment, whether incorporated in the Project or not, will have passed to the City prior to the making of the application for payment, free and clear of all liens, claims, security interests and encumbrances; and that no Work, materials or equipment covered by an application for payment will have been acquired by the Contractor or by any other person performing the Work at the Site or furnishing materials and equipment for the Project subject to an agreement under which an interest therein or encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

36. Performance and Payment Bonds

(a) A Performance and Payment Bond satisfactory to the City, executed by a surety company authorized to do business in the State of Florida or otherwise secured in a manner satisfactory to the City, in an amount equal to one hundred (100) percent of the Contract Price, as awarded, will be required from the Contractor insuring the faithful performance of the Contract and protecting the City from suits for non-payment of debts which might be incurred by a contractor's performance for the City.

(b) All required bonds shall be provided on the forms accompanying the City's Solicitation. The surety company shall be approved for the amount of the bonds and, either hold a certificate of authority from the U.S. Department of Treasury or have obtained reinsurance from a Treasury listed insurer.

(c) The Contractor shall be required to submit all required bonds within ten (10) days from the date of Notice of Award.

37. Permits and Responsibilities

(a) The Contractor shall, without additional expense to the City, be responsible for obtaining any necessary licenses, permits, and approvals for complying with any federal, state, county, and municipal laws, codes, and regulations applicable to the performance of the Work, including, but not limited to, any laws or regulations requiring the use of licensed contractors to perform parts of the Work. The Contractor shall be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence and shall take proper safety and health precautions to protect the Work, the Workers, the public, and the property of others. The Contractor shall be responsible for all materials delivered and Work performed until completion and acceptance of the entire Project, except for any completed unit of Work which may have been accepted under the Contract.

(b) If the Contractor observes that the specifications or drawings are at variance with applicable laws, rules, regulation or ordinances the Contractor shall give the City prompt written notice thereof, and any necessary changes may be adjusted by a written amendment to the Contract. If the Contractor performs any Work knowing it to be contrary to such laws, ordinances, rules and regulations and without such notice to the City, the Contractor shall bear all costs and liability arising there from.

(c) Pursuant to House Bill 279/Chapter 2020-154, the following other governmental entities may have additional permits or fees generated by the project:

- Southwest Florida Water Management District (SWFWMD)
- Florida Department of Environmental Protection
- U.S. Army Corp. of Engineers
- Pinellas County
- Pinellas County Health Dept.
- Florida Department of State Division of Historical Resources
- City of St. Petersburg – Potable Water Line Easement
- City of Safety Harbor Building Department
- U.S. Coast Guard
- Tampa Bay Mitigation
- Duke Energy
- CSX

38. Protection of City Property

The Contractor shall use reasonable care to avoid damaging existing buildings, equipment, and vegetation on or about Sites owned by, or under the control of the City. If the Contractor's failure to use reasonable care causes damage to any of this property, the Contractor shall replace or repair the damage at no expense to the City as the City directs. If the Contractor fails or refuses to make such repair or replacement, the City shall have the right to make the necessary repairs and the Contractor shall be liable for the cost, which may be deducted from the Contract Price.

39. Protection of Existing Site Conditions

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the Work Site which are not to be removed and which do not unreasonably interfere with the Work required under this Contract. The Contractor shall remove trees only when specifically authorized to do so and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during Contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the City.

(b) The Contractor shall protect from damage all existing improvements and utilities (1) at or near the Work Site and (2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this Contract or failure to exercise reasonable care in performing the Contract Work. If the Contractor fails or refuses to repair the damage promptly, the City may have the necessary Work performed and charge the cost to the Contractor.

40. Publicity Releases

All publicity releases or releases of reports, papers, articles, maps, or other documents in any way concerning this Contract or the Work hereunder which the Contractor or any of its Subcontractors desires to make for purposes of publication in whole or in part, shall be subject to approval by the City prior to release.

41. Public Records Requirement

Pursuant to section 119.0701, Florida Statutes, for any tasks performed by Contractor on behalf of the City, Contractor shall: (a) keep and maintain all public records, as that term is defined in chapter 119, Florida Statutes ("Public Records"), required by the City to perform the work contemplated by this Contract; (b) upon request from the City's custodian of public records, provide the City with a copy of the requested Public Records or allow the Public Records to be inspected or copied within a reasonable time at a cost that does not exceed the costs provided in chapter 119, Florida Statutes, or as otherwise provided by law; (c) ensure that Public Records that are exempt or confidential and exempt from Public Records disclosure requirements are not disclosed except as authorized by law for the duration of the term of this Contract and following completion of this Contract, if Contractor does not transfer the records to the City in accordance with (d) below; and (d) upon completion of this Contract, (i) if the City, in its sole and absolute discretion, requests that all Public Records in possession of Contractor be transferred to the City, Contractor shall transfer, at no cost, to the City, all Public Records in possession of Contractor within thirty (30) days of such request or(ii) if no such request is made by the City, Contractor shall keep and maintain Public Records required by the City to perform the work contemplated by this Contract. If Contractor transfers all Public Records to the City upon completion of this Contract pursuant to (d)(i) above, Contractor shall destroy any duplicate Public Records that are exempt or confidential and exempt from Public Records disclosure requirements within thirty (30) days of the termination of this Contract and provide the City with a letter confirming that this has been done within thirty (30) days of completion of this Contract. If Contractor keeps and maintains Public Records upon completion of this Contract pursuant to (d)(ii) above, Contractor shall meet all applicable requirements for retaining Public Records. All Public Records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology of the City. If Contractor does not comply with a public records request, or does not comply with a public records request within a reasonable amount of time, the City may pursue any and all remedies available in law or equity including, but not limited to, specific performance. The provisions of this section only apply to those tasks in which Contractor is acting on behalf of the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE

CUSTODIAN OF PUBLIC RECORDS, RACHAEL TELESCA, CITY CLERK AT (727)-724-1555, rtelesca@cityofsafetyharbor.com, 750 Main Street, Safety Harbor, Florida 34695.

42. Removal of Contract Personnel

(a) The Contractor and any subcontractor acknowledge that any person assigned to Work under this Contract must perform their duties so as to not unduly impair performance under this Contract and completion of the Project. By assigning a person to Work under this Contract, the Contractor agrees to be responsible for the behavior of that person during the term of this Contract.

(b) The Contractor acknowledges that the City has the right to require the removal of any Contractor or Subcontractor or employee thereof that the City determines, at its sole discretion, to be negatively affecting performance of Contract Work. Examples of such behavior includes but is not limited to: (1) conduct which poses a threat to the safety of anyone Working under the Contract; (2) conduct which is disruptive to Contract performance; (3) careless Work performance; and (4) other behavior determined by the City to be objectionable or unduly hindering Contract performance.

(c) Upon receipt of written notice from the City that a person's behavior is unduly impairing Contract performance, the Contractor agrees to remove that person from doing any further Work on the Project, and to cause that person to be removed from the Work Site. The Contractor agrees that it is not entitled to any additional costs it may incur as a result of the removal of the person named by the City.

43. Seasonal Weather Conditions

Seasonal weather conditions shall be considered and included in the planning and scheduling of all Work influenced by high and low ambient temperatures, precipitation and/or saturated soil to ensure completion of all Work within the Contract Time. Contract Time extensions for abnormal weather will be granted only to the extent that the actual time lost during a particular month exceeds the Contract Time. Time extensions granted for abnormal weather shall not result in an increase in the Contract Price.

44. Severability

(a) If any provision of the Contract Documents, or the application thereof to any person or circumstances is rendered or declared illegal for any reason or shall be invalid or unenforceable by a court of competent jurisdiction, the remainder of the Contract Documents and the application of such provision to other persons or circumstances shall not be affected thereby but shall be enforced to the greatest extent permitted.

(b) If any one or more of the provisions of the Contract Documents shall be held to be invalid, illegal, or unenforceable in any respect by a court of competent jurisdiction, the validity, legality, and enforceable in any respect by a court of competent jurisdiction, the validity, legality, and enforceability of the remaining provisions hereof shall not in any way be affected or impaired thereby and the Contract Documents shall be treated as through that portion had never been a pert thereof.

45. Site Investigation and Conditions Affecting the Work

(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the Work and that it has investigated and satisfied itself as to the general and local conditions which can affect the Contract Work or its cost, including, but not limited to; (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, roads rights of way access to the Work Site and other lands made available by the City for this Project; (3) uncertainties of weather, flooding patterns and water drainage, or similar physical conditions at the Site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed prior to and during Work performance. The Contractor acknowledges that its undertaking to complete the Contract within the Contract Schedule includes an allowance for the normal number of days in which Contract Work may be partially or totally delayed because of weather during the season and at the location the Contract will be performed and that the Contractor shall not be entitled to excusable delays or compensation for such delays. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the Site, access to the Site, and territory surrounding the Site, including all exploratory Work done by the City as well as from the drawings and specifications made a part of this

Contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the Work or for proceeding to perform the Work successfully without additional expense to the City.

(b) The City assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the City. Nor does the City assume responsibility for any understanding reached or representation made concerning conditions which can affect the Work by any of its officers, employees, engineers or agents before the execution of this Contract, unless that understanding or representation is expressly stated in this Contract.

46. Specifications and Drawings

(a) After award of Contract, the Contractor will be furnished one (1) complete set of plans. Additional plans may be furnished at the Contractor's request and at the Contractor's sole expense.

(b) The Contractor shall keep on the Work Site a copy of the drawings and specifications and shall at all times give the City access thereto. Anything mentioned in the Specifications and not shown on the drawings, or shown on the drawings and not mentioned in the Specifications, shall be of like effect as if shown or mentioned in both. In case of differences between drawings and specifications, the Specifications shall govern. In case of a discrepancy in the figures, in the drawings, or in the Specifications, the matter shall be promptly submitted to the City, which shall make a determination in writing. Any action or adjustment by the Contractor without such a determination shall be at its own risk and expense.

(c) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", " designation", or "prescription", of the City is intended; and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by", or "acceptable to", or "satisfactory to" the City, unless otherwise expressly stated.

(d) Where "as shown", "as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this Contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place" (that is, "furnished and installed").

(e) Shop drawings means drawings submitted to the City by the Contractor, Subcontractor, or any lower tier subcontractor pursuant to this Contract, showing in detail (1) the proposed fabrication and assembly of structural elements and (2) the installation (i.e., form, fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the Work required by the Contract. The City may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this Contract.

(f) If this Contract requires plans and specifications, the Contractor shall coordinate all such drawings and review them for accuracy, completeness, and compliance with the Contract Documents and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the City without evidence of the Contractor's approval may be returned for resubmission. The City will indicate an approval or disapproval of the shop drawings and, if not approved as submitted, shall indicate the City's reasons therefore. Any Work done before such approval shall be at the Contractor's risk. Approval by the City shall not relieve the Contractor from responsibility for any errors or omissions in such drawings or from responsibility for complying with the requirements of this Contract, except with respect to variations described and approved in accordance with (g) below.

(g) If shop drawings show variations from the Contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the City approves any such variation, the City shall do so by appropriate Contract Modification.

(h) The Contractor shall submit to the City for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of the Specifications. Three sets (unless otherwise indicated) of all shop drawings will be retained by the City, and one set will be returned to the Contractor.

(i) This clause shall be included in all subcontracts at any tier.

47. Superintendence by Contractor

At all times during performance of this Contract and until the Work is completed and accepted, the Contractor shall directly superintend the Work or assign and have on the Work Site a competent superintendent who is satisfactory to the City and has authority to act for the Contractor.

48. Subcontractors and Outside Consultants

(a) All subcontractors, outside associates, or consultants shall be subject to the City's written approval before such subcontractors, associates or consultants may perform any Work under this Contract. Such subcontractors shall be limited to such individuals or firms as were specifically identified in the Contractor's offer and agreed to by the City in connection with the award of this Contract. Any substitution in such subcontractors, associates or consultants shall be subject to the prior written approval by the City. Acceptance of any subcontractor shall not be deemed a waiver of any right of the City, including the right to reject defective Work.

(b) No subcontractor shall be permitted to perform Work associated with the subcontract until the subcontractor (or the Contractor on the subcontractor's behalf) is in compliance with the insurance requirements specified elsewhere in the Contract Documents, and has furnished satisfactory evidence of insurance to the City.

(c) The Contractor shall not employ any Subcontractor (including those who are to furnish the principal items of materials for the Work), except as approved by prior written approval by the City. The City may revoke its approval of a subcontractor at any time during the term of this Contract in its sole discretion.

(d) The Contractor shall be fully responsible for all acts and omissions of his subcontractors and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that Contractor is responsible for the acts and omissions of persons directly employed by Contractor. Nothing in the Contract Documents shall create any contractual relationship between the City and any Subcontractor or other person or organization having a direct contract with Contractor, nor shall it create any obligation on the part of the City to pay or to see to the payment of any monies. The City may furnish to any Subcontractor or other person or organization, to the extent practicable, evidence of amounts paid to Contractor on account of specific Work done.

(e) All Work performed by a Subcontractor will be pursuant to an appropriate agreement between the Contractor and the Subcontractor which specifically binds the subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the City.

49. Suspension of Work

The City may order the Contractor in writing to suspend all or any part of the Work for such period of time as the City may determine, in its sole discretion, to be appropriate for the convenience of the City.

50. Termination

(a) Termination for Convenience: Notwithstanding any provision herein, the City may terminate this Contract without cause by written notice, in whole or in part, when it is in the City's interest, in its sole discretion, upon seven (7) days written notice to the Contractor. Where the Contractor's services have been so terminated by the City, said termination shall not affect any rights of the City against the Contractor then existing or which may thereafter accrue. Any retention or payment of monies by the City due to the Contractor will not release the Contractor from liability. Upon such termination, the City shall be liable only for payment under the payment provisions of this Contract for services rendered before the date the notice was given.

(b) Termination for Default: If the Contractor does not deliver supplies in accordance with the Contract delivery schedule, the Contractor fails to perform in the manner called for in the Contract, or if the Contractor fails to comply with any other provisions of the Contract, the City may terminate this Contract for default immediately upon written notice. The Contractor will only be paid for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the Contract. If the Contractor defaults in performance of this Contract, the City has the right to withhold the disputed amounts.

(c) Opportunity to Cure: The City, in its sole discretion may, in the case of a termination for default, allow the Contractor ten (10) days in which to cure the defect. In such case, the notice of termination will state the time period in which cure is permitted and any other appropriate conditions.

(d) If Contractor fails to remedy to City's satisfaction the default of any of the terms, covenants, or conditions of this Contract within ten (10) days after receipt by Contractor of written notice from the City, the City shall have the right to terminate the Contract without any further obligation to Contractor. Any such termination for default shall not in any way operate to preclude the City from also pursuing all available remedies against Contractor and its sureties for said breach.

(e) If it is later determined by the City that the Contractor had an excusable reason for not performing, such as a strike, fire, or flood, events which are not the fault of or are beyond the control of the Contractor, the City, in its sole discretion, after setting up a new delivery of performance schedule, may allow the Contractor to continue Work, or treat the termination as a termination for convenience.

(f) Excess Reprocurement Liability: The Contractor shall be liable to the City for all expenses incurred by the City in reprocuring elsewhere the same or similar items or services offered by the contractor hereunder, should the Contractor fail to perform.

By executing this Contract and each and every renewal (if renewal is separately provided for herein), pursuant to section 287.135, Florida Statutes, the Contractor certifies, represents, and warrants that: (a) it is not on the Scrutinized Companies with Activities in Sudan List, (b) it is not on the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, (c) that it does not have business operations in Cuba or Syria, and (d) that it is not participating in a boycott of Israel, and that all such certifications were true at the time it submitted its bid or proposal for this Agreement and as of the effective date of any renewal. Notwithstanding anything contained in this Agreement to the contrary, the City may terminate this Agreement immediately if: (1) the Contractor is found to have submitted a false certification regarding (a) – (d) above in accordance with section 287.135(5), Florida Statutes, or (2) the Contractor is found to have been placed on the Scrutinized Companies that Boycott Israel List as that term is defined and such list is maintained pursuant to Section 287.135, Florida Statutes, or is otherwise engaged in a boycott of Israel. Such termination shall be in addition to any and all remedies available to the City at law. The provisions of this section shall only apply if the Contract Price is in excess of one million U.S. dollars ($1,000,000.00).

51. Time Extensions

Notwithstanding any other provisions of this Contract, the time extensions for changes in the Work will depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. A Contract Modification granting the time extension may provide that the Project completion date will be extended only for those specific elements so delayed and that the remaining Project completion dates for all other portions of the Project will not be altered and may further provide for an equitable readjustment under the new completion schedule.

52. Time of Completion and Liquidated Damages

(a) The Contractor agrees that the Project shall be completed within the Contract Time. Time is of the essence for the completion of the Work. Since time is of the essence for this Contract, the Contractor recognizes that the City will suffer financial loss if the Work is not substantially completed within the time specified herein, as said time may be adjusted only as provided for herein. In such event, the total amount of the City's damages, will be difficult, if not impossible, to definitely ascertain and quantity, because this is a public construction project that will, when completed, benefit the public and enhance the delivery of valuable services to the public. It is hereby agreed that it is appropriate and fair that the City receive liquidated damages from the Contractor, if the Contractor fails to achieve completion of the Work within the required Contract Time. Should the Contractor fail to substantially complete the Work within the Contract Time, Owner shall be entitled to assess, as liquidated damages, but not as a penalty, $500 for each calendar day thereafter until completion is achieved with no cap on this assessment. The Contractor hereby expressly waives and relinquishes any right which it may have to seek to characterize the above noted liquidated damages as a penalty, which the parties agree represents a fair and reasonable estimate of the City's actual damages at the time of contracting if Contractor fails to substantially complete the Work within the Contract Time.

(b) In the event of delay in the completion of this Work, beyond the agreed upon dates by the Contractor and the City, the City shall assess as liquidated damages $500 per calendar day.

53. Use and Possession Prior to Completion

The City shall have the right to take possession of or use any completed or partially completed part of the Contract Work. Before taking possession of or using any Work, the City shall furnish the Contractor a list of items of Work remaining to be performed or corrected on those portions of the Work that the City intends to take possession of or use. However, failure of the City to list any item of Work shall not relieve the Contractor of responsibility for complying with the terms of the Contract. The City's possession or use shall not be deemed an acceptance of any Work under the Contract.

54. Variation in Estimated Quantity

If the quantity of a unit-priced item in this Contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the Contract Price may be resubmitted for the City's consideration. If the quantity variation is such as to cause an increase in the Contract Time necessary for completion, the Contractor may request in writing a Contract Modification. Either request must be received by the City within ten (10) days of when the Contractor know or should have known that the estimated quantity varied. Upon the receipt of a written request, the City shall ascertain the facts and make a determination of the request.

55. Warranty of Construction

(a) In addition to any other warranties provided in this Contract, the Contractor warrants, except as provided in paragraph (j) of this clause, that Work performed under this Contract conforms to the Contract Documents, Specifications, and is free of any defect in equipment, material, or design furnished, or workmanship performed, by the Contractor or any Subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of one year from the date of final acceptance as amended by Change Orders. If the City takes possession of any part of the Work before final acceptance, this warranty for such part of the Work shall continue for a period of one year from the date the City takes possession.

(c) The Contractor shall remedy at the Contractor's expense (i) any failure to conform to the Contract Documents or Specifications (ii) any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to real or personal property owned or controlled by the City, when the damage is the result of: (1) the Contractor's failure to conform to Contract requirements; or (2) any defect of equipment, material, workmanship, or design furnished.

(d) The Contractor shall restore any Work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to Work repaired or replaced will run for one year from the date of repair or replacement.

(e) The City shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the City shall have the right to replace, remove, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for Work performed and materials furnished under this Contract, the Contractor shall: (1) obtain all warranties that would be given in normal commercial practice; (2) require all warranties to be executed, in writing, for the benefit of the City, if directed by the City; and (3) enforce all warranties for the benefit of the City, if directed by the City.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the City may bring suit at its expense to enforce a Subcontractor's, manufacturers, or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the City or for the repair of any damage that result from any defect in material or designs furnished by the City.

(j) This warranty shall not limit the City's rights under the "Inspection of Construction" clause of this Contract with respect to latent defects, gross mistakes, or fraud.

56. Electronic Signature

This Contract may be executed by electronic signature technology and such electronic signature shall act as the Parties' legal signatures on this Contract and shall be treated in all respects as an original handwritten signature.

EXHIBIT 'F'

TECHNICAL SPECIFICATIONS

Capital Improvement Project

Seminole Park and Mapleway Water Main Replacement Project

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SECTION 01005

GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Description

1. The Work to be completed consists of the furnishing of all labor, materials and equipment, and the performance of all Work included in this Contract.

B. Work Included

1. The Contractor shall furnish all labor, superintendence, materials, plant, power, light, heat, fuel, water, tools, appliances, equipment, supplies and other means of construction necessary or proper for performing and completing the Work. The Contractor shall perform and complete the Work in the manner best calculated to promote rapid construction consistent with safety of life and property and to the satisfaction of the Engineer, and in strict accordance with the Contract Documents. The Contractor shall clean up the Work and maintain it during and after construction, until accepted, and shall do all Work and pay all costs incidental thereto. The Contractor shall repair or restore all structures and property that may be damaged or disturbed during performance of the Work.

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

3. The Contractor shall provide and maintain such modern plant, tools, and equipment as may be necessary, in the opinion of the Engineer, to perform in a satisfactory and acceptable manner all the Work required by this Contract. Only equipment of established reputation and proven efficiency shall be used. The Contractor shall be solely responsible for the adequacy of his workmanship, materials and equipment, prior approval of the Engineer notwithstanding.

C. Public Utility Installation and Structures

1. Public utility installations and structures shall be understood to include all poles, tracks, pipes, wires, conduits, house service connections,

vaults, manholes and all other appurtenances and facilities pertaining thereto whether owned or controlled by the Owner, other governmental bodies or privately owned by individuals, firms or corporations, used to serve the public with transportation, traffic control, gas, electricity, telephone, sewerage, drainage, water or other public or private property which may be affected by the Work shall be deemed included hereunder.

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

3. Public utility installations or structures owned or controlled by the Owner or other governmental body, which are shown on the Plans to be removed, relocated, replaced or rebuilt by the Contractor, shall be considered as a part of the general cost of doing the Work and shall be included in the prices bid for the various contract items. No separate payment shall be made therefore.

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

5. All owners, governmental utility departments, and owners of public utilities that may be affected by the Work will be informed in writing by the Engineer within two weeks after the execution of the Contract or Contract covering the Work. Such notice will set out, in general, and

direct attention to, the responsibilities of the Owner and other governmental utility departments and other owners of public utilities for such installations and structures as may be affected by the Work and will be accompanied by one set of Plans and Specifications covering the Work under such Contract or Contracts.

6. In addition to the general notice given by the Engineer, the Contractor shall give written notice to Owner and other governmental utility departments and other owners of public utilities of the locations of proposed construction operations, at least forty-eight hours in advance of breaking ground in any area or on any unit of the Work.

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

8. The construction of underground utility lines and other structures shall be done in accordance with the following standards:

   a. No more than 400 linear feet of trench shall be open at any one time;

   b. Wherever consistent with safety and space consideration, excavated material shall be cast to the uphill side of trenches. Trench material shall not be cast into or onto the slope of any stream, channel, road ditch or waterway.

1.02 DRAWINGS AND SPECIFICATIONS

A. Drawings

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

B. Copies Furnished to Contractor

1. After the Agreement has been executed, the Contractor will be furnished copies of Contract Documents in accordance with the General Provisions (Exhibit F).

2. The Contractor shall furnish each of the subcontractors, manufacturers, and suppliers such copies of the Contract Documents as may be required for their Work. Additional copies of the Drawings and Specifications, when requested, may be furnished to the Contractor at cost of reproduction.

C. Supplementary Drawings

1. When, in the opinion of the Engineer, it becomes necessary to explain more fully the Work to be done or to illustrate the Work further or to show any changes which may be required, Drawings known as Supplementary Drawings, with Specifications pertaining thereto, will be prepared by the Engineer and up to five paper prints thereof will be given to the Contractor and two copies to the Owner.

D. Contractor to Check Drawings and Data

1. The Contractor shall verify all dimensions, quantities and details shown on the Shop Drawings, Construction Drawings, Supplementary Drawings, Schedules, Specifications or other data received from the Engineer and shall notify the Engineer of any errors, omissions, conflicts and discrepancies found therein. The Contractor shall submit to the Engineer a Request for Information (RFI), consecutively numbered, detailing all errors, omissions, conflicts and discrepancies. Engineer will promptly provide a response to all RFIs submitted by the Contractor. Contractor shall not take advantage of any errors or omissions, as full instructions will be furnished by the Engineer, should such errors or omissions be discovered.

E. Technical Specifications

1. The Technical Specifications consist of three parts: General, Products and Execution. The General Section contains General Requirements that govern the Work. Products and Execution modify and supplement these by detailed requirements for the Work and shall always govern whenever there appears to be an inconsistency.

F. Intent

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

2. The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any Work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only

material and workmanship of the best quality is to be used, and interpretation of these Specifications shall be made upon that basis.

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

1.03 MATERIALS AND EQUIPMENT

A. Manufacturer (Suppliers)

1. The names of proposed manufacturers, suppliers and dealers who are to furnish materials, fixtures, equipment, appliances or other fittings shall be submitted to the Engineer for approval. Such approval must be obtained before shop drawings will be checked. No manufacturer will be approved for any materials to be furnished under this Contract unless the Contractor shall be of good reputation and have a plant of ample capacity. The Contractor shall, upon the request of the Engineer, be required to submit evidence that The Contractor has manufactured a similar product to the one specified and that it has been previously used for a like purpose for a sufficient length of time to demonstrate its satisfactory performance. All transactions with the manufacturers or subcontractors shall be through the Contractor, unless the Contractor shall request in writing to the Engineer, that the manufacturer or subcontractor deal directly with the Engineer. Any such transactions shall not in any way release the Contractor from his full responsibility under this Contract.

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

B. Delivery

1. The Contractor shall coordinate delivery of materials in ample quantities to prevent delays. The Contractor shall insure the most speedy and uninterrupted progress of the Work so as to complete the Work within the allotted Contract Time. The Contractor shall also coordinate deliveries in order to avoid delay in, or impediment of, the progress of the Work of any related Contractor.

C. Tools and Accessories

1. The Contractor shall, unless otherwise stated in the Contract Documents, furnish with each type, kind or size of equipment, one complete set of suitably marked, high grade, special tools and/or

appliances needed to adjust, operate, maintain or repair the equipment. Such tools and appliances shall be furnished in approved painted steel cases, properly labeled and equipped with cylinder locks and duplicate keys.

2. Spare parts shall be furnished as specified herein and shall comply with one of the following requirements:

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

   a. Those spare parts not available to the Owner within 24-hours.

   b. Those spare parts identified by the supplier as critical.

   c. Those spare parts so specified.

D. Installation of Equipment

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

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

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

4. The Contractor shall, at his own expense, furnish all materials and labor for, and shall properly bed in non-shrink grout, each piece of equipment on its supporting base that rests on masonry foundations. Grout shall completely fill the space between the equipment base and the foundation. All metal surfaces coming in contact with concrete or

grout shall receive a coat of coal tar epoxy equal to Kop-Coat 300M, or material/paint as directed by the Engineer.

E. Services of Manufacturer's Representative

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

2. In addition, the Contractor shall have the manufacturer's representative execute a written Certification of Proper Installation indicating that the Contractor has installed the equipment in accordance with the manufacturer's recommendations. No equipment will be accepted without this Certification of Proper Installation.

1.04 INSPECTION AND TESTING

A. General

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

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

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

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

B. Costs

1. All testing furnished under this Contract shall be performed by the Contractor or inspection bureaus without cost to the Owner, unless otherwise expressly specified.

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

3. Materials and equipment submitted by the Contractor as equivalent to those specified may be tested by the Owner for compliance with the specifications. The Contractor shall reimburse the Owner for the expenditures incurred in making such tests on materials and equipment that are rejected for non-compliance.

C. Inspection of Materials

1. The Contractor shall give notice in writing to the Engineer sufficiently in advance of his intention to commence the manufacture or preparation of materials especially manufactured or prepared for use in or as part of the permanent construction. Such notice shall contain a request for inspection, the date of commencement and the expected date of completion of the manufacture or preparation of materials. Upon receipt of such notice, the Engineer will arrange to have a representative present at such times during the manufacture as maybe necessary to inspect the materials or he will notify the Contractor that the inspection will be made at a point other than the point of manufacture, or he will notify the Contractor that inspection will be waived. The Contractor must comply with these provisions before shipping any material. Such inspection shall not release the Contractor from the responsibility for furnishing materials meeting the requirements of the Contract Documents.

D. Certificate of Manufacture

1. When inspection is waived or when the Engineer so requires, the Contractor shall furnish to him authoritative evidence in the form of Certificates of Manufacture that the materials to be used in the Work have been manufactured and tested in conformity with the Contract Documents. These certificates shall be notarized and shall include

copies of the results of physical tests and chemical analyses, where necessary, that have been made directly on the product or on similar products of the manufacturer.

E. Shop Tests of Operating Equipment

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

2. Five copies of the manufacturers' actual test data and interpreted results thereof, accompanied by a certificate of authenticity sworn to by a responsible official of the manufacturing company, will be forwarded to the Engineer for approval.

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

F. Preliminary Field Tests

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

G. Final Field Tests

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

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

H. Failure of Tests

1. Any defects in the materials and equipment or their failure to meet the tests, guarantee or requirements of the Contract Documents shall be promptly corrected by the Contractor, by replacement or otherwise as directed by the Engineer. The decision of the Engineer as to whether or not the Contractor has fulfilled his obligations under the Contract will be final and conclusive. If the Contractor fails to make these corrections, or if the improved materials and equipment, when tested, shall again fail to meet the guarantees or specified requirements, the Owner, notwithstanding its partial payment for Work, and materials and equipment, may reject the materials and equipment and may order the Contractor to remove them from the site at his own expense.

I. Final Inspection

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

1.05 TEMPORARY STRUCTURES

A. Temporary Fences

1. If, during the course of the Work, it is necessary to remove or disturb any fence or part thereof, the Contractor shall, at his own expense, if so ordered by the Engineer, provide a suitable temporary fence, which shall be maintained until the permanent fence is replaced or the fence is not needed. The Engineer will be solely responsible for the determination of the necessity for providing a temporary fence and the type of temporary fence to be used.

B. Temporary Driveways

2. The Contractor shall furnish, install and maintain at its own expense all temporary driveways and access roads required to provide access to the Work and through the site of the Work, to maintain existing operations, and to allow construction of other projects in the area. The Contractor shall fully cooperate with the Engineer in providing this access.

C. Temporary Sidewalks

Any sidewalk that is removed for greater than five (5) working days shall be temporarily restored by the Contractor with asphalt millings until the permanent concrete sidewalk is restored.

1.06 TEMPORARY SERVICES

A. First Aid

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

1.07 LINES AND GRADE

A. Grade

1. All Work under this Contract shall be constructed in accordance with the lines and grades shown on the Construction Drawings, or as given by the Engineer. The full responsibility for keeping alignment and grade rests upon the Contractor.

2. The Contractor, prior to commencing construction, shall establish bench marks and base line controlling points. The Contractor shall so place excavation and other materials as to cause no inconvenience in the use of the reference marks provided. The Contractor shall remove any obstructions placed by him contrary to this provision.

B. Surveys

1. The Contractor shall furnish and maintain, at his own expense, stakes and other such materials to establish all working or construction lines and grades, as required, and shall be solely responsible for the accuracy thereof.

2. All surveying shall be performed in accordance with Specification 01050.

C. Safeguarding Marks

1. The Contractor shall safeguard all points, stakes, grade marks, monuments and bench marks made or established on the Work, bear the cost of re-establishing them if disturbed, and bear the entire expense of rectifying Work improperly installed due to not maintaining

or protecting or to removing without authorization such established points, stakes and marks.

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

1.08 ADJACENT STRUCTURES AND LANDSCAPING

A. The Contractor shall be entirely responsible and liable for all damage or injury as a result of his operations to all other adjacent public and private property, structures of any kind and appurtenances thereto met with during the progress of the Work. The cost of protection, replacement in their original locations and conditions or payment of damages for injuries to such adjacent public and private property and structures affected by the Work, whether or not shown on the Construction Drawings or specified shall be included in the various Contract Items and no separate payments will be made therefore. Where such public and private property structures of any kind and appurtenances thereto are not shown on the Construction Drawings and in the opinion of the Engineer are damaged and required to be removed in order to avoid interference with the Work.

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

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

D. Protection of Trees

1. Unless indicated to be removed, the Contractor shall adequately protect all trees and shrubs with boxes or otherwise in accordance with ordinances governing the protection of trees. No excavated materials shall be placed so as to injure such trees or shrubs. Trees or shrubs destroyed through negligence of the Contractor or his

employees shall be replaced with new stock of similar size and age, in the proper season and at the sole expense of the Contractor.

2. Beneath trees or other surface structures, where possible, pipelines may be built in short tunnels, backfilled with excavated materials, except as otherwise specified, or the trees or structures carefully supported and protected from damage.

3. The Owner may order the Contractor, for the convenience of the Owner, to remove trees along the line or trench excavation. If so ordered, the Owner will obtain any permits required for removal of trees.

E. Lawn Areas

1. All lawn areas shall be left in as good condition as before the starting of the Work. Where sod is to be removed, it shall be restored with new sod. Restoration of the Right-of-Way shall be completed with sod. Hydroseeding shall not be considered acceptable.

2. The cost of all labor, materials and equipment required for the replacement or repair of any lawn area shall be included in the appropriate bid items and no additional payment will be made therefore.

F. Restoration of Fences

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

1.09 PROTECTION OF WORK AND PUBLIC

A. Fire Conditions

1. The Contractor shall notify the City of Safety Harbor of all “Maintenance of Traffic” (MOT) changes. All road/lane closures, road/lane narrowing and/or detours must be forwarded to the Fire Marshall 24 hours in advance, and must include specific detour instructions and the duration of closure.

B. Barriers and Lights

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

C. Smoke Prevention

1. The Contractor shall use hard coal, coke, oil or gas as fuel for equipment generating steam. A strict compliance with ordinances regulating the production of emission of smoke will be required. No open fires will be permitted.

D. Noise

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

2. Except in the event of an emergency, no Work shall be done between the hours of 6:00 P.M. and 7:00 A.M. Monday through Saturday, all day on holidays, or all day Sunday. If the proper and efficient prosecution of the Work requires operations during the night, the written permission of the Engineer will be obtained before starting such items of the Work.

E. Access to Public Services

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

F. Dust Prevention

1. The Contractor shall prevent dust nuisance from his operations or from traffic by keeping the roads and/or construction areas sprinkled with water at all times. The Contractor shall be solely responsible for securing a source of reclaimed, potable or other source of water for dust prevention and control.

1.10 CUTTING AND PATCHING

A. The Contractor shall do all cutting, fitting or patching of the Work that may be required to make the several parts thereof join and coordinate in a manner satisfactory to the Engineer and in accordance with the Construction Drawings and Specifications. The Work shall be performed by competent workmen skilled in the trade required by the restoration.

1.11 CLEANING

A. At all times during the construction of the Work, the Contractor shall keep the site of the Work and adjacent premises as free from material, debris and rubbish as is practicable and shall remove the same from any portion of the site if, in the opinion of the Engineer, such material, debris, or rubbish constitutes a nuisance or is objectionable.

1. The Contractor shall remove from the site all of his surplus materials and temporary structures when no further need therefore develops.

A. Final Clearing

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

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

1.12 MISCELLANEOUS

A. Protection Against Siltation and Bank Erosion

1. The Contractor shall arrange his operations to minimize siltation and bank erosion on construction sites and on existing or proposed water courses, drainage ditches, wetlands and other areas of concern.

2. The Contractor, at his own expense, shall remove any siltation deposits and correct any erosion problems as directed by the Engineer that results from his construction operations.

3. The Contractor shall be solely responsible for any fines resulting from sedimentation in any environmentally protected areas.

B. Protection of Wetland Areas

1. The Contractor shall properly dispose of all surplus material, including soil, in accordance with Local, State and Federal regulations and the permits issued for this project. Under no circumstances shall surplus material be disposed of in wetland areas as defined by the Florida Department of Environmental Protection, Southwest Florida Water Management District, U.S. Army Corps of Engineers, etc.

C. Existing Facilities

1. The Work shall be so conducted to maintain existing facilities in operation insofar as is possible. Requirements and schedules of operations for maintaining existing facilities in service during construction shall be as described in these Specifications.

D. Use of Chemicals

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

E. Tree Removal, Trimming and Root Pruning

1. The Contractor shall be required to notify the Engineer forty-eight (48) hours in advance of any removal of trees on the project. No clearing shall occur and no earth moving equipment shall be placed on-site until after the notice has been issued. The Contractor shall provide maintenance of the tree barricades and other preventive measures to protect the trees that are to remain. The Contractor shall conform to all local ordinances, rules and regulations in the removal of any trees from the site of the Work.

2. All tree trimming, root pruning and tree removal must be done by or under the direct supervision of an ISA certified arborist. Said certified arborist must also be an employee of the tree care company performing said work. To clarify, the certified arborist must be on site during any tree trimming, root pruning or other tree work. The Contractor shall provide the Owner and Engineer a copy of the certified arborist's current ISA Certification and be approved by the City prior to the commencement of the work.

3. Trees marked on the Drawings with an "X" indicate trees that are required to be removed by the Contractor due to not meeting the

criteria for root pruning and/or the tree's proximity to the location of the work.

4. For each tree marked on the plans with an "X", the Contractor shall field verify if the tree actually is required to be removed based on the Contractor's means and methods of installing the utilities. Should the Contractor deem that a tree is required to be remove, the Contractor shall:

    a. Submit to the Owner and Engineer the plans to show which tree(s) in private property or public right-of-way the Contractor proposes to remove.

    b. Mark the in the field tree by with a red ribbon around the trunk. Marking the tree using paint is prohibited.

    c. Notify the Owner and Engineer that potential tree(s) that are required to be removed have been marked.

    d. Allow the Owner and Engineer up to ten (10) business days to field verify and provide the Contractor with approval that the tree may be removed. The Contractor shall be responsible for marking the trees and scheduling with the Owner and Engineer as described herein, so that it does not affect the Contractor's schedule. The Contractor shall not remove any tree without the Owner's approval.

5. Should there be other trees that are not marked with an "X" on the Drawings, but is deemed by the Contractor that it is required to be removed, the Contractor shall follow the same procedure as defined above.

6. The removal of a tree consists of the following in general:

    a. Removing the tree including all limbs and branches and disposing of the tree.

    b. Grinding the stump of the tree to 12-inches below grade.

    c. Placing top soil over the affected area.

    d. Placing sod over the area and installing fertilizer and watering the sod

7. For root pruning, should the Contractor deem that a tree is required to be root pruned, the Contractor shall:

a. Submit to the Owner and Engineer the plans to show which tree(s) and the limits of root pruning for each tree on private property or public right-of-way.

b. Allow the Owner and Engineer up to ten (10) business days to field verify and provide the Contractor with approval that the tree may be root pruned. The Contractor shall be responsible for root pruning plans and scheduling with the Owner and Engineer as described herein, so that it does not affect the Contractor's schedule. The Contractor shall not root prune any tree without the Owner's approval.

8. Any damage to public or private property during the removal of a tree or root pruning in public or private property shall be repaired at the Contractor's expense.

F. Related Permits

1. The Contractor recognizes that the Engineer has applied for, and may have received, certain permits pertaining to the Work. At the sole discretion of the Engineer, the Engineer may assign said permits to the Contractor and the Contractor shall accept said assignments upon such request from the Engineer.

G. All Work in the vicinity of open waters, wetlands or any jurisdictional area is to be performed in strict accordance with the environmental permits and their conditions. Erosion barriers, when shown on the construction Drawings, are the minimum required. If the Contractor's construction methods require that additional erosion control is necessary to satisfy these permits, such controls shall be supplied, installed and maintained throughout the construction process by the Contractor at no additional cost to the Owner.

1. It is the sole responsibility of the Contractor to submit, in a timely manner, any information, data, etc. which is required as a condition of a permit. Required information, data, etc. shall be submitted directly to the permitting agency by the Contractor with copies to the Permittee (or Owner) and the Engineer. The Contractor shall be responsible for any fine(s) or other action(s) resulting from his violation of permit conditions.

1.13 RESTORATION OF PROPERTY

A. Responsibility. All damage resulting from construction on existing structures, wetland areas, roadway pavement, driveways, other paved areas, fences, utilities, traffic control devices and any other obstruction not specifically named herein, shall be repaired, restored or replaced by the Contractor unless otherwise specified.

B. Temporary Repairs. At a minimum, all damage described in Paragraph A above shall be temporarily repaired, restored or replaced immediately following damage thereto. Temporary restoration shall mean putting the affected area back into a safe, usable condition. In no case shall trenches remain open over night within a street right-of-way unless the municipality's traffic control division grants specific approval.

C. Permanent Repairs. All damages shall be permanently repaired, restored, or replaced not later than the 30th calendar day following the completion of construction at that location unless otherwise stipulated. Permanent repairs shall be accomplished in a professional workmanship-like manner in accordance with Specifications contained herein, or contract documents, if addressed. The Contractor may be relieved of the 30-day time limit above only by specific written agreement with the Engineer.

D. Owner Retribution. In the event that the Contractor fails to make permanent repairs within the time specified, the Owner, at its option, will cause the repair, restoration, or replacement of the affected area to be accomplished using its own resources or by contract with others. The costs of such Work will be deducted from any other monies owed the Contractor.

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

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SECTION 01014

SUMMARY OF WORK

PART 1 - GENERAL

1.01 LOCATION OF WORK

A. All Work of this Contract is located in rights-of-way, easements, or on property owned by the Owner, local governments or regulatory agencies.

1.02 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment, tools, services and incidentals to complete all work required by Contract Documents, Plans and Specifications.

B. The Contractor shall perform all work complete, in place and ready for continuous service, and shall include repairs, testing, permits, clean up, replacements and restoration required as a result of damages caused during construction.

C. All materials, equipment, skills, tools and labor which is reasonably and properly inferable and necessary for the proper completion of the work in a substantial manner and in compliance with the requirements stated or implied by the Contract Documents shall be furnished and installed by the Contractor without additional compensation, whether specifically indicated in the Contract Documents or not.

D. The Contractor shall comply with all local, State, Federal, and other codes that are applicable to the proposed construction work.

1.03 GENERAL DESCRIPTION OF WORK TO BE PERFORMED

A. Base Bid Work: The scope of work for the installation of the water mains, water service laterals and fire hydrants, which includes in general the following:

1. Installation of the water main by open-cut and horizontal directional drill methods.

2. Installation of new water service laterals from the new water main to the existing water meters with a new meter box in the orientation as shown on the drawings.

3. Pressure testing, disinfection, and bacteriological testing of the water mains.

4. Coordinate with the City to obtain FDEP clearance for the new water mains.

5. Connecting existing water main(s) and service piping to the new water main(s) and service lateral.

6. If the location of the existing water meter box is not in back of the sidewalk (i.e. as shown on the city's standard details), then the Contractor shall coordinate with the City's engineer for the exact locations prior to installation.

7. Restoration of private property including landscape, driveways and other miscellaneous restoration.

8. Restoration of Right-of-Ways to existing conditions or better, including concrete curbs, granite curbs, sidewalks, driveway aprons, milling and resurfacing of asphalt and miscellaneous site restoration.

1.04 CONSTRUCTION ACTIVITIES

A. General

1. The Contractor shall obtain from the Owner all water required for flushing, cleaning and testing purposes. The Contractor shall pay the Owner for all water used during construction for flushing, testing and cleaning purposes.

2. Upon successful completion of construction of each new component and pre-operational testing of these facilities, the Contractor shall conduct testing as required by the Contract Documents.

3. Contractor shall provide Engineer a minimum of 14-calendar days advance written notice of any requested change in utilities operations, bypass requirements or connections to existing facilities, and shall obtain the Engineer‘s written approval before scheduling this work.

4. All connections to existing water mains shall be scheduled with the Engineer and Owner a minimum of (14) days in advance of actual construction activities.

5. All work within local government or State rights-of-way shall comply with all applicable State and local requirements and regulations. These include, but are not limited to traffic control, drainage and runoff control, signage, flagging, restoration, etc.

6. No overtime costs shall be incurred by the Owner due to scheduled nighttime construction activities. The Contractor shall incorporate these activities into its normal operating schedule.

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

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SECTION 01015

CONTROL OF WORK

PART 1 - GENERAL

1.01 WORK PROGRESS

A. The Contractor shall provide equipment that is efficient, appropriate and large enough to secure a satisfactory quality of work at a rate of progress that ensures the completion of the Work within the Contract Times established in the Contract. If, at any time, such facilities appear to the Engineer to be inefficient, inappropriate, or insufficient for securing the quality of work required or for producing the rate of progress aforesaid, Engineer may order the Contractor to increase the facilities equipment, and the Contractor shall conform to such order. Failure of the Engineer to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the work and rate of progress required. Such direction provided to the Contractor shall not be construed as accelerating the Work.

1.02 PRIVATE LAND

A. The Contractor shall not enter or occupy private land outside of designated easements, except by written permission of the land Owner.

1.03 WORK LOCATIONS

A. Work shall be located as indicated on the Drawings, but the Engineer reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons. Where fittings are noted on the Drawings, such notation is for the Contractor's convenience and does not relieve him from laying and jointing different or additional items where required.

1.04 OPEN EXCAVATIONS

A. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons and/or damage to property. The Contractor shall, at his own expense, provide suitable and safe bridges and other crossings for accommodating travel for Owner's personnel, pedestrians and workmen. Bridges provided for access to private property during construction shall be provided, and then removed when no longer required. The length of open trench will be controlled by the particular surrounding conditions, but shall always be confined to limits that minimize interference with plant operating personnel and does not endanger existing facilities. If execution of the Work becomes hazardous, or if it excessively restricts traffic, construction

procedures shall be modified or alternative construction procedures shall be implemented, such as limiting the length of open trench, prohibiting stacking excavated material in the street, and/or requiring that the trench not remain open overnight.

B. The contractor's methods of work will be consistent with the standard practices and requirements of all appropriate Safety Regulatory Agencies, particularly the Occupational Safety and Health Administration (OSHA) requirements for excavation. Unless otherwise specifically stated in these plans and specifications, the methods of safety control and compliance with regulatory agency safety requirements are the full and complete responsibility of the Contractor.

C. The Contractor shall take precautions to prevent injury to the public due to open trenches. All trenches, excavated material, equipment, of other obstacles that could be dangerous to the public shall be well-lighted at night.

D. No more than 400 linear feet of trench shall be open at any one time and no open trenches overnight or during weekends, holidays, etc.

1.05 TEST PITS

A. The Contractor shall excavate test pits for the purpose of locating underground pipeline or structures in advance of construction. Such pits shall be excavated, protected and backfilled by the Contractor so as not to create a hazardous area. Test pits shall be backfilled immediately after their purpose has been satisfied and the surface restored and maintained in a manner satisfactory to the Engineer.

1.06 MAINTENANCE OF TRAFFIC

A. All work in rights-of way shall be performed in accordance with the approved Right-of-Way Use Permit from the governing Local Authority or, in the absence of such Permit(s), in accordance with FDOT Standard Section 102. Unless permission to close a street is received in writing from the proper authority, all excavated material shall be placed so that vehicular and pedestrian traffic may be maintained at all times. If the Contractor's operations cause traffic hazards, he shall repair the road surface, provide temporary ways, erect wheel guards or fences, or take other measures for safety satisfactory to the Engineer.

B. Detours around construction will be subject to the approval of the Owner and the Engineer. Where detours are permitted, the Contractor shall provide all necessary barricades and signs as required to divert the flow of traffic. While traffic is detoured the Contractor shall expedite construction operations and those periods when traffic is being detoured will be strictly controlled by the Owner.

C. The road shall be kept open to two-way traffic for the duration of the construction period, except that, DURING NON-PEAK TRAFFIC PERIODS, one lane of traffic will be permitted provided that flagmen are used and prior approval is obtained from the City or the municipality with jurisdiction. The Contractor will not be permitted to isolate residences or places of business. Access shall be provided to all residences and all places of business whenever construction interferes with the existing means of access.

D. Temporary Curb (Asphaltic or Concrete) shall not be used, with the following exception: Portable Temporary Low Profile Barrier for Roadside Safety, in accordance with FDOT Index 412, can be used in lieu of barrier walls for design speeds of 45 mph or less, where a low profile is desired to maintain sight distance at intersections and driveways. Portable Temporary Low Profile Barrier for Roadside Safety shall be paid for under the contract unit value for Barrier Wall (Temporary) Low Profile Concrete (Linear Foot), and will be full compensation for furnishing, installing, maintaining, relocating and removing the barrier wall. The contractor shall not receive additional compensation for relocating the barrier wall (i.e., from one construction phase to another). The approved "Portable Temporary Low Profile Barrier for Roadside Safety" is a proprietary design by the University of Florida. Only those barrier units cast by producers licensed by the University of Florida will be allowed for installation.

1.07 CARE AND PROTECTION OF PROPERTY

A. The Contractor shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition similar or equal to that existing before the damage was done, or he shall make good the damage in other manner acceptable to the Engineer.

B. All sidewalks that are disturbed by the Contractor's operations shall be restored to their original condition with the use of similar or comparable materials. All curbing shall be restored in a condition equal to the original construction and in accordance with the best modern practice.

C. Along the location of the work all fences, walks, bushes, trees, shrubbery, and other physical features shall be protected and restored in a thoroughly workmanlike manner. Fences and other features removed by the Contractor shall be replaced in the location indicated by the Engineer as soon as conditions permit. All lawn areas beyond the limits of construction that have been damaged by the Contractor shall be restored to original conditions using sod.

D. Trees close to the work shall be boxed or otherwise protected against injury in accordance with local regulations. The Contractor shall trim all branches that are susceptible to damage due of his operations, but in no case shall any tree be cut or removed without prior notification of the appropriate authority and the Engineer. All injuries to bark, trunk, limbs, and roots of trees shall be repaired by dressing, cutting, and painting in accordance with approved methods, using only approved tools and materials.

E. The protection, removal, and replacement of existing facilities shall be considered part of the Work under the Contract and all costs in connection therewith shall be included in the unit and/or lump sum prices established.

1.08 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, drains, and 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 operations shall be repaired by him at his 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 shall be maintained and all costs or charges resulting from damage thereto shall be paid by the Contractor.

C. If, in the opinion of the Engineer, permanent relocation of a utility owned by the Owner is required, the Engineer may direct the Contractor in writing, to perform the work. Work so ordered will be paid for at the unit prices bid in the Proposal, if applicable, or as provided for in the General Conditions. If relocation of a privately owned utility is required, the Owner will notify the Utility to perform the work as expeditiously as possible. The Contractor shall fully cooperate with the Owner and Utility and shall have no claim for delay due to such relocation.

1.09 DISTRIBUTION SYSTEMS AND SERVICES

A. The Contractor shall only interrupt water, telephone, Cable TV, sewer, gas, or other related utility services and disrupt the normal functioning of the system as little as possible, and shall notify the Engineer and public 48 hours in advance of any requirement for dewatering, isolating, or relocating a section of a utility, so that necessary arrangements may be made with the appropriate agency.

B. If it appears that utility service will be interrupted for an extended period, the Engineer may order the Contractor to provide temporary service lines.

Inconvenience of the users shall be the minimum, consistent with the existing conditions. The safety and integrity of the system is of prime importance in scheduling work.

1.10 PROTECTION OF CONSTRUCTION AND EQUIPMENT

A. All newly constructed work shall be carefully protected from injury or damage in any way. No wheeling or walking or placing of heavy loads shall be allowed and any portion injured or damaged shall be reconstructed by the Contractor at his own expense.

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

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 by the Owner.

1.11 WATER FOR CONSTRUCTION PURPOSES

A. The Contractor shall be responsible for providing all water required for construction purposes at the Contractor's own expense. The Contractor shall make all connections and other provisions necessary to complete all work included as a part of this Contract and shall make ready for use a fully functional system.

B. The Contractor shall obtain from the Owner all water required for flushing, testing and cleaning purposes.

C. The Contractor shall coordinate with the Owner to have a construction water meter delivered to the site. The Owner's utilities crews shall install the construction water meter on a City of Safety Harbor fire hydrant assembly and relocate as necessary.

D. Contractor shall coordinate with the Owner prior to making any connection to existing water mains. An Owner's representative must be present at the time of connection and the Owner will operate the valves.

1.12 MAINTENANCE OF FLOW

A. The Contractor shall, at his own cost, provide for the flow of sewers, drains, drainage facilities and water courses interrupted during the progress of the work, and shall immediately remove all offensive matter. The entire procedure for maintaining existing flows shall be approved by the Engineer in advance of the interruption of any flow.

1.13 COOPERATION WITHIN THIS CONTRACT

A. All firms or persons authorized to perform any work under this Contract shall cooperate with the General Contractor and his subcontractors or trades, and shall assist in incorporating the work of other trades where necessary or required.

B. Cutting and patching, drilling and fitting shall be carried out where required by the trade or subcontractor having jurisdiction, unless otherwise indicated herein or directed by the Engineer.

1.14 CLEAN-UP

A. During the course of the work, the Contractor shall keep the site of his operations in as clean and neat a condition as is possible. He shall dispose of all residues resulting from the construction work and, at the conclusion of the work, he shall remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures, and any other refuse remaining from the construction operation, and shall leave the entire site of the work in a neat and orderly condition.

B. Contractor shall be responsible for the disposal of all materials removed from the site.

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

3.01 WORK SITE ACCESS

A. Access to the site of the Work shall be via the various rights-of-way and easements owned or secured by the Owner. No valves or equipment shall be operated by Contractor personnel without the prior approval of the Owner or without the Owner's personnel present during the equipment operation.

END OF SECTION

SECTION 01016

CONSTRUCTION PHASING PLAN

PART 1 - GENERAL

1.01 CONSTRUCTION PHASING PLAN

A. The Contractor shall be responsible for keeping all existing stormwater ponds and structures in-service during the construction of the utilities. Temporary bypasses and or bypass pumping shall be provided in cases where existing stormwater inlets and culverts are to be removed as part of construction.

B. No facility, structure or water service shall be taken out of service until a temporary utilities/facility or the new replacement utility/facility or structure is fully constructed, tested and accepted by the Owner.

C. The suggested phasing plan specified herein shall be representative only. It is up to the Contractor to devise their own phasing plan, which will meet the requirements as specified herein. The Contractor shall submit to the Engineer a construction phasing plan for approval, prior to beginning any construction onsite.

D. Brief shutdown of equipment may be allowed during critical phases. The Contractor shall notify the Owner and Engineer for approval, two (2) weeks prior to any temporary shutdowns.

E. The Contractor shall conduct his operations in such a manner that will maintain access to private property/driveways at all times and will result in minimum inconvenience to the public accessing the neighborhood roads and/or business establishments and shall provide temporary access during construction.

F. The Contractor shall be responsible for constructing any temporary utilities/facilities and temporary pumping in order to keep the stormwater system in-service during construction. All materials, piping, equipment, power, labor, and etc. associated with temporary utilities/facilities or temporary pumping shall be the responsibility of the Contractor.

G. Suggested Phasing

1. For each road within the Project Area that the Contractor begins construction activities, the Contractor shall be required to complete construction (and restoration) along that road before the Contractor is allowed to proceed with construction along another road within the neighborhood. The intent of this requirement to prevent the entire neighborhood from being in a construction zone for the entire duration

of the construction contract time. This applies if the Contractor intends on having multiple crews working on different roads at the same time (i.e. each crew shall complete construction and restore the roadway and private property before they are allowed to move onto another road). As such, once the Contractor begins the construction along a roadway, the following is a non-comprehensive list of tasks that should completed prior to moving onto another road within the project area:

a. Installation of the new water main and service laterals;
b. Perform restoration over the trench area as specified in Section 02485;
c. Performing pressure testing, disinfection, bacteriological testing;
d. Submitting as-builts to the Owner/Engineer to allow the Owner/Engineer to develop partial Record Drawings for clearance of the water main;
e. Wait for clearance of the water main by FDEP;
f. Once cleared by FDEP, the Contractor shall begin to install new meter boxes and water meters and re-connect the individual properties to the new water meter;
g. Abandonment of existing water mains and water service laterals.
h. Restoration of private property including landscape, driveways and other miscellaneous restoration;
i. Milling and resurfacing asphalt as specified in Section 02485;
j. Restoration of concrete curbs, sidewalks, and miscellaneous site restoration.

2. The only exception to the above requirements is that the Contractor shall not be required to perform asphalt restoration (Phase 2) at an intersection if the water main is to be interconnected with another water main by the Contractor later during construction. All other requirements “a. through j.” above shall apply.

H. Other Requirements

1. Once the Contractor completes the water service lateral connection to the individual property, restoration of the private property shall be completed within twenty-one (21) consecutive calendar days. Failure to comply could result in a Stop Work Order until the restoration phases of work on the property are complete.

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

END OF SECTION

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SECTION 01030

SPECIAL PROJECT PROCEDURES

PART 1 - GENERAL

1.01 WORKMANSHIP, MATERIAL AND EQUIPMENT

A. When a particular product is specified or called for, it is intended and shall be understood that the proposal tendered by the Contractor included those products in its bid. Should the Contractor desire products equal to those specified the Contractor shall furnish information as described in the General Conditions. The alternate product or products submitted by the Contractor shall meet the requirements of the Specifications and shall, in all respects, be equal to the products specified by name herein.

B. All apparatus, mechanism, equipment, machinery and manufactured articles for incorporation into the Work shall be the new and unused standard products of recognized reputable manufacturers.

C. Contractor shall dispose of all excess materials from the site.

D. No more than 400 linear feet of trench shall be open at any one time.

1.02 CONNECTIONS TO EXISTING SYSTEMS

A. The Contractor shall perform all work necessary to locate, excavate and perform the connection to the existing systems, as shown on the Contract Documents. The costs for this work and for the actual connection to the existing systems shall be included in the various prices bid for the Work and shall not result in any additional cost to the Owner.

B. Connections to existing water mains shall not be performed on Thursdays or Fridays to allow for bacteriological tests to be conducted.

1.03 EXISTING UNDERGROUND PIPING, STRUCTURES AND UTILITIES

A. The attention of the Contractor is directed to the fact that during excavation, the possibility exists that the Contractor may encounter various water, gas, telephone, electrical, fiber optic cables, dewatering systems, or other utility lines not shown on the Contract Documents. The Contractor shall exercise extreme care before and during excavation to locate and flag these lines so as to avoid damage thereto. Should damage occur to an existing line, the Contractor shall immediately repair the line at no cost to the Owner.

B. It is the Contractor's responsibility to locate all existing utilities within the proposed work area.

C. Contractor will be responsible to coordinate utility adjustments and provide necessary fittings and restraints as required. If an unforeseen conflict is encountered, the Contractor should notify City staff. There are provisions in the Contract documents for submitting change orders. The Contractor shall provide evidence and an explanation of the condition encountered to City staff for review and approval.

D. To accommodate unknown utilities that are located on the field, it is typical that the Contractor will be directed by the City to install additional fittings to go under or over an existing utility. The Contractor shall be paid under Bid Item #12 Ductile Iron Fittings on a per TONS basis. It should be noted that the unit of TONS of fittings included in the Bid Form exceeds that quantity as shown on the plans to accommodate the installation of additional fittings due to utility conflicts discovered in the field.

E. It is the responsibility of the Contractor to ensure that all utility or other poles, the stability of which may be endangered by the close proximity of excavation, are temporarily held in position while work proceeds in the vicinity of the pole and that utility or other companies concerned be given reasonable advance written notice of any such excavation by the Contractor. Copy the Engineer on all communications with those entities.

F. The locations of existing utilities are shown without express or implied representation, assurance, or guarantee that they are complete or correct or that they represent a true picture of underground piping to be encountered. Encountering existing utilities at different depths or locations than shown on the drawings shall not result in additional costs to the Owner.

G. The existing piping and utilities that interfere with new construction shall be rerouted as shown, specified or required. Before any piping or utilities not shown on the Contract Documents are disturbed, the Contractor shall notify the Engineer of the location of the pipeline or utility and shall reroute or relocate the pipeline or utility as directed.

H. The Contractor shall exercise care in any excavation to locate all existing piping and utilities. All utilities that do not interfere with completed work shall be carefully protected against damage. Any existing utilities damaged in any way by the Contractor shall be restored or replaced by the Contractor at his expense, as directed by the Engineer.

I. It is intended that wherever existing utilities such as water, gas, telephone, electrical, or other service lines must be crossed, deflection of the pipe within recommended limits and cover shall be used to satisfactorily clear the obstruction unless otherwise indicated on the Contract Documents. However, when in the opinion of the Owner or Engineer this procedure is not feasible, he may direct the use of fittings for the utility crossing. The Contractor shall

verify utility crossings with test pits prior to construction as required by the Engineer.

1.04 SERVICES OF MANUFACTURER'S FIELD SERVICE TECHNICIAN

A. Bid prices for equipment furnished shall include the cost of a competent field service technician of the manufacturers of all equipment to supervise the installation, adjustment and testing of the equipment, and to instruct the Owner's operating personnel on operation and maintenance. The approved manufacturer's operation and maintenance data shall be delivered to the Engineer prior to instructing the Owner's personnel. This supervision may be divided into two or more time periods, as required by the installation program or as directed by the Engineer.

B. After installation of the equipment has been completed and the equipment is presumably ready for operation, but before it is operated by others, the manufacturer's field service technician shall inspect, operate, test and adjust the equipment. The inspection shall include at least the following points where applicable:

1. Soundness (without cracked or otherwise damaged parts).

2. Completeness in all details, as specified and required.

3. Correctness of setting, alignment, and relative arrangement of various parts.

4. Adequacy and correctness of packing, sealing and lubricants.

5. Calibration and adjustment of all related instrumentation and controls.

6. Energize equipment.

7. Deficiency correction.

8. Demonstration of compliance with applicable performance specification.

C. The operation, testing and adjustment shall be as required to prove that the equipment has been left in proper condition for satisfactory operation under the conditions specified.

D. Upon completion of this work, the manufacturer's field service technician shall submit to the Engineer in triplicate, a complete, signed report of the results of his inspection, operation, adjustments and tests. The report shall include detailed descriptions of the points inspected, tests and adjustments

made, quantitative results obtained if such are specified, and suggestions for precautions to be taken to ensure proper maintenance.

E. Each equipment manufacturer shall provide instruction to the Owner's operating personnel. Training shall not be performed until the requirements of Paragraphs B, C and D above have been fully satisfied and any specified performance testing completed. Training shall be provided for the number of days specified in each equipment section of these specifications. Training shall be provided on an 8-hour per day basis. Partial days less than eight (8) full working hours shall not be credited toward the specified duration. Training shall not be concurrent with on-going testing, debugging or installation activities; but shall be on a separate activity devoted exclusively to the instruction of the Owner's personnel in the operation and maintenance of the manufacturer's equipment. Qualified representatives of each equipment manufacturer specifically skilled in providing instruction to operations personnel shall perform training. Training shall provide an overview of operations and maintenance requirements and shall include as a minimum, but not be limited to:

1. Description of unit and component parts.

2. Operating capabilities and performance criteria.

3. Operating procedures.

4. Maintenance procedures.

5. Servicing and lubrication schedules.

6. Troubleshooting.

7. Electrical instrumentation and control requirements and interface.

The operating and maintenance data to be provided shall be used as a basis for training.

F. A certificate from the manufacturer stating that the installation of the equipment is satisfactory, that the unit has been satisfactorily tested, is ready for operation, and that the operating personnel have been suitably instructed in the operation, lubrication and care of the unit shall be submitted before start-up and acceptance by the Owner. The certificate shall indicate date and time instruction was given and names of operating personnel in attendance. This certification shall be submitted on a project-specific certification sheet, as approved by the Engineer.

G. See the Technical Specifications for additional requirements for furnishing the services of the manufacturer's field service technician.

H. For other equipment furnished, the Contractor, unless otherwise specified, shall furnish the services of accredited field services technicians of the manufacturer only when some evident malfunction or over-heating makes such services necessary in the opinion of the Engineer.

1.05 OPERATING AND MAINTENANCE DATA

A. Operating and maintenance data for each piece of equipment furnished shall be delivered directly to the Engineer for approval within 30 days of shop drawing approval. No payment shall be made for equipment installed or stored on-site until the Engineer has approved the adequacy and completeness of operating and maintenance data. Final approved copies of operating and maintenance data shall be delivered to the Engineer prior to scheduling the instruction period with the Owner.

1.06 EQUIPMENT DATA LIST

A. Obtain, prepare and submit a complete, detailed listing of equipment and motor data for all electrical items furnished under this Contract. This listing shall be submitted with the preliminary draft of Operations and Maintenance Data Manuals on Equipment Data Sheets.

1.07 SPARE PARTS

A. Spare parts for certain equipment to be provided are specified in the pertinent sections of the Specifications. The Contractor shall collect and store all spare parts in a manner approved by the manufacturer. In addition, the Contractor shall furnish to the Engineer an inventory listing all spare parts, the equipment they are associated with, the name and address of the supplier, and the delivered cost of each item. Copies of actual invoices for each item shall be furnished with the inventory to substantiate the delivered cost. The Contractor shall deliver the spare parts to the Engineer ten (10) days prior to facility start-up.

B. All spare parts shall be furnished in containers clearly identified in indelible markings as to contents. Each container shall be packed for prolonged storage.

1.08 INSTALLATION OF EQUIPMENT

A. Special care shall be taken to ensure proper alignment of all equipment, with particular attention to mechanical equipment such as pumps and electric drives. The units shall be carefully aligned on their foundations by qualified millwrights after their sole plates have been shimmed to true alignment at the

anchor bolts. The anchor bolts shall be set in place and the nuts tightened against the shims. After the foundation alignments have been approved by the manufacturer, the bedplates or wing feet of the equipment shall be securely bolted in place. The alignment of equipment shall be further checked after securing to the foundations, and after confirmation of all alignments, the sole plates shall be finally grouted in place. The Contractor shall be responsible for the exact alignment of equipment with associated piping and, under no circumstances, will "pipe springing" be allowed.

B. All wedges, shims, filling pieces, keys, packing, or other materials necessary to properly align, level and secure apparatus in place shall be furnished by the Contractor. All parts intended to be plumb or level must be proven exactly so. Any grinding necessary to bring parts to proper bearing after erection shall be done at the expense of the Contractor.

1.09 MAINTENANCE SCHEDULES

A. For all mechanical and electrical equipment furnished, the Contractor shall provide a list including the equipment name and the address and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained.

1.10 INSTALLATION LISTS

A. All manufacturers or equipment suppliers who propose to furnish equipment or products to be incorporated into the Work shall submit an installation list to the Engineer along with the required Shop Drawings.

B. The installation list shall include all installations (minimum of two) where identical equipment has been installed and has been in operation for a period of at least five (5) years.

1.11 PROVISIONS FOR CONTROL OF EROSION

A. Sufficient precautions shall be 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 that promote erosion.

B. The Contractor shall comply with the requirements of the EPA-NPDES general permit for stormwater discharges and the stormwater pollution prevention plan developed for the project.

1.12 HURRICANE PREPAREDNESS PLAN

A. Within 30 days of the date of Notice to Proceed, the Contractor shall submit to the Engineer and Owner a Hurricane Preparedness Plan. The Plan should outline the necessary measures that the Contractor proposes to perform at no additional cost to the Owner in case of a hurricane warning.

B. In the event of inclement weather, or whenever Engineer will direct; the Contractor shall carefully protect the Work and materials against damage or injury from the weather. If, in the opinion of Engineer, any portion of Work or materials, work areas properties shall have been 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 the Contractor.

C. For the duration of the project, all-weather emergency access shall be maintained. The access shall be able to withstand the weight of a fire truck.

1.13 CONSTRUCTION CONDITIONS

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

1.14 PUBLIC NUISANCE

A. The Contractor shall not create a public nuisance including, but not limited to, encroachment on adjacent lands, flooding of adjacent lands, or excessive noise.

B. All noise resulting from construction activities shall follow the latest Pinellas County Noise Ordinance. Sound levels shall not exceed 55 dBA 7 PM to 7 AM or 72 dBA 7 AM to 7 PM. This sound level shall be measured at the exterior of the exterior wall of the nearest residence. Levels at the equipment shall not exceed 85 dBA measured five (5) feet from the equipment at any time. Sound levels in excess of these values are sufficient cause to have the work suspended. Work stoppage by the Engineer or Owner for excessive noise shall <u>not</u> relieve the Contractor of completing the Work in accordance with the Contract Time, at no additional cost to the Owner.

C. No extra charge may be made for time lost due to work stoppage resulting from the creation of a public nuisance.

1.15 HAZARDOUS LOCATIONS

A. Contractor shall perform work in accordance with OSHA, state and local safety requirements. All the Contractor employees shall attend a safety training class provided by the Owner for the work within PRF property.

1.16 SUSPENSION OF WORK DUE TO WEATHER

A. During inclement weather, all work that could be damaged or rendered inferior by such weather conditions shall be suspended. The orders and decisions of the Engineer as to suspensions will be final and binding. The ability to issue such an order will not be interpreted as a requirement to do so. During suspension of the work for any cause, the work shall be suitably covered and protected so as to preserve it from injury by the weather or otherwise; and, if the Engineer will so direct, rubbish and surplus materials will be removed.

1.17 RELOCATIONS

A. 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 Construction Drawings. The cost of all such relocations shall be borne by the Contractor at no additional cost to the Owner.

1.18 SALVAGE

A. Any existing equipment or material including, but not limited to, valves, pipes, fittings, couplings, etc., which is removed or replaced as a result of construction under this project may be designated as necessary and delivered, to the Owner at a location directed by the Owner, at the Contractor's expense. Any material or equipment not considered salvage by the Owner shall become the property of the Contractor and shall be disposed of by the Contractor at no additional cost to the Owner.

B. The Contractor shall be responsible for the removal and proper disposal in accordance with all laws and regulations of all excess soil materials excavated from the site.

1.19 PERMITS

A. Upon notice of award, the Contractor shall immediately apply for all applicable permits, not previously obtained by the Owner, from the

appropriate governmental agency or agencies. No work shall commence until all applicable permits have been obtained and copies delivered to the Engineer. The costs for obtaining all permits shall be borne by the Contractor.

1.20 PUMPING

A. The Contractor with his own equipment shall do all pumping necessary to prevent flotation of any part of the structures during construction operations.

B. The Contractor shall, for the duration of the contract and with his own equipment, pump out water and wastewater that may seep or leak into the excavations or structures. Below grade galleries and other operating areas shall be kept dry at all times.

1.21 OWNER OCCUPANCY AND OPERATION OF COMPLETED FACILITIES

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

1.22 NOTIFICATION OF WORK ON EXISTING FACILITIES

A. Before commencing work on any of the existing structures or equipment, the Contractor shall notify the Owner/Engineer, in writing, at least 10 calendar days in advance of the date he proposed to commence such work.

1.23 NOTIFICATION TO RESIDENTS WITHIN THE PROJECT AREA

A. The Contractor shall notify all residents within the project area, with a printed door hanger notice indicating the following information about the proposed construction work and the Contractor performing the work: City seal or logo; the scheduled date for the start of construction; the type of construction; general sequence and scheduling of construction events; possibility of water service disruption and/or colored water due to construction efforts; Contractor's name, the Superintendent's name, Contractor address and telephone number; Contractor's company logo (optional); requirement for residents to remove landscaping and/or other private appurtenances which are in conflict with the proposed construction; and other language as appropriate to the scope of Contract work. Sample door hanger including proposed language shall be approved by the City prior to the start of construction. Notification shall be printed on brightly colored and durable card stock and shall be a minimum of 4-¼ by 11 inches in size. Notification (door hanger) shall be posted to residences and businesses directly affected by the Contractor's activities no later than seven (7) days prior to the start of construction activity. Directly affected by the Contractor's activities shall mean all Contractor operations including staging areas, equipment and material storage, principal access routes across private property, etc. Contractor cannot start without proper seven (7) day notice period to residents. Contractor is required to maintain sufficient staff to answer citizen inquiries during normal business hours and to maintain appropriate message recording equipment to receive citizen inquires after business hours.

1.24 WATER SERVICE CONNECTIONS

A. The Work requires that new services be installed to the lots shown on the drawings. This shall include a new service lateral from the new water main to the new meter box, installing a new, Owner-supplied meter in the new meter box and connecting the new meter to the existing service line from the property (i.e. connect to customer side of the meter). All connections to the customer's side of the meter shall be performed by a Florida Licensed Plumber.

B. After the new water main and street services are tested, disinfected and cleared by the Health Department/FDEP, the Contractor shall transfer each affected lot's service to the new water main. This shall include:

1. A new service lateral from the new water main to the existing or new meter box.

2. Installing a new meter box in the orientation as shown on the Drawings. It shall be noted that coring a hole into the (side of the) new meter box in order to facilitate or avoid using fittings is not considered acceptable. The Contractor shall install the new meter box in the orientation as shown on the Drawing and install necessary fittings on the service lateral to accommodate the orientation of the new meter box.

3. If the existing water meter has registered over a certain amount volume, the Owner will provide the Contractor with a new water meter to be installed in the new meter box. If the Owner does not provide a new water meter, then the Contractor shall remove the existing water meter and install the existing water meter in the new meter box. Piping in the meter box shall include all accessories necessary to connect the new meter to the service lateral and connecting the new meter to the existing service line from the property (i.e. connect to customer side of the meter). It shall be noted that coring a hole into the (side of the) new meter box in order to facilitate or avoid using fittings is not considered acceptable. The Contractor shall install the new/existing meter in the new meter box in the orientation as shown on the Drawings and install necessary fittings to connect the new meter to the customer's existing piping.

4. Remove old meter box and install a cap on the existing water service line at the property as shown on the Drawings.

5. Restoring water service to the affected building by placing the new service line into service.

C. All work conducted downstream of the meter and on private property shall be completed by a Florida licensed plumber hired by the Contractor and properly

registered to do work in the City. Work on private property shall not be completed by the Contractor's personnel.

D. Following connection of the lot to the new water service, the Contractor's plumber shall open a faucet or hose bib on the exterior of the home/building to flush system. Timing of this work shall be coordinated with the building/home owner and Owner's Representative.

E. Property owners and/or residents shall be notified at least 72 hours in advance of work being conducted on their property and turning off water service. Once the work begins on a private lot, work shall continue and be completed within four (4) hours. No property shall remain without water service for longer than four (4) hours. Trenches or holes shall not remain open overnight or over the weekend. The Contractor shall restore or repair property per the Owner's standard details and to equal or better than original condition.

F. All pipe, fittings and accessories shall be lead-free.

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

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SECTION 01050

FIELD ENGINEERING AND SURVEYING

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. The Contractor shall provide and pay for all field engineering and survey service required. Such work shall include survey work to establish in the field right of way lines, easement lines, base lines, bench marks (elevations), center lines, stationing, and grades; and to locate and lay out site improvements, structures, and controlling lines and levels required for the construction of the Work. Also included are such engineering services as are specified or required to execute the Contractor's construction methods. Engineers and Surveyor and Mappers shall be licensed professionals registered in the State of Florida.

B. The accuracy of any method of staking shall be the responsibility of the Contractor. All surveying for vertical and horizontal control shall be the responsibility of the Contractor.

C. The Contractor shall be responsible for the preservation of all stakes and marks. The Contractor shall not proceed with any work until he has established such points, marks, lines and elevations as may be necessary for the prosecution of the Work.

1.02 SURVEY REFERENCE POINTS

A. Existing horizontal and vertical control points for the project are those designated on the Drawings. The Contractor shall locate and protect control points prior to starting site work and shall preserve all permanent reference points during construction. In working near any permanent property corners or reference markers, the Contractor shall use care not to remove or disturb any such markers. In the event that markers must be removed or are disturbed due to the proximity of construction, the Contractor shall have them referenced and reset by a Registered Land Surveyor and Mapper.

1.03 PROJECT SURVEY REQUIREMENTS

A. The Contractor shall engage the services of a Florida Registered Land Surveyor and Mapper to establish all lines and grades on the Drawings necessary to fully construct the Work, and meet the survey requirements of this Section, in accordance with Chapter 5J-17 of the Florida Administrative Code.

1.04 RECORDS

A. The Contractor shall maintain a complete, accurate log of all control and survey work as construction progresses. Survey notes indicating the information and measurements used in establishing locations and grades shall be kept in notebooks and furnished each month to the Engineer with the Record Drawings.

B. The Contractor shall provide an As-Built Survey of all pipelines installed in the project, signed and sealed by a Florida Registered Surveyor and Mapper per Section 01720.

1.05 SUBMITTALS

A. Submit name and address of Surveyor and Mapper to the Engineer.

B. On request of the Engineer, submit documentation to verify accuracy of field engineering work.

PART 2 - PRODUCTS

A. The Registered Land Surveyor and Mapper shall establish and stake all pipeline right-of-way and easements adjacent to construction, at 100' intervals on tangents, 50' intervals on curves and at all changes in direction. The surveyor shall place lath and hub at such points with stations indicated. Tack in hub shall not be permitted.

B. The Registered Land Surveyor and Mapper shall utilize current right-of-way maps, plats and property deeds, all being of public record, in conjunction with existing monumentation, to establish the existing right-of-way lines and utility easement boundaries.

C. The Registered Land Surveyor and Mapper shall establish a temporary benchmark system in accordance with Chapter 5J-17 F.A.C. and shall provide a written list to the Contractor for his use.

D. The Registered Land Surveyor and Mapper shall provide as-built drawings of the entire project as required under Section 01720.

PART 3 - EXECUTION

(NOT USED)

END OF SECTION

SECTION 01070

ABBREVIATIONS AND SYMBOLS

PART 1 - GENERAL

A. Referenced Standards: Any reference to published specifications or standards of any organization or association shall comply with the requirements of the specification or standard which is current on the date of Advertisement for Bids. In case of a conflict between the referenced specifications or standards, the one having the more stringent requirements shall govern. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of the Owner, Contractor or Engineer, or any of their consultants, agents or employees from those set forth in the Contract Documents.

B. In case of conflict between the referenced specifications or standards and the Contract Documents, the Contract Documents shall govern.

C. Abbreviations:

AA	Aluminum Association
AASHTO	American Association of State Highway & Transportation Officials
AASHO	American Association of State Highway Officials (now AASHTO)
ABPA	Acoustical and Board Products Association
ACI	American Concrete Institute
ACOE	Army Corps of Engineers
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AI	The Asphalt Institute
AIEE	American Institute of Electrical Engineers (now IEEE)
AIMA	Acoustical and Insulating Materials Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standard Institute
API	American Petroleum Institute
APWA	American Public Works Association
AREA	American Railway Engineering Association
ASA	American Standards Association (now ANSI)
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers

ASSCBC	American Standard Safety Code for Building Construction
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWPB	American Wood Preservers Bureau
AWS	American Welding Society
AWWA	American Water Works Association
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard
E/A	Engineer and/or Architect
EPA	Environmental Protection Agency
F'C	Concrete Compressive Strength
FDEP	Florida Department of Environmental Protection
FDER	(now FDEP - formerly Florida Department of Environmental Regulation)
FDOT	Florida Department of Transportation
FDOT Specs	Spec Standard Specification for Road and Bridge Construction, Florida Department of Transportation, 2011
FS	Federal Standard
GPM	Gallons Per Minute
HP	Horsepower
ID	Inside Diameter
IEEE	Institute of Electrical and Electronic Engineers
IPCEA	Insulated Power Cable Engineers Association
LBR	Limerock Bearing Ratio
NBFU	National Board of Fire Underwriters
NBS	National Bureau of Standards
NEC	National Electrical Code
NECA	National Electrical Contractors' Association
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NPDES	National Pollution Discharge Elimination System
NPT	National Pipe Threads
NSF	National Science Foundation
OD	Outside Diameter
OSHA	U.S. Department of Labor, Occupational Safety and Health Association
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PS	United States Products Standards
PSIG	Pounds Per Square Inch Gauge
RPM	Revolutions Per Minute
SAE	Society of Automotive Engineers
SDI	Steel Decks Institute
SJI	Steel Joists Institute

SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SSPC	Structural Steel Painting Council
STA	Station (100 feet)
SWFWMD	Southwest Florida Water Management District
TDH	Total Dynamic Head
UL	Underwriter's Laboratories, Inc.
USACOE	United States Army Corps of Engineers
USASI or USAS	United States of America Standards Institute (Now ANSI)
USDA	United State Department of Agriculture
USEPA	United States Environmental Protection Agency

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SECTION 01090

REFERENCE STANDARDS

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

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

1.02 QUALITY ASSURANCE

A. Application: When a standard is specified by reference, comply with requirements and recommendations stated in latest version of that standard, except when requirements are modified by the Contract Documents or applicable codes establish stricter standards.

B. Publication Date: The publication in effect on the date of issue of Contract Documents, except when a specific publication date is specified.

1.03 ABBREVIATIONS, NAMES, AND ADDRESSES OF ORGANIZATIONS

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

AA	Aluminum Association 1400 Crystal Drive Suite 430 Arlington, VA 22202
AASHTO	American Association of State Highway and Transportation Officials 555 12th Street NW Suite 1000 Washington, DC 20004
ACI	American Concrete Institute 38800 Country Club Drive Farmington Hills, MI 48331
AI	Asphalt Institute 2696 Research Park Drive Lexington KY 40511
AISC	American Institute of Steel Construction 130 East Randolph

	Suite 2000 Chicago, IL 60601
AISI	American Iron and Steel Institute 25 Massachusetts Avenue, NW Suite 800 Washington DC 20001
ANSI	American National Standards Institute 1899 L Street, NW 11th Floor Washington, DC 20036
ASME	American Society of Mechanical Engineers Two Park Avenue New York, NY 10016-5990
ASTM	American Society for Testing and Materials 100 Barr Harbor Drive West Conshohocken, PA 19428
AWWA	American Water Works Association 6666 W. Quincy Avenue Denver, CO 80235
AWS	American Welding Society 8669 NW 36 Street Suite 130 Miami, FL 33166-6672
CRSI	Concrete Reinforcing Steel Institute 933 North Plum Grove Road Schaumburg, IL 60173-4758
FS	Federal Specification General Services Administration Specifications and Consumer Information Distribution Section (WFSIS) 470 L'enfant Plaza – Suite 8100 Washington, DC 20407
NEMA	National Electrical Manufacturers' Association 1300 North 17th Street Suite 900 Rosslyn, VA 22209
PCA	Portland Cement Association 200 Massachusetts Ave NW, Suite 200

	Washington, DC 20001
PCI	Prestressed Concrete Institute 8770 W Bryn Mawr Ave. Chicago, IL 60631
SSPC	Society for Protective Coatings 800 Trumbull Drive Pittsburgh, PA 15205
UL	Underwriters' Laboratories, Inc. 333 Pfingsten Road Northbrook, IL 60062

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

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SECTION 01200

MEETINGS AND CONFERENCES

PART 1 - GENERAL

1.01 PRE-CONSTRUCTION CONFERENCE

A. In accordance with the Contract Documents, prior to the commencement of Work, a mandatory preconstruction conference shall be held at a mutually agreed time at the Owner's facility. The Contractor shall be required to attend the preconstruction conference/meeting.

B. The purpose of the conference shall be to designate responsible personnel and establish a working relationship. Matters requiring coordination shall be discussed and procedures for handling such matters established. The agenda shall include as a minimum:

1. Contractor's Initial Construction Schedule

2. Procedures for Transmittal, Review and Distribution of Shop Drawings

3. Procedures for Submittal and Review of Monthly Pay Applications

4. Maintaining Record Drawings

5. Critical Work Sequencing and Construction Restrictions

6. Field Decisions and Change Orders

7. Field Office, Storage Areas and Security

8. Equipment and Material Deliveries

9. Safety Meetings and Program

10. Traffic Control Plan

11. Pre-construction Video

C. The Engineer will preside at the conference and will arrange for keeping the minutes and distributing them to all persons in attendance.

1.02 PROGRESS MEETINGS

A. The Engineer will schedule and conduct regular project meetings at least monthly and at other times as deemed necessary by the progress of the

Work. Monthly progress meetings and other meetings as deemed necessary by the Owner shall be considered mandatory meetings. Therefore, the Contractor shall be required to attend each meeting. The Contractor and/or Engineer may request attendance by representatives of material Supplier(s) and Subcontractor(s).

B. The Owner/Engineer will preside at the conference and will arrange for keeping the minutes and distributing them to all persons in attendance. The purpose of the meetings will include but not be limited to reviewing the progress of the Work, maintaining coordination of efforts, discussing changes in scheduling and resolving problems which may develop; claims review; and future scheduling.

1.03 TRAFFIC CONTROL MEETINGS

A. The Owner will schedule and conduct meetings as required with the Contractor to attend to matters of traffic control and associated public convenience and safety during the course of the Work. The Contractor shall be required to attend each meeting.

B. The Engineer will preside at the meetings and provide for keeping the minutes and distribution of minutes to the Owner, the Contractor and others. The purpose of the meetings shall be for the Contractor presentation of traffic control plans and any revisions required during performance of the Work and to discuss related matters.

1.04 PUBLIC INFORMATION MEETINGS

A. The Contractor shall designate a public information specialist for the Project who shall attend and actively participate in periodic public information meetings that may be scheduled by the Owner.

PART 2 - PRODUCT

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01 CONSTRUCTION SCHEDULE

A. Within 7 days after the award of the contract, the Contractor shall submit to Engineer for review a schedule of the proposed construction operations. The construction schedule shall indicate the sequence of the Work, the time of starting and completion of each part, and the installation date for each major item of equipment, and the time for making connections to existing piping, structures, or facilities.

B. At least every 30 days the schedule shall be revised as necessary to reflect changes in the progress of the Work.

C. Owner may require Contractor to add to his equipment, or construction forces, as well as increase the working hours, if operations fall behind schedule at any time during the construction period.

1.02 PRELIMINARY SUBMITTALS

A. Within 10 days after the Notice of Award, but prior to the pre-construction conference, the Contractor shall submit the following items to the Owner's construction manager for review by the ENGINEER.

1. A preliminary schedule of Shop Drawing submittals.

2. A preliminary list of all permits and licenses the Contractor shall obtain showing the permitting agency, the type of permit, the expected date of application for the permit, required date for receipt of the permit, and permit fee.

1.03 PROGRESS REPORTS

A. A progress report shall be furnished to Engineer with each application for progress payment. If the Work falls behind schedule, Contractor shall submit additional progress reports at such intervals as Engineer may request.

B. Each progress report shall include sufficient narrative to describe current and anticipated delaying factors, their effect on the construction schedule, and proposed corrective actions. Any Work reported complete, but which is not readily apparent to Engineer, must be substantiated with satisfactory evidence.

C. Each progress report shall also include three (3) prints of the accepted graphic schedule marked to indicate actual progress.

1.04 SCHEDULE OF VALUES

A. The Contractor shall submit to the Engineer for review a Schedule of Values after review of the tentative schedule and before submission of the first application for payment. The Schedule of Values, showing the value of each kind of work, shall be acceptable to Engineer before any application for payment is prepared.

B. The sum of the items listed in the Schedule of Values shall equal the Contract Price. Such items as Bond premium, temporary construction facilities, may be listed separately in the Schedule of Values, provided the amounts can be substantiated. Overhead and profit shall not be listed as separate items.

C. In addition to those items listed in Paragraph B, items that shall also be included on the Schedule of Values include O & M manuals (including electronic format), As-Builts, Start-Up and Training, and any other individualized component that the Contractor would like to separately itemize for payment.

D. An unbalanced Schedule of Values providing for overpayment of Contractor on items of Work that would be performed first will not be accepted. The Schedule of Values shall be revised and resubmitted until acceptable to Engineer. Final acceptance by Engineer will indicate only consent to the Schedule of Values as a basis for preparation of applications for progress payments and shall not constitute an agreement as to the value of each indicated item.

1.05 SCHEDULE OF PAYMENTS

A. Within thirty (30) days after award of contract, Contractor shall furnish to Engineer a schedule of estimated monthly payments. The schedule shall be revised and resubmitted each time an application for payment varies more than 10 percent from the estimated payment schedule.

1.06 SHOP DRAWINGS AND ENGINEERING DATA

A. Shop Drawings and Engineering Data shall be submitted in accordance with specification 01340.

1.07 EXCAVATION PLAN

A. The Contractor shall prepare and submit an excavation plan prior to beginning the Work. The plan shall indicate the general plan for performing excavation, ground dewatering, sheeting, shoring and bracing, haul routes for the disposal of surface materials and for transporting excess excavation materials to either (1) a disposal site chosen by the Contractor when excess excavated materials are designated to become the property of the Contractor or (2) to the storage area designated by the Contract Documents when the excess excavated materials are designated to remain the property of the Owner. The excavation plan is for the Owner's information only. Submission and acceptance by the Owner of this information shall not relieve the Contractor from constructing the Work in a continuous safe manner at all times and in accordance with the Contract Documents.

1.08 SURVEY DATA

A. All field books, notes, and other data developed or obtained by the Contractor in performing the surveys required by the Work shall be available to the Owner or Engineer for examination throughout the construction period. All such data shall be submitted to the Owner with all other Project Record Documents required for Final Completion of the Work in accordance with Section 01720.

B. Survey data shall be submitted in digital electronic format as specified in Section 01720.

1.09 CONTRACTOR'S DAILY REPORTS

A. The Contractor shall furnish the Owner's construction manager with one (1) copy of each of the Contractor's daily report. These reports shall include, at a minimum, the following:

1. The number of craftsmen and hours worked by each Subcontractor

2. The number and hours worked by each trade

3. The number and hours worked of each type of equipment

4. A description of work activities performed

5. A description of any material or equipment deliveries

6. Description of obstructions encountered

7. Temperature and weather conditions

8. Testing and start-ups performed

9. Training conducted

10. Water quality monitoring activities and turbidity readings

B. The daily reports shall be submitted to the Owner's construction manager at weekly intervals. The format shall be acceptable to the Engineer.

C. Information provided on the daily report shall not constitute NOTICE of delay or any other Notice required by the Contract Documents. Notice shall be as required therein.

1.10 LAYOUT DATA

A. Contractor shall keep neat and legible notes of measurements and calculations made by him in connection with the layout of the Work. Copies of such data shall be furnished to the Engineer for use in checking.

B. Contractor's layout as provided under Lines and Grades. All such data considered of value to Owner will be transmitted to Owner by Engineer with other records upon completion of the Work.

PART 2 - PRODUCT
(NOT USED)

PART 3 - EXECUTION
(NOT USED)

END OF SECTION

SECTION 01310

CONSTRUCTION SCHEDULES

PART 1 - GENERAL

1.01 GENERAL

A. Construction under this contract must be coordinated to assure that construction is completed within the time allowed by the Contract Documents. The Contractor will also coordinate his activities with the other contractors to allow orderly and timely completion of all the work.

B. All construction schedules shall be of the critical path method, bar chart type, and shall be prepared using MICROSOFT PROJECT, SURETRACK, PRIMAVERA P3, or equal.

1.02 CONSTRUCTION SCHEDULING GENERAL PROVISIONS

A. Within 7 calendar days after the award of the contract, the Contractor shall prepare and submit to the Engineer a preliminary construction progress schedule. The schedule shall contain a sufficient number of tasks such that no single task has a value that exceeds 1.5% of the total Contract Amount. Partial payments will not be approved until an acceptable construction progress schedule has been approved by the Engineer.

B. The schedule shall be updated monthly reflecting the approved baseline schedule and the Contractor’s progress on each activity. No progress payment will be approved until the updated schedule is submitted and approved by the Engineer.

C. Night work may be established by the Contractor as regular procedure only with the prior written permission of the Owner. Such permission, however, may be revoked at any time by the Owner if the Contractor fails to maintain adequate equipment and supervision for the proper execution and control of the work at night.

D. The Contractor shall designate an authorized representative of his firm who shall be responsible for development and maintenance of the schedule and of progress and payment reports. This representative of the Contractor shall have direct project control and complete authority to act on behalf of the Contractor in fulfilling the commitments of the Contractor's schedule.

1.03 PROGRESS OF THE WORK

A. The work shall be executed with such progress as may be required to prevent any delay to the general completion of the work. The work shall be

executed at such times and in or on such parts of the project, and with such forces, materials and equipment to assure completion of the work in the time established by the Contract.

B. If the Contractor for his convenience and at his own expense, should desire to carry on his work at night or outside regular hours, he shall submit written notice to the Engineer and he shall allow ample time for satisfactory arrangements to be made for inspecting the work in progress. The Contractor shall reimburse the Owner for extra inspection required for work outside regular hours. The Contractor shall light the different parts of the project as required to comply with all applicable Federal and State regulations and with all applicable requirements of the municipality in which the work is being done.

PART 2 - PROGRESS SCHEDULE SUBMITTALS

2.01 GENERAL REQUIREMENTS

A. As required within the General Conditions, the Contractor shall submit a critical path progress schedule as described herein. The schedule shall take into considerations all work phasing and restrictions as specified elsewhere in the Contract Documents.

B. The critical path progress schedule requirement will consist of a detailed schedule, monthly status reports (Monthly Reports), a start-up schedule, and revisions to the schedules and analyses as described. The planning, scheduling, management and execution of the work are the sole responsibilities of the Contractor. The progress schedule shall allow Engineer to review Contractor's planning, scheduling, management and execution of the work; to assist Engineer in evaluating work progress and make progress payments; to allow other contractors to cooperate and coordinate their activities with those of the Contractor; and to provide Owner with information about "construction schedule" and "cumulative outlay schedule."

C. Engineer's review of the schedule submittals shall not relieve Contractor from responsibility for any deviations from the Contract Documents unless Contractor has in writing called Engineer's attention to such deviations at the time of submission and Engineer has given written concurrence to the specific deviations, nor shall any concurrence by Engineer relieve Contractor from responsibility for errors and omissions in the submittals.

D. Float or slack time is not for the exclusive benefit of the Owner, the Engineer or the Contractor. Extensions of time for performance, as specified in the General Conditions, will be granted only to the extent that equitable time adjustments for the network activity, or activities affected, exceed the total float or slack time along the affected network paths, as shown in the precedence diagram and computer printout report in effect at the instant of

either (a) a notice to proceed with a change, or (b) a notice of suspension of work or possession, or (c) detection of a subsequently acknowledged differing site condition, or (d) occurrence of cause for an excusable delay. Further, use of float time in the schedule, or the allocation of float time to activities by means of special logic restraints or imposed dates, shall be shared to the benefit of Owner, Engineer, Contractor, and his subcontractors and suppliers in proportion of their scope of responsibilities. Excessive use of float time to the detriment of succeeding activities may be cause for denying an extension of time if it can be demonstrated that the float along the network paths affected at the instant of the delaying condition would have been larger than the delay had it not been for the excessive and unreasonable float usage in violation of the sharing concept required by this Specification.

E. Engineer's review of the schedule submittals shall be only for conformance with the information given in the Contract Documents and shall not extend to the means, methods, sequences and techniques or procedures of construction or to safety precautions or programs incident thereto. Engineer's review of the schedule submittals will be predicated on a Contractor's stamp of approval signed off by Contractor. Contractor's stamp of approval on any schedule submittals shall constitute a representation to Owner and Engineer that Contractor, has either determined or verified all data on the submittal, or assumes full responsibility for doing so, and that Contractor and his subcontractors and suppliers have reviewed and coordinated the sequences shown in the submittal with the requirements of the work under the Contract Documents.

2.02 SUPPLEMENTARY REQUIREMENTS

A. Graphic network diagrams shall be on a time-scaled precedence network format. The graphic network diagram shall include the following format:

1. Description of each activity, or restraint, shall be brief but convey the scope of work described.

2. Activities shall identify all items of work that must be accomplished to achieve substantial completion, or any interim substantial completion, such as the major disciplines of work; items pertaining to the approval of regulatory agencies; contractor's time required for submittals, fabrication and deliveries; the time required by Engineer to review all submittals as set forth in the Contract Documents; items of work required of Owner to support pre-operational and start-up testing; time required for the relocation of utilities. Activities shall also identify interface milestones with the work of other contract work under separate contracts with Owner.

3. Any activities not shown on the graphic network diagram shall be considered to have no effect on the Contractor's ability to achieve

substantial completion, or interim substantial completion, within the Contract Time. Any delays to activities that do not appear in the concurred detailed schedule shall give rise only to non-prejudicial delays. Attempts to impose after-the-fact logic constraints where none existed previously to justify time extensions will not be permitted.

4. Activity durations shall be in whole working days.

5. Graphic diagrams shall be time-scaled and sequenced by work areas. The Diagram of Activities shall show numerical values for total float and be shown on their early schedules. The diagram shall be neat and legible and submitted on sheets no larger than 24 inches by 36 inches on a medium suitable for reproduction.

B. Printout reports shall contain the following data for each activity or restraint:

1. Activity identification, activity description, activity duration, activity man-days, computed or specified early start date, computed early finish date, computed late start date, computed or specified late finish date, and total float and free float.

2. Five separate reports shall be provided, including all activities and restraints, and shall be submitted monthly as follows:

a. Activity, sort by early start dates in order of ascending numbers.
b. Activity, sort by department.
c. Float report, in order of ascending total float values.
d. Successor/predecessor report.

PART 3 - EXECUTION

3.01 DETAILED SCHEDULE SUBMITTAL

A. Submittal shall include a time-scaled graphic diagram showing all Contract activities, computer printout reports, and a supporting narrative. The initial Detailed Schedule submittal shall be delivered within 10 calendar days after the Notice to Proceed, and shall use the Notice to Proceed as the “data date”. Upon receipt of Engineer's comments, Contractor shall meet with Engineer and discuss an appraisal and evaluation of the proposed work plan. Necessary revisions resulting from this review shall be made by Contractor and the detailed schedule resubmitted within 15 calendar days after the meeting. The re-submittal, if agreed to by the Owner, and unless subsequently changed with the concurrence of or at the direction of Owner, shall be the work plan to be used by the Contractor for planning, scheduling, managing and executing the work. If Contractor fails to provide an acceptable Detailed Schedule submittal, he will be deemed not to have provided a basis

upon which progress may be evaluated, which will further constitute reasons for refusing to recommend payment.

B. The graphic diagram shall be formatted in accordance with Article 2.02(A) above. The diagram shall include (1) all detailed activities grouped by major areas of work. The critical path activities shall be identified, including critical paths for interim dates, if applicable, by clearly highlighting the path on the graphics diagram.

C. This submittal shall include five copies of the graphic diagram, the printout reports and the narrative, in accordance with Article 2.02 of these scheduling requirements.

D. The narrative shall include sufficient data to explain the basis of Contractor's determination of durations, describe the contract conditions and restraints plugged into the schedule, and provide a "what-if" analysis pertaining to potential problems and practical steps to mitigate them. Should Engineer require additional data, this information shall be supplied by Contractor within ten calendar days.

3.02 MONTHLY STATUS REPORTS

A. Beginning with the first month, and every month thereafter, Contractor shall submit to Engineer, with each request for payment, a Monthly Status Report (based on the Detailed Schedule) with data as of the last day of the pay period. The monthly Status Report shall include a revised copy of the currently accepted graphic diagram, computer printouts and a narrative. The Monthly Status Report will be reviewed by the Engineer. The Contractor will address the Engineer's comments in the subsequent Monthly Status Report. If Contractor fails to provide acceptable Monthly Status Reports, he will be deemed not to have provided a basis upon which progress may be evaluated, which will be reason for refusing to recommend progress payments.

B. The revised diagram shall show, for the currently accepted detailed diagram, percentages of completion for all activities, actual start and finish dates, and remaining durations, as appropriate. Activities not previously included in the currently accepted detailed schedule shall be added, except that contractual dates will not be changed except by Change Order. Review of a revised diagram by the Engineer will not be construed to constitute concurrence with the time frames, duration, or sequencing for such added activities; instead the corresponding data as ultimately incorporated into an appropriate change order shall govern.

C. The narrative shall include the information shown in the following outline in a narrative form:

1. Construction progress (refer to activity number in the Detailed Schedule) including:

    a. Activities completed this reporting period;
    b. Activities in progress this reporting period;
    c. Activities scheduled to commence next reporting period.

2. Description of problem areas

3. Current and anticipated delays

    a. Cause of the delay;
    b. Corrective action and schedule adjustments to correct the delay;
    c. Impact of the delay on other activities, on milestones, and on completion dates.

4. Changes in construction sequence

5. Pending items and status thereof

    a. Permits
    b. Change Orders
    c. Time extensions
    d. Other

6. Contract completion date status

    a. Ahead of schedule and number of days
    b. Behind schedule and number of days

3.03 REVISIONS

A. All revised Detailed Schedule submittals shall be in the same form and detail as the initial submittal and shall be accompanied by an explanation of the reasons for such revisions, all of which shall be subject to review by Engineer. The revision shall incorporate all previously made changes to reflect current as-built conditions. Minor changes to the submittal may be reviewed at monthly meetings. Changes to activities having adequate float shall be considered a minor change.

B. A revised detailed work plan submittal shall be submitted for review, when required by Engineer, for one of the following reasons:

1. Owner or Engineer directs a change that affects the date(s) specified in the Agreement or alters the length of a critical path.

2. Contractor elects to change any sequence of activities so as to affect a critical path of the currently accepted detailed schedule documents.

C. If, prior to agreement on an equitable adjustment to the Contract Time, Engineer requires revisions to the Detailed Schedule in order to evaluate planned progress, Contractor shall provide an interim revised submittal for review with change effect(s) incorporated as directed. Approved interim revisions to the documents will be incorporated during the first subsequent Monthly Status Report.

3.04 START-UP SCHEDULE SUBMITTALS

A. At least 90 calendar days prior to the date of Substantial Completion, Contractor shall submit a time-scaled (days after notice to proceed) graphic diagram detailing the work to take place in the period between 60 days prior to Substantial Completion, together with a supporting narrative. Engineer shall have 10 calendar days after receipt of the submittal to respond. Upon receipt of Engineer's comments, Contractor shall make the necessary revisions and submit the revised schedule within ten calendar days. If Contractor fails to provide acceptable Start-up Schedule Submittals, he will be deemed not to have provided a basis upon which progress may be evaluated, which will be reason for refusing to recommend payment.

B. The Start-up Schedule may not be combined with the Detailed Schedule. The Start-up Schedule is intended to show much greater detail than the Detailed Schedule for start-up activities. Typical information required includes, but is not limited to, the timing of vendor representatives, pre-op testing, individual equipment start-ups, Owner's training, and performance certification testing.

C. The graphic diagram shall use the currently accepted Detailed Schedule for those activities completed ahead of the last 60 calendar days prior to Substantial Completion, and detailed activities for the remaining 60-day period within the time frames outlined in the currently accepted Detailed Schedule.

D. Contractor will be required to continue the requirement for monthly reports, as outlined in Articles 3.03 and 3.04 above. In preparing these reports, Contractor must assure that the Detailed Schedule is consistent with the progress noted in the Start-up Schedule.

E. In addition, Contractor will be required to submit a revised copy of the start-up graphic diagram on a monthly basis with a start-up narrative. This revised diagram shall highlight percentages of completion, actual start and finish dates, and remaining durations as applicable. Activities not previously included in the accepted detailed work plan shall be added in these submittals, except that contractual dates shall not be changed except by Change Order. Reviews of these submittals by Engineer will not be

construed to constitute concurrence with the time frames, durations or sequence of work for each added activity.

3.05 CONSTRUCTION PERIOD

A. Whenever it becomes apparent from the current monthly progress evaluation and updated schedule data that any milestone and/or Contract completion date will not be met, the Contractor shall take appropriate action to bring the work back on schedule. Actions could include:

1. Increase construction manpower in such quantities and crafts as to substantially eliminate the backlog of work;

2. Increase the number of working hours per shift, shifts per work day, work days per week, or the amount of construction equipment, or any combination of the foregoing sufficient to substantially eliminate the backlog of work; and

3. Reschedule work items to achieve concurrency of accomplishment.

B. The addition of equipment or construction forces, increasing the working hours or any other method, manner, or procedure to return to the current Detailed Schedule shall be at the Contractor's own cost and shall not be considered justification for a Change Order or treated as an acceleration order.

END SECTION

SECTION 01340

SHOP DRAWINGS, PRODUCT DATA, WORKING DRAWINGS AND SAMPLES

PART 1 - GENERAL

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 Drawings 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 review 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 review.

C. See Shop Drawing Schedule requirements in Subparagraph 1.07 CONTRACTOR'S RESPONSIBILITY.

1.03 PRODUCT DATA

A. 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 manufacturers 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.

1.04 WORKING DRAWINGS

A. When used in the Contract Documents, the term "working drawings" shall be considered to mean the Contractor's Drawings for temporary structures such as temporary bulkheads, support of open cut excavation, support of utilities, ground water control systems, forming and falsework; 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 will have no responsibility therefore.

1.05 SAMPLES

A. The Contractor shall furnish, for review of the Engineer, samples required by the Contract Documents or requested by the Engineer. Samples shall be delivered to the Engineer as specified or directed and in quantities and sizes as specified. A minimum of two samples of each item shall be submitted unless otherwise specified. The Contractor shall prepay all shipping charges on samples. Materials or equipment for which samples are required shall not be used in work until reviewed by the Engineer.

B. Samples specified in individual sections, include, but are not necessarily limited to, physical examples of the work such as sections of manufactured or fabricated work, small cuts or containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effect, graphic symbols, and units of work to be used by the Engineer or Owner for independent inspection and testing, as applicable to the Work.

C. The Contractor shall prepare a transmittal letter for each shipment of samples. He shall enclose a copy of this letter with the shipment and send a copy of this letter to the Engineer. Review of a sample shall be only for the

characteristics or use named in such review and shall not be construed to change or modify any Contract requirements.

1.06 SUBMITTAL REQUIREMENTS

A. The Contractor shall review, approve, and submit, with reasonable promptness and in such sequence, 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 eight (8) copies of descriptive or product data submittals to complement shop drawings to the Engineer. The Engineer will review the submittal and return to the Contractor two (2) marked-up copies of the shop drawings with the appropriate review comments.

C. 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, facility or system.

4. Name of contractor, subcontractor, and manufacturer submitting drawing.

5. Clear identification of contents, location of the work, and the sheet numbers where the product is found in the contract drawings.

6. Contractor Certification Statement.

7. Submittal Identification Number.

8. Contract Drawing Number Reference.

D. 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 his letter of transmittal and on the shop drawings along with notification of his 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 he shall not be relieved of the responsibility 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.

E. 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.

F. For all mechanical and electrical equipment furnished, the Contractor shall provide a list including the equipment name, and address and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained. In addition, a maintenance and lubrication schedule for each piece of equipment shall be submitted as specified in Section 01730.

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 prepared by or for him 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 bound 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 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, "Rejected. Revise as indicated and resubmit". Before starting this work all revisions must be corrected by the Contractor. After resubmittal they will be reviewed and returned to him by the Engineer. If returned marked, "No exceptions noted" or "Exceptions 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 twenty-one (21) calendar days for review from the time the Engineer receives them.

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 review by the Engineer of the necessary shop drawings.

H. All shop drawings, product data, working drawings and samples submitted by subcontractors for review 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 subcontractor's 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.

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 Drawings 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 (1.07H), 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 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:

1. "NO EXCEPTIONS NOTED" is assigned when there are no notations or comments on the submittal. When returned under this code the Contractor may release the equipment and/or material for manufacture.

2. "EXCEPTIONS 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.

3. "EXCEPTIONS AS NOTED/CONFIRM." This combination of codes is assigned when a confirmation of the notations and comments is required by the Contractor. The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product. This confirmation is to address the omissions and/or nonconforming items

that were noted. Only the items to be "confirmed" need to be resubmitted.

4. "EXCEPTIONS AS NOTED/RESUBMIT." This combination of codes is assigned when a resubmittal is required by the Contractor. The Contractor may release a portion of the equipment or material for manufacture; however, all notations and comments must be incorporated into the final submittal. This resubmittal is to address the omissions and/or nonconforming items that were noted.

5. "REJECTED. REVISE AS INDICATED AND RESUBMIT." This combination of codes is assigned when the submittal is in noncompliance with the Contract Documents and must be corrected and the entire package resubmitted. This code 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.

6. "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 Engineer at least seven (7) working days prior to release for manufacture.

G. The Engineer will review each original submittal and the first re-submittal of Shop Drawings, product data and samples. Further reviews of subsequent re-submittals shall be charged to the Contractor at a rate of $150.00 per hour.

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. The Engineer may at his option provide a list or mark the submittal directing the Contractor to the areas that are incomplete.

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

END OF SECTION

SECTION 01380

CONSTRUCTION PHOTOGRAPHS

PART 1 - GENERAL

1.01 REQUIREMENTS

A. The Contractor shall employ a competent photographer to take pre and post construction record photographs. All photos shall be taken in a manner with minimum distortion and high resolution and sharpness.

1.02 PHOTOGRAPHY REQUIRED

A. Pre-construction photographs shall be taken in strict conformance with this Section and shall be furnished to the Owner and Engineer prior to any excavation work.

B. Pre and post construction photographs shall be taken no sooner than 30 days prior to work being performed and no later than two (2) weeks prior to work being performed to include the following:

1. All Right-of-ways areas;
2. All asphalt paved areas;
3. All concrete driveways and sidewalks;

C. Digital Photos:

1. All photographs are to be provided with a description index of the images with dates and be color digital. Photographs shall be compiled on an online portal such as OneDrive, SharePoint, or other similar software.
2. Filenames of photos on private property photos shall be named with the street address of the private property.
3. All digital photos shall include the date and time on the actual image.
4. Resolution: Color, minimum 8.0 megapixels, 3264 x 2448
5. File Format: JPG.

D. The Owner and Engineer reserves the right to request additional photos be taken upon review of the photos submitted by the Contractor.

PART 2 - PRODUCTS –
(NOT USED)

PART 3 - EXECUTION

(NOT USED)

END OF SECTION

SECTION 01385

COLOR AUDIO-VIDEO CONSTRUCTION RECORDS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope

1. The Contractor shall prepare color audio/video files on an online portal such as OneDrive, SharePoint, or other similar software of all work areas within 21 days of the Notice to Proceed.

B. Requirements Included

1. Prior to commencing work, the Contractor shall have a continuous color audio/video recording taken along the entire length of the Project including all affected project areas. Streets, easements, rights-of way, lots or construction sites within the Project must be recorded to serve as a record of pre-construction conditions. The recordings and video log will be submitted to the Owner and the Engineer. The Engineer will designate those areas, if any, to be omitted from or added to the audio-visual coverage. All audio/video files and written records will become property of the Owner.

C. Scheduling

1. No construction shall begin prior to review and approval of the audio/video files covering the Project construction area(s) by the Engineer. The Engineer and Owner will have the authority to reject all or any portion of video not conforming to specifications and order that it be redone at no additional charge. The Contractor shall reschedule unacceptable coverage within seven days after being notified. Audio/video recordings shall not be made more than 21 days after Notice to Proceed.

D. Videographer Qualifications

1. The Contractor shall engage the services of a professional videographer known to be skilled and regularly engaged in the business of preconstruction color audio-video documentation. The videographer, through the Contractor, shall furnish to the Engineer a list of all equipment to be used for the audio-video recording, i.e., manufacturer’s name, model number, specifications and other pertinent information.

2. Additional information to be furnished by the videographer is the names and addresses of two references that the videographer has performed color audio-video recording on projects of a similar nature within the last 12 months. Engineer's approval of the selected videographer is required prior to taking first audio-video.

E. Equipment

1. The Contractor shall furnish all equipment, accessories, materials and labor to perform this service. The total audio-video system shall reproduce bright, sharp, clear pictures with accurate colors and shall be free from distortion, tearing, rolls or any other form of imperfection. The audio portion of the recording shall reproduce the commentary of the camera operator with proper volume, clarity and be free from distortion and interruptions. In some instances, audio-video coverage may be required in areas not accessible by conventional wheeled vehicles. Such coverage shall be obtained by walking. The color video camera used in the recording shall be of Industrial Grade and shall have, at a minimum, EIA Standard NTSC type color - 1.0V 75 OHMS. Video output from camera shall be capable of horizontal resolution of 350 lines at center and utilize a minimum of 8:1 zoom with a 2/3 Newvicon tube or CCD pick-up element for optimum color imagery plus minimum lag through of one foot candle. The recording shall be made with Industrial Grade recorder. The recordings shall be high resolution, extended still frame capable, in color.

F. Recorded Information, Audio

1. Each video shall begin with the current date, project name and be followed by the general location, i.e., viewing side and direction of progress. Accompanying the video recording of each video shall be a corresponding and simultaneously recorded audio recording. This audio recording, exclusively containing the commentary of the camera operator or aide, shall assist in viewer orientation and in any needed identification, differentiation, clarification, or objective description of the features being shown in the video portion of the recording. The audio recording shall also be free from any conversations.

G. Recorded Information, Video

1. All video recordings must continuously display transparent digital information to include the date and time of recording. The date information shall contain the month, day and year. The time information shall contain the hour, minutes and seconds. Additional information shall be displayed periodically. Such information shall include, but not be limited to, project name, contract number, direction of travel and the viewing side. This transparent information shall

appear on the extreme upper left hand third of the screen. Camera pan, tilt, zoom-in and zoom-out rates shall be sufficiently controlled such that recorded objects will be clearly viewed during video playback. In addition, all other camera and recording system controls, such as lens focus and aperture, video level, pedestal, chrome, white balance, and electrical focus shall be properly controlled or adjusted to maximize picture quality. The construction documentation shall be recorded in SP mode.

H. Viewer Orientation

1. The audio and video portions of the recording shall maintain viewer orientation. To this end, overall establishing views of all visible house and business addresses shall be utilized. In areas where the proposed construction location will not be readily apparent to the video viewer, highly visible yellow flags shall be placed, by the Contractor, in such a fashion as to clearly indicate the proposed centerline of construction. When conventional wheeled vehicles are used as conveyances for the recording system, the vertical distance between the camera lens and the ground shall not exceed 10 feet. The camera shall be firmly mounted such that transport of the camera during the recording process will not cause an unsteady picture. Houses and buildings shall be identified visually by house number, when visible, in such a manner that structures of the proposed system can be located by reference. In all instances, however, location shall be identified by audio or visual means at intervals not-to-exceed 100 linear feet in the general direction of travel.

I. Lighting

1. All recording shall be done during time of good visibility. No recording shall be done during precipitation, mist or fog. The recording shall only be done when sufficient sunlight is present to properly illuminate the subjects of recording and to produce bright, sharp video recordings of those subjects.

J. Speed of Travel

1. The average rate of travel during a particular segment of coverage shall be directly proportional to the number, size and value of the surface features within that construction areas zone of influence. The rate of speed in the general direction of travel of the vehicle used during recording shall not exceed 44 feet per minute.

K. Video Log/Index

1. All video shall be permanently labeled and shall be properly identified by video number and project title. Each video shall have a digital log of that video's contents. The log shall describe the various chapters of coverage contained on the video in terms of the names of the streets or location of easements, coverage beginning and end, directions of coverage, video unit counter numbers, engineering survey or coordinate values (if reasonably available) and the date. This log shall correspond directly to the information displayed on the title screen of the video as described below.

2. Each video shall contain a title screen that clearly describes the contents of each chapter on the video. The chapters shall be divided to allow the Engineer the ability to locate a particular area of the project and shall correspond directly to the digital video log.

L. Area of Coverage

1. Video coverage shall include all surface features located within the zone of influence of construction supported by appropriate audio coverage. Such coverage shall include, but not be limited to, existing driveways, sidewalks, curbs, pavements, drainage system features, mailboxes, landscaping, culverts, fences, signs, Contractor staging areas, adjacent structures, etc., within the area covered by the project. Of particular concern shall be the existence of any faults, fractures, or defects. Video coverage shall be limited to one side of the site, street, easement or right-of-way at any one time.

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

END OF SECTION

SECTION 01410

TESTING AND TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. The Contractor shall employ and pay for the services of an Owner approved independent testing laboratory to perform the geotechnical testing (soil and roadway materials density testing and concrete testing) specifically indicated on the Contract Documents or specified in the Specifications. The Owner may at any other time elect to have materials and equipment tested for conformity with the Contract Documents. The Contractor shall pay for all testing.

1. Contractor shall cooperate with the laboratory to facilitate the execution of its required services.

2. Employment of the laboratory shall in no way relieve Contractor's obligations to perform the Work of the Contract.

B. Contractor shall perform and pay for all other testing required in the specifications.

1.02 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY

A. Laboratory is not authorized to:

1. Release, revoke, alter or enlarge on requirements of Contract Documents.

2. Approve or accept any portion of the Work.

3. Perform any duties of the Contractor.

1.03 CONTRACTOR'S RESPONSIBILITIES

A. Cooperate with laboratory personnel; provide access to Work and to Manufacturer's operations.

B. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.

C. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other materials mixes that require control by the testing laboratory.

D. Materials and equipment used in the performance of work under this Contract are subject to inspection and testing at the point of manufacture or fabrication. Standard specifications for quality and workmanship are indicated in the Contract Documents. The Engineer may require the Contractor to provide statements or certificates from the manufacturers and fabricators that the materials and equipment provided by them are manufactured or fabricated in full accordance with the standard specifications for quality and workmanship indicated in the Contract Documents. All costs of this testing and providing statements and certificates shall be a subsidiary obligation of the Contractor, and no extra charge to the Owner shall be allowed on account of such testing and certification.

E. Furnish incidental labor and facilities:

1. To provide access to work to be tested.

2. To obtain and handle samples at the Project site or at the source of the product to be tested.

3. To facilitate inspections and tests.

4. For storage and curing of test samples.

F. Notify laboratory sufficiently in advance (minimum 48 hours) of operations to allow for laboratory assignment of personnel and scheduling of tests.

G. The Owner and Engineer reserve the right to require additional tests.

H. The Lab technician shall notify the Contractor, the Owner's representative and the Engineer upon failing results. Work shall not continue in a given area until passing results are obtained.

I. The Owner and the Engineer shall be provided with copies of all test reports.

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES

PART 1 - GENERAL

1.01 SANITARY FACILITIES

A. Contractor shall furnish temporary separate male and female sanitary facilities at the site, as provided herein, for the needs of all construction workers and others performing work or furnishing services on the Project.

B. Sanitary facilities shall be of reasonable capacity, properly maintained throughout the construction period, and obscured from public view to the greatest practical extent. If toilets of the chemically treated type are used, at least one toilet will be furnished for each 20 persons. Contractor shall enforce the use of such sanitary facilities by all personnel at the site.

1.02 MAINTENANCE OF TRAFFIC

A. Contractor shall conduct his work to interfere as little as possible with public travel, whether vehicular or pedestrian. Whenever it is necessary to cross, obstruct, or close roads, driveways and walks, whether public or private, Contractor shall provide and maintain suitable and safe bridges, detours, or other temporary expedients for the accommodation of public and private travel, and shall give reasonable notice to owners of private drives before interfering with them. Driveway access to commercial properties shall be maintained at all times. Such maintenance of traffic shall not be required when Contractor has obtained permission from the owner and tenant of private property, or from the authority having jurisdiction over public property involved, to obstruct traffic at the designated point. At all times, the Contractor shall perform the Work in accordance with the permits and easement agreements.

B. Traffic control shall be in accordance with the Florida Department of Transportation Index 600 and as shown on the Drawings. The Contractor shall follow all traffic rules regulated by the local governments.

C. In making open-cut street crossings, the Contractor shall not block more than one-half of the street at a time. Whenever possible, Contractor shall widen the shoulder on the opposite side to facilitate traffic flow. Temporary surfacing shall be provided as necessary on shoulders.

1.03 BARRICADES AND LIGHTS

A. All streets, roads, highways, and other public thoroughfares which are closed to traffic shall be protected by effective barricades on which shall be placed acceptable warning signs. Barricades shall be located at the nearest intersecting public highway or street on each side of the blocked section.

B. All open trenches and other excavations shall have suitable barricades, signs, and lights to provide adequate protection to the public. Obstructions such as material piles and equipment shall be provided with similar warning signs and lights. Contractor shall be responsible for public safety within the construction area.

C. All barricades and obstructions shall be illuminated with warning lights from sunset to sunrise. Material storage and conduct of the Work on or alongside public streets and highways shall cause the minimum obstruction and inconvenience to the traveling public. All barricades, signs, lights and other protective devices shall be installed and maintained in conformity with applicable statutory requirements and, where within railroad and highway rights-of-way, as required by the authority having jurisdiction thereof.

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

1.04 PROTECTION OF PUBLIC AND PRIVATE PROPERTY

A. Contractor shall protect, shore, brace, support, and maintain all underground pipes, conduits, drains, and other underground construction uncovered or otherwise affected by his construction operations. All pavement, surfacing, driveways, curbs, walks, buildings, utility poles, guy wires, fences, and other surface structures affected by construction operations, together with all sod and shrubs in yards and parking areas, shall be restored to their original condition, whether within or outside the easement. All replacements shall be made with new materials.

B. Existing irrigation systems must be maintained and protected during construction operations. The Contractor will be required to repair any and all components of irrigation system damaged during construction.

1.05 PARKING

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

1.06 DUST CONTROL

A. Contractor shall take reasonable measures to prevent unnecessary dust. Earth surfaces subject to dusting shall be kept moist with water or by application of an approved chemical dust suppressant. Dusty materials in piles or in transit shall be covered when practicable to prevent blowing.

B. Buildings or operating facilities that may be adversely affected by dust shall be adequately protected from dust. Existing or new machinery, motors, instrument panels or similar equipment, shall be protected by suitable dust screens. Proper ventilation shall be included with dust screens.

1.07 SWEEPING

A. The Contractor shall sweep loose material from all pavements at the end of each workday.

1.08 POLLUTION CONTROL

A. Contractor shall prevent the pollution of drains and watercourses by sanitary wastes, sediment, debris and other substances resulting from construction activities. No sanitary wastes will be permitted to enter any drain or watercourse other than sanitary sewers. No sediment, debris or other substance will be permitted to enter sanitary sewers and reasonable measures will be taken to prevent such materials from entering any drain or watercourse.

1.09 STORMWATER CONTROL

A. The Contractor shall be responsible for maintaining stormwater flow and drainage of the construction area. In cases where existing stormwater structures and culverts are to be removed as part of construction, temporary flow paths or bypass pumping shall be provided until the new stormwater system is accepted and placed into service.

1.10 COMBUSTIBLES STORAGE

A. The Contractor shall protect all combustible products and materials placed on site from vehicular damage and vandalism.

B. Contractor shall submit a plan for all locations of fuel and vehicle storage through the duration of the project, updated as necessary to address specific phases or locations of the work.

C. There shall be no fuel storage in wetland areas or stormwater ponds.

D. Fuel storage containers shall be limited to 549 gallons or less. The Contractor is solely responsible for maintaining fuel containers and ensuring that all measures for protection and containment are provided as required by law.

PART 2 - PRODUCT

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

END OF SECTION

SECTION 01510

TEMPORARY UTILITIES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Furnish, install and maintain temporary utilities required for construction, remove on completion of Work.

1.02 REQUIREMENTS OF REGULATORY AGENCIES

A. Comply with National Electric Code.

B. Comply with Federal, State and local codes and regulations and with utility company requirements.

C. Comply with regulations of Health Department of the municipalities.

PART 2 - PRODUCTS

2.01 MATERIALS, GENERAL

A. Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

2.02 TEMPORARY ELECTRICITY AND LIGHTING

A. Arrange with utility company and Owner to provide service required for power and lighting, and pay all costs for service and for power used in the construction, testing and trial operation prior to final acceptance of the work by the Owner as stipulated by the Engineer. All cost associated with obtaining temporary and permanent power will be at Contractor expense.

B. Provide adequate artificial lighting for all areas of work when natural light is not adequate for work, and for areas accessible to the public.

2.03 TEMPORARY WATER

A. If applicable, install at each and every connection to the Owner's water supply a backflow preventer and meter meeting local requirements. This does not include water for testing.

B. The Contractor shall include in its bid any cost(s) anticipated for the use of temporary water facilities as a part of the construction of this project.

2.04 TEMPORARY SANITARY FACILITIES

A. Provide sanitary facilities in compliance with laws and regulations.

B. Service, clean and maintain facilities and enclosures.

PART 3 - EXECUTION

3.01 GENERAL

A. Maintain and operate systems to assure continuous service.

B. Modify and extend systems as work progress requires.

C. Allow the Owner and Engineer reasonable use of all temporary utilities.

3.02 REMOVAL

A. Completely remove temporary materials and equipment when their use is no longer required as determined by the Engineer, but not before achieving Substantial Completion.

B. Clean and repair damage caused by temporary installations or use of temporary facilities.

END OF SECTION

SECTION 01530

PROTECTION OF EXISTING FACILITIES

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall protect all existing utilities, service lines, facilities, and improvements not designated for removal and restore damaged or temporarily located utilities, service lines, facilities, and improvements to a condition equal to or better than they were prior to such damage or temporary relocation in accordance with the requirements of the Contract Documents.

B. The number of exploratory excavations required shall be that number sufficient to determine the alignment and depth of the existing utility or facility.

C. The Contractor shall determine the exact locations and depths of all existing utilities indicated on the Drawings that affect the Work. In addition to those indicated, the Contractor shall make exploratory excavations of all utilities including but not limited to water service lines, water meters, and gas service lines. All such exploratory excavations shall be performed as soon as practicable after Notice to Proceed and, in any event, a sufficient time in advance of construction to avoid possible delays to the Contractor's Work.

D. The Contractor’s specific attention is directed to the fact that the Work of this project includes work located on residential roads. The Contractor shall take all precautions necessary to assure that the existing utilities, cable, water, internet, telephone, electric, etc. remains in service during construction of the new water mains.

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

3.01 RIGHTS-OF-WAY

A. The Contractor shall not do any Work that would affect any oil, gas, sewer, or water pipeline; any telephone, telegraph, or electric transmission line; fiber optic cable; any fence; or any other structure, nor shall the Contractor enter upon the rights-of-way or easements involved with any such utilities until the Contractor has secured authority therefore from the utility, rights-

of-way or easement owner, and has provided the Engineer with written proof of same. After authority has been obtained, the Contractor shall give said facility owner a minimum of one week's notice of the Contractor's intention to begin Work, and shall give said facility owner convenient access for removing, shoring, supporting, or otherwise protecting its pipeline, transmission line, ditch, fence, or structure and for replacing same. Should two (2) or more contracts be executed at one time on the same or adjacent land in such manner that work on one contract may interfere with that on another, the Owner shall decide which Contractor shall have priority to perform and in what manner. When the territory of one contract is the necessary or convenient means of access for the execution of another contract, such privilege of access or any other reasonable privilege may be granted by the Owner to the Contractor so desiring, to the extent, amount, manner, and times permitted by the Owner. No such decision as to the method or time of conducting the Work or the use of territory shall be made the basis of any claim for delay or damage, except as provided for temporary suspension of the Work.

3.02 PROTECTION OF STREET OR ROADWAY MARKERS

A. The Contractor shall not destroy, remove, or otherwise disturb any existing survey markers, or other existing street or roadway markers, without proper authorization. No pavement breaking or excavation shall be started until all survey or other permanent marker points that may be disturbed by the construction operations have been properly referenced for easy and accurate restoration. It shall be the Contractor's responsibility to notify the proper representatives of the Owner of the time and location that work will be done. Such notice shall be sufficiently in advance of construction that there shall be no delay due to waiting for survey points to be satisfactorily referenced for restoration. All survey markers or points disturbed without proper authorization by the Engineer will be accurately restored by the Contractor at no additional cost to the Owner after all street or roadway resurfacing has been completed.

3.03 RESTORATION OF PAVEMENT

A. General: All paved areas, including asphaltic concrete cut or damaged during construction, shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents or in the requirements of the agency issuing the permit. All temporary and permanent pavements shall conform to the requirements of the affected pavement owner. All pavement subject to partial removal shall be neatly saw cut in straight lines. All restoration shall be performed in accordance with these Specifications.

B. Temporary Resurfacing: Wherever required by the authorities having jurisdiction, the Contractor shall place temporary surfacing promptly after backfilling and maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration of improvements. Temporary resurfacing shall be constructed in accordance with these Specifications.

C. Permanent Resurfacing: All pavement restoration shall be in accordance with these Specifications.

3.04 EXISTING UTILITIES AND IMPROVEMENTS

A. General: The Contractor shall protect all utilities and other improvements that may be impaired during construction operations. It shall be the Contractor's responsibility to ascertain the actual location of all existing utilities and other improvements indicated on the Drawings that may be encountered during construction, and to assure that such utilities or other improvements are adequately protected from damage due to such operations. The Contractor shall take all possible precautions for the protection of unforeseen utility lines, for uninterrupted utility service and such special protection as may be directed by the Owner.

B. Utilities To Be Moved: If it becomes necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon proper application by the Contractor, be notified by the Owner to relocate such property within a specified reasonable time. The Contractor shall not interfere with said property until it has been relocated by the utility or franchise holder.

C. Owner's Right of Access: The right is reserved by the Owner, and by the owners of public utilities and franchises, to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the Work.

D. Existing Utilities: Existing utility lines that are shown on the Drawings or the locations of which are made known to the Contractor prior to excavation that are to be retained and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired by the Contractor at no additional cost to the Owner.

E. Utilities To Be Removed: When utility lines that are to be removed are encountered within the area of operations, the Contractor shall notify the utility owner and the Owner a sufficient time in advance for the necessary measures to be taken to prevent interruptions of the service.

F. Approval Of Repairs: All repairs to a damaged improvement facility shall be inspected and approved by an authorized representative of the improvement's Owner before being concealed by backfill or other Work.

G. Relocation of Utilities: Where the proper completion of the Work requires the temporary or permanent removal and/or relocation of an existing utility, or other improvement that is shown on the Drawings, the Contractor shall, at Contractor's own expense, remove, and without unnecessary delay, temporarily replace or relocate such utility or improvement in a manner satisfactory to the Owner and the owner of the facility. In all cases of such temporary removal or relocation, restoration to the former location shall be accomplished by the Contractor in a manner that will restore or replace the utility or improvement as nearly as possible to its former location and to as good or better condition as prior to removal.

H. Maintaining In Service: All oil and gasoline pipelines, power, telephone, or other communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of the Work shall be maintained continuously in service during all the operations, unless other arrangements satisfactory to the Engineer are made with the Owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, wire, or cable. The Contractor shall be responsible for and shall make good all damage due to Contractor's operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

I. Existing irrigation systems must be maintained and protected during construction operations. The Contractor will be required to repair any and all components of irrigation system damaged during construction.

3.05 TREES WITHIN RIGHTS-OF-WAY AND PROJECT LIMITS

A. General: The Contractor shall exercise all necessary precautions to prevent damage or destruction of any trees or shrubs, including those lying within street rights-of-way and Project limits. The Contractor shall not trim or remove any trees unless such trees have been approved for trimming or removal by all jurisdictional agencies and the Owner. All existing trees and shrubs that are damaged during construction shall be trimmed or replaced by Contractor under permit from the jurisdictional agencies and the Owner and to the satisfaction of said agencies and the Owner. Tree trimming, tree planting and transplanting shall be accomplished in accordance with these specifications.

3.06 NOTIFICATION BY THE CONTRACTOR

A. Prior to any excavation in the vicinity of any existing underground facilities, including all water, sewer, storm drain, gas, petroleum products, or other pipelines; all buried electric power, communications, or television cables; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way, the Contractor shall notify the respective authorities representing the owners or agencies responsible for such facilities not less than three (3) working days nor more than five (5) working days prior to excavation so that representatives of said owners or agencies can be present during such work if they so desire.

3.07 SUBSURFACE OBSTRUCTIONS

A. The Contractor shall field determine, before pipeline trenching or any other excavations are begun, the depth and location of existing utilities. Utility locations indicated on the Drawings are shown based on available data. The Contractor shall submit descriptions, depths, and locations of subsurface obstructions to the Engineer for review if they differ from those shown on the Drawings.

B. In excavation, backfilling, and laying pipe, care shall be taken not to remove, disturb, or damage existing pipes, conduits, or structures. If necessary, the Contractor shall sling, shore-up, and maintain such structures in operation at no additional cost to the Owner.

C. The Contractor shall obtain the permission of and give sufficient Notice to the proper authorities of the Contractor's intention to remove or disturb any pipe, conduit, structure or facility, and shall abide by their requirements and Laws and Regulations governing such work.

D. In the event subsurface structures are broken or damaged in the execution of the Work, the Contractor shall immediately notify the proper authorities and, at the option of said authorities, either repair the damage at once or pay the proper charges for repairing said damage at no additional cost to the Owner. Repairs shall be made to the satisfaction of the Engineer. The Contractor shall be responsible for any damage to persons or property caused by such breaks or due to the neglect in reporting and/or repairing such damages.

E. Neither the Owner nor the Engineer will be liable for any claims made by the Contractor based on underground obstructions that could have been reasonably identified as being different than that indicated on the Drawings. The Contractor shall uncover subsurface obstructions in advance of construction so that the method of avoiding same may be determined before the Work reaches the obstruction.

3.08 CONFLICTS WITH OTHER UTILITIES

A. It shall be the Contractor's responsibility to provide the appropriate utility company sufficient advance Notice so their representatives may verify the utility location on the Project site when construction begins. The Contractor shall coordinate and cooperate with these utilities to ensure that no damages occur which may cause interruption of their services.

B. All temporary support or minor adjustment that does not require replacement or direct by-pass connections to these existing services (such as all direct-buried telephone cables or two-inch and smaller gas lines) shall be the responsibility of the Contractor.

C. Where it may be necessary to relocate gas mains or telephone ducts (defined here as gas lines larger than 2-1/2 inches and telephone cables within ductwork) to allow construction of the Work or where major relocation of small services requires replacement or performing connections to the existing lines, all such relocation work is the responsibility of and must be performed by the respective utility companies. The Contractor shall immediately provide Notice to the proper utility company and the Engineer of the occurrence and location of such required relocations.

D. The Owner will not be responsible for any delay or inconvenience to the Contractor resulting from the existence, removal, or adjustment of any public or private utility that could have been reasonably identified. Additional costs incurred as a result thereof shall be borne by the Contractor and considered as included in the price bid for the various pay items.

E. Relocation or realignment of storm drains or sewer lines that may interfere with the construction of the Work shall be the responsibility of the Contractor.

F. Where storm drains or sewer lines are removed by the Contractor to facilitate construction and replaced in their original position, there shall be no direct payment made. All related costs shall be included in the price bid for the various pay items.

3.09 POLE RELOCATION AND PROTECTION

A. The Contractor shall take notice of the number of power, telephone, and traffic signal support poles along the length of the Project. Several may be in proximity to or in direct conflict with the alignment of the proposed new pipelines. The Contractor shall immediately provide Notice to the proper utility company and the Engineer of the occurrence and location of such required relocations. It is intended that poles shall be supported with mud

jacks or by other means of bracing as required to maintain them in a stable condition. The Contractor shall coordinate relocation and protection activities with the pole owner. Supporting power poles and other utilities located on the power poles shall be the responsibility of the Contractor. When applicable, the Contractor must coordinate with Duke and any other power pole owner.

3.10 EXISTING FENCE LINES

A. At various locations along the length of the Project, existing fences may conflict with or impair construction operations for the installation of the Work. The Contractor shall protect these fences in places where they do not conflict with construction operations. Where a fence may conflict with the backswing of machinery or otherwise impede construction, the Contractor shall contact the owner and arrange for the temporary removal or relocation of the fence. Any fence temporarily relocated shall be placed in a manner to maintain the intent and integrity of the original fenced area. Any fence removed or temporarily relocated shall be restored to its original condition and location unless otherwise arranged with the owner of the fence. Where it is impossible to salvage the existing materials to reconstruct the fence, the fence shall be replaced "in kind."

B. All cost for such temporary removal, temporary replacement, or "in kind" replacement shall be included in the price bid for the various pay items. No direct payment shall be made for fence replacement.

3.11 UTILITY INVESTIGATION

A. Prior to commencing with trench or other excavations required for the performance of the Work, the Contractor shall conduct a field investigation for the purpose of determining existing locations of all underground utilities and facilities which are shown on the Drawings. The Contractor shall coordinate all utility investigations with Sunshine. The investigation shall be made by hand or machine excavation. All such excavations shall include removal of surface material and obstructions required to perform the excavations. The Contractor shall notify, in writing, the owner of the facility to be excavated and request that a representative of the owner be present during the excavation. The Contractor shall provide the utility owner adequate Notice so that a representative can be there. The Contractor shall provide sheeting, shoring, and bracing as required to minimize the required size of the excavation and support adjacent ground, structures, roadways, and utilities. After the data is obtained at each excavation site, the Contractor shall immediately backfill each excavation site. Backfill shall be compacted sand for the full depth. The surface shall be returned to its original grade and condition except that paved areas

may be temporarily surfaced and maintained where excavations required for the performance of the Work coincide with the location of the investigative location. The Contractor shall be responsible for all costs associated with the repair of roadways, paving, structures, underground and above ground utilities and facilities damaged in conducting the investigations.

B. It is the Contractor's responsibility to locate all existing utilities within the proposed work area.

C. Findings of the investigation shall be reported to the Engineer. The Engineer will furnish one (1) set of full-size Drawings for the Contractor's field use in recording the findings of the investigation. The Contractor shall describe the size, material, and location of existing underground utilities and facilities. Locations and elevations shall be referenced to Project stationing, distance from base line, and Project bench marks. The Contractor shall provide written detailed description of any underground utility or facility conflicting with the elevation or alignment of the Work.

3.12 SPECIAL RESTORATION REQUIREMENTS

A. The Contractor shall schedule and conduct operations to minimize the impact of construction upon lawns, driveways, sidewalks, irrigation systems, and street paving. Restoration for these items shall be completed as soon as practical after installation of proposed pipelines. The following specific requirements apply.

1. Driveways and Sidewalks: The Contractor shall saw cut existing driveway or sidewalk pavement and remove the required section not sooner than the same day the Work is to be installed beneath it. The Contractor shall maintain full access to each driveway at all times. The Contractor shall re-grade and compact disturbed areas immediately after the Work is installed. The Contractor shall provide suitable, safe, temporary walking surfaces where the sidewalk is removed. The Contractor shall construct temporary driveway or sidewalk section within 24 hours of removal of the existing section. The Contractor shall coordinate driveway construction and restoration with property owners. Property owners shall be provided with Notice of proposed method and schedule of construction and restoration a minimum of 72 hours prior to commencement of construction activities affecting the property owner's driveways or sidewalks.

2. Irrigation Systems: The Contractor shall provide 10-day Notice to property owners prior to the Contractor removing irrigation system components.

3. Lawn Areas: The Contractor shall remove existing grass along a straight line to a minimum distance of six inches beyond the areas disturbed by construction activities on each side of the affected area. Sod shall be installed in disturbed lawn areas in a strip of uniform width along each section of lawn area with sod of identical type as existing. The Contractor shall grade and compact the area before the end of the next calendar day after excavation is performed. All sodding shall be performed in accordance with these Specifications. The Contractor shall install new sod within fourteen days after excavation.

4. Trees, Shrubs, and Landscaping: The Contractor shall use a bonded company, licensed to perform landscape work, to perform all landscaping work required in accordance with these Specifications.

5. Fencings and all other existing facilities impacted by construction operations: The Contractor shall protect and restore all fences and existing facilities impacted by construction to their previously undisturbed state.

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SECTION 01570

TRAFFIC REGULATION

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. The Contractor shall be responsible for providing safe and expeditious movement of traffic through construction zones. A construction zone is defined as the immediate areas of actual construction and all abutting areas which are used by the Contractor and which interfere with the driving or walking public.

B. Remove temporary equipment and facilities when no longer required, restore grounds to original, or to specified conditions.

1.02 TRAFFIC CONTROL

A. The necessary precautions shall include, but not be limited to, such items as proper construction warning signs, variable message boards, signals, lighting devices, markings, barricades, channelization and hand signaling devices. The Contractor shall be responsible for installation and maintenance of all devices and requirements for the duration of the construction period.

B. The Contractor shall provide at least 72 hours notification to the applicable City, County or State Highway Department of the necessity to close any portion of a roadway carrying vehicles or pedestrians so that the final approval of such closings can be obtained at least 48 hours in advance.

C. The Contractor shall also be responsible for completing and submitting Road Closure Requests at least 48 hours in advance.

D. The Contractor shall be responsible for removal, relocation, or replacement of any traffic control device in the construction area which exists as part of the normal pre-construction traffic control scheme. Any such actions shall be performed by the Contractor under the supervision, and in accordance with the Specifications, of the Owner, unless otherwise specified.

E. The Contractor shall immediately notify the Owner of any vehicular or pedestrian safety or efficiency problems incurred as a result of the construction of the project.

1.03 MAINTENANCE OF TRAFFIC

A. The Contractor shall maintain traffic within the construction area throughout the duration of the construction in accordance with Section 102 of the Florida Department of Transportation (FDOT) “Standard Specifications for Road and Bridge Construction,” latest edition (the Standard Specifications) except as may be modified herein. Sections 102-11 “Method of Measurement,” 102-12 “Submittals,” and 102-13 “Basis of Payment” do not apply and are replaced by the measurement and payment requirements of 3b-Attachment 1 to Schedule Bid Form of this contract.

B. Roadways shall be kept open to one-way traffic in each direction during all phases of the construction period except that daylight lane closures with flagger control will be allowed. The Contractor will not be permitted to isolate residences or places of business. Alternate access shall be provided to all residences and all places of business whenever construction interferes with the existing access.

C. The Contractor shall maintain access at all times for postal delivery, emergency services and trash pickup. The postal service, police department, fire department and solid waste services shall be notified of the need to temporarily close any roadway and an alternate means of access to affected properties shall be provided.

D. The Contractor shall conduct his operations in such a manner that will maintain access to private property/driveways and will result in minimum inconvenience to the public accessing the neighborhood roads and/or business establishments and shall provide temporary access during construction.

E. In the event that vehicular access to residences and/or driveways will be temporarily blocked, the Contractor shall notify the Owner three (3) days in advance and shall assist the Owner with coordinating with affected residents. Blocking vehicular access to any residence shall not exceed one calendar day.

F. The Contractor shall prepare Traffic Control Plans for review by the Owner/Engineer prior to implementation of the plan. Traffic Control Plans for work in FDOT ROW shall be prepared, signed, and sealed by a Florida licensed Professional Engineer with FDOT Advanced MOT Certification and shall also be submitted to the FDOT for review prior to implementation of the plan. Prior to initiating each phase of a detour system, the Contractor shall prepare a specific detour letter/map, to be approved by the Engineer, and deliver by hand to each home or business affected.

G. The Contractor shall furnish, erect and maintain all necessary traffic control and safety devices in accordance with the Florida Department of Transportation (FDOT) Index 600 series of “Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway System,” latest edition, and shall take all necessary precautions for the protection of the work and the safety of the public for the duration of the construction period.

H. The work shall include the furnishing, erection, maintenance and removal upon completion of construction, all temporary traffic barricades of whatever type required, and for such duration as may be required by the Engineer. Also included as part of the work is material and construction necessary for temporary connections, sidewalk maintenance and driveway maintenance.

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

END SECTION

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SECTION 01580

PROJECT IDENTIFICATION AND SIGNS

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Furnish, install prior to construction, and maintain one (1) project identification signs at locations to be determined by the Owner.

B. Remove signs on completion of construction.

C. Allow no other signs to be displayed.

1.02 INFORMATIONAL SIGNS

A. Painted signs with painted lettering, or standard products.

1. Size of signs and lettering: as required by the Owner, or as appropriate to usage.

2. Colors: as required by the Owner, otherwise of uniform colors throughout Project.

B. Erect at appropriate locations, as directed by the Owner or Engineer, to provide required information.

C. Project identification sign shall comply with standards shown in the Drawings.

1. Project identification sign will be provided by the Owner.

2. Project identification sign shall be installed by the Contractor.

1.03 QUALITY ASSURANCE

A. Sign Painter: Professional experienced in type of work required.

B. Finishes, Painting: Adequate to resist weathering and fading for scheduled construction period.

PART 2 - PRODUCTS

2.01 SIGN MATERIALS

A. Structure and Framing: May be new or used, wood or metal, in sound condition structurally adequate and suitable for specified finish.

B. Sign Surfaces: Exterior softwood plywood with medium density overlay, standard large sizes to minimize joints.

1. Thickness: As required by standards to span framing members, to provide even, smooth surface without waves or buckles.

C. Rough Hardware: Galvanized.

D. Paint: Exterior quality.

1. Use Bulletin colors for graphics.

2. Colors for structures, framing, sign surface and graphics:

E. The project sign shall be painted in accordance with the detail provided by the Owner.

PART 3 - EXECUTION

3.01 PROJECT IDENTIFICATION SIGNS

A. Paint exposed surface of supports, framing and surface material; one coat of primer and one coat of exterior paint.

3.02 MAINTENANCE

A. Maintain signs and supports in a neat, clean condition; repair damages to structures, framing or sign.

3.03 REMOVAL

A. Remove signs, framing, supports and foundations at completion of project.

END OF SECTION

SECTION 01600

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Material and equipment incorporated into the Work:

1. Conform to applicable specifications and standards. This project is a potable water project. Therefore, all materials that come in contact with the potable water, whether specified or not, shall be NSF-61 certified.

2. Comply with size, make, type and quality specified, or as specifically approved in writing by the Engineer.

3. Manufactured and fabricated products:

a. Design, fabricate and assemble in accord with the best engineering and shop practices.

b. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.

c. Two or more items of the same kind shall be identical, by the same manufacturer.

d. Products shall be suitable for service conditions.

e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.

4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.02 APPROVAL OF MATERIALS

A. All materials and equipment furnished by the Contractor shall be subject to the inspection and approval of the Engineer. No material shall be delivered to the work without prior review of the Engineer.

B. Facilities and labor for handling and inspection of all materials and equipment shall be furnished by the Contractor. If the Engineer requires, either prior to beginning or during the progress of the work, the Contractor shall submit

samples of materials for such special tests as may be necessary to demonstrate that they conform to the specifications. Such samples shall be furnished, stored, packed, and shipped as directed at the Contractor's expense. Except as otherwise noted, the Engineer will make arrangements and the Owner will pay for the tests.

C. The Contractor shall submit data and samples sufficiently early to permit consideration and review before materials are necessary for incorporation in the work. Any delay resulting from the Contractor's failure to submit samples or data promptly shall not be used as a basis of claims against the Owner or the Engineer.

D. The materials and equipment used on the work shall correspond to the approved samples or other data previously submitted to the Engineer for review.

1.03 MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION

A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including four (4) copies to the Engineer.

1. Maintain one set of complete instructions at the job site during installation and until completion.

B. Handle, install, connect, clean, condition and adjust products in strict accord with such instructions and in conformity with specified requirements.

1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Engineer for further instructions.

2. Do not proceed with work without clear instructions.

C. Perform work in accord with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

D. Upon completion of installation, the Contractor shall obtain from the manufacturer a signed certification that the equipment has been properly installed in accordance with the manufacturer’s recommendations.

1.04 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accord with construction schedules, coordinate to avoid conflict with work and conditions at the site.

1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.

2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.

B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.05 STORAGE AND PROTECTION

A. The Contractor shall furnish a covered, weather-protected storage structure providing a clean, dry, noncorrosive environment for all mechanical equipment, valves, architectural items, electrical and instrumentation equipment, and special equipment to be incorporated into this project. Storage of equipment shall be in strict accordance with the "instructions for storage" of each equipment supplier and manufacturer including connection of heaters, placing of storage lubricants in equipment or climate-controlled facilities, etc. The Contractor shall furnish a copy of the manufacturer's instructions for storage to the Engineer prior to storage of all equipment and materials. Corroded, damaged or deteriorated equipment and parts shall be replaced before acceptance of the project. Equipment and materials not properly stored will not be included in a payment estimate.

B. Store products in accord with manufacturer's instructions, with seals and labels intact and legible.

1. Store products subject to damage by the elements in weather tight enclosures.

2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.

3. Store fabricated products above the ground on blocking or skids to prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.

4. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.

C. All materials and equipment to be incorporated in the work shall be handled and stored by the Contractor before, during, and after shipment in a manner to prevent warping, twisting, bending, breaking, chipping, rusting, and any injury, theft or damage of any kind whatsoever to the material or equipment.

D. Cement, sand and lime shall be stored under a roof and off the ground and shall be kept completely dry at all times. All miscellaneous steel and reinforcing steel shall be stored off the ground and covered or otherwise to prevent accumulations of dirt or grease, and in a position to prevent accumulations of standing water and to minimize rusting. Precast concrete sections shall be handled and stored in a manner to prevent accumulations of dirt, standing water, staining, chipping or cracking. Brick, block and similar masonry products shall be handled and stored in a manner to reduce breakage, chipping, cracking, and spilling to a minimum.

E. All materials that, in the opinion of the Engineer, have become so damaged as to be unfit for the use intended or specified shall be promptly removed from the site of the work, and the Contractor shall receive no compensation for the damaged material or its removal.

F. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.

G. Protection after Installation:

1. Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove covering when no longer needed.

H. The Contractor shall be responsible for all material, equipment, and supplies sold and delivered to the Owner under this Contract until final inspection of the work and acceptance thereof by the Owner. In the event any such material, equipment, and supplies are lost, stolen, damaged, or destroyed prior to final inspection and acceptance, the Contractor shall replace same without additional cost to the Owner.

I. Should the Contractor fail to take proper action on storage and handling of equipment supplied under this Contract within seven days after written notice to do so, the Owner retains the right to correct all deficiencies noted in previously transmitted written notice and deduct the cost associated with these corrections from the Contract Price. These costs may be comprised of expenditures for labor, equipment usage, administrative, clerical, and engineering and any other costs associated with making the necessary corrections.

1.06 SUBSTITUTIONS AND PRODUCT OPTIONS

A. Contractor's Options:

1. For products specified only by reference standard, select any product meeting that standard.

2. For products specified by naming several products or manufacturers, submit the products or manufacturers named in the Proposal, which complies with the specifications.

3. For products specified by naming one or more products or more products or manufacturers and "or equal", Contractor shall submit a request as for substitutions for any product or manufacturer not specifically named.

B. Substitutions:

1. After the Effective Date of the Agreement, the Engineer will consider written requests from Contractor for substitution of products.

2. Submit a separate request for each product, supported with complete data, with drawings and samples as appropriate, including:

a. Comparison of the qualities of the proposed substitution with that specified.

b. Changes required in other elements of the work because of the substitution.

c. Effect on the construction schedule.

d. Cost data comparing the proposed substitution with the product specified.

e. Any required license fees or royalties.

f. Availability of maintenance service, and source of replacement materials.

3. The Engineer will solely determine the acceptability of the proposed substitution.

C. Contractor's Representation:

1. A request for a substitution constitutes a representation that Contractor:

a. Has investigated the proposed product and determined that it is equal to or superior in all respects to that specified.

b. Will provide the same warranties or bonds for the substitution as for the product specified.

c. Will coordinate the installation of an accepted substitution into the Work, and make such other changes as may be required to make the Work complete in all respects.

d. Waives all claims for additional costs, under his responsibility, which may subsequently become apparent.

1.07 SPECIAL TOOLS

A. Manufacturers of equipment and machinery shall furnish any special tools (including grease guns or other lubricating devices) required for normal adjustment, operations and maintenance, together with instructions for their use. The Contractor shall preserve and deliver to the Owner these tools and instructions in good order no later than upon completion of the Contract.

1.08 WARRANTY

A. For all major pieces of equipment, submit a warranty from the equipment manufacturer as specified in the General Provisions (Exhibit F). At a minimum, the manufacturer's warranty period shall be concurrent with the Contractor's for one (1) year after the time of Substantial Completion. Exceptions for extended warranties shall be noted within each piece of equipment’s technical specification.

1.09 SPARE PARTS

A. Spare parts for certain equipment have been specified in the pertinent sections of the Specifications. The Contractor shall collect and store all spare parts so required in an area to be designated by the Engineer. In addition, the Contractor shall furnish to the Engineer an inventory listing all spare parts, the equipment they are associated with, the name and address of the supplier, and the delivered cost of each item. Copies of actual invoices for each item shall be furnished with the inventory to substantiate the delivered cost.

B. Where “Manufacturer’s Recommended” spare parts are specified to be furnished, the Contractor shall furnish those spares that are recommended by the Manufacturer as noted in their standard product literature.

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

END SECTION

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SECTION 01700

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Comply with requirements stated in General Conditions and in Specifications for administrative procedures in closing out the Work.

1.02 SUBSTANTIAL COMPLETION

A. When Contractor considers the Work is substantially complete, he shall submit to the Engineer:

1. A written notice that the Work, or designated portion thereof, is substantially complete.

2. A list of items to be completed or corrected.

3. A copy of all applicable, executed:

a. Manufacturer Certifications of Proper testing, Ready for Operation and Completion
b. Calibration and Testing Certificates
c. Transmittals of Operations and Maintenance Manuals
d. Transmittals of Spare Parts
e. Owner’s Equipment Training Attendance Sign-in sheets
f. Warranties and guarantees of the manufacturer(s).

B. Within a reasonable time after receipt of such notice, the Engineer will make an inspection to determine the status of completion.

C. Should the Engineer determine that the Work is not Substantially Complete:

1. The Engineer will promptly notify the Contractor, in writing, giving the reasons therefore.

2. Contractor shall remedy the deficiencies in the Work, and send a second written notice of substantial completion to the Engineer.

3. The Engineer will re-inspect the Work.

D. When the Engineer finds that the Work is Substantially Complete, he will:

1. Prepare and deliver to Owner a tentative Certificate of Substantial Completion with a tentative list of items to be completed or corrected before final completion.

2. After consideration of any objections made by the Owner as provided in Conditions of the Contract, and when the Engineer considers the Work Substantially Complete, he will execute and deliver to the Owner and the Contractor a definite Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected.

1.03 FINAL INSPECTION

A. When Contractor considers the Work to be complete, he shall submit written certification that:

1. Contract Documents have been reviewed.

2. Work has been inspected for compliance with Contract Documents.

3. Work has been completed in accordance with Contract Documents.

4. Equipment and systems have been tested in the presence of the Owner's representative and are operational.

5. Work is completed and ready for final inspection.

B. The Engineer will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.

C. Should the Engineer consider that the Work is incomplete or defective:

1. The Engineer will promptly notify the Contractor in writing, listing the incomplete or defective work.

2. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to the Engineer that the Work is complete.

3. The Engineer will re-inspect the Work.

D. When the Engineer finds that the Work is acceptable under the Contract Documents, he shall request the Contractor to make closeout submittals.

1.04 REINSPECTION FEES

A. Should the Engineer perform re-inspections, due to failure of the Work, to comply with the claims of status of completion made by the Contractor:

1. Owner will compensate the Engineer for such additional services.

2. Owner will deduct the amount of such compensation from the final payment to the Contractor.

1.05 CONTRACTOR'S CLOSEOUT SUBMITTALS TO ENGINEER

A. Evidence of compliance with requirements of governing authorities.

B. Project Record Documents and As-built Drawings.

C. Operating and Maintenance Data, Instructions to Owner's Personnel.

D. Warranties and Bonds, w/ a log of start dates and expiration dates.

E. Keys and Keying Schedule.

F. Spare Parts, Maintenance Materials and Specific Tools.

G. Evidence of Payment and Release of Liens.

H. Certificate of Insurance for Products and Completed Operations.

I. Contractor's Final Affidavit.

J. Lien Waivers from Subcontractors and Suppliers.

K. Consent of Surety from the bonding company.

L. Contractor's Guarantee.

1.06 FINAL ADJUSTMENT OF ACCOUNTS

A. Submit a final statement of accounting to the Engineer.

B. Statement shall reflect all adjustments to the Contract Sum:

1. The original Contract Sum.

2. Additions and deductions resulting from:

a. Previous Change Orders.

b. Unit Prices.

c. Deductions for uncorrected Work.

d. Penalties and Bonuses.

e. Deductions for liquidated damages.

f. Deductions for re-inspection payments.

g. Other adjustments.

3. Total Contract Sum, as adjusted.

4. Previous payments.

5. Sum remaining due.

C. Engineer will prepare a final Change Order, reflecting approved adjustments to the Contract Price, which were not previously made by Change Orders.

1.07 FINAL APPLICATION FOR PAYMENT

A. Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the General Provisions (Exhibit F).

PART 2 - PRODUCTS
(NOT USED)

PART 3 - EXECUTION
(NOT USED)

END OF SECTION

SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Maintain at the site for the Owner one record copy of:

1. Drawings

2. Specifications

3. Addenda

4. Requests for Information

5. Work Change Directives, Requests for Cost Proposals

6. Change Orders and other Modifications to the Contract

7. Engineer's Field Orders or written instructions

8. Approved Shop Drawings, Working Drawings and Samples

9. Field Test Records

10. Construction Photographs

11. Detailed Progress Schedule, Monthly Updates

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

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

1. Provide files and racks for storage of documents.

2. Provide locked cabinet of secure storage space for storage of samples.

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

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

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

E. As a pre-requisite for monthly progress payments, the Contractor is to exhibit the currently updated "record documents" for review by the Engineer and Owner.

1.03 MARKING DEVICES

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

1.04 RECORDING

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

B. Record information concurrently with construction progress.

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

C. Drawings: Legibly mark to record actual construction:

1. Depths of various elements of foundation in relation to finish first floor datum

2. Denote all underground piping elevations and dimensions; all changes to piping location; horizontal and vertical locations of underground utilities and appurtenances, all referenced to permanent surface improvements or by state Plane coordinates. Actual installed pipe material, class, etc.

3. Locations of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.

4. Field changes of dimension and detail.

5. Changes made by Field Order, Work Change Directives, Request for Information or by Change Order.

6. Details not on original Contract Documents.

7. Equipment and piping relocations.

D. Specifications and Addenda; legibly mark each Section to record:

1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.

2. Changes made by Field Order or by Change Order.

E. Shop Drawings (after final review and approval)

1.05 AS-BUILT DRAWINGS

A. Payment Applications will not be approved if the As-built drawings are not kept current and will not be approved until the As-built drawings show completely all information required and are current.

B. The final Payment Application shall not be accepted by the Owner until the As-built drawings are approved for conformance to the minimum requirements. The Owner's acceptance of the Contractor's As-built drawings does not relieve the Contractor of the sole responsibility for the accuracy or completeness of the As-built drawings.

C. The Contractor shall provide an As-Built Survey of all pipelines installed in the project, signed and sealed by a Florida Registered Surveyor and Mapper. As a minimum, the As-Built Survey shall provide at minimum:

1. Pipe invert elevations at every 100 feet;

2. Pipe invert elevations at any grade change or direction changes;

3. Pipe inverts of all utilities at utility crossings where the proposed utility crosses above or below other utilities;

4. If any pavement is restored and is greater than 10 feet in length, pavement elevations on a 10 foot grid;

5. Locations of water service laterals (i.e. service saddle location) from the water main.

6. Location of the water meter box.

7. All other surveying as required to show that the work has been completed to the lines and grades shown on the Drawings or the Specifications.

D. All deviations shall be highlighted on the As-built drawings using a "cloud". If any revisions to the original plans required a CHANGE ORDER, the "cloud" shall include the CHANGE ORDER number.

E. The Contractor shall submit all As-built drawings after review and approval by the Owner and Engineer in digital electronic format (AutoCAD and pdf) along with one set of marked up drawings.

F. Submit three (3) full sized 24”x36” of as-built survey, signed and sealed by the Registered Land Surveyor.

G. Submit two (2) CD-ROMS of the as-built survey in AUTOCAD 2017 or later format.

1.06 SUBMITTAL

A. At contract close-out, deliver Record Documents to the Engineer for the Owner.

B. Accompany submittal with transmittal letter in duplicate, containing:

1. Date

2. Project title and number

3. Contractor's name and address

4. Title and number of each Record Document

5. Signature of Contractor or his authorized representative

1.07 WARRANTIES, GUARANTEES, BONDS, AND CERTIFICATES MANUAL

A. This manual shall contain all warranties, guarantees, bonds, certificates, and similar documents, including those customarily provided by manufacturers and suppliers which cover a period greater than the two-year correction period. Show Owner as beneficiary on these documents.

B. Two hard copy sets of this manual and one electronic file copy are to be delivered to the Owner. The requirements for hard copies and for electronic files are provided below in this section.

1.08 CONSTRUCTION PHOTOGRAPHS

A. This manual shall contain construction photographs obtained from the Contractor, Engineer, and Owner. All photographs are to be color digital compiled on CD and provided with a descriptive index of the images with dates

B. Two electronic file copies are to be delivered to the Owner.

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

END OF SECTION

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SECTION 01730

OPERATING AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. The Contractor shall compile product data and related information appropriate for Owner's maintenance and operation of the actual products furnished by the Contractor.

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

B. The Contractor shall instruct Owner's personnel in maintenance of products and in operation of equipment and systems.

C. The Contractor shall furnish the Owner five (5) approved complete hardcopy sets of Operation and Maintenance Data and one (1) approved complete set of Operation and Maintenance Data in electronic ".pdf" format as specified herein for the project.

D. The Contractor shall organize all electronic Operation and Maintenance Data by specification division and section number and shall be posted on an online portal such as OneDrive, SharePoint or other similar software.

1.02 QUALITY ASSURANCE

A. Preparation of data shall be done by personnel:

1. Trained and experienced in maintenance and operation of described products.

2. Familiar with requirements of this Section.

3. Skilled and technical writer to the extent required to communicate essential data.

4. Skilled as draftsman competent to prepare required Drawings.

1.03 FORM OF SUBMITTALS

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

B. Format:

1. Size: 8-1/2 inches x 11-inches.

2. Paper: 20 pound minimum white, for typed pages.

3. Text: Manufacturer's printed data, or neatly typewritten.

4. Drawings:
   a. Provide reinforced punched binder tabs, bind in with text.
   b. Reduce larger Drawings and fold to size of text pages but not larger than 14-inches x 17-inches.

5. Provide fly-leaf for each separate product, or each piece of operating equipment.
   a. Provide typed description of product, and major component parts of equipment.
   b. Provide indexed tabs.

6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS." List:
   a. Title of Project
   b. Identity of separate structure, as applicable.
   c. Identity of general subject matter covered in the manual.

C. Binders:

1. Commercial quality three-post binders with durable and cleanable plastic covers.

2. Maximum post width: 2-inches.

3. When multiple binders are used, correlate the data into related consistent groupings.

1.04 CONTENT OF MANUAL

A. Neatly typewritten table of contents for each volume, arranged in systematic order.

1. Supplier name and contact information for parts and technical assistance.

2. Contractor, name of responsible principal, address and telephone number.

3. A list of each product required to be included, indexed to content of the volume.

4. List, with each product, name, address and telephone number of:
   a. Subcontractor or installer.
   b. Maintenance contractor, as appropriate.
   c. Identify area of responsibility of each.
   d. Local source of supply for parts and replacement.

5. Identify each product by product name and other identifying symbols as set forth in Contract Documents.

B. Product Data:

1. Include only those sheets that are pertinent to the specific product.

2. Annotate each sheet to:
   a. Clearly identify specific product or part installed.
   b. Clearly identify data applicable to installation.
   c. Delete references to inapplicable information.

C. Drawings:

1. Supplement product data with drawings as necessary to clearly illustrate, where applicable to the individual subsystem:
   a. Relationship of component parts of equipment and systems.
   b. Control and flow diagrams.

D. Written text, as required to supplement product data for the particular installation:
   1. Organize in consistent format under separate headings for different procedures.

   2. Provide logical sequence of instructions of each procedure.

E. Copy of each warranty, bond and service contract issued.

1. Provide information sheet for Owner's personnel, give:
   a. Proper procedures in event of failure.
   b. Instances which might affect validity of warranties or bonds.

1.05 INSTRUCTION OF OWNER'S PERSONNEL

A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in operation, adjustment and maintenance of products, equipment and systems.

B. Operating and maintenance manual shall constitute the basis of instruction.

1. Review contents of manual with personnel in full detail to explain all aspects of operation and maintenance.

C. Two weeks prior to the schedule vendor's training, a detailed lesson plan shall be submitted to the Engineer for review that is representative of the material to be covered during the training period.

D. The acceptance of the manufacturer's training will be in accordance with the successful completion of the attached Manufacturer's Training Summary Report. This checklist will be completed by the Owner and Engineer at the completion of each vendor training session.

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

END OF SECTION

SECTION 02071

DIRECTIONAL DRILLING

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The work of this Section includes all labor, machinery, construction equipment and appliances required to perform in a good workmanlike manner all directional boring.

B. The overall work scope shall include, but not be limited to steerable directional boring equipment, boring pits and equipment, sheeting, location signs as required, maintenance of traffic and miscellaneous appurtenances to complete the entire Work as shown on the Contract Drawings, and restoration. Directional boring operations shall be performed within the right-of-way and/or easements shown on the Drawings.

C. The equipment used in directional boring, also known as horizontal directional drilling, shall be of adequate commercial size and satisfactory working condition for safe operation, and may be subject to approval by the City or State at the discretion of the Engineer. Such approval, however, shall not relieve the Contractor of the responsibility for making a satisfactory installation meeting the criteria set forth herein. Only workmen experienced in directional boring operations shall be used in performing the Work.

D. Provide all structures, safety equipment, and professional services required to provide for the health and safety of the general public and of personnel involved in directional boring work in accordance with the requirements of the regulatory agencies having jurisdiction.

E. Potential locations for entry and exit points are shown on the drawings. The Contractor shall submit proposed locations as part of his drilling plan for approval by the Engineer. The Contractor shall employ licensed, professional land surveyors to locate the entry and exit points, and to establish horizontal and vertical datum for the bore and the pipe layout and fabrication areas.

F. Take all measures necessary to protect surrounding public and private property, adjacent buildings, roads, drives, sidewalks, and appurtenances from damage due to directional boring work. The work shall be performed in a manner that will minimize or eliminate the potential for frac-out and the upheaving of driveways, sidewalks and roads. If deemed necessary by the Contractor, pressure relief holes shall be utilized to control the pressure within the bore hole. The exact procedure for controlling the bore hole

pressure and completing the bore shall be the responsibility of the Contractor.

G. The Directional Boring operation is to be operated in a manner to eliminate the discharge of water, drilling mud, and cuttings to nearby water bodies or to the land areas involved during the construction process. If inadvertent spills to nearby water bodies occur, the Contractor shall immediately provide environmental controls and clean up to the satisfaction of, and at no additional expense to the Owner.

H. Best Management Practices (BMP's) for erosion control within the Contractor's work area shall be implemented and maintained at all times during drilling and back-reaming operations to prevent siltation and turbid discharges in excess of State Water quality Standards pursuant to Rule 62-302, F.A.C. Methods shall include, but are not limited to the immediate placement of turbidity containment devices such as turbidity screen, silt containment fence, hay bails, and earthen berms, etc to contain the drilling mud.

I. The Contractor shall be responsible for preparing and submitting to the Engineer and all permitting agencies (described in the permits attached to these specifications) sheeting, shoring, and bracing plan and dewatering plan for all excavations required in the project. The Contractor shall be responsible for obtaining all necessary permits including but not limited to a Generic Permit under F.A.C. 62-621.300 for dewatering activities.

J. The Owner has had soil borings along the proposed alignment of the water main. The location of these soil borings is shown on the plans (if applicable). A brief report of the result of these borings is referenced in the specifications is solely for the purposes of assisting the Contractor in preparing its bid. By making this report available to the Contractor, the Owner makes no representations that the report is a true and accurate representation of the existing site conditions. The Contractor shall be responsible to review and evaluate the contract documents and site conditions before submitting a bid to do the work. It is the Contractor's responsibility to locate all existing utilities within the proposed work area.

H. Relief holes are not required, but pipe frac-outs need to be avoided per Specification Section 02071. Means and methods are up to the contractor. Relief holes are recommended on both sides of driveways to confirm pipe depth. Sidewalk damage and replacement from relief holes will be paid under Site Restoration Bid Item #38.

1.02 REFERENCE DOCUMENTS

A. Florida Department of Transportation (FDOT) Utility Accommodation Guide

B. American Society for Testing and Materials (ASTM).

C. American Water Works Associations (AWWA).

D. American Petroleum Institute (API).

E. Plastic Pipe Institute (PPI).

1.03 QUALIFICATIONS

A. The following requirements represent the minimum qualifications required by the Owner for this project. The Contractor shall submit proof to the Engineer that the Contractor or the HDD contractor meets these requirements below:

1. Contractor shall have been in business under the current name for the past 36 months.

2. Contractor shall have a minimum of five (5) years of successful experience in installing pipelines using horizontal directional drill (HDD) methods.

3. Contractor must submit on above referenced jobs the successful deployment of downhole survey tools that record fluid pressure and provide steering and tracking.

4. Qualifications and Experience of Contractor Personnel: The Contractor shall employ skilled, experienced superintendent(s), drill rig operators, and key personnel. The superintendent(s) and drill rig operators shall have at least three years of successful experience using the HDD process, on at least five (5) projects with similar diameters, pull back length and ground conditions. The superintendent(s), drill rig operator, and key personnel shall demonstrate successful completion of at least three (3) projects where pipe was installed with horizontal directional drilling techniques. The Contractor shall furnish resumes of the superintendent(s) and operators. Personnel experience records should include project names, locations, pull back lengths, ground conditions, pipe materials, project description, project owner, engineer, and references with names, addresses and telephone numbers. The superintendent and operators listed in the submittal shall be on site during all construction related activities required for HDD installation.

1.04 SUBMITTALS

A. All submittals shall be in conformance with Section 01340.

B. Prior to beginning work, the contractor must submit to the Owner and Engineer the following items:

1. The Contractor shall provide a complete HDD work plan with a written description identifying details of the proposed method of construction and sequence of operations to be performed during construction. The work plan shall be comprehensive, realistic and based on actual working conditions for this particular project. The work plan shall address the following requirements as a minimum:

   a. Pre-construction walkover and site inspection.

   b. Sunshine One Call for utilities location within the limits of the HDD project (Ground Penetrating Radar (GPR) Electronic Locate, Subsurface Location as required).

   c. The Contractor shall video tape and take photographs of nearby structures which may be affected by inadvertent fluid returns.

   d. The Contractor shall review as-built drawing and prior geotechnical reports of past projects in the area, if available and identify and potential concerns.

   e. The work plan shall include the exact locations and dimensions of all drill entry/exit pits, equipment staging areas, and dewatering plans.

   f. The work plans shall include a traffic control plan, a spill cleanup/environmental protection plan, dewatering plan and contingency plans for possible problems.

   g. The Contractor shall establish a drill profile between the entry and exit point by observing various framework conditions mentioned below in order to ensure, that the intended theoretical drilling profile line can also be realized in practice.

      (i) Entry and exit angle
      (ii) Slant tangential sections
      (iii) Radii of curvature
      (iv) Cover
      (v) Borehole diameter

h. The Contractor shall provide anticipated drilling rates for pilot bore, reaming and pullback procedures. These drilling rates shall be used by the Contractor to calculate drilling fluid volumes required for pilot hole, each reaming pass and pullback. The Contractor shall verify pump capacity and that the drilling fluid cleaning system is capable of sustaining the anticipated drilling rates during the pilot bore, reaming and pullback.

i. The Contractor shall submit qualification documents for the HDD superintendent and key personnel experience in accordance with Section 1.3A of this specification. Also, the Contractor shall have personnel with a Florida/OSHA Certification for the site Safety Representative.

j. The Contractor shall submit make and model of the drilling rig that will be used, along with maximum thrust/pull-back force, maximum torque, and rated drilling fluid pumping capacity.

k. The Contractor shall provide documentation indicating that the drill rig is equipped with an electrical strike package.

l. The Contractor shall submit a detailed schedule for the HDD installation. The detail schedule shall identify all major construction activities and durations, with beginning and completion dates shown. The detail schedule shall be updated at least every two weeks or more frequently, as directed by the Engineer, and shall include but not limited to the following items:

(i) Pre-construction walk over and inspection.
(ii) Regular Mobilization and set-up.
(iii) Pilot bore
(iv) Pre-reaming and reaming.
(v) Layout of pipe.
(vi) Pressure Testing of pipe prior to pullback and after installation.
(vii) Final reaming and pullback of product pipe.
(viii) Mandrel/pig test to confirm deformations of product pipe are within allowable tolerances.
(ix) Cleanup, surface restoration, and demobilization.

m. MSDS of any potentially hazardous substances to be used.

C. The Contractor shall make available complete, legible, written daily logs and records.

D. The Contractor shall submit a drill profile for approval by the Engineer and shall be based on the control elevations and stationing of the applicable construction baseline shown on the plans. The Contractor shall notify the Engineer immediately upon discovery of any deviations from the design plans.

E. The Contractor shall submit records of equipment calibrations and certifications for all equipment used for tracking of the drill head. Procedures shall be as recommended by the equipment manufacturer, including measures to verify the accuracy of the equipment readings. If the Contractor is proposing to use a surface wire grid system, the Contractor shall submit a drawing with the surveyed location of the surface wire grid system. The Contractor shall submit methods for surveying the coordinates of the surface wire grid system both outside and under the waterway. The Contractor shall submit a drilling bore log within seven (7) days of performing the bore. Depths shall be recorded at a maximum of every ten (10) feet. Elevations shall be indicated on record drawings. During pilot bore, reaming passes and pipe pullback the Contractor shall electronically record and evaluate the following information a maximum of once every ten (10) feet:

1. Rate of Penetration
2. Rotation
3. Thrust
4. Pump Rates
5. Measured Depth
6. Annular Pressure
7. Flow Meter (Returns Suction Line)

F. Any unexpected deviations from expected values shall be immediately investigated and the cause of which determined and reported to the Engineer.

G. A drilling bore log shall be submitted within seven (7) days of performing the bore. Depths shall be recorded at a maximum of every ten (10) feet. Record drawings shall indicate elevations.

H. Contractor shall submit specifications on directional drilling equipment to be used to ensure that the equipment will be adequate to complete the project. Equipment shall include but not be limited to: drilling rig of sufficient capacity, drilling rods, appropriate drill bit, reamer, product pipe, mud system, mud motors (if applicable), down-hole tools, guidance system and rig safety systems. All surveying equipment used for downhole wireline surveying and tracking of the bore path and drill head and layout of the surface wire grid system or other guidance system shall be inspected and calibrated by the

equipment manufacturer prior to use. Proof of this inspection and calibration shall be provided to the Engineer prior to the commencement of drilling operations. Specifications for any drilling fluid additives that Contractor intends to use or might use shall be submitted.

I. The Contractor shall submit plans for disposal of waste materials resulting from the pipeline construction, including drilling fluids, cuttings, waste oil, fuel, discharge water, etc. The Contractor shall identify the disposal site and submit a letter indicating willingness and legal authority to accept the described anticipated waste products.

J. The Contractor shall provide details on measures to be taken to monitor and protect adjacent utilities, structures, and roadways, and provide details on monitoring equipment and provisions, including the layout of all settlement points, and other monitoring points.

PART 2 - PRODUCTS

2.01 DIRECTIONAL BORING EQUIPMENT

A. The directional boring equipment shall be suitable for installing the diameter and length of pipe as indicated in the drawings. The drilling equipment shall be capable of advancing through the geologic conditions to be encountered at the site, as described in the geotechnical report, and as anticipated by the Contractor.

B. The directional boring equipment shall be steerable by means of an electronic tool directional system and shall provide a bentonite clay slurry to completely seal around the installed carrier pipe.

C. At all times during the pilot bore the Contractor shall provide and maintain a bore tracking system that is capable of accurately locating the position of the drill head in the x, y, and z axes. The Contractor shall record these data at least once per drill pipe length or every ten (10) feet, whichever is more frequent. The position of the drill head shall be continuously tracked and recorded by a wireless or wired tracking/locator system, DigiTrack or approved equal.

D. Deviations between the recorded and design bore path shall be calculated and reported on the daily log. If the deviations exceed tolerances specified elsewhere, such occurrences shall be reported immediately to the Engineer. The Contractor shall undertake all necessary measures to correct deviations and return to design line and grade.

E. Drilling fluid pressures and flow rates shall be continuously monitored and recorded by the Contractor. The pressures shall be monitored at the pump

and within the annular space with a downhole pressure-sensing tool located within thirty (30) feet of the drilling head.

F. Maximum allowable drilling speeds shall be calculated by the Contractor for pilot boring and each reaming pass and shall not be exceeded for pilot boring or reaming passes. Measurements shall be taken every ten (10) feet.

G. The Contractor shall provide all materials for completing the installation and for adequate protection of the work.

H. Pipe shall be color-coded by the pipe manufactured during fabrication indicating appropriate service.

2.02 DRILLING PIPE

A. Drill rods shall be Firestick II or equivalent. Drill rods shall be of a diameter sufficient for the torque and longitudinal loads and fluid capacities required for the work.

B. The Contractor shall use high quality drill pipes. The drill pipe shall be inspected periodically by the Contractor and properly maintained within the manufacturer’s prescribed limits.

C. The Contractor shall adhere to the manufacturer’s guidelines for using their pipe, and sound practices must be followed to ensure reduced risk of downhole failure, i.e. the Contractor shall not bend the drill pipe sharper than the minimum bend radius stated by the manufacturer, especially on HDD enter and exit locations.

2.03 BENTONITE DRILLING MUD

A. Bentonite technical criteria shall be as described in API Specification 13A, "Specification for Oil Well Drilling Fluids Material" for fresh water drilling fluids.

B. Any modification to the basic drilling fluid involving additives must describe the type of material to be used and be included in Contractor's drilling plan presented to the Owner. The Owner retains the right to sample and monitor the waste drilling mud, cuttings and water.

C. The drilling fluid shall be designed for the geologic conditions to be encountered at the site, as described in the geotechnical report and as anticipated by the Contractor.

2.04 PIPE LOCATION WIRE

A. All directional drilled pipe shall be installed with two (2) insulated tracer wires with a 45 mil HDPE jacket and minimum average break load of 1150 lbs. Tracer wires shall be 12 AWG-Solid CCS EHS Copperhead Directional Drill Wire as manufactured by Copperhead Industries, the 12 AWG Pro-Trace HDD-CCS PE45 Tracer Wire as manufactured by Pro-Line Safety Products, or approved equal. This wire shall be spliced twelve (12) inches below grade to two (2) 12-guage tracer wires and brought up in the valve boxes at the ends of each line segment, splices shall be made only by methods per the equipment manufacturer's recommendation. The splicing connectors shall be the LSC1230 SnakeBite™ Locking Connector from Copperhead Industries, the Direct Bury Lug from DryConn®, or approved equal. All miscellaneous splicing components shall be furnished and installed by the Contractor.

2.05 EROSION CONTROL MEASURES

A. Provide silt fence as approved under FDOT Standard Specifications for use near open water bodies, wetlands, ditches, inlets or other areas where runoff could pollute nearby water bodies. The Contractor shall place silt fence between all drilling operations and any drainage, wetland, waterway, or other area designated for protection by the contract documents, state, federal or local regulations. Additional environmental protection necessary to contain any hydraulic or drilling fluid spills shall be put in place, including berms, liners, turbidity curtains and other measures. The Contractor shall adhere and comply with all applicable permits/permit conditions.

B. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into wetlands and other surface water exists. Turbidity barriers shall remain in place and shall be maintained in a functional condition at all locations until construction is completed and soils are stabilized and vegetation had been established.

C. Turbidity barriers shall be made of material in which manatees and turtles cannot become entangled, shall be properly secured and shall be regularly monitored to avoid manatee entanglement. Barriers must not impede manatee movement and shall not block manatee entry or exit from manatee feeding areas.

2.06 STORAGE AND HANDLING OF MATERIALS

A. Inspect materials delivered to the site for damage. All materials found to have cracks, flaws, cuts, abrasions or other major defects shall be rejected and removed from the job site immediately.

B. Store materials under cover out of direct sunlight. Do not store directly on the ground. Keep all materials free of dirt and debris.

C. Disposal of fluids is the responsibility of the Contractor, and shall be performed in accordance with all permits and applicable federal, state or local environmental regulations. Upon completion, the Contractor shall thoroughly clean the entire area of all debris, spilled fluids and damaged plants, and restored to existing or better conditions.

PART 3 - EXECUTION

3.01 GENERAL

A. All spoil and slurry must be contained in trucks, tanks, approved recirculation pits, or other containers at all times. Dumping of spoil or slurry on the ground, discharge into sewer, or discharge into the water bodies will not be permitted. All spoils will be transported and disposed of off site at an approved disposal facility that meets all State of Florida and local requirements.

B. Perform all work within areas shown on the plans. The Contractor shall provide adequate control of surface water and drilling fluids drainage and runoff, and provide silt fences and hay bales to prevent surface water or drilling fluids from entering the adjacent environmentally sensitive area.

C. Surface settlement or heave of utilities and other features above the HDD centerlines and within the zone influenced by the HDD construction shall be limited in values that avoid damage. The Contractor shall repair any damage resulting from settlement or heave caused by HDD activities at no additional cost to the Owner.

D. It shall be the Contractor's sole responsibility that all work is done in conformance with all applicable federal, state, and local safety requirements. Required safety equipment and procedures shall be employed by the Contractor at all times. All materials and methods of construction shall meet the applicable requirements of Pinellas County and the applicable requirements of the State of Florida Administrative Code.

E. Contractor shall comply with the City of Safety Harbor Noise Ordinance per Chapter 15 Sec. 15.03 of the City of Safety Harbor Code of Ordinances. Sound levels in excess of these values are sufficient cause to have the work halted until equipment can be quieted to these levels. Work stoppage by the Owner for excessive noise shall not relieve the Contractor of the other portions of this specification including, but not limited to, completion of all Work within specified contract time and contract price. The Contractor shall submit a plan prior to construction identifying all noise reduction/abatement procedures. The plan will be approved by the Engineer prior to construction. If mufflers cannot achieve the necessary noise reduction, noise abatement shall be accomplished by the Contractor's installation of baffles (or other acceptable means) positioned to break line-of-sight from the noise source to affected residences and/or commercial structures. Minimum noise abatement measures shall consist of equipping all engines with hospital grade mufflers or silencers.

F. Contractor shall provide at least seventy-two (72) hours advance written notice to the Owner of the planned inception of major drilling activities, including pilot bore launch, pre-reaming, reaming, and product pipe pullback.

The Contractor shall immediately notify the Owner, in writing, when any significant problems are encountered or if ground conditions are considered by the Contractor to be materially and significantly different than those represented within the Contract Documents. The Contractor shall perform the pilot bore in the presence of the Owner, unless Owner grants prior written approval to perform such work in Owner's absence.

G. All surveying equipment used tracking of the bore path and drill head shall be inspected and calibrated by the equipment manufacturer prior to use. Proof of this inspection and calibration shall be provided to the Engineer prior to the commencement of drilling operations.

H. The directional boring equipment shall be operated by individuals trained by the manufacturer as experienced operators.

I. The directional boring equipment shall produce a stable, clay sealed tunnel with a minimum burial depth consistent with the design profile or approved drill profile.

J. The directional boring equipment shall employ a fluid cutting technique. The soil shall be cut by small diameter, high pressure jets of liquefied clay. The jets shall cut the soil in advance of the boring tool, impregnating and lining the tunnel wall with clay. The clay shall be totally inert and pose no environmental risk. A pilot hole shall be drilled with an appropriately sized drill pipe. The pilot hole will then be increased to the appropriate diameter by a reaming operation. The boring tool will then be connected to the pipe, and the boring tool shall pull the carrier pipe through the clay lined tunnel as it traverses under the surface being crossed. The pulling strength of the boring equipment shall not exceed pipe safety pull strength as per manufacturer's recommendations. Surface excavations shall be limited to small launching and receiving pits. Pits shall be no larger than that required for launching and receiving. Adequate "pit-tail" lengths of service connection piping shall be provided at both the launching and receiving ends to facilitate service connection assembly.

K. The Contractor shall notify the Engineer immediately in the event that any obstruction is encountered that prevents further advancement of the drill pipe, or pull back of the pre-reamer, reamer, and/or pipe. The Contractor shall make all diligent and reasonable efforts to advance past the object by drilling slowly through the object, pulling back, and drilling along a new bore path that avoids the object, or excavating and exposing and removing the object, and all other reasonable attempts to continue the bore. The Contractor shall notify the Engineer of proposed measures to attempt to advance past the object, prior to initiating the attempt. If the Contractor attempts to pull back and re-drill, the Contractor shall adhere to line and grade tolerances established in this specification section, unless the Engineer approves variance, in writing, prior to the Contractor's attempt to re-

drill. The Contractor shall investigate the cause and together determine an appropriate response. Appropriate response may include revisions to equipment or methods, retraction and re-drilling of a portion of the borehole, or abandonment of the borehole. If abandonment is deemed necessary, the Contractor shall recover, to the extent practicable, any drill pipe, product pipe, and tools in the borehole, and properly abandon the borehole by contact grouting, unless otherwise directed in writing by the Engineer. If the borehole is abandoned, the Contractor shall be allowed to begin a second attempt to install the pipeline at an alternate location subject to approval, in writing, by the Engineer at no additional expense to the Owner. The Contractor shall take all reasonable actions to complete the installation with minimal delays.

L. The Contractor shall monitor for settlement or heave before and during drilling and grouting operations. The Contractor shall measure and record drilling fluid viscosity and density at least three times per shift with at least two hours between readings, using calibrated Marsh funnel and mud balance. These measurements shall be included in daily logs submitted to the Engineer. The Contractor shall document modifications to the drilling fluids, by noting the types and quantities of drilling fluid additives and the dates and times when introduced. The reason for the addition of drilling fluid additives or other modifications shall be documented and reported.

M. The Contractor shall measure and record the pH on a regular basis (three times per shift with at least two hours between readings) with pH strips, paper or a pH meter.

N. The Contractor shall constantly monitor and record the circulating volume, particularly for the early detection of drilling fluid losses, or thinning, or the danger of borehole collapse. Ground upheavals can also be detected early from such differences, and necessary action can be implemented to prevent further damage.

O. All directional bores crossing a ditch/swale/creek must be at least 36 inches below actual/design bottom of conveyance.

3.02 PILOT BORE

A. The pilot bore shall follow the design path of the bore shown on the Drawings.

B. Horizontal and vertical deviations shall be less than plus or minus one foot from the design path centerline. The Contractor shall continuously monitor horizontal and vertical position and record the position at least once per drill pipe length, or at ten (10) feet intervals, whichever is most frequent.

C. The radius of curvature shall not be less than that shown on the Drawings. The radius of curvature shall be calculated over the distance of three drill pipe sections.

D. The Contractor shall be solely responsible for all work necessary to correct excessive deviations from line and grade, including re-drilling, redesigning connections, and acquiring additional easement, at no additional cost to the Owner and without schedule extension.

3.03 REAMING

A. Upon approval of the pilot hole location by the Engineer, the hole opening or enlarging phase of the installation shall begin. The bore hole shall be reamed to 120% to 150% larger than the pipe or per the manufactures recommendation. Drilling mud shall then be injected into the hole to stabilize the hole and remove soil cuttings. The type of reamer to be utilized in this phase shall be determined by the types of subsurface soil conditions that have been encountered during the pilot hole drilling operation. The reamer type shall be at the Contractor's discretion.

3.04 PIPE PULLBACK OPERATION

A. The pipes shall be assembled in a manner that does not obstruct adjacent roads, driveways or public activities adjacent to the layout areas except as directed otherwise by the Owner.

B. The Contractor shall provide adequate support/rollers along the stringing area to support the required length of pipe for each bore. Such support/rollers shall be comprised of a non-abrasive material arranged in a manner to provide support to the bottom and bottom quarter points of the pipeline allowing for free movement of the pipeline during pullback. The Contractor must use a sufficient number of pipe rollers or skids to prevent excess sagging of the pipe and/or dragging of the pipe on the ground. Pulling/dragging the pipe on asphalt or concrete shall not be permitted.

C. Each length of pipe shall be inspected and cleaned as necessary to be free of debris immediately prior to joining.

D. All plastic pipe installed by directional boring shall be provided with a minimum of two (2) insulated 12 AWG-Solid CCS Directional Drill Copperhead Tracer Wire as manufactured by Copperhead Industries, the 12 AWG Pro-Trace HDD-CCS PE45 Tracer Wire as manufactured by Pro-Line Safety Products, or approved equal. This wire is to be continuous and brought up in the valve boxes at the ends of each line segment with splices made only by methods approved by the Engineer. Trace wires shall be secured to the pipe prior to pulling. The locator wire shall be tested by voltage of at least 12 DC. Test each wire with both positive and negative

charge with not more than 1 volt of loss per 1000 feet will be allowed. The wire will be tested prior to the pressure test of pipeline. If wire fails, pressure test will not be done until wire is repaired.

E. Pulling Loads: The maximum pull (axial tension force) exerted on the pipelines shall be measured continuously and limited to the maximum allowed by the pipe manufacturer so that the pipe or joints are not overstressed.

F. Torsion and Stresses: A swivel shall be used to connect the pipeline and tracer wires to the drill pipe to prevent torsional stresses from occurring in the pipe.

G. Pipeline Support: The pipelines shall be adequately supported during installation so as to prevent overstressing or buckling.

H. The Contractor shall at all times handle the pipe in a manner that does not overstress the pipe. Vertical and horizontal curves shall be limited so that wall stresses do not exceed 50% of yield stress for flexural bending of the pipe. If the pipe is buckled or otherwise damaged, the damaged section shall be removed and replaced by the Contractor at his expense. The contractor shall take appropriate steps during pullback to ensure that the pipe will be installed without damage.

I. During the pullback operation, the Contractor shall monitor roller operation and sidebooms if required to assist above ground movement of the pipe. Surface damage or cuts that exceed 10% of the pipe wall thickness shall be repaired by Contractor before pulling operations resume.

J. The lead end of the pipe shall be closed during the pull back operation. If necessary to reduce pull back loads and to ensure that adequate internal pressure is maintained at all points to counter balance collapse pressures, the pipe shall be filled with water as in enters the borehole.

K. After completion of “pull back” and prior to the final pipe tie-in, pipe shall be provided a sufficient relaxation period as recommended by the specified pipe manufacturer.

L. The Contractor shall install, maintain, and leave in place any sheeting, underpinning, cribbing, and other related items (other than that required for the boring and receiving pits) to support any structure or facility affected by the boring operations. The Engineer, depending upon existing conditions, may require that additional sheeting for the excavation be left in place.

M. Damage to the product pipe resulting from manufacturer defects, installation, contact grouting, or grouting of the annulus is the responsibility of the Contractor, including costs for replacement and labor and materials. To

confirm no damage to the pipe, upon completion of pull back and grouting, the Contractor shall perform the following test on the completed pipeline:

1. A sphere or pig, one inch less in diameter than the internal diameter of the product pipe, which is capable of allowing water to pass through it, complete with a pulling cable on either side of sphere or pig, shall be pulled through the entire length of the pipeline. If the pig or sphere cannot pass through the pipe, it shall be considered collapsed and damaged.

2. After the product pipe is completely pulled through the borehole, a sufficient relaxation period, if recommended by the pipe manufacturer, shall be provided before the final pipe tie-in.

N. Contractor shall flush, clean, pig and hydrostatically test each pipeline according to the test procedures required per Section 02640.

3.05 HANDLING DRILLING FLUIDS AND CUTTINGS

A. During the drilling, reaming, or pullback operations, the Contractor shall make adequate provisions for handling the drilling fluids, or cuttings at the entry and exit pits. These fluids shall not be discharged into the waterways. Care shall be taken to avoid spillage on sidewalks, roadways or other public thorough fares. Spills shall be cleaned prior to resuming public access to construction area. When the Contractor's provisions for storage of the fluids or cuttings on site are exceeded, these materials shall be hauled away to a suitable legal disposal site. After completion of the directional drilling work, the entry and exit pit locations shall be restored to original conditions. The Contractor shall comply with all Florida Department of Environmental Protection permit provisions.

3.06 WATER

A. The Contractor shall be responsible for providing/obtaining water for construction purposes. The Contractor shall be responsible to pay for all costs for water for construction purposes.

3.07 NEARBY UTILITIES

A. The drawings show existing buried utilities that are assumed to be near the directional drill alignment. There is no guarantee that these utilities are located as shown or that additional utilities may not be present. It will be the Contractor's responsibility to locate all nearby utilities or other subsurface obstructions that may interfere with the work by contacting Sunshine One Call, excavating windows along the pipeline drill alignment, or other means.

3.08 RESPONSIBILITY

A. The Contractor shall be fully responsible for the steerable, clay lined directional drilling operation. Any noticeable surface defects resulting from installation activities or operation of boring equipment shall be repaired by the Contractor, at his expense. All exploratory, entrance, exit and slurry pits shall be restored by the Contractor to the preconstruction condition or better at no additional cost. Care shall be taken to avoid unnecessary construction equipment traffic on sidewalks, driveways and green spaces. Damage to these areas shall be repaired by the Contractor, at his expense.

3.09 CLEANING AND SIZING PIGS

A. After the pipe is in place, cleaning pigs shall be used to remove residual water and debris. After the cleaning operation, the Contractor shall provide and run a sizing pig to check for abnormalities in the form of buckles, dents, excessive out-of-roundness, and any other deformations. The sizing pig run shall be considered acceptable if the survey results indicate that there are no sharp anomalies (e.g. dents, buckles, gouges, and internal obstructions) greater that 2-percent of the nominal pipe diameter, or excessive ovality greater than 5-percent of the nominal pipe diameter. For gauging purposes, dent locations are those defined above which occur within a span of five feet or less. Pipe ovality shall be measured as the percent difference between the maximum and minimum pipe diameters.

3.10 SUCCESSFUL COMPLETION

A. The contractor shall be considered as having completed the requirements of any directional boring when he has successfully completed the work and tested the pipe to the satisfaction of the Engineer.

B. At the completion of construction, the Contractor shall remove all temporary facilities installed by the Contractor. Unused soil, aggregate, and other materials shall be removed and disposed of at approved sites in accordance with all Federal, State, and Local regulations. Any damage to streets, lawns, common areas, and sidewalks shall be restored to original or better conditions. All disturbed areas shall be re-vegetated.

3.11 RECORD KEEPING

A. Daily logs and records shall be maintained by the Contractor and shall include annular pressure, drilling lengths, location of drill head, drilling fluid pressures and flow rates, drilling fluid losses, inadvertent returns, drilling times required for each pipe joint, any instances of retraction and re-drilling of the pilot bore or segments thereof, and any other relevant observations, including any observed settlement, heave, frac-outs or surface spills. The drilling fluid pressures shall be measured at the entry point and at the drill

head and recorded at least twice per drill pipe length. These records shall be maintained and provided daily to the Engineer.

B. For HDD below grade, the position of the drill head shall be continuously tracked and recorded by a wireless or wired tracking/locator system, DigiTrack or approved equal.

C. A plot of actual locations of the bore path shall be maintained and updated daily, or more frequently, as directed by the Engineer. Contractor shall maintain a daily project log of drilling operations and a guidance system log with a copy given to Engineer at completion of boring. As-built drawings with x, y, z coordinates of the pipe shall be certified by the Contractor, for accuracy and shall be provided to the Engineer within 48 hours after completion of the boring.

D. Drill profile submitted by the Contractor shall be based on the control elevations and stationing of the applicable construction baseline shown in the drawings.

E. The Contractor shall submit measured mud and/or drilling fluid weights used during pilot boring and reaming of the bore measured at a minimum of twice per shift or at least once per two hundred (200) feet of drilled or reamed length, whichever is more frequent.

END OF SECTION

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SECTION 02125

SILT BARRIERS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The work included under this section consists of furnishing all necessary labor, equipment, tools and materials, and in performing all operations in connection with the installation of a staked silt barrier, of cloth or straw bales, or a floating silt barrier for the protection of open water, wetland systems or areas intended to remain undisturbed by adjoining work.

B. This work shall be performed in strict accordance with the requirements of all applicable sections of these specifications and in conformity with lines, grades, notes and typical sections as shown on the drawings, as directed by the Engineer or as directed by representatives of governmental agencies having permitting jurisdiction over areas to be protected.

PART 2 - PRODUCTS

2.01 STAKED FABRIC SILT BARRIER

A. The sediment control fabric is to be woven polypropylene meeting the following standards:

Mullen Burst Test	(ASTM D-3786)	200 psi (min.)
Grab Elongation	(ASTM D-1682)	30% (max.)
Slurry Flow Rate	(VTM-51)	0.3 gpm/sf (min.)
Retention Efficiency	(VTM-51)	75% (min.)

B. The fabric shall be provided in widths adequate to provide a barrier of a minimum of 24 inches in height and allow for 8 inches of fabric to be buried for restraint.

PART 3 - EXECUTION

3.01 STAKED CLOTH SILT BARRIER

A. The sediment control fabric shall be attached per the manufacturer’s recommendations to the uphill or sediment producing side of the stakes. The stakes shall be spaced at 6 to 10 foot intervals. A 4” to 6” trench shall be dug along the fence line and backfilled with the bottom 8 inches of control fabric in place.

B. The ends of each unit of fence shall be connected to adjoining fence sections with a connector provided by the manufacturer or by intertwining the two end posts to overlap the fabric sufficiently to prevent sediment from escaping, as shown in the Drawings.

3.02 STAKED STRAW/SYNTHETIC BALES

A. Securely bound straw/synthetic bales may be used as a sediment barrier. The bales shall be securely bound with two strands of rope or wire. The bales shall be positioned in a 4 inch trench along the plan alignment and each bale is to be secured by driving two 2"x 2" stakes or #5 rebar through the bale and 18" to 24" into the ground. The tops of the stakes shall then be secured by a continuous wire tie.

B. Deteriorated bales shall be replaced as directed by the Engineer.

3.03 REMOVAL

A. Upon obtaining Substantial Completion, the Contractor shall be responsible for the complete removal of all silt barriers unless so directed by the Engineer. Following removal, all materials shall become the property of the Contractor.

END OF SECTION

SECTION 02140

TEMPORARY DEWATERING

PART 1 - GENERAL

1.01 DESCRIPTION

A. The Work to be performed includes the furnishing of all equipment, materials and labor necessary to remove surface or subsurface waters from excavation areas in accordance with the requirements set forth and as shown on the Drawings or as specified.

B. Unless specifically authorized by the Engineer, all pipe and structures shall be laid "in the dry".

1.02 QUALITY ASSURANCE

A. The dewatering of any excavation areas and the disposal of the water produced shall be in strict accordance with the latest revision of all Laws and Regulations; with the local, State and Federal permits for the project; and, with the Contractor’s approved Storm Water Pollution Prevention Plan (SWPPP).

PART 2 - PRODUCTS
(NOT USED)

PART 3 - EXECUTION

3.01 TEMPORARY DEWATERING

A. Prior to commencing work, the Contractor shall submit to the Engineer for approval the Contractor’s plans for dewatering. The dewatering system shall be in conformity with the overall construction plan.

B. The Contractor shall obtain a dewatering permit per Chapter 62-621.300 F.A.C. necessary for dewatering.

C. The Contractor shall provide adequate equipment for the removal of surface or subsurface waters that may accumulate in the excavation. Flotation and migration of fines shall be prevented by the Contractor by maintaining a positive and continuous operation of the dewatering system. The Contractor shall be fully responsible and liable for all damages that may result from the operation and/or failure of this system.

D. If subsurface water is encountered, the Contractor shall utilize suitable equipment to adequately dewater the excavation so that it will be dry to a

depth of 12-inches below the pipeline subgrade compaction level or over-excavation level, whichever is lower, but not more than 5-feet, to facilitate effective subgrade compaction and to provide for a stable trench bottom. For concrete structures, the dewatering system shall maintain the water at such a level at least 2 feet below the subgrade of the structure. A wellpoint system, trench drain, sump pump operation, or other dewatering method shall be utilized to maintain the excavation in a dry condition for preparation of the trench bottom and until the fills, structures or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural levels. No water shall be allowed to contact masonry or concrete within 24 hours after being placed.

E. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation and to preserve the integrity of adjacent structures and utilities. Well or sump installations shall be constructed and operated continuously with proper sand filters to prevent drawing of finer grained soil from the surrounding ground. Dewatering by trench pumping shall not be permitted if migration of fine grained natural material from bottom, side walls, or bedding material may occur.

F. In the event that satisfactory dewatering cannot be accomplished due to subsurface conditions, or where dewatering could damage existing structures, the Contractor shall obtain the Engineer's approval of wet trench construction or procedure before commencing construction.

G. Engine-driven dewatering pumps shall be equipped with residential type mufflers. Where practical and feasible, electrical "power drops" and electric motor-driven equipment shall be used in lieu of portable generators.

H. The Contractor shall take all additional precautions to prevent uplift of any structure during construction.

I. The Contractor shall take all precautions to preclude the accidental discharge of fuel, oil, etc. to prevent adverse effects on groundwater quality. All costs associated with any such adverse effects shall be borne by the Contractor.

J. The Contractor shall, at no expense to the Owner, be required to excavate below grade and refill with approved fill material if the Engineer determines that adequate drainage has not been provided.

3.02 DISPOSAL

A. All product water from dewatering shall be pumped from the trench or other excavation and shall be disposed of in strict accordance with the Permits. The Contractor will be allowed to discharge product water from dewatering offsite into storm sewers, or ditches having adequate capacity, canals or suitable disposal pits, or other surface waters in accordance with the Dewatering Plan, provided that the water has been sampled and tested by the Contractor, is in compliance with the concentration limits specified in 62-621.300(2) FAC, and the Contractor has obtained a Generic Permit for the Production of Groundwater. The frequency of water sampling and testing shall be determined by the Engineer based on existing conditions and field observations.

B. Prior to discharging produced groundwater from any construction site, the contractor must collect samples and analyze the groundwater, which must meet acceptable discharge limits per 62-621.300(2) FAC.

C. Permission to use any storm sewers, or drains, for water disposal purposes shall be obtained from the authority having jurisdiction. Any requirements and costs for such use shall be the responsibility of the Contractor. However, the Contractor shall not cause flooding by overloading or blocking up the flow in the drainage facilities, and shall leave the facilities unrestricted and as clean as originally found. Any damage to existing facilities shall be repaired or restored as directed by the Engineer or the authority having jurisdiction, at no cost to the Owner.

D. Contractor shall be responsible for acquiring and complying with all permits required to discharge the product water from dewatering and shall protect waterways from turbidity during the operation.

E. In areas where adequate disposal sites are not available, partially backfilled trenches may be used for water disposal only when the Contractor's plan for trench disposal is approved in writing by the Engineer. The Contractor's plan shall include temporary culverts, barricades and other protective measures to prevent damage to property or injury to any person or persons.

F. Contractor shall not dam, divert, or cause water to flow in excess in existing gutters, pavements or other structures: and to do this he may be required to conduct the water to a suitable place of discharge determined by the Engineer.

G. No flooding of streets, roadways, driveways or private property shall be permitted.

3.03 EQUIPMENT REMOVAL

A. Removal of dewatering equipment shall be accomplished after the system is no longer required. All materials and equipment constituting the system shall be removed by the Contractor.

END OF SECTION

SECTION 02221

EXCAVATION AND BACKFILL FOR PIPES

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. This work covers clearing and grubbing, site work, excavation, and backfill for sanitary sewers, force mains, potable water mains, reclaimed water mains and their appurtenances.

B. The work pertaining to storm sewers shall be performed in accordance the Florida Department of Transportation “Standard Specifications for Road and Bridge Construction” (FDOT Specifications), latest edition. The Contractor shall acquire his own copies of the FDOT Specifications. In the event of conflict between the FDOT Specifications and the Specifications listed in these documents, the FDOT Specifications shall govern.

1.02 BURNING

A. Burning of debris shall not be permitted.

1.03 CLEAN-UP

A. Clean-up is an essential part of the work. As the work progresses and is completed, the Contractor shall clean the various sites of all operations and completely restore all work areas to the satisfaction of the Engineer and the Owner. This clean-up shall be done as promptly as practical and shall not be left until the end of the construction period. No part of the work shall be considered complete, and no payment will be made, until clean-up is completed.

B. It is the Contractor's responsibility to assure that all construction sites and all other affected properties are restored to a condition equal to, or better than, the existing conditions prior to construction. All restoration is subject to the approval of the Engineer and/or Property Owners.

1.04 DRAINAGE

A. It is the responsibility of the Contractor to maintain the existing drainage systems during construction. Any damage done to an existing drainage structure or system is to be immediately repaired at no additional cost to the Owner to a condition equal to or better than its original condition to the satisfaction of the Engineer.

1.05 DUST CONTROL

A. It is the responsibility of the Contractor to control all dust problems that may occur during the construction with required watering. Dust control will be required seven days a week.

1.06 SPRINKLERS

A. The Contractor shall be responsible for sprinklers encountered within the area of excavation and shall make sure that, if disturbed or damaged, they shall be rebuilt to the satisfaction of the Engineer or property Owner and with no additional cost to the Owner.

1.07 EROSION CONTROL

A. It is the Contractor's responsibility to erect suitable silt fences, hay bales or other erosion runoff control devices prior to commencement of earth moving or excavation activities. The Contractor shall be responsible for maintaining the silt fences, hay bales or other erosion runoff control devices in an effective manner, repairing or replacing damaged or ineffective section during the course of the work until a ground cover of grass is established and final environmental approval has been obtained.

1.08 PERMITS FOR DEWATERING OPERATIONS

A. The Contractor is responsible for obtaining all permits required for dewatering discharges, including a Florida Department of Environmental Protection Generic Permit for Produced Groundwater per F.A.C 62-621.300 and as specified in Section 02140.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General

1. Materials for use as fill are described below. For each material, the Contractor shall notify the testing lab of the source of the material at least ten (10) calendar days prior to the date of anticipated use of such material.

2. Materials shall be furnished as required from off site sources and hauled to the site.

3. Disposal of unsuitable material is specified in this Section.

B. Common Fill

1. Common fill shall consist of mineral soil, free of organic material, loam, wood, trash and other objectionable materials, which may be compressible or which cannot be compacted properly. Common fill shall not contain stones larger than four inches in any dimension, broken concrete, masonry, rubble, or other similar materials. It shall have physical properties such that it can be readily spread and compacted during filling.

2. Material falling within the above Specification, encountered during the excavation, may be stored in segregated stockpiles for reuse. All material, which in the opinion of the Engineer, is not suitable for reuse shall be spoiled as specified herein for disposal of unsuitable materials.

C. Crushed Stone

1. Pea Gravel for PVC pipe bedding shall be FDOT No. 89 in accordance with Section 901 of the FDOT Standard Specifications for Road and Bridge Construction.

D. Select Fill

1. Select fill shall be noncohesive, non-plastic material free of all debris, lumps or clods. Fill material shall be clean earth fill composed of sand or an approved mixture of clay and sand. Backfill material placed within one foot of piping and appurtenances shall not contain any stones or rocks larger than two inches in diameter, or three-quarter inch in diameter for PVC pipe.

PART 3 - EXECUTION

3.01 SAFETY PRECAUTIONS AND TEMPORARY WORKS

A. The Contractor shall provide and maintain adequate barricades, construction signs, torches, flashers and guards as required in pedestrian and vehicular traffic areas. All safety rules and regulations of local authorities shall be observed. Local fire officials shall be kept advised of roads closed and roads re-opened.

B. Where required, the Contractor shall provide suitable crossings at street intersections and driveways, and supply such aid, as may be required for pedestrians and motorists, including delivery vehicles, to safely negotiate the construction area. "Street Closed to Through Traffic" signs and "Detour" routes shall be indicated and maintained by the Contractor when the job is

located in a public or private street or way. In the case of dead end streets, the Contractor shall advise all concerned residents and make all arrangements to maintain reasonable ingress and egress for the residents. Particular attention shall be given to residents in bad health, emergencies and emergency vehicles. The Contractor shall be responsible for building and maintaining all by-pass roadway areas and restoring those areas to their original condition.

C. The Contractor shall furnish temporary or permanent support, adequate protection and maintenance of all underground facilities and utilities encountered. Support, protection, maintenance and restoration are the Contractor's responsibility at no additional cost to the Owner.

3.02 CLEARING AND GRUBBING

A. The Contractor shall remove only vegetation such as trees, shrubs, and grass, which interfere with the construction, as may be determined by the Engineer, and he shall preserve and protect all other existing vegetation.

3.03 EXCAVATION

A. General

1. The Contractor shall perform all excavation of every description, and of whatever substances encountered, to the depth indicated on the Drawings, or as otherwise specified.

2. Trench excavation shall be such that the pipe can be laid to the alignment and grade required. Trenches shall be shored and drained in such a manner that work may proceed safely and efficiently.

3. Trench dewatering pumps shall discharge to natural drainage channels, drains or sewers and shall be adequate to remove accumulated storm and/or subsurface water. The Contractor shall take necessary action to prevent surface water from flowing into the trenches. It is the responsibility of the Contractor to assure that all trench walls and trench bottoms are dry and remain dry during pipeline construction.

4. The Contractor shall separate, remove and dispose of excavated material not suitable for backfill, as directed by the Engineer.

5. All excavated material retained for backfill shall be piled in such a manner as not to endanger the work or obstruct the sidewalks, driveways or drainage. Fire hydrants, valve pit covers and hoses, curb stop boxes, fire and police call boxes and other utility controls shall be unobstructed and accessible at all times during construction.

B. Unclassified Excavation

1. Unclassified excavation shall include soil, clay, silt, sand, muck, gravel, hardpan, loose shale, loose stones in masses and boulders measuring less than one-half cubic yard in volume.

C. Classified Excavation

1. Classified excavation shall be rock further defined as follows: boulders, measuring one-half cubic yard or more in volume, rock material in ledges, bedded deposits and unstratified masses, conglomerate deposits firmly cemented and concrete or masonry structures, except sidewalks and paving, that in the opinion of the Engineer, requires removal by drilling and blasting, wedging, sledging, barring or breaking up with a power operated hand tool.

2. No soft or disintegrated rock that can be removed with a hand pick or power operated excavator or shovel, no loose, shaken, or previously blasted rock or broken stone in rock fillings or elsewhere, and no rock exterior to the minimum limits of measurement all owed, which may fall into the excavation, shall be considered as rock.

3.04 TRENCH PREPARATION

A. Unsupported trench width shall be limited to the minimum practicable width allowing working space to place and compact the haunching material. The maximum width shall be the pipe diameter plus one foot on each side of the pipe at springline for pipe in unsupported trenches. In sheeted trenches the width of trench between faces of the sheeting shall be adequate to allow the pipe bedding and haunching to be placed and completed, and the sheeting removed without disturbing the bedding and haunching material within two pipe diameters on each side of the pipe. Trench boxes and moveable sheeting shall be wide enough to allow moving without disturbing the bedding and haunching within two pipe diameters on each side of the pipe. Trench boxes and moveable sheeting shall be constructed and used in the trench to avoid disturbing the piping, bedding and haunching when being moved forward in the trench.

B. Dewatering of the trench bottom shall be accomplished using adequate means to allow preparation of bedding, placement of haunching and pipe in a trench environment without standing water. Dewatering shall continue until sufficient backfill is placed above the pipe to prevent flotation.

C. The trench shall be dug so that the pipe can be laid to the alignment and depth required, and it shall be excavated only so far in advance of the pipe laying as allowed by the Engineer. The trench shall be so braced and drained

that the workmen may work in it safely and efficiently. All trench preparation shall comply with all the latest applicable Local, State (Florida Trench Safety Act) and Federal Regulations (OSHA: Safe Trench Act). It is essential that the discharge of the trench dewatering pumps be conducted to natural drainage channels, drains or storm sewers.

D. Bell holes shall be provided at each joint to permit the joint to be made properly. Ledge rock, boulders and large stones shall be removed to provide a clearance of six inches on all pipe twenty-four (24) inches and smaller and nine inches on pipe larger than twenty-four (24) inches. If such removal is required, backfilling will be done with selected material approved by the Engineer and tamped to establish the proper grade.

E. Trench Bottom

1. Where the bottom of the trench at subgrade is found to be unstable or to include ashes, cinders, refuse, vegetable or other organic matter, or large pieces or fragments of inorganic material that, in the judgment of the Engineer, should be removed, the Contractor shall excavate and remove such unsuitable material to the width and depth as directed by the Engineer. Before the pipe is laid, the subgrade shall be made by backfilling with an approved material in three inch uncompacted layers. The layers shall be thoroughly tamped as specified by the Engineer to provide the uniform and continuous bearing support as heretofore described.

2. The trench shall be dry when the bottom is prepared. The trench bottom shall be excavated, or filled and compacted, as required to bring it to grade and shaped to receive and support the pipe barrel. In addition, bell holes shall be excavated so that after placement only the barrel of the pipe receives bearing pressure from and is uniformly supported by, the bottom of the trench. Preparation of the trench bottom and placement of the pipe shall be such that the final position of the pipe is true to line and grade, and uniformly supported throughout the barrel of each length. When pipe is placed in refill material, additional refill of the same material shall be tamped on each side of the barrel to the springline, thus forming a trough of firm bedding.

F. All materials that, in the opinion of the Engineer, are suitable for reuse in restoring the disturbed surface shall be kept separated from the general excavation material and can only be used as directed by the Engineer.

G. All excavated material shall be piled in a manner that will not endanger the work and that will avoid obstructing sidewalks and driveways. Hydrants, valve pit covers, valve boxes, curb stop boxes, fire and police call boxes, or other utility controls shall be left unobstructed and accessible until the work is

completed. Gutters, drainage inlets, natural water courses and miscellaneous drainage structures shall be kept clear or other satisfactory provisions made for their proper operation.

H. Hand methods for excavation shall be employed when damage to existing facilities is likely if heavy equipment is utilized or as directed by the Engineer.

3.05 DEPTH

A. Overdepth

1. When classified excavation is required, the rock shall be excavated to a minimum depth of six inches below the trench depths as indicated on the drawings or Specifications. Authorized overdepths in rock excavation shall be refilled to grade with loose granular moist earth or shell thoroughly tamped in place.

B. Trench shall be excavated to the depth required so as to provide a uniform and continuous bearing and support for the pipe on solid and undisturbed ground at every point between bell holes, except as necessary for removal of pipe slings or other lifting tackle. Any part of the bottom of the trench excavated to a point below the specified grade shall be corrected with approved material at the Contractor's expense and thoroughly tamped as directed by the Engineer.

C. Wherever unstable soil or muck that is determined by the Engineer to be incapable of properly supporting the pipe is encountered in the bottom of the trench, such material shall be removed to the required depth and the trench refilled as specified to proper grade. If, in the opinion of the Engineer, removal of the unstable material by this method is impractical, then the Contractor shall support the pipe as detailed on the plans, or as directed by the Engineer.

3.06 BACKFILL

A. General

1. The Contractor shall not perform any of the backfilling operations until after he has inspected the lines and found them to be acceptable to the Owner.

2. Backfill material shall consist of earth, loam, sandy clay, sand, gravel, soft shale or other materials, free from organic materials, large clods of earth, or stones. Where excavated material is not suitable for backfill, it shall be replaced by excess excavated material from other areas.

3. In all areas, backfill material shall be deposited in six -inch layers and carefully tamped until the compacted backfill depth reaches one foot above the top of pipe.

4. No mechanical equipment, or machinery other than a hand operated mechanical vibrator, shall be allowed within the trench area until the backfill has been properly tamped to one foot above the top of pipe. The remainder of the backfill shall be deposited in one-foot layers and thoroughly tamped. Settling the backfill with water shall not be permitted.

5. Where trenches are improperly backfilled, or where settlement occurs, the trenches shall be reopened to the depth required for proper compaction, refilled and compacted, and the surface restored to the required grade and compaction, mounded over and smoothed off.

B. Compaction Requirements

1. Trenches located under pavement or inside the two feet horizontal to one-foot vertical slope, downward from roadway shoulder or the back of curb and from spring line to bottom of sub-grade or the finished surface of the embankment, as appropriate, shall be compacted to a density of ninety-eight (98) percent as determined by AASHTO T-180, Modified Density Test.

2. Trenches located outside of the two feet horizontal to one-foot vertical slope downward from roadway shoulder or the back of curb and where no vehicular traffic will pass over the trenches, backfill shall be compacted to a density approximately equal to that soil adjacent to the trench but not less than ninety-five (95) percent of the maximum density as determined by AASHTO T-180, Modified Density Test.

C. Testing of Backfill

1. Trenching within, or across roadways, or other areas to be paved, or stabilized shall be backfilled and compacted to their full depth. Compaction testing shall also meet the requirements of Section 01410.

2. Density tests for backfilled trenches within, or across roadways, shall be performed as specified or as directed by the Engineer, with at least one test taken at different locations for each vertical foot beginning from two feet over pipe to ground level.

3. Backfill testing shall be performed in accordance with Pinellas County Minimum Testing Frequency Requirements, latest edition, unless called out differently by the Engineer on the plan documents.

4. Where unsatisfactory compaction is revealed by the test, the Contractor shall re-excavate, backfill, re-compact and/or rework the backfill as required, to obtain the required degree of compaction over the entire depth of the trench.

5. Satisfactory backfill compaction is an integral part of pipe laying, paving, and stabilizing. Satisfactory density reports shall be on file before each Contractor's statement is submitted for payment.

D. Disturbance of Sewer Mains

1. Sewer mains shall be checked by the Contractor to determine whether any displacement of the pipe has occurred after the trench has been backfilled to two feet above the pipe. If such inspection shows poor alignment, displaced pipe or any defects, these defects shall be remedied to the satisfaction of the Engineer by the Contractor at his expense.

3.07 DISPOSAL OF SURPLUS MATERIAL

A. All excavated material not required or not suitable for fill, or backfill, shall be disposed of by the Contractor, as directed by the Engineer.

B. Material suitable for backfill shall be stockpiled on, or near site, until released by the Engineer for disposal.

C. The Contractor shall bear all costs for disposal of all surplus or unsuitable materials.

3.08 SHEETING AND BRACING

A. The Contractor shall do all shoring and sheeting required to perform and protect the excavation and, as required, for the safety of the employees.

B. All trenches shall be sheeted and braced as required by the Engineer and all applicable Federal, State, County and Municipal regulations. Sheeting and bracing shall be used to prevent shifting of adjacent soil and to prevent damage to structures or the work. The sole responsibility for the design, methods of installation, and adequacy of the sheeting and bracing, shall be and shall remain that of the Contractor.

C. Sheeting and bracing or approved laying box shall be used in all trenches unless the slopes are excavated until the natural angle of repose of the soil is encountered.

D. In general, sheeting and bracing shall be removed as the excavation is backfilled in such a manner as to avoid the caving in of the bank or disturbance of adjacent areas or structures. The voids left by withdrawal of the sheeting and bracing shall be carefully filled by jetting, ramming or other means approved by the Engineer. Permission shall be obtained from the Engineer prior to removal of any sheeting or bracing. Permission shall not relieve the Contractor of any responsibility for damage due to failure to leave such sheeting and bracing in place.

E. The Engineer may order, in writing, any or all sheeting or bracing to be left in place for the purpose of preventing injury to adjacent structures, property, etc. If left in place, such sheeting shall be cut off at the elevation ordered, but in no case less than thirty-six (36) inches below the existing grade. Bracing remaining in place shall be driven in tight. The right of the Engineer to order sheeting and bracing to remain in place shall not be construed as creating any obligation on his part to issue such orders. Payment for sheeting and bracing, unless specifically called for on the Drawings shall not be paid under separate item, but shall be included in the payment for other items of Work.

3.09 DEWATERING BY WELLPOINT

A. Well points shall be spaced and at sufficient depths as required to eliminate water during the excavation period until the work is completed. Ample means and equipment shall be provided with which to remove promptly, and dispose properly all water entering any excavation. This includes the use of sand or gravel as required to maintain adequate flow during the pipe laying or installation of other items of work within the excavation.

B. Water pumped or drained shall be disposed of in a suitable manner without damage to adjacent property to other work under construction or to street pavements or public parks. Water shall not be discharged onto streets without adequate protection of the surface at the point of discharge. All gutter, drains, culverts, sewers and inlets shall be kept clean and open for surface drainage. Water shall not be directed across or over pavements except through approved pipes or properly constructed troughs. Contractor shall obtain permission from the owner of any property involved before digging ditches or constructing water courses for removal of water, and provide for disposal of the water without ponding or creating a public nuisance. Water may be discharged into storm sewers provided that such water has been pre-treated to meet the Contractor’s Storm Water Pollution Prevention Plan (SWPPP). Payment for dewatering shall not be paid for under a separate item, but shall be included in the payment for other items of work, unless it is specifically included as a Pay Item in the Contract.

APPURTENANCES

A. Excavation for manholes and other appurtenances shall be made to size that will allow at least twelve (12) inches between their outer surfaces and the embankment or shoring. Overdepth excavation and backfill to required depth below such appurtenances, that have not been directed by the Engineer, shall be at the expense of the Contractor.

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SECTION 02276

TEMPORARY EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The work specified in this Section consists of designing, providing, maintaining and removing temporary erosion and sedimentation controls as necessary.

B. Temporary erosion controls include, but are not limited to, straw, hay, filter fabric, permanent vegetation, grassing, mulching, netting, watering and reseeding on-site surfaces, spoil and borrow areas and providing interceptor ditches at those locations that will ensure that erosion during construction will be either eliminated or maintained within acceptable limits as established by the Engineer, Owner and the permitting agencies.

C. Temporary sedimentation controls include, but are not limited to, silt dams, traps, barriers and appurtenances, which ensure that sedimentation will be either eliminated or maintained within acceptable limits as established by the Owner and the permitting agencies.

D. The Contractor shall provide routine re-establishment, daily maintenance of permanent and temporary erosion and sediment control measures features until the project is complete and all soil stabilized.

E. Contractor shall be required to comply with all permit conditions included as attachments to these Contract Documents and as required by these Specifications.

F. The Contractor shall use all methods and products that meet or exceed those set forth in the FDOT Standard Specifications.

1.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. Standard Building Code.

B. Environmental Resource Permit

PART 2 - PRODUCTS

2.01 EROSION CONTROL

A. Loaming, seeding, sodding, and mulching is specified in Section 02485.

B. Netting - fabricated of material acceptable to the Engineer.

2.02 SEDIMENTATION CONTROL

A. Bales – synthetic or clean, seed-free cereal hay type.

B. Netting - fabricated of material acceptable to the Engineer.

C. Filter stone - crushed stone conforming to Florida Department of Transportation specifications.

D. Concrete block - hollow, non-load-bearing type.

E. Concrete - exterior grade not less than one inch thick.

F. Drainpipe with sock (sedimentation control) shall be used to prevent and control soil erosion runoff and intrusion into stormwater drainage systems.

1. Drain sock products such as “ADSSock” or approved equal.

2. Sock material shall be on ultra-porous filter (synthetic wrap material) fitted snuggly over pipe. Material shall be 100 percent knitted polyester (or approved equal), equivalent opening size of 30 to 40, burst strength of 100-135 (ASTM D 3786), fiber size of 100-40 200 denier filament, 2.5 to 3.5 ounces per square yard (ASTM D 3776).

3. Approval of material is required by Owner prior to use.

4. Drainpipe with sock shall span the entire opening of the inlet.

PART 3 - EXECUTION

3.01 EROSION CONTROL

A. Type of erosion control barriers used shall be governed by the nature of the construction operation, Contract Documents and all applicable permits.

B. Diversion ditches or swales may be required to prevent turbid storm water runoff from being discharged to wetlands or other water bodies. It may be necessary to employ a combination of barriers, ditches and other erosion/turbidity control measures as conditions warrant.

C. Fill material stockpiles shall be protected at all times by on-site drainage controls which prevent erosion of the stockpiled material. Control of dust from such stockpiles may be required, depending upon their location and the expected length of time the stockpiles will be present. In no case shall an unstabilized stockpile remain after thirty (30) calendar days.

D. No disturbed area may be denuded for more than thirty (30) calendar days unless otherwise authorized by the City Engineer. Within sixty (60) calendar days after final grade is established on any portion of a project site, that portion of the site shall be provided with established permanent soil stabilization measures per the original site plan, whether by impervious surface or landscaping.

E. Minimum procedures for grassing are:

1. Scarify slopes to a depth of not less than 6 inches and remove large clods, rock, stumps and roots all larger than 1/2-inch in diameter and debris.

2. Sow seed within twenty-four (24) hours after the ground is scarified with either mechanical seed drills or rotary hand seeders.

3. Apply mulch loosely and to a thickness between 3/4-inch and 1-1/2 inches.

F. Apply netting over mulched areas on all sloped surfaces.

G. Roll and water seeded areas in a manner which will encourage sprouting of seeds and growing of grass. Reseed areas that exhibit unsatisfactory growth. Backfill and seed eroded areas.

3.02 SEDIMENTATION CONTROL

A. Install and maintain silt dams, traps, barriers and appurtenances, as shown on the Drawings and as described herein. Hay bales that deteriorate and filter stone that is dislodged shall be replaced.

B. Existing storm water systems shall be protected at all times to prevent sedimentation of the storm water system. Sedimentation prevention shall comply with or exceed “Best Management Practices” in accordance with the Southwest Florida Water Management District.

C. Siltation accumulations greater than the lesser of 12 inches or one-half the depth of the siltation control barrier shall be immediately removed and placed in upland areas.

D. Where pumps are to be used to remove turbid waters from the construction area, the water shall be treated to reduce turbidity to state water quality standards prior to discharge to the wetlands. Treatment methods include, for example, turbid water being pumped into grassed swales or appropriate vegetated areas (other than upland preservation areas and wetland buffers), sediment basins, or confined by an appropriate enclosure such as turbidity

barriers and kept confined until its turbidity level meets state water quality standards.

E. Sediment basins and traps, perimeter berms, filter fences, berms, sediment barriers, vegetative buffers and other measures intended to trap sediment and/or prevent the transport of sediment onto adjacent properties, or into existing water bodies; must be installed, constructed, or, in the case of vegetative buffers, protected from disturbance, as a first step in the land alteration process. Such systems shall be fully operative and inspected by the City before any other disturbance of the site begins. Earthen structures including but not limited to berms, earth filters, dams or dikes shall be stabilized and protected from drainage damage or erosion within one week of installation.

F. Areas of 3 acres or more shall be required to have temporary sedimentation basins as a positive remedy against downstream siltation and will be shown and detailed on construction plans. During development, permanent detention areas may be used in place of silt basins provided they are maintained to the satisfaction of the City.

G. The Contractor shall be prohibited from discharging silt through any stormwater outfall structure during construction. When temporary sedimentation basins are used, they shall be capable at all times of containing at least one (1) cubic foot of sediment for each one hundred (100) square feet of area tributary to the basin. Such capacity shall be maintained throughout the project by regular removal of sediment from the basin.

H. Land alteration and construction shall be minimized in both permanent and intermittent waterways and the immediately adjacent buffer of 25 feet from top of bank of the waterways and the buffer area whenever possible, and barriers shall be used to prevent access. Where in channel work cannot be avoided, precautions must be taken to stabilize the work area during land alteration, development and/or construction to minimize erosion. If the channel and buffer area are disturbed during land alteration, they must be stabilized within three (3) calendar days after the in channel work is completed.

I. Silt curtains or other filter/siltation reduction devices must be installed on the downstream side of the in channel alteration activity to eliminate impacts due to increased turbidity. Wherever stream crossings are required, properly sized temporary culverts shall be provided by the contractor and removed when construction is completed. The area of the crossing shall be restored to a condition as nearly as possible equal to that which existed prior to any construction activity.

3.03 PERFORMANCE

A. Should any temporary erosion and sediment control measures employed by the Contractor fail to produce results, which comply with the requirements of the State of Florida, the Contractor shall immediately take the necessary steps to correct the deficiency at his or her own expense.

3.04 MAINTENANCE

A. All erosion and siltation control devices shall be checked regularly, especially after each rainfall and will be cleaned out and/or repaired as required.

3.05 COMPLIANCE

A. Failure to comply with the aforementioned requirements may result in a fine and/or more stringent enforcement procedures such as (but not limited to) issuance of a "Stop Work Order".

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SECTION 02485

SURFACE RESTORATION

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, materials, and equipment necessary to satisfactorily return all construction areas to their original conditions or better.

B. Work includes furnishing and placing sod, fertilizer, gravel, concrete, asphalt, planting, watering and maintenance until acceptance by the Owner.

C. All grassed areas disturbed by the work of this contract shall be sodded in conformance with Sections 575, 981, 982 and 983 of FDOT's Standard Specifications (latest edition) unless noted herein or shown on the plans. Seeding/Hydroseeding shall not be acceptable.

1.02 QUALITY ASSURANCE

A. Requirements: It is the intent of this Specification that the Contractor is obliged to deliver a satisfactory stand of grass as specified. If necessary, the Contractor shall repeat any or all of the work, including grading, fertilizing, watering, and sodding at no additional cost to the Owner until a satisfactory stand is obtained.

B. Satisfactory Stand: For purposes of grassing, a satisfactory stand of grass is herein defined as a full lawn cover over areas to be sodded, with grass free of weeds, alive and growing, leaving no bare spots larger than 3/4 sq. yd. within a radius of 10 ft.

1.03 SUBMITTALS

A. Provide technical data as required for shop drawings on all materials or installation procedures required under this Section.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Fertilizer

1. Fertilizer shall be a complete fertilizer, the elements of which are derived from organic sources. Fertilizer shall be a standard product complying with State and Federal fertilizer laws.

2. Percentages of nitrogen, phosphorus and potash shall by based on laboratory tests on soils outlined in Paragraph 1.03B and approved by the Engineer. For purpose of bidding, assume 6% nitrogen, 6% phosphorus and 6% potash by weight. At least 50% of the total nitrogen shall contain no less than 3% water-insoluble nitrogen.

3. Fertilizer shall be delivered to the site, mixed as specified, in the original unopened standard size bags showing weight, analysis and name of manufacturer. Containers shall bear the manufacturer's guaranteed statement of analysis, or a manufacturer's certificate of compliance covering analysis shall be furnished to the Engineer. Store fertilizer in a weatherproof place and in such a manner that it will be kept dry and its effectiveness will not be impaired.

4. Superphosphate shall be composed of finely ground phosphate rock as commonly used for agricultural purposes containing not less than 20% available phosphoric acid.

B. Sodding

1. Sod shall be Argentine Bahia or St. Augustine to match existing sod of firm texture having a compacted growth and good root development as approved.

2. Sod shall be certified to meet Florida State Plant Board Specifications, absolutely true to varietal type, and free from weeds or other objectionable vegetation, fungus, insects and disease of any kind.

3. Before being cut and lifted the sod shall have been mowed 3 times with the final mowing not more than a week before cutting into uniform dimensions.

C. Water

1. It is the Contractor's responsibility to water the site, as required during sodding operations and through the maintenance period and until the work is accepted. The Contractor shall make whatever arrangements may be necessary to ensure an adequate supply of water to meet the needs for his work. The Contractor shall also furnish all necessary hose, equipment, attachments and accessories for the adequate irrigation of lawns and planted areas as may be required.

D. Asphalt Restoration

1. Areas damaged by construction activities within the City’s ROW shall be restored by milling 1.75” and resurfacing with 1.75” of SP-9.5 the full lane width of any impacted lane(s) and for a length of 25 feet from

each side of the damaged area or as shown on the Drawings, whichever is greater.

2. Areas damaged by construction activities within the FDOT ROW shall be restored as shown on the Drawings, which shall include, two (2) 2.5-inch lifts of SP-12.5 asphalt, following by two (2) 1.5-inch lifts of SP-9.5 over the trench and milling and resurfacing with 1.5-inch of SP-9.5 the full lane width of any impacted lane(s) and for a length of 50 feet from each side of the damaged area or as shown on the Drawings, whichever is greater.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Following the subgrade preparation, the Contractor shall commence work on lawns and grassed areas. Areas to be sodded shall be free from soft spots and uneven grades. Apply 20 lbs. of 12-3-6 fertilizer per 1,000 sq. ft.

B. Protection

1. Sodded areas shall be protected against the traffic or other use by placing warning signs or erecting barricades as necessary. Any areas damaged prior to actual acceptance by the Owner shall be repaired by the Contractor as directed by the Engineer.

3.02 LAWN BED PREPARATION

A. Areas to be sodded shall be cleared of all rough grass, weeds, and debris, and the ground brought to an even grade as approved.

B. The soil shall then be thoroughly tilled to a minimum 8-inch depth.

C. Superphosphate at a rate for bidding purposes of 5 pounds per 1,000 square foot and complete fertilizer at a rate for bidding purposes of 16 pounds per 1000 square foot shall be evenly distributed over entire area and cross-disced into a depth of 4-6 inches.

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

3.03 SOD HANDLING AND INSTALLATION

A. During delivery, prior to planting, and during the planting of the lawn areas, the sod panels at all times be protected from excessive drying and unnecessary exposure of the roots to the sun. All sod shall be stacked during

construction and planting so as not to be damaged by sweating or excessive heat and moisture.

B. After completion of soil conditioning as specified above, sod panels shall be laid tightly together so as to make a solid sodded lawn area. On mounds and other slopes, the long dimension of the sod shall be laid perpendicular to the slope. Immediately following sod laying the lawn areas shall be rolled with a lawn roller customarily used for such purposes, and then thoroughly watered.

C. Bring the sod edge in a neat, clean manner to the edge of all paving and shrub areas. Top dressing with approved, clean, weed free, sand may be required at no additional cost to the Owner if deemed necessary by the Engineer.

3.04 CLEANUP

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

3.05 MAINTENANCE

A. Any existing landscape items damaged or altered during construction by the Contractor shall be restored or replaced as directed by the Engineer.

B. Maintain landscape work until Owner accepts project. Watering, weeding, cultivating, restoration of grade, mowing and trimming grass, protection from insects and diseases, fertilizing and similar operations as needed to ensure normal growth and good health for live plant material shall be the responsibility of the Contractor and at no additional cost to the Owner. Sodded areas shall receive no less than 1.5 inches of water per week.

3.06 REPAIRS TO LAWN AREAS DISTURBED BY CONTRACTOR'S OPERATIONS

A. Lawn areas planted under this Contract and all lawn areas damaged by the Contractor's operation shall be repaired by proper soil preparation, fertilizing, and resodding, in accordance with these Specifications.

END OF SECTION

SECTION 02521

CONCRETE MATERIALS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The work shall include the furnishing of all materials, equipment and labor required to construct all concrete work shown on the Drawings or incidental to the proper execution of the work.

B. All concrete work within the Pinellas County Right of Way shall conform to the specifications described herein.

C. All concrete work within the FDOT Right of Way shall conform to the FDOT Standard Specifications for Road and Bridge Construction, latest edition (FDOT Specifications).

1.02 SUBMITTALS

A. Prior to placing any concrete, the Contractor shall submit for the Engineer's approval, a design mix, calculated by a recognized testing laboratory, and using the approved aggregates to produce a workable mix of the desired strength, together with certified copies of seven day and twenty-eight (28) day tests of cylinders taken from concrete made according to the design mix. The mixes shall be designed to secure concrete having a minimum compressive strength at age twenty-eight (28) days as shown on the Plans or covered in other sections of these Specifications.

B. The contractor shall submit reinforcing steel shop drawings to the Engineer, for review in accordance to the General Requirements.

PART 2 - PRODUCTS

2.01 CEMENT

A. Portland cement shall conform to the latest revision of Federal and/or ASTM Specifications enumerated below:

1. For general concrete construction, ASTM designation C-150, Type I or Type II, or Federal Specifications SS-C-192, Type I or II.

2. For construction of sewage treatment plant and pump station structures Type II cement shall be used.

3. Slag cement shall conform to ASTM designation C-465.

4. Slag cement may be used in the maximum ratio of one part of slag cement by weight to six parts of total cement by weight, if approval by the Engineer, is obtained prior to use.

B. Concrete Bag Mix

1. Quickcrete 5000 High Early Strength Concrete Mix #1007 or Engineer approved equal.

2. Use of bag mix is strictly limited to non-structural use and Engineer designated locations only.

3. The Contractor is required to strictly adhere to the mixing and installation instructions set forth by the manufacturer.

4. Testing to be performed at Engineers discretion. Concrete not meeting design strength or not properly installed per the manufacturer is subject to removal and replacement at no additional cost to the Owner.

2.02 FINE AGGREGATE

A. Fine aggregate shall be clean, hard, strong, durable uncoated particles of natural sand known as Lake Wales, Interlachen or approved equal. The source, composition, quality and gradation of the fine aggregate shall be subject to the approval of the Engineer. Samples of the sand shall be furnished, together with certified copies of the gradation and analysis from a recognized testing laboratory.

B. All fine aggregate shall be reasonably free of lumps of clay, soft or flaky particles, salt, alkali, organic matter, loam or other extraneous substances. The weight of extraneous or deleterious substances shall not exceed the following percentages:

Loss by decantation - 3 percent
Shale -1 percent
Clay lumps - 1 percent
Coal and lignite - 1 percent
Cinders and clinkers – 0.5 percent

C. The fine aggregate shall be reasonably well graded from coarse to fine and when tested by means of laboratory sieves, shall meet the following requirements in percent of total weight:

Total Retained On	Percent Retained
No. 4 Sieve	0 - 5
No. 10 Sieve	3 - 30
No. 30 Sieve	30 - 70
No. 50 Sieve	65 - 95
No. 100 Sieve	95 - 100

D. Deficiencies in the percentages of the fine aggregates passing the No. 50 and No. 100 sieves may be remedied by the addition of pozzolanic or cementitious materials excepting Portland cement. Such materials must meet the approval of the Engineer.

2.03 COARSE AGGREGATE

A. Coarse aggregate shall consist of hard, tough, durable components, free from adherent coatings and vegetable matter, and shall not contain soft, friable, thin or elongated particles in quantities considered deleterious by the Engineer. Coarse aggregate shall be properly graded from fine to coarse to produce concrete of the desired strength, density, and workability. The source, composition, quality and gradation of the coarse aggregate shall be subject to the approval of the Engineer. Samples of the coarse aggregate shall be furnished together with certified copies of the gradation and analysis from a recognized testing laboratory.

B. All coarse aggregate shall be washed and shall be free from disintegrated pieces, salt, alkali, vegetable matter and adherent coatings. The total percentage of all deleterious substances shall not exceed five percent by weight. The substances designated shall not be present in excess of the following amounts:

Loss by decantation - 1 percent
Clay lumps or other soluble materials - 1/4 percent
Soft fragments - 5 percent

C. Where the cover over reinforcing is two inches or more, the maximum size of aggregate shall be one and one-half inches. Where the cover over reinforcing is less than 2-inches, the maximum size of aggregate shall be three-quarter inch. The maximum size of aggregate shall not exceed one fifth of the narrowest dimension between forms nor three quarters of the minimum clear spacing between reinforcing bars. Furnish aggregate gradations sized larger than nominal maximum size of 1.5 inch as two components. The grading of the coarse aggregate in the concrete shall be within the following limits:

	Percent Passing
Maximum size square mesh screen	97 - 100 percent
Minimum size square mesh screen	40 - 70 percent
No. 4 Sieve	0 - 6 percent

2.04 WATER

A. The water used in mixing concrete shall be fresh, clean and free from injurious amounts of oil, acid, alkali or organic matter.

B. Water from any source other than a municipal water supply shall be shown by test to comply with Florida State Road Department requirements for mixing water.

C. Reclaimed water shall not be used for mixing or curing concrete.

2.05 REINFORCEMENT

A. Reinforcing bars shall conform to the requirements of the latest revision of Federal Specification QQ-S-632 and shall be as follows unless indicated otherwise on the plans:

1. Bent: Type II (deformed), Class B40
2. Straight: Type II (deformed), Class B40
3. Column Ties: Type I (plain), Class B40

B. Wire mesh, unless otherwise shown on the drawings or specified, shall be 6" x 6" No. 10 woven, or electrically welded wire fabric conforming to the requirements of ASTM designation A 185, latest revision.

C. Reinforcing steel shall be detailed, fabricated and placed according to the methods and standards recommended in the "Manual of Standard Practice for Detailing Reinforced Concrete Structures" of the American Concrete Institute.

2.06 JOINTS

A. Water Stops

1. Materials for stops shall be 1/8-inch steel plate welded into a continuous strip, or an approved alternate material.

2.07 GROUTING AND PATCHING

A. Cement for use in grouting and patching shall be non-shrinking material free of stain-causing agents and matching the adjacent concrete in appearance.

B. Bonding Agent: To be structural epoxy adhesive conforming to ASTM-C881 Type I & II, Grade 2, Class B & C with a minimum bond strength of 1900 psi.

PART 3 - EXECUTION

3.01 REINFORCING STEEL

A. The reinforcing fabricated to shapes and dimensions shown, shall be placed where indicated on the Drawings. Before placing, all reinforcements shall be thoroughly cleaned of rust, mill scale or coatings, which would reduce or destroy the bond.

B. Splices in reinforcing mats shall be staggered. Horizontal mats shall be supported on metal chairs with all sills or pads below subgrade. Spacers shall be provided for wall and column steel and shall be removed as the concrete is placed.

C. The concrete covering over steel reinforcement shall be as shown on the Plans.

3.02 PROPORTIONING

A. All materials, except water, shall be proportioned into the mix by weight. Water may be proportioned either by weight or volume.

B. Delivery tickets for transit mix concrete shall be furnished showing the weight of cement of each type incorporated in the batch before unloading at the placement site.

C. Precise control of the proportions and amounts of all materials will be required. Unauthorized changes in proportions, or addition of water, shall be sufficient cause for rejection of the batch. The proportions of the approved design mix may be changed only upon specific approval of the Engineer. The use of admixture to improve workability will not be approved, unless such admixture is a part of the design mix and the submitted design mix test data. Only admixture of pozzolanic, cementitious or silicious nature will be considered.

D. The amount of water used in the mix shall be kept at the minimum necessary to produce concrete of a workable consistency. Consistency shall be measured at the time of pouring by slump tests, when directed by the Engineer. The slump shall fall within the following tabulated limits:

Slump in Inches

Type of Structure	Minimum	Maximum
Massive sections, pavement and slabs on ground	1	4
Heavy slabs, beams or walls	3	5
Thin walls and columns, ordinary slabs or beams	3	6

3.03 MIXING AND PLACING

A. General

1. Concrete shall be machine-mixed in standard equipment in good condition, operated within its rated capacity. The batching plant shall be equipped with facilities for measurement of dry materials by weight, and water by weight or volume. Mixing equipment may be a portable plant (job-mix), or truck mounted (transit-mix). The use of transit-mix concrete will be limited by length of haul. Transit-mixing will be required to meet the requirements for mixing time. Batching plant and handling equipment shall be of sufficient capacity to produce and place concrete without interruption or cold joints. All equipment shall be subject to the approval of the Engineer.

B. Time

1. The minimum time for mixing each batch after all materials are in the mixer shall be one minute for 1/2 to 1 1/2 cubic yard mixers, and 1 1/2 minutes for mixers over 1 1/2 cubic yard capacity. The mixer shall revolve at a uniform speed, a minimum of twelve (12) revolutions after all materials have been placed therein.

2. Neither the speed, nor the volume capacity of the mixer, shall exceed those recommended by the manufacturer. Excessive over-mixing, requiring addition of water to preserve the consistency, will not be permitted.

C. Placing

1. Concrete shall be placed before the initial set has occurred and in no event after it has contained its water content for more than sixty (60) minutes, unless documented by the testing laboratory justifying a longer truck residence time without deleterious effect.

2. Perform an initial slump test before the addition of water at the jobsite. If the slump, as delivered, is outside the tolerance range, reject the load. If the slump is within the tolerance range, that load may be adjusted by adding water provided the addition of water does not exceed the water to cementitious materials ratio as defined by the mix design. After adjusting the slump, perform a slump test to confirm the concrete is within the slump tolerance range. Do not place concrete represented by slump test results outside the tolerance range. Water may be added only upon arrival of the concrete to the jobsite and not thereafter.

3. The concrete shall be compacted and worked in an approved manner into all corners and angles of the forms and around reinforcement and embedded fixtures in such a manner as to prevent segregation of the coarse aggregate.

4. All concrete shall be placed with the aid of mechanical vibrating equipment supplemented by hand forking or spading. Vibration shall be transmitted directly to the concrete and not through the forms. The duration of vibration at any location in the forms shall be held to the minimum necessary to produce thorough consolidation.

5. The concrete shall be placed by suitable equipment as nearly as possible to its final location and without any segregation of the aggregate. Any free vertical drop shall not exceed three feet.

6. Before depositing new concrete, on or against concrete which has set, the existing surfaces shall be cleaned of all laitance, foreign matter and loose particles, and covered with a neat cement grout. Grout for horizontal construction joints shall be of cement and fine aggregate in the same proportions as in the concrete to be placed and shall be from one-half to one inch thick.

7. Exposed formed surfaces shall be rubbed with Carborundum brick or otherwise dressed to produce a smooth, true surface. Interior surfaces of tanks, wet wells, etc., shall be considered as exposed to a point six inches below low water level. Special care shall be taken in dressing circular structures to obtain a true circular surface.

D. Slabs

1. No special concrete or cement mortar topping course shall be used for slab finish, unless shown on the drawings. The slab shall be brought to a true and even finish by power or hand-floating. Unless otherwise specified, the surface shall be floated to a true, regular surface with a wood float and shall be steel-troweled to a smooth finish. Troweling shall be the minimum to obtain a smooth, dense surface and shall not be done until the mortar has hardened sufficiently to prevent excess fine material from being worked to the surface. All floor surfaces except those which are to be painted, shall immediately after troweling, be brushed lightly with a soft bristle janitor's push broom to produce a non-slip surface. The brushing shall be sufficient to mark the surface only, without appreciably disturbing the troweled finish.

3.04 FINISHING

A. Top surfaces which are not covered by forms, and which are not to be covered by additional concrete or backfill, shall be carried slightly above grade, and struck off by board finish.

B. An FDOT Class 2 surface finish shall be provided on all endwalls and wingwalls (reference FDOT Standard Specification section 400-15.2.3).

3.05 CURING AND PROTECTING

A. Curing

1. All concrete shall be kept wet by covering with water, or approved water saturated covering, or by other method approved by the Engineer, which will keep all surfaces continuously wet, for a period of seven days unless otherwise directed by the Engineer.

2. Water for curing shall be clear and entirely free from any elements which might cause staining or discoloration of the concrete.

3. Where wood forms are left in place during curing, they shall be kept wet at all times to prevent opening at the joints and drying out of the concrete.

B. Weather Protection

1. No concrete shall be mixed or placed when the air temperature in the shade and away from artificial heat is as low as forty (40)

degrees Fahrenheit, and falling. Concrete may be mixed and placed when the air temperature in the shade, and away from artificial heat is thirty-five (35) degrees Fahrenheit, and rising.

2. Fresh concrete shall be protected from rain, flowing water and mechanical injury and all concrete shall be protected from injurious action by the sun.

3. Do not expose concrete to the action of salt or brackish water for a period of seven days after placing the concrete. Protect the concrete during this period by keeping salt or brackish water pumped out of cofferdams.

4. Meet the temperature requirements and special measures for mixing and placing concrete in hot weather as specified in FDOT Standard Specification section 346. When the temperature of the concrete as placed exceeds 75 degrees Fahrenheit, incorporate in the concrete mix a water-reducing retarder or water reducer if allowed by FDOT Standard Specification section 346. Spray reinforcing steel and metal forms with cool fresh water just prior to placing the concrete in a method approved by the Engineer.

3.06 SAND CEMENT AND/OR SOIL CEMENT RIP-RAP

A. Where directed, the Contractor shall prepare sand cement, or if satisfactory material is available from the excavation, soil cement rip-rap.

B. The mixture shall be mixed dry at 4:1 ratio by volume of sand, or soil and Portland cement. The dry mixture shall be placed in burlap or fiberbags as required to form a basic rip-rap unit approximately eighteen (18) inches long, twelve (12) inches wide, and six (6) inches high.

C. Rip-rap shall be placed as directed to provide protection of slopes, pipe ends and bulkheads.

3.07 JOINTS

A. Water Stops

1. Water stops shall be installed at all expansion, contraction and construction joints subject to water pressure and where indicated.

B. Expansion Joints

1. Expansion joints shall be placed as indicated on the Plans. Joint material shall be installed as indicated and as directed by the Engineer.

C. Construction Joints

1. Vertical construction joints will not be allowed unless detailed in the Drawings.

2. Construction joints shall be located as shown on the Plans and/or in accordance with an approved schedule of pours.

3.08 TESTS

A. Procedures

1. Compressive strength tests shall be made by breaking standard 6-inch diameter by 12-inch high test specimens prepared, cured and broken in accordance with the American Society for Testing Materials Standard Methods, C-31 and C-39, latest revision. Four specimen test cylinders shall be taken from each concrete pour of five cubic yards or more. One additional test shall be taken from each thirty (30) cubic yards or fraction, thereof, in each pour in excess of thirty (30) cubic yards. Test specimens shall be taken from manhole bottom pours of less than five cubic yards as directed by the Engineer. Test specimens shall be taken in the presence of the Engineer. One cylinder from each pour shall be broken at seven days, the remainder at twenty-eight (28) days. Additional test cylinders may be ordered for determining the characteristics of a new design mix or changes in equipment or methods, and under adverse weather, or curing conditions.

2. Slump test shall be made in accordance with ASTM C143, latest revision and shall be made whenever directed by the Engineer.

B. Responsibility for Tests and Reports

1. The Contractor shall supply all cylinder molds, slump cones, tools and labor for preparing specimens, and shall provide clean, moist sand or burlap for curing. Cylinders shall not be shipped to the testing laboratory until the third day following preparation, and shall be protected from accidental damage at all times.

2. The test cylinders shall be tested in a recognized commercial testing laboratory.

3.09 CAUSE FOR REJECTION

A. Should the concrete fail to conform to all the requirements of this Section, the Engineer may require the Contractor to remove the defective concrete and reconstruct the Work as directed.

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SECTION 02530

CONCRETE SIDEWALKS, DRIVEWAYS, CURB AND GUTTERS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Contractor shall furnish all labor and materials required to restore and construct concrete sidewalks, driveways and gutters as specified herein.

B. This work shall be performed in strict accordance with the requirements of all applicable sections of these specifications and in conformity with lines, grades, notes, and typical cross sections shown on the drawings or as directed by the Engineer.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Sidewalk shall be 3000 psi concrete, at least four feet wide, five feet wide on arterial and collector streets, and four inches thick, except at driveways. Driveway sidewalks shall be six inches thick with six inches by six inches #10 wire mesh reinforcing.

B. Replacement of concrete driveways shall be in accordance with the details as shown in the drawings. The Contractor shall be responsible for removing existing concrete driveways to the next joint and replace concrete driveways that exhibit cracks caused by construction activities.

C. Curb and curb and gutter shall consist of 3000 psi/28 day concrete.

D. Expansion joints shall be installed between the back-of-curb and concrete driveways, and between concrete driveways and sidewalks, where new concrete abuts old concrete.

PART 3 - EXECUTION

3.01 CURB AND GUTTER

A. Curb or curb and gutter removal, where required in the construction of this work, shall be held to a minimum. Curb and gutter material to be removed shall be carefully separated from the trench excavation material and shall be disposed of as directed. The Contractor shall replace all curb or curb and gutter which have been removed. Curb and gutter shall be removed up to the nearest regular joint on each side of the trench.

B. Curb or curb and gutter shall be replaced as soon as possible after the backfill is placed and compacted and shall duplicate in all respects the original construction. Workmanship shall be in accordance with the best standard practices for this type of work. Curb and curb and gutter shall consist of 3,000 psi/28 day concrete reinforced with bars or mesh of the same size, spacing and number as the section of curb or curb and gutter it replaces.

3.02 SIDEWALKS

A. Sidewalk removal, where required in the construction of this work, shall be held to a minimum. Sidewalk material removed shall be carefully separated from the trench excavation material and shall be disposed of as directed. Sidewalk shall be cut at the nearest regular joint on each side of the trench.

B. The Contractor shall replace all sidewalks which are removed. Sidewalks shall be replaced as soon as practicable after the backfill is placed and compacted and shall duplicate, in all respects, the original sidewalk. Any sidewalk that is removed for greater than five (5) working days shall be temporarily restored by the Contractor with asphalt millings until the permanent concrete sidewalk is restored.

C. The Contractor shall replace all sidewalks which are damaged by the construction operation or by the heavy equipment traveling over them and shall replace them at their own expense.

D. The top surface of all sidewalks shall be given a light broom finish.

3.03 DRIVEWAYS

A. Concrete driveways that are crossed or traversed by the trenches shall be restored to the conditions existing prior to the excavation.

B. Removal shall be held to a minimum, but when necessary removal shall be made in neat sawcut lines or to the nearest joint if approved by the Engineer.

3.04 TEST

A. The quality of the concrete as to conformance to the specifications is the entire responsibility of the Contractor until it is accepted in place. When required by the County or the Engineer, the Contractor shall arrange for field testing. Field testing shall include, but may not be limited to, the following:

1. Compressive Strength Test: Compressive strength tests shall be made by breaking standard six inch diameter by twelve (12) inch high test specimens prepared, cured and broken in accordance with the American Society for Testing Materials Standard Methods C 31 and C

39, Latest Revision. Four specimen test cylinders shall be taken from each concrete pour of five cubic yards or more. One additional test shall be taken from each fifty (50) cubic yards or fraction thereof in each pour in excess of thirty (30) cubic yards. One cylinder from each pour shall be broken at seven days, the remainder at twenty-eight (28) days. Additional test cylinders may be ordered for determining the characteristics of a new design mix or changes in equipment or methods, and under adverse weather or curing conditions.

2. Slump Test: Slump test shall be made in accordance with ASTM C 143, and shall be made on each load of concrete unless directed differently by the County or Engineer.

3. Reports: Proper reports of all tests performed by the laboratory shall be prepared by the laboratory and submitted promptly to the Owner and Engineer. Such reports shall be properly labeled so as to identify the portions of the Project into which the materials are being placed, and the results of the test indicating whether or not the test met the requirements of these specifications.

3.05 CAUSE FOR REJECTION

A. Should the concrete fail to conform to all the requirements of this Section, the Engineer may require the Contractor to remove the defective concrete and reconstruct the work as directed.

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SECTION 02576

ASPHALT ROADWAY RESTORATION

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Contractor shall furnish all labor and materials required to restore stabilized roadways and asphalt paving within the Right-of-Way.

B. Areas damaged by construction activities within the City's ROW shall be restored by milling 1.75" and resurfacing with 1.75" of SP-9.5. The limits of milling and resurfacing shall be as shown on the Drawings. If none is shown, the full lane width of any impacted lane(s) and for a length of 25 feet from each side of the damaged area shall be milled and resurfaced.

C. Areas damaged by construction activities within the Pinellas ROW shall be restored by milling and resurfacing with 2" of SP-12.5. The limits of milling and resurfacing shall be as shown on the Drawings. If none is shown, the full lane width of any impacted lane(s) and for a length of 25 feet from each side of the damaged area shall be milled and resurfaced.

D. Areas damaged by construction activities within the FDOT ROW shall be restored as shown on the Drawings, which shall include, two (2) 2.5-inch lifts of SP-12.5 asphalt, followed by two (2) 1.5-inch lifts of SP-9.5 over the trench and milling and resurfacing with 1.5-inch of SP-9.5. The limits of milling and resurfacing shall be the full lane width of any impacted lane(s) and for a length of 50 feet from each side of the damaged area or as shown on the Drawings, whichever is greater.

E. Workmanship and materials shall be in accordance with Department of Transportation requirements for new pavement for roads under their jurisdiction. Any local or County Road shall be restored in accordance with permits or ordinances of the municipality having jurisdiction over such road or street. Restoration of flexible pavement shall conform to the approved permit or utility license for each road crossing.

F. Where applicable, all work shall conform to the Technical Specifications of Florida Department of Transportation "Standard Specifications for Road and Bridge Construction", latest edition (Divisions II and III) and "Roadway and Traffic Design Standards", latest edition, including any amendments thereto. The Contractor shall acquire his own copies of the Department of Transportation Standards. In the event of conflict between the Department of Transportation Standards and the Specifications listed in these documents, the Engineer shall determine which shall govern.

1.02 SUBMITTALS

A. Shop drawings for the proposed materials of construction, including an asphalt job mix formula, shall be submitted to the Engineer for approval at least two weeks prior to the application of stabilized or paved surfaces.

PART 2 - PRODUCTS

2.01 SUBBASE

A. Materials used should be high bearing value soil, sand-clay, ground limestone, crushed limerock, coquina, or any other material suitable for stabilization. Muck shall not be used.

2.02 BASE

A. Limerock for use as base material shall meet the requirements of Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Section 911. The limerock producer shall address each truck receipt to the Contractor and the job site. Each receipt shall show the source of the material by D.O.T. pit number. One copy of each receipt will be submitted daily to the Owner for his records.

B. Coquina shell used in the base course shall have an organic material of not greater than 0.5 percent nor contain significant quantities of sand or other impurities, which would prevent bonding. At least ninety-seven (97) percent of the coquina used shall pass through a 3 1/ 2-inch ring.

C. Crushed concrete base material shall conform to the following gradation:

Sieve Size	Percent by Weight Passing
2"	100
1-1/2"	95-100
3/4"	65-90
3/8"	45-75
No. 4	35-60
No. 10	24-45
No. 50	5-25
No. 200	0-10

1. Material for Crushed Concrete Base shall consist only of crushed concrete and such additive materials as may be approved by the Engineer for the purpose of facilitating construction and achieving the desired characteristics of the finished in-place product. Material which shows a significant tendency toward adverse chemical or physical change on exposure to moisture will not be acceptable. The material shall be free of any ferrous metals.

2. The material shall not contain lumps, balls, or pockets of sand or clay material in size or quantity sufficient to be detrimental to the proper bonding, finishing or strength of the crushed concrete base.

3. The specific mechanical and physical properties of crushed concrete aggregate and any additive materials permitted in the construction of crushed concrete base shall be determined on the basis of test results as the work progresses.

D. Reclaimed Asphalt Pavement Base

1. Reclaimed asphalt base material may be used on paved shoulders, bike paths and other non-traffic applications. Materials shall be in accordance with Section 283 of the FDOT Standard Specifications for Road and Bridge Construction.

2.03 PRIME AND TACK COATS

A. Bituminous prime coats shall be applied to previously prepared bases. Bituminous tack coats shall be placed on existing paved surfaces and between successive lifts of asphalt material.

B. The prime coat shall be cut-back asphalt Grade RC-70 or RC-250, emulsified asphalt Grades SS-I or CSS-I, or other types and grades of bituminous material specified or approved by the Engineer.

C. The tack coat shall be emulsified asphalt, Grades RS-2, SSI-I, CSS-I, SS-IH, CSS-IH, AS-60, AE-90, AE-150, or asphalt emulsion prime.

D. A cover material must be placed on the prime coat to ensure that the prime coat remains intact until the surface course is placed.

PART 3 - EXECUTION

3.01 PAVEMENT AND BASE REMOVAL

A. Pavement removal shall be held to the minimum width consistent with good construction practice. The pavement material shall be carefully separated from other excavated materials and will not be permitted to be included in the backfill, but shall be satisfactorily disposed of by the Contractor. Base materials may be salvaged and stockpiled for reuse as stabilizer, subject to the approval of the Engineer. Reuse of salvaged base material as new base material is not permitted.

3.02 ASPHALT REMOVAL

A. All asphalt street pavement removed shall be replaced with base and surface materials which are of a quality and thickness equal to or more than the materials removed. The edges of the paving shall be cut to neat lines beyond any settled or broken areas. Pavement shall be replaced as soon as practicable after compaction of backfill.

3.03 SURFACE TREATED STREETS

A. All surface treated streets removed shall be replaced with at least six inches of compacted shell or limerock as directed by the Engineer. This base shall be primed and sanded and maintained until overlayed.

3.04 REPLACING STABILIZED ROADWAY

A. The Contractor shall restore cuts in all stabilized roadway surfaces using the same type and grade of material used on the existing street surface. After the pipelines and/or appurtenances have been installed and properly backfilled as herein specified, the Contractor shall bring the roadway surface to grade and ready the surface to receive the stabilization material. The stabilizing materials shall be of high-bearing value such as sand, clay, oyster shell, coquina shell, rock screening, crushed concrete or any other material which, as allowed by the agency with jurisdiction over such road and that, in the opinion of the Engineer, is suitable for stabilization.

B. The stabilizing material shall be applied in such quantities as may be necessary to bring the top six inches of the roadway surface to a bearing value as hereinafter specified and to the proper line and grade. The material shall be incorporated with the roadbed material by plowing, disking, harrowing, blading, and mixing with a rotary tiller, or any other equipment approved by the Engineer. The mixed materials shall be of uniform density throughout the width and depth of the layer being processed. After thoroughly mixing to a uniform texture, the surface shall be compacted by rolling with any type of equipment that will produce the density required. Compaction shall continue until the entire depth to be stabilized has a value determined from tests made on the 6-inch

compacted thickness, of not less than the requirements set forth by the agency having jurisdiction over the road.

3.05 SUBBASE PREPARATION

A. Prior to installation of base material, the area shall be graded to within 0.2± feet, and soft, spongy or mucky material removed. Sufficient stabilizing material shall be cut in to achieve a Florida Bearing Value (FBV) in excess of 75 psi or limerock bearing ratio (LBR) greater than forty (40) pounds at a minimum density of ninety-eight (98) percent of a maximum density as defined and measured in ASSTHO T-180 (Modified Proctor), to a six inch minimum depth.

B. Density tests for subbase materials shall be taken at three hundred (300) foot intervals in a staggered pattern and around structures as required. If compaction procedures allow, testing requirements may be reduced or increased at the Engineer's discretion.

3.06 BASE COURSE CONSTRUCTION

A. General

1. The base course shall be constructed on the prepared subgrade, in accordance with the Specifications and Plans. All base material shall be placed in accordance with the lines, grades, notes, and typical cross sections shown on the Plans. Any deviation from the Plans is subject to the approval of the Engineer. Any deviations not approved by the Engineer shall be repaired to the satisfaction of the Engineer at no expense to the Owner.

B. Limerock, Reclaimed Asphalt or Crushed Concrete Base Course

1. Base shall be spread by mechanical spreaders, equipped to produce an even distribution with a uniform thickness. When the specified compacted thickness of the base is greater than six inches, the base shall be constructed in two courses. The thickness of the first course shall be one-half the total thickness of the finished base. After spreading is completed, the entire surface shall be scarified and shaped so as to produce the required grade and cross section after compaction. If two courses are required, each lift shall be prepared as previously described. Prior to spreading of the upper course, density tests will have been taken for the lower and determined to be satisfactory.

2. When the material does not have the proper moisture content to ensure the required density, it shall be wet or dried as required.

When adding water, it shall be uniformly mixed in by disking to the full depth of the course that is being compacted.

3. All materials shall be compacted to a density of not less than ninety-eight (98) percent of maximum density as determined by AASHTO T 180. Density tests shall be taken at three hundred (300) foot intervals in a staggered pattern and around structures as required. Density determinations shall be made at more frequent intervals, at no extra cost, if deemed necessary by the Engineer.

4. The finished surface of the base course shall be checked with a template cut to the required crown and a fifteen foot straight edge laid parallel to the center line of the road. All irregularities greater than one-quarter inch shall be corrected to the satisfaction of the Engineer.

5. The base material shall extend at least twelve (12) inches outside the edge of the finished paved surface, unless otherwise indicated. Thickness of the base shall be measured at two hundred (200) foot intervals at various points in the cross section. Measurements shall be taken at various points on the cross section through holes not less than three inches in diameter and at locations, as specified by the Engineer. Where the compacted thickness is deficient by one-half inches or more, the Contractor shall correct the deficiency by scarifying and adding material for a distance of one hundred (100) feet in each direction from the edge of the deficient area. The required thickness, compaction and cross section will then be achieved.

6. Prime coat shall be applied only when the base meets the specified density and the moisture content in the top half of the base does not exceed ninety (90) percent of the optimum moisture of the base material.

C. Asphalt Base Course

1. Asphalt base courses shall be applied in accordance with DOT Standards and Specifications, Section 234. The job mix formula approved for the Project shall be used. Any deviation from the approved mix must be submitted to the Engineer and approved before being implemented.

2. The base course material shall be placed with an approved paving machine. A motor grader may be required if a leveling course is needed. The base mix may be placed when the air temperature is at least forty (40) degrees F and rising, provided that the sub-grade is not frozen or affected by frost.

3. A paver, equipped with automatic screed control, shall be used for all machine-laid courses. The automatic joint matcher shall be used on the top course of the base after the first pass with a paving machine. All mixtures shall be laid by the stringline method, with the exception of areas adjacent to curb and gutter or other true edges. The temperature of the mix shall be between three hundred (300) degrees F and three hundred fifty (350) degrees F. Any mixture caught by rain in transit may be laid at the Contractor's own risk; if removal and replacement is required, it shall be at the expense of the Contractor. In no case shall the mixture be spread when rain is falling or when there is water on the surface to be covered. The layer thickness for asphalt concrete structure courses shall be as shown on the Drawings.

4. Compaction

   a. After the asphalt mixture has been spread to the proper lines, grades, and cross sections, compaction operations may begin. The Contractor shall establish rolling procedures and submit his sequence of compaction operations to the Engineer for approval. The equipment used may include, but is not committed to steel-wheeled rollers, pneumatic tired rollers, and vibratory rollers. Areas which are inaccessible to a roller shall be compacted by the use of hand tamps or other satisfactory means. An entire sequence of compaction operations shall be performed for each layer of applied material, density determinations shall also be made.

   b. The in-place density of each course shall be determined through core samples and the nuclear backscatter method. A core sample of a representative paving section shall be taken every two hundred fifty (250) feet. Additional testing around manholes or other structures may be required. In addition to density tests via core samples, Marshall stability tests are also required. Marshall stability tests will be taken for every day of asphalt pavement production.

D. Shell Base Course

1. Shell base material shall be constructed on the prepared subgrade in accordance with these Specifications and in conformity with the lines, grades and cross sections shown on the Plans. The shell base shall be spread uniformly and evenly; during spreading operations the shell shall be thoroughly saturated with water.

2. After spreading the shell shall be compacted, with water being added as required, until the required density is obtained. Compaction and density shall be as required for limerock base, except that the testing methods shall be modified in the laboratory and in the field. At least three density determinations shall be made on each day's final compaction operations.

3. Upon completion of initial compaction, the entire surface shall be scarified and shaped to exact crown and cross section. The base shall then be rewatered and compacted to the required density. The finished surface shall be tested with a template and fifteen (15) foot straight edge. All irregularities greater than one-quarter inch shall be corrected to the satisfaction of the Engineer. The prime coat shall be applied after the base meets all density and finish requirements.

3.07 ASPHALT WEARING SURFACE

A. The asphalt wearing surface shall be constructed on the prepared base in accordance with the Plans and Specifications and in conformity with the indicated lines, grades, and cross sections.

B. The mixture shall be spread only when the base is clean, dry, properly cured, and approved by the Engineer. The temperature shall be at least forty (40) degrees F and rising. No paving operations will be permitted if it is raining or rain is imminent. The mix shall be between three hundred (300) F and three hundred fifty (350) degrees F.

C. The asphalt mixture shall be spread with an approved paving machine to the required width and depth. All mixes, except those adjacent to curb and gutter, shall be laid according to the stringline method. The depth of each layer shall be checked every fifty (50) feet.

D. The mixture shall be compacted to its final depth, no less than one and one half inch and thicker for new roads and one inch for overlays. Compaction and layering procedures specified for asphalt base courses shall apply to surface courses. All testing and density requirements will also apply.

E. When laying operations are interrupted, a transverse joint shall be constructed by cutting back on the previous run to expose the full depth of material. Longitudinal joints are to be sloped or rolled over and sealed. When the adjacent strip is constructed, the edge shall be trimmed back to expose the unsealed face. All longitudinal construction joints shall be offset six inches to twelve (12) inches laterally between layers.

F. When fresh mixture is laid against transverse or longitudinal joints, it shall be placed in contact to produce an even, well compacted joint after rolling.

G. The finished surface shall be tested with a template and fifteen (15) foot straight edge. Any irregularities shall be repaired to the satisfaction of the Engineer. The surface shall be of uniform texture and compaction. No sand spots, ripples, or loosened portions shall be evident. No traffic shall be allowed onto the finished surface until it is deemed acceptable by the Engineer.

END OF SECTION

SECTION 02640

POTABLE WATER MAINS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. This specification shall be applicable for all potable water main work shown on the Drawings.

B. The Contractor shall supply all labor, equipment, materials and incidentals necessary to install and test all potable water mains and appurtenances as shown on the Drawings and as specified herein.

C. All pipe, fittings, valves, and appurtenances used for potable water piping shall be NSF-61 certified for continuous contact with potable water.

D. Valves and appurtenances shall be as specified in Section 15100.

1.02 SUBMITTALS

A. Submit shop drawings to the Engineer for review in accordance with the General Conditions for all pipe, fittings, restrained joints and appurtenances.

B. 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.

C. Furnish in duplicate to the Engineer sworn certificates that all tests and inspections required by the Specifications under which the pipe is manufactured have been satisfied.

D. Submit to the Engineer for approval prior to beginning work the following:

1. Dewatering Plan
2. Pigging and Flushing Plan
3. Pressure testing Plan
4. Disinfection Plan
5. Existing Water Main Abandonment Plan
   a. The water main abandonment plan shall show the locations where the contractor intends on cutting the pipe to pump the grout and intermediate cuts in the pipe as specified herein.
   b. The water main abandonment plan shall include the estimated quantity of grout in cubic yards that the Contractor

estimates will be required to be pumped into each section of pipe. (i.e. show how much grout is to be pump for each section of pipe that is to be abandoned).

E. Submit as-builts of the water main to the Engineer so that Record Drawings can be prepared by the Engineer to request clearance from the FDEP to place the water main piping into operation.

1.03 CONNECTION TO EXISTING LINES

A. The following work shall be performed where piping of this Contract must connect to existing lines:

1. Expose buried lines to confirm or determine end connection, pipe material and diameter.

2. Furnish and install appropriate piping and make proper connections.

B. The Contractor shall provide, install and test any required tapping valves and perform all taps in the presence of the Owner's representative.

PART 2 - PRODUCTS

2.01 2" PVC PIPE FOR HORIZONAL DIRECTIONAL DRILL (HDD)

A. 2" water main pipe installed via HDD methods shall be of Restrained Joint PVC Pressure Pipe meeting the performance requirements of ASTM D2241 "Standard Specification for PVC, Pressure Rated Pipe (SDR Series)" and shall be manufactured from compound that meets or exceeds cell classification 12454 per ASTM D1784. 2" Restrained Joint PVC pipe for HDD applications shall be Certa-Lok® Yelomine as manufactured by CertainTeed, no equals.

B. The Certa-Lok Yelomine pipe, couplings and fittings shall provide a restrained joint by utilizing precision-machined grooves on the pipe and in the coupling which, when aligned, allow a spline to be inserted, resulting in a fully circumferential restrained joint that locks the pipe and coupling together. A flexible elastomeric seal (O-ring) in the coupling provides a hydraulic pressure seal.

C. Certa-Lok Yelomine pipe shall be furnished with Permanent Use Certa-Lok Couplings, Spline and O-rings.

D. Certa-Lok Yelomine pipe shall be rated for 250 psi , SDR-17, with IPS size O.D. and 20' lay lengths.

E. Fittings and fitting restraints shall be as specified herein.

2.02 4” AND 6” PVC PIPE FOR HORIZONAL DIRECTIONAL DRILL (HDD)

A. 4” and 6" potable water mains installed via HDD methods shall meet the requirements of AWWA Specification C900 "Polyvinyl Chloride (PVC) Pressure Pipe." All pipe shall be Class 235, DR-18 with Ductile Iron Pipe Size (DIPS) Outside Diameter (O.D.) Each length of pipe shall be hydrotested to four (4) times its class pressure by the manufacturer in accordance with AWWA C900/C905. PVC pipe shall meet the requirements of ASTM D1784, manufactured from compounds with cell classification 12454. PVC pipe shall be furnished with push-on integral bell type joints per ASTM D3139 and shall be supplied with elastomeric gaskets installed meeting the requirements of ASTM F477. PVC pipe shall have a 20’ standard lay length. The 4” Restrained Joint PVC pipe for HDD applications shall be Certa-Lok® C900/RJ as manufactured by CertainTeed, no equals. The 6” Restrained Joint PVC pipe for HDD applications shall be Certa-Lok® C900/RJIB as manufactured by CertainTeed, no equals.

B. The Certa-Lok C-900/RJ and C-900/RJIB pipe and couplings shall provide a restrained joint by utilizing precision-machined grooves on the pipe and in the coupling which, when aligned, allow a spline to be inserted, resulting in a fully circumferential restrained joint that locks the pipe and coupling together. A flexible elastomeric seal (O-ring) in the coupling provides a hydraulic pressure seal.

C. Certa-Lok C-900/RJ and C-900/RJIB pipe shall be furnished with Permanent Use Certa-Lok Couplings, Spline and O-rings.

D. All PVC pipe and couplings for potable water mains shall comply and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF-61. Pipe color shall be BLUE for all potable water mains.

2.03 POLYVINYL CHLORIDE PIPE AND FITTINGS

A. Class-Rated Polyvinyl Chloride (PVC) Pipe:

1. Unless otherwise shown on the Drawings, all potable water mains installed via open cut methods shall meet the requirements of AWWA Specification C900 "Polyvinyl Chloride (PVC) Pressure Pipe." All pipe shall be Class 235, DR-18 with Ductile Iron Pipe Size (DIPS) Outside Diameter (O.D.) Each length of pipe shall be hydrotested to four (4) times its class pressure by the manufacturer in accordance with AWWA C900/C905. PVC pipe shall meet the requirements of ASTM D1784, manufactured from compounds with cell classification 12454. PVC pipe shall be furnished with push-on integral bell type joints per ASTM D3139 and shall be supplied with elastomeric gaskets installed

meeting the requirements of ASTM F477. PVC pipe shall have a 20' standard lay length.

2. All PVC pipe for potable water mains shall comply and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF-61. Pipe color shall be BLUE for all potable water mains.

3. PVC Pipe shall be as manufactured by JMEagle, North American Pipe Corporation, Diamond Plastics, or approved equal.

B. Fittings:

1. All fittings for C-900 PVC pipe (installed by open cut or HDD) four inches (4") to six inches (6") in diameter shall be of Ductile Iron. Ductile Iron fittings shall be mechanical joint with a minimum pressure rating of 350 psi. Fittings shall be Compact Body Type and shall meet the requirements of AWWA C153/ANSI A21.53 as applicable. Rubber gasket joints shall conform to AWWA C111/ANSI A21.11 for mechanical and push-on type joints. All fittings shall be mechanically restrained.

2. All ductile iron fittings shall be cement mortar lined and seal coated in accordance with ANSI/AWWA C104/A21.4. Exterior of ductile iron fittings shall be asphaltic coated. Ductile iron fittings shall comply and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF-61.

3. The Contractor shall provide a polyethylene encasement over all buried ductile iron fittings. The material, installation and workmanship shall conform to applicable sections of AWWA C105/ANSI Standard A21.5. Installation methods A or B shall be employed using flat tube polyethylene. The Contractor shall make provisions to keep the polyethylene from direct exposure to sunlight prior to installation; and backfilling following installation shall be completed without delay to avoid exposure to sunlight. Polyethylene shall be color coded blue for potable water.

4. All ductile iron fittings supplied shall be poured in a foundry located in the United States of America (U.S.A.), no exceptions. Ductile iron fittings shall be as manufactured by US-Pipe, Tyler Union, American, or approved equal.

C. 2" PVC IPS Pipe and Fittings

1. Where shown on the drawings, 2" PVC pipe shall be IPS DR-17 (250 psi) and shall meet the requirements of ASTM D2241 "Standard

Specification for Polyvinyl Chloride (PVC) Pressure Rated Pipe (SDR Series)." All pipe shall be made from quality PVC resin, compounded to provide physical and mechanical properties that equal or exceed cell class 12454 as defined in ASTM D1784. Gaskets conform to ASTM F477. Pipe shall have an integral bell joint design and shall be tested to the requirements of ASTM D3139.

2. All PVC pipe for potable water mains shall comply and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF-61. Pipe color shall be BLUE for all potable water mains.

3. Fittings for 2" IPS pipe shall be PVC Plastic fittings SDR-21, Pressure Class 200 and shall meet or exceed the performance specifications of ASTM Standards D 1784, manufactured from compounds with cell classification 12454B. Joints per ASTM Standards D 3139 testing requirements. Gaskets shall be per ASTM Standards F477. No solvent-cement weld pipe or fittings will be accepted. PVC fittings shall comply with and be labeled as approved by the NSF-61 for use in potable water lines. PVC fittings shall be as manufactured by Harco or approved equal.

2.04 RESTRAINED JOINTS

A. All buried piping and fittings shall be restrained with mechanical restrainers in accordance with the restrained joint table provided in the Drawings. Pipes subject to pressure or being fed by a pumping system shall be restrained based on a 150 psi working pressure. Restrained joint length indicated in the Tables represents the length on all sides of fittings and valves within which all joints must be restrained. As a minimum, the joints at all fittings and valves shall be restrained.

B. Restrained joints shall be capable of holding against withdrawal for line pressures 50 percent above the normal working pressure but not less than 150 psi. The pipe and fittings shall be restrained push-on joints or restrained mechanical joints.

C. Restrained pipe joints that achieve restraint by incorporating cut out sections in the wall of the pipe shall have a minimum wall thickness at the point of cut out that corresponds with the minimum specified wall thickness for the rest of the pipe.

D. Ductile iron mechanical joint fittings used with C-900 PVC pipe shall be restrained with the EBAA Iron Series 2000PV Mechanical Joint Restraint Gland, no equals.

E. C-900 PVC pipe with push-on joints shall be restrained with EBAA Iron Series 1500 restrainers, no equals. The restraining device and Tee head bolts shall be manufactured of high strength ductile iron meeting ASTM A-536, Grade 65-45-12. Clamping bolts and nuts shall be manufactured of corrosion resistant high strength, low alloy CORTEN steel meeting the requirements of ASTM A-242.

F. IPS PVC Pipe with push-on joints shall be mechanically restrained. The restraint shall be manufactured of ductile iron conforming to ASTM A536. A split serrated ring shall be utilized behind the pipe bell. A split serrated ring shall be used to grip the pipe, and a sufficient number of bolts shall be used to connect the bell ring to the gripping ring. The restraint shall be the Series 6500, as manufactured by EBAA Iron, Inc. or approved equal. PVC fittings on IPS PVC Pipe shall be mechanically restrained using EBAA Iron 7500 Series or approved equal.

2.05 COUPLINGS

A. Buried water main pipe 12-inch diameter or less.

1. EBAA Iron, Inc., Series 3800 restrained coupling system; no equals. Provide coupling designed to restrain forces based on the pressure rating of the pipe joined using a minimum 2 to 1 safety factor.

2. Ductile iron body and end rings shall meet or exceed the requirements of ASTM A536, minimum 65-45-12, and shall be tested in accordance with the requirements of said standard.

3. Bolts, nuts, washers and rods shall be low alloy steel per ANSI/AWWA C111/A21.11.

4. Gasket seals shall conform to ASTM D2000 and be EPDM.

5. Coupling sleeve internal surfaces (wetted parts) shall be lined with a minimum of 15 mils of fusion bonded epoxy conforming to ANSI/AWWA C213. Exterior surfaces of sleeve and end rings shall be coated with a minimum of 6 mils of fusion bonded epoxy conforming to ANSI/AWWA C116/A21.16.

6. Coatings and gaskets shall be ANSI/NSF-61 standards.

2.06 LOCATOR WIRE AND IDENTIFICATION TAPE

A. Locator Wire

1. All PVC pipe shall be installed with two (2) insulated tracer wires. This wire shall to be continuous and brought up in the valve boxes and test stations as shown on the details. Locator wire may be any of the following:

   a. Open cut applications, #12 AWG Solid (.0641" diameter), steel core soft drawn high strength tracer wire, 282 lb. tensile break load, 30 mil high molecular weight-high density yellow polyethylene jacket complying with ASTM-D-1248, 30 volt rating. as manufactured by Copperhead Industries 1230-HS, or approved equal.

   b. For HDD applications, #12 AWG solid (.0808" diameter), steel core hard drawn extra high strength horizontal directional drill tracer wire, 1150# average tensile break load, 45 mil high molecular weight-high density yellow polyethylene jacket complying with ASTM-D-1248, 30 volt rating as manufactured by Copperhead Industries 1245-EHS, or approved equal.

2. Direct bury waterproof wire connectors shall meet or exceed UL Standards 486D and be compatible with THHN or THWN insulation thickness (3M- DBR-6 direct bury splice kit; King Innovation; or equal). A silicone insulating gel sealant shall be used.

3. Jacket color shall be BLUE to match the water main use as described in the detail drawings.

B. Identification Tape

1. Metal Identification Tape: Metal detectable underground tape with solid aluminum foil core, permanent printing under a protective layer and containing a laminated polyethylene reinforcement layer (Empire Level Mfg. Corp.; Merco Tape Company – M225; Presco; or equal). Tape shall have a minimum thickness of 5 mils and a minimum width of 2 inches. The warning label shall be printed in black ink letters over a background color matching the water main use as described in the detail drawings.

2. Marking Tape: Non-detectable adhesive backed identification tape, latex adhesive, minimum width two (2) inches (NADCO; or equal). Background color of marking tape shall be BLUE to match the water main use as described in the detail drawings.

PART 3 - EXECUTION

3.01 GENERAL

A. Care shall be taken in loading, transporting, and unloading to prevent injury to the pipe or coatings. Pipe or fittings shall not be dropped. All pipe or fittings shall be examined before laying, and no piece shall be installed which is found to be defective. Any damage to the pipe coatings shall be repaired as directed by the Engineer.

B. All pipe and fittings shall be subjected to a careful inspection just prior to being laid or installed. If any defective pipe is discovered after it has been laid it shall be removed and replaced with a sound pipe in a satisfactory manner at no additional expense to the Owner. All pipe and fittings shall be thoroughly cleaned before laying, shall be kept clean until they are used in the work, and when installed or laid, shall conform to the lines and grades required.

C. All buried piping shall be installed to the lines and grades as shown on the Drawings. All underground piping shall slope uniformly between joints where elevations are shown.

D. Contractor shall exercise extreme care when constructing piping to shore up and protect from damage all existing underground water lines and power lines, and all existing structures.

E. Potable water service lines may be installed by open cut or horizontal directional drill (HDD) as shown on plans or as directed by Engineer.

3.02 PIPE

A. Ductile iron fittings shall be installed in accordance with requirements of AWWA Standard Specification C600 except as otherwise provided herein. A firm, even bearing throughout the length of the pipe shall be constructed by tamping selected material at the sides of the pipe up to the springline. BLOCKING WILL NOT BE PERMITTED.

B. All pipe shall be sound and clean before laying. When laying is not in progress, including lunchtime, the open ends of the pipe shall be closed by watertight plug or other approved means. Good alignment shall be preserved in laying. The deflection at joints shall not exceed that recommended by manufacturer. Fittings, in addition to those shown on the Drawings, shall be provided, if required, in crossing utilities which may be encountered upon opening the trench. Solid sleeves shall be used only where approved by the Engineer.

C. When cutting pipe is required, the cutting shall be done by machine, leaving a smooth cut at right angles to the axis of the pipe. Cut ends of pipe to be used with a push-on bell shall be beveled to conform to the manufactured spigot end. Cement lining shall be undamaged.

D. Push-on joints shall be made in strict accordance with the manufacturer's instructions. Pipe shall be laid with bell ends looking ahead. A rubber gasket shall be inserted in the groove of the bell end of the pipe, and the joint surfaces cleaned and lubricated. The plain end of the pipe is to be aligned with the bell of the pipe to which it is to be joined, and pushed home with a back or by other means.

E. Mechanical joints at valves, fittings, and where designated on the Drawings and/or as specified, shall be in accordance with the "Notes on Method of Installation" under ANSI Specification A21.11 and the instructions of the manufacturer. To assemble the joints in the field, thoroughly clean the joint surfaces and rubber gasket with soapy water before tightening the bolts. Bolts shall be tight to the specified torques. Under no condition shall extension wrenches or pipe over handle or ordinary ratchet wrench be used to secure greater leverage. Torque values shall be at minimum the following or the latest minimum torque requirements by the manufacturer. Contractor shall be responsible for confirm the proper torque values.

1. EBAA 2000 PV Megalugs (on Ductile Iron Fittings 4”-24”):

    a. T-bolts/Nuts: 75-90 ft-lbs
    b. Twist-off Nuts: As required to twist off. If re-assembly is required after Twist-off Nuts have been removed, tighten to 60-80 ft-lbs.

2. EBAA 1500 Restraint Harness (PVC Pipe Joint Restraint Harness up to 6”)

    a. Side Bolts/Nuts: 60 ft-lbs
    b. Thrust Rod/Bolts/Nuts: Allow enough room on the thrust bolts to fully engage the nuts. Do not tighten these bolts enough to force the spigot further into the bell of the joint.

3. EBAA 3800 Coupling (Restrained Coupling/Sleeve 4”-24”)

    a. Threaded Rod/Nuts: 75-90 ft-lbs
    b. Twist-off Nuts: As required to twist off. If re-assembly is required after Twist-off Nuts have been removed, tighten to 60-80 ft-lbs.

F. All valves, hydrants, fittings and other appurtenances needed on the pipelines shall be set and jointed as indicated on the Drawings or as required by the manufacturer.

G. Deflected bell pipe if shown on the Drawings is shown only as an assistance in illustrating a preferred means of installation in specific locations, and is not intended to indicate all deflected bell pipe necessary to effect the installation as shown in plan and profile views. The cost of all such deflections shall be included within the bid price for furnishing and installing the pipe.

H. PVC piping shall be installed in strict accordance with the manufacturer's instructions. The pipe shall be backfilled with selected fine excavated material as shown on the Drawings and thoroughly compacted to one foot above the top of the pipe and thereafter backfilled as specified in Section 02221.

3.03 PRESSURE AND LEAKAGE TESTS OF UNDERGROUND PUSH-ON JOINT PVC PRESSURE PIPING

A. Field tests shall be made to confirm compliance with the contract and to establish compliance with the technical provision. The test shall be performed by the Contractor as herein specified. All piping, and equipment shall be tested in the field in the presence of the Engineer or his authorized assistant, in the manner prescribed in the Sections of these Specifications pertaining to such installation.

B. Prior to pressure testing, all mains shall be flushed and pigged to remove all sand and other foreign matter. The velocity of the flushing water shall not be less than 2 feet per second. Flushing shall be terminated at the direction of the Engineer. The Contractor shall dispose of the flushing water without causing a nuisance or property damage.

C. Pressure and Leakage Test of Underground Piping

1. Hydrostatic pressure and leakage tests shall conform with Section 4 of AWWA C600 Specification with the exception that the Contractor shall furnish all gauges, meters, pressure pumps and other equipment needed to test the line.

2. The pressure required for the field hydrostatic pressure and leakage test shall be 150 psi. The Contractor shall provide temporary plugs and blocking necessary to maintain the required test pressure. Corporation cocks at least 2 inches in diameter, pipe riser and angle globe valves shall be provided at each pipe dead-end in order to bleed air from the line. The cost of these items shall be included as part of testing.

3. The duration of each such test will be at least two (2) hours.

4. All leaks evident at the surface shall be repaired and leakage eliminated regardless of total leakage as shown by test. Lines which fail to meet tests shall be repaired and retested as necessary until test requirements are complied with. Defective materials, pipes, valves, and accessories shall be removed and replaced. The pipelines shall be tested in such sections as may be directed by the Engineer by shutting valves or installing temporary plugs as required. The line shall be filled with water and all air removed and the test pressure shall be maintained in the pipe for the entire test period by means of a force pump to be furnished by the Contractor. Accurate means shall be provided for measuring the water required to maintain this pressure. The amount of water required is a measure of the leakage.

5. During the duration of the test, the line pressure shall not be permitted to drop more than 5 psi below the test pressure. Once the pressure drops 5 psi below the test pressure, the line shall be refilled until the test pressure is restored.

6. The amount of leakage which will be permitted shall be in accordance with AWWA, C600 Standards for all pressure. No pipe installation shall be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{SD(P)^{1/2}}{148{,}000}$$

In which L is the allowable leakage in gallons per hour; S is the length of pipe tested, in feet; D is the nominal diameter of the pipe, in inches; and P is the average test pressure during the leakage test, in pounds per square inch gauge. The duration of the leakage test shall be two (2) hours for pressurized pipes. The equation is based on 20’ pipe lengths and shall be adjusted accordingly for other lengths.

7. The Contractor must submit his plan for testing to the Engineer for review at least ten (10) days before starting the test. The Contractor shall remove and adequately dispose of all blocking material and equipment after completion and acceptance of the field hydrostatic test, unless otherwise directed by the Engineer. Any damage to the pipe coating shall be repaired by the Contractor. Lines shall be totally free and clean prior to final acceptance.

8. No leakage will be allowed for Certa-Lok pipe sections.

3.04 DISINFECTION OF POTABLE WATER LINES

A. Prior to disinfection, the lines shall be pigged, flushed and pressure tested. Lines shall be disinfected in accordance with the applicable requirements of AWWA C651 and as described Section 02650. At no time are valves on the distribution system to be operated without the presence of a duly qualified representative of the Owner.

3.05 ABANDONMENT OF EXISTING WATER MAINS WITH GROUT

A. Excavate, uncover, and cut open the existing main that is to be filled with grout at both ends, and at minimum every 200 feet apart to allow for the pumping of the grout into the pipeline or to allow air to be expelled from the pipeline during grouting operations. The Contractor shall be responsible for furnishing equipment of sufficient power to pump the grout into the pipe. If required due the Contractor's equipment, shall cut a hole in the existing water main at more frequent intervals (i.e. less than every 200 feet) to allow for the grout to be pumped into the existing water main.

B. Plant produced concrete grout shall be delivered using concrete construction equipment. Place grout into pipeline to be filled by pumping or other methods approved by the engineer. Provide all necessary piping, hose, valves and connections to convey grout from delivery truck to connection point of pipeline to be filled.

C. Completely fill existing main throughout its entire length with grout by pumping grout into the lower end of the pipe to be filled while water/air is expelled from the upper end of the pipe. Control rate at which grout is pumped into the pipe in order to have the full pipe cross-section fill with grout and not have the water/air over-run the top of the grout surface.

D. Protect grout from freezing for a period of 36 hours after placement.

E. Provide necessary closures of pipe openings to keep grout from exiting the main before it has hardened.

F. After operations to fill existing main are completed, backfill and compact all excavations and restore the work area to a condition equal to or better than the condition that existing prior to starting the work.

3.06 REMOVAL OF EXISTING MAIN

A. Excavate or otherwise expose water main designated on the drawings to be removed.

B. Cleanly separate the water main piping designed for removal from the piping that will remain by cutting or disassembling at joint. Provide and place a secure cap on piping to remain.

C. Remove water main piping and accessories in suitably sized segments. Removed piping not designated by the Engineer to become salvage, shall become the property of the Contractor and shall be promptly removed from the project to a lawful place of disposal.

D. Removal of water main piping from pier supports shall include the work of removing and disposing of attachments to the support piers and cutting off anchor bolts flush with the surface of the support pier as directed by and to the satisfaction of the Engineer. Removal of the support pier is not part of the work to remove existing water main piping.

E. After water main piping removal is completed, backfill and compact all excavations and shall restore the work area to a condition equal to or better than the condition that existing prior to starting the work.

END OF SECTION

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SECTION 02650

DISINFECTION OF POTABLE WATER MAINS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. This Specification provides written description and direction of required practices to those involved in the process of disinfecting potable water mains and appurtenances prior to their placement for service. The Contractor shall furnish all water, power, equipment, chemicals, labor and ancillary appurtenances required to perform disinfection of potable water mains.

B. The Owner shall employ the services of an environmental laboratory certified to perform sampling and bacteriological testing of potable water mains.

C. Chlorination shall not take place until:

1. The main is constructed in accordance with the Contract Documents as modified by the Engineer during construction and all construction permit requirements are met.

2. All blow offs, injection and sample points are constructed and ready for use.

3. The main has been pigged and thoroughly flushed with scouring velocities as needed.

4. The main has been successfully pressure and leakage tested in accordance with Section 02640.

5. Chlorine neutralization chemicals, and methods for application and disposal of chlorinated water, have been established by the Contractor. The Contractor shall dispose of the water without causing a nuisance, property damage and in compliance with the National Pollution Discharge Elimination System (NPDES) and all applicable jurisdictions.

1.02 APPLICABILITY

A. All new water mains shall be flushed and disinfected in accordance with ANSI/AWWA C651 and bacteriological samples shall be collected and analyzed on two consecutive days.

B. New additions or alterations/relocations of water mains less than or equal to 50’ in length shall be disinfected by either the Tablet method, Continuous-feed method or swabbing or spraying with a hypochlorite solution and flushed as prescribed in ANSI/AWWA C651. Bacteriological samples shall be collected and analyzed on two consecutive days.

C. New additions or alterations/relocations of water mains that are over fifty (50) feet in length shall be disinfected and flushed using the Continuous-feed method as described in ANSI/AWWA C651. Bacteriological samples shall be collected and analyzed on two consecutive days.

D. All newly disinfected water mains shall maintain, after samples have been collected, a minimum pressure of 20 psi until a Letter of Clearance has been obtained from the FDEP.

E. Bacteriological test results for all new and altered public drinking water facilities other than wells will be considered invalid if the results are for samples collected more than sixty (60) days before the results are received by the FDEP.

1.03 SCHEDULING AND NOTIFICATION

A. All disinfection of water mains shall be completed by the Contractor. The Contractor shall be responsible to provide all the necessary equipment and materials to perform the disinfection in accordance with ANSI/AWWA C651.

B. Scheduling of the disinfection and flushing of newly constructed or altered water mains require a minimum of 48 hours notice. The Contractor shall coordinate disinfection; flushing and bacteriological sampling of newly constructed or altered water mains to be completed within the normal business week and hours. The Owner shall coordinate Sample analysis with State certified labs.

C. The disinfection and sample collection for water lines down stream of a property’s water meter or backflow prevention device is under the jurisdiction of the Plumbing/Building Code.

PART 2 - PRODUCTS

2.01 CHLORINATION CHEMICALS

A. Forms of chlorine to be used for disinfection shall be as listed in AWWA C651.

1. Liquid chlorine per ANSI/AWWA B301.
2. Sodium hypochlorite liquid per ANSI/AWWA B300.

3. Calcium hypochlorite tablets or granules per ANSI/AWWA B300. (Calcium hypochlorite intended for swimming pool disinfection shall not be used.)

B. All products shall be NSF approved for use with potable water.

2.02 DECHLORINATION CHEMICALS

A. Chemicals to be used to dechlorinate flushing water shall be as listed in Appendix C, of AWWA C651. These include:

1. Sodium Thiosulfate ($Na_2S_2O_3*5H_2O$)
2. Sodium Bisulfite ($NaHSO_3$)
3. Sodium Sulfite (Na_2SO_3)
4. Sulfur Dioxide (SO_2).

PART 3 - EXECUTION

3.01 GENERAL

A. The Contractor shall locate blow-off valves at low points and dead ends in the grid to permit the removal of sediment.

B. The corporation stop to be used for pressure testing and chlorination shall be installed at the tap valve by the Contractor.

C. Samples shall be taken only through an approved standpipe assembly. No samples shall be taken through a fire hydrant.

D. Disinfection and pressure testing shall be completed on all the new sections of water mains, including the fittings and valves.

E. All blow-off standpipes and injection points shall be removed upon satisfactory completion of sampling and testing. Corporation stop shall remain in the line. Water mains smaller than six inches, or mains without fire hydrants or permanent blowoffs, the temporary blowoff and sample points shall remain installed until such time as the main is cleared and has been flushed before being placed into service.

F. Teflon tape shall be required on all threaded joints to avoid contamination (No pipe dope will be allowed).

G. It is the Contractor’s responsibility to place blow-off and sample points as agreed upon by the Engineer.

H. The Owner at their discretion shall have the authority to modify this policy according to field conditions in coordination with the Contractor.

3.02 FLUSHING

A. All pipelines shall be flushed to remove the lighter solids in the line. Because flushing cannot be relied on to remove heavy material allowed to get into pipeline during installation, every precaution shall be made to protect the pipeline against entrance of foreign material during the installation process.

B. Every new pipeline shall be flushed at a minimum velocity of 2.5 feet per second (fps) to ensure that the lighter solids are removed from the pipe interior. (Note that it may be difficult to obtain scouring velocities in a pipe over two hundred (200) feet in length.) Discharge velocity can be determined by a simple field procedure involving the "trajectory" method. For any size pipe discharging horizontally three feet above the ground, a stream of water traveling at twelve (12) feet per second will strike the ground six feet away. Similarly, a stream of water traveling at five feet per second will strike the ground more than two feet from the end of the pipe. This test must be made thru an open-ended pipe; it must not end with a valve or fitting, which would be smaller than the inside diameter of the pipe.

C. All pipelines six (6) inches in diameter or greater, or pipelines suspected of having heavy foreign material in them, shall be subjected to open end flushing to remove any foreign material from the pipeline. Pigging is required in addition to open-end flushing.

D. A velocity of 5.0 fps is desirable and a velocity of 12 fps may be needed to remove sand from river undercrossings and other subsurface inverts.

E. Table 1, provided at the end of this Specification, outlines the number and size of flushing assemblies required.

F. During the flushing process, a clean white cup shall be used at all sampling points to visually check for water clarity. When all the sample points are clear, meaning there is no background sediment, and the system chloramines residual is present, the line is ready to schedule for chlorination.

G. In the case of mains twenty-four (24) inch and larger, preliminary flushing may be replaced by stringent measures for removal of dirt and sediment from the pipe and the thorough cleaning of its interior prior to filling with the high chlorine solution. Swabbing with a chlorine solution may be required at the discretion of the Engineer.

3.03 CHLORINATION

A. Upon satisfactory completion of all testing and flushing, the Contractor shall furnish all materials and labor necessary to disinfect all water mains in accordance with the applicable sections of AWWA C-651.

B. Prior to chlorine injection the following shall be ensured:

1. That the source water tap valve for the water mains to be chlorinated has been shut off.

2. That all blow offs and sample points involved in the Project are open.

3. That there are no open valves to activate water mains tied into the water mains to be chlorinated.

4. That there is an uninterrupted supply of potable water or adequate number of barrels to assure there is no interruption once the injection process begins.

C. Disinfection of water mains shall be completed in accordance with ANSI/AWWA C651 standards and shall include the following; preflushing or cleaning of the water mains before the application of chlorine, disinfecting the mains with the prescribed chlorine dose for the disinfection method being utilized, allow for the proper amount of chlorine holding or contact time, ensuring that the applicable chlorine residual was maintained for the duration of the disinfection period, and final flushing and clearing of the heavily chlorinated water with the disposal and treatment of the heavily chlorinated water in accordance with applicable dechlorination methods. All sampling points shall be at sites as designated by the approved plan or (500) feet intervals. Satisfactory bacteriological analysis shall be determined by the results of samples.

D. The Contractor shall furnish sufficient water to perform the disinfection required. As the chlorine solution is being injected the chlorine residual at the closest sample point to the injection point shall be tested with a high Cl2 test kit or OTO reagent as applicable**.** The Owner has set 50 mg/l as the targeted free chlorine residual for new water main clearances as measured at the end of pipeline discharge. The water flow or solution strength shall be adjusted as necessary to achieve the recommended minimum chlorine strength.

E. As the high chlorine solution reaches each successive sample point, the valve at the sample point shall be closed. Prior to closing the valve at the last sample point, the following water main shut down process shall take place in sequence:

1. The source water control valve shall be closed.
2. The injection pump should be shut off and its valve closed.
3. The last blow off/ sample point valve should be closed.

F. The initial chlorine solution shall be no less than 50 ppm and not more than 1000 ppm in concentration and shall be left standing in the main for a period of not less than twenty-four (24) hours and not more than forty eight (48) hours. There must be a chlorine residual of 10 ppm at the standpipe hose bib after twenty-four (24) hours. After this period, the high chlorine water shall be drained and/or flushed from the system.

3.04 DRAINING, FLUSHING AND NEUTRALIZATION

A. Draining and/or flushing the solution from the main shall be the responsibility of the Contractor and shall be performed so as not to cause damage to the environment or create a nuisance to the owners of adjacent property. The Contractor shall inform the Engineer of the proposed methods of disposal of the high chlorine solution and shall secure any permits that may be necessary to dispose of such material.

B. Where applicable flushed water shall be treated to remove the chlorine residual from the water being discharged that has the potential to impact storm sewer, retention pond, lake, bay, gulf, or any other body of water, chemicals for dechlorinating the water shall be as specified above. See AWWA Standard C651, Disposal of Heavily Chlorinated Water, Appendix C for additional details. This process shall be followed each time water is discharged.

3.05 SAMPLING

A. The Contractor shall be responsible for scheduling bacteriological sampling.

B. Bacteriological sampling shall be conducted in accordance with Florida Administrative Code (F.A.C.) 62-555.340. Samples may be collected after first reducing the disinfection residual to no more than 4 mg/L or the representative disinfection residual of the source water. Disinfection residuals shall be measured and recorded. Bacteriological samples shall be collected and analyzed on two or more consecutive business days each taken at least six (6) hours apart. Samples shall be analyzed for the presence of total coliform by the certified lab.

C. Main Clearance Sampling is completed when each sample site has two consecutive day satisfactory (Total Coliform Absent) results.

D. Bacteriological test results for new and altered public drinking water mains will be considered invalid if the pressure in the mains is not maintained at 20 psi or greater after the samples are collected.

E. Flushing and sampling shall be repeated, as required, if total coliform is detected in a water sample. If necessary, the main shall be re-chlorinated.

3.06 ACTIVATION OF NEW WATER MAINS

A. Upon receipt of two (2) consecutive days' passing bacteriological results, the City will submit the analyses and required Certification to the Florida Department of Environmental Protection (FDEP). Prior to submitting the analyses and required certifications to the FDEP, the Contractor shall provide the Engineer with his Record Drawings for the potable water main being certified. Once the FDEP approves the Certification and issues a Letter of Clearance, the new main may be placed into service. The Contractor shall allow for a three (3) week minimum period between receipt of two consecutive passing test results and issuance of the Letter of Clearance by FDEP as long as As-Built drawings were provided to the Engineer prior to or with the passing bacteriological results. No section of any main shall be put into service without the written permission of the City and after the FDEP has cleared such main for use.

B. After the Final or Partial "Letter of Clearance" has been issued by the (FDEP) for a newly constructed water main the water main(s) needs to be thoroughly flushed before it is actually placed into service.

C. To achieve this flushing, fire hydrants may be utilized on 6-inch and larger water mains. On water mains less than 6-inches, a permanent blow-off may be used. Otherwise, the temporary blow-offs setup for the flushing, chlorination and main clearance sampling procedures shall be utilized.

D. Before activation, new water mains should be flushed until the water runs clean and clear. In addition, after the water main has been flushed, field tests for Total Chlorine should be taken to ensure disinfection residuals are similar to and representative of the source water.

TABLE 1

REQUIRED OPENINGS TO FLUSH PIPELINES (40 PSI RESIDUAL PRESSURE)
(For information purposes only)

Pipe Size	Flow (gpm Required to Produce 2.5 fps Velocity	Orifice Size (in.)	Number of Hydrant Outlet Nozzles	Size (in.) of Hydrant Outlet Nozzles
2	25	2	1	2-1/2
4	100	2	1	2-1/2
6	220	2	1	2-1/2
8	390	2	1	2-1/2
10	610	2-5/16	1	2-1/2
12	880	2-13/16	1	2-1/2
14	1200	3-1/4	2	2-1/2
16	1565	3-5/8	2	2-1/2
18	1980	4-3/16	2	2-1/2

END OF SECTION

SECTION 15100

VALVES AND APPURTENANCES

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. All labor, materials, equipment and incidentals required to furnish and install for complete and ready operation all valves and appurtenances shown on the Construction Drawings and as specified herein.

B. All valves and appurtenances shall be of the size shown on the drawings.

C. All valves and appurtenances shall have the name of the manufacturer cast in raised letters on some appropriate part of the body.

D. The equipment shall include, but not be limited to, the following:

1. Resilient Wedge Gate Valves
2. Valve Boxes
3. Fire Hydrants

1.02 DESCRIPTION OF SYSTEMS

A. All of the equipment and materials specified herein are intended to be standard for use in controlling the flow of wastewater, waste activated sludge, return activated sludge, scum, etc., depending on the application.

B. Unless otherwise specified herein or on the drawings all resilient seats, seals, and other sealing components of valves and flexible fittings shall be of EPDM construction.

C. In the case of existing valves that are being replaced with new valves, all replacement valves shall have the identical lay length and end connections as the existing valves being replaced. All replacement valves are to be provided with an actuator to match the type of the existing actuator and mounted in an identical fashion as the existing actuator. This applies to all types of valves. Prior to ordering any replacement valve, the contractor shall notify the Engineer if the valve in questions has to be special manufactured or ordered because of a non-standard lay length. All replacement valves shall be installed with new hardware and gaskets as applicable.

D. Each valve 4-inch and larger shall be supplied with an actuator. Valves shown on the drawings without powered actuators shall be supplied with a manual actuator as described in this specification.

1.03 QUALIFICATIONS

A. All valves and appurtenances shall be products of well-established reputable firms who are fully experienced and qualified in the manufacture of the particular equipment to be furnished. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications, as applicable.

1.04 SUBMITTALS

A. Complete shop drawings of all valves and appurtenances shall be submitted to the Engineer for review.

1.05 TOOLS

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

1.06 VALVE INDICES

A. The Contractor shall submit a valve schedule containing all valves required for the work. The schedule shall the location, type, a number, words to identify the valve's function, and the normal operating position for each valve.

PART 2 - PRODUCTS

2.01 RESILIENT WEDGE GATE VALVES (RWGV)

A. All gate valves 4" to 24" in diameter shall be resilient seated or resilient wedge, manufactured to meet or exceed the requirements of AWWA C509 or AWWA C515 of latest revision and in accordance with the following Specifications. Valves shall have an unobstructed waterway equal to or greater than the full nominal diameter of the valve.

B. The valves are to be non-rising stem with the stem made of cast, forged or rolled bronze shown in AWWA C509. Two stem seals shall be provided and shall be of the O ring type, one above and one below the thrust collar.

C. The sealing mechanism shall consist of a cast iron gate having a vulcanized synthetic rubber coating, or natural rubber seat ring. The resilient sealing mechanism shall provide zero leakage at the water working pressure when installed with the line flow in either direction.

D. The valve body, bonnet, and bonnet cover shall be cast iron ASTM A126, Class B. All ferrous surface inside and outside shall be meet AWWA C550

fusion bonded epoxy coating. A handwheel or wrench nut shall be provided for operating the valve. All Valves are to be tested in strict accordance with AWWA C509.

E. Valves shall be manufactured by Mueller A2360/A2361, Clow 2638, Kennedy KS-RW or American Flow Control Series 2500.

F. Valves shall open left (counterclockwise)

G. Bonnet hex head nuts and bolts shall be 304/316 stainless steel (no socket head bolts allowed). Brass nuts shall be used with packing gland bolts if required for OS&Y valves.

H. Buried Valves:

1. In-line valves shall have mechanical joint ends in accordance with ANSI/AWWA C111/A21.11.

2. Tapping valves shall have flanged end with raised male face, conforming to MSS SP-60, for connection to the tapping sleeve; and a mechanical joint connection on the outlet side of the valve. Flange end bolting shall be 304 stainless steel.

3. The valves are to be non rising stem with the stem made of copper alloy in accordance with AWWA C515. Two stem seals shall be provided and shall be of the O ring type, Nitrile Buna-N or EPDM rubber, one above and one below the thrust collar.

4. Provide two-inch square operating nut.

5. Provide bevel gear for valve when shown on the drawings or when necessary to allow using a valve box in locations where depth of bury is limited.

2.02 VALVE BOXES

A. All buried valves shall have cast-iron three-piece valve boxes with AASHTO H-20 loading rated. Valve boxes shall be provided with suitable heavy bonnets and to extend to such elevation at or slightly above the finished grade surface, as directed by the Engineer. The barrel shall be two-piece, sliding or slip type, having 5-1/4-inch shaft. The upper section shall have a flange at the bottom having sufficient bearing area to prevent settling and shall be complete with cast iron covers.

B. All valves shall have actuating nuts extended within 12 inches of the top of the valve boxes. Valve boxes shall be provided with concrete base and

valve nameplate engraved with lettering 1/8-inch deep as shown on the Construction Drawings.

C. Valve box covers shall indicate the type of service “Water”. Valve boxes shall be as manufactured by Tyler Union or approved equal.

2.03 VALVE IDENTIFICATION DISK

A. Valve Identification Disk: Solid cast bronze, three (3) inch diameter with integral anchor pin for embedment in concrete. Anchor shall be suitable for securing to a concrete base in theft or tamper proof manner. Surface of disk shall be engraved with 1/4” to 3/8” capital letters and numbers, approximately 0.015 inch depth. Surface shall be ground smooth and epoxy-coated to prevent tarnishing.

PART 3 - EXECUTION

3.01 INSTALLATION

A. All valves and appurtenances shall be installed in the locations shown, true to alignment and rigidly supported. Any damage to the above items shall be repaired to the satisfaction of the Engineer before they are installed.

B. Buried Valves

1. Valve stems shall be vertical.

2. Provide bevel gear actuators for large valves to allow use of valve box when depth of bury is limited.

3. Buried valves, including tapping valves and sleeves, shall be wrapped with polyethylene encasement material before backfilling.

C. Valve Boxes

1. Place valve box over each stem with base bearing on compacted fill and top flush with final grade. Valve box shall be aligned vertically and plumb over the valve operating nut.

2. Base of valve box shall be positioned to just cover the top of the valve but not rest directly on the valve. Inserting a PVC riser pipe between valve and valve box base is not acceptable.

3. Boxes shall have sufficient bracing to maintain alignment during backfilling.

4. Prior to acceptance by the City, Contractor shall remove any sand or other undesirable material from the box.

D. Fire Hydrants

1. Hydrants shall be installed plumb.

2. After installation of fire hydrant assemblies, Contractor shall notify Engineer that the assembly is complete and ready to be flow tested. City will flow test hydrant. Contractor shall keep hydrant assembly wrapped in plastic or other suitable material until the water main to which it is connected is disinfected and cleared for service by the Health Department. After the water main is placed into service, and the City has flow tested the hydrant, the hydrant shall be painted by the Contractor.

3. Fire Hydrants shall have a 6” gate valve and fire hydrant guards as shown in the drawings.

3.02 INSPECTION AND TESTING

A. Valve and service components shall be inspected for damage and shall be repaired to the satisfaction of the Engineer before they are installed.

B. Completed pipe, valves and service lines shall be subjected to a hydrostatic pressure and leakage test in accordance with Section 02640. All leaks shall be repaired and lines retested. Prior to testing, the pipelines shall be restrained to prevent movement during tests. If any joint, connection, or device proves to be defective, it shall be repaired or replaced to the satisfaction of the Engineer.

C. After installation of tapping sleeve and tapping valve, but before the existing main is tapped, Contractor shall subject the completed assembly to a 2 hour hydrostatic pressure test at 150 psi in accordance with Section 02640. The test shall be witnessed by the City Inspector.

3.03 POTABLE WATER SERVICES

A. The Contractor shall install a new potable water service laterals and new meter box/set to each lot associated with the project as shown on the details.

B. On new potable water mains, prior to pressure testing, Contractor shall install service saddle and corporation stop for each service that is to be connected to the new main. New service lines shall be pressure tested along with the potable water main.

C. Service line may be installed by open cut (OC) or horizontal directional drill (HDD) methods. Service lines under roadways shall be installed in a casing as shown on the details.

D. Upon clearance of the new water main for service by the Florida Department of Environmental Protection, the Contractor shall install and connect the water service to the new meter box/set.

E. Preliminary locations of potable water services are shown on the plans. During construction, it is the Contractor's responsibility to confirm the actual location of the existing meter box/services with the property owners.

F. Each customer shall be provided with 72-hour minimum notice that water service will be interrupted. Once the work begins on a private lot, work shall continue and be completed within four (4) hours. No property shall remain without water service for longer than four (4) hours.

END OF SECTION

CITY OF SAFETY HARBOR (THE CITY)

EXHIBIT G

BID BOND

PRINCIPAL (Legal name, business address and telephone number)	**Date Bond Executed:** (must not be later than bid opening date)
	Type Of Organization ("X" one) ❒ Individual ❒ Partnership ❒ Joint Venture
	State of Incorporation:

SURETY(IES) (Name(s), business address(es) and telephone number)

PROJECT (Address and description)

PENAL SUM OF BOND	**BID IDENTIFICATION**	
PERCENT OF BID PRICE	**BID DUE DATE:**	**SOLICITATION #**
%	FOR ("X" one) ❒ Construction ❒ Supplies ❒ Services	

KNOW ALL MEN BY THESE PRESENTS,
that we, the Principal and Surety(ies) hereto, are firmly bound to the City of Safety Harbor (hereinafter called the City) in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally; provided, that, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or action against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sums only as it is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

THE CONDITION OF THIS OBLIGATION IS SUCH,
that whereas the Principal has submitted the offer identified above, if the Principal, upon acceptance by the City of his offer identified above, within the period specified therein for acceptance, shall execute such further contractual documents, if any, and give such bond(s) as may be required by the terms of the offer as accepted within the time specified (ten 10) days if no period is specified) after receipt of the forms by him, or in the event of failure so to execute such further contractual documents and give such bonds, if the Principal shall pay the City for any cost of procuring the work (including administrative costs) which exceeds the amount of his offer, then the above obligation shall be void and of no effect.

Each surety executing this instrument hereby agrees that its obligation shall not be impaired by any extension(s) of the time for acceptance of the offer that the Principal may grant to the City, notice of which extension(s) to the Surety(ies) being hereby waived; provided, that such waiver of notice shall apply only with respect to extensions aggregating not more than sixty (60) calendar days in addition to the period originally allowed for acceptance of the offer; provided further, that if any legal action be filed upon this bond, venue shall lie exclusively in Pinellas County, Florida.

The entity identified as the RESIDENT AGENT of the Surety is hereby designated by the Surety as the Resident Agent in the State of Florida to whom any requisite notices may be delivered and on whom service of process may be had in matters arising out of such suretyship as required pursuant to Florida State Statute 624.422.

IN WITNESS WHEREOF,

the Principal and Surety(ies) have executed this bid bond and have affixed their seals on the date set forth above.

PRINCIPAL

Signature(s)	**Typed Names and Titles**	
1. (seal)	1.	**Corporate Seal**
2. (seal)	2.	

INDIVIDUAL SURETIES

Signature(s)	Typed Names and Titles	
1. (seal)	1.	**Corporate Seal**
2. (seal)	2.	

CORPORATE SURETY(IES)

(Surety A) Name & Address		State of Incorporation	**Corporate Seal**
		Liability Limit $	
Signature(s)	1. (seal)	2. (seal)	
Name(s) & Title(s) (Typed)	1.	2.	

The RESIDENT AGENT of the surety in the State of Florida, for the delivery of notice and service of process is:

Name: _____ Address: _____

_____

(Surety B) Name & Address		State of Incorporation	**Corporate Seal**
		Liability Limit $	
Signature(s)	1. (seal)	2. (seal)	
Name(s) & Title(s) (Typed)	1.	2.	

The RESIDENT AGENT of the surety in the State of Florida, for the delivery of notice and service of process is:

Name: _____ Address: _____

_____

(Surety C) Name & Address		State of Incorporation	**Corporate Seal**
Signature(s)	1. (seal)	2. (seal)	
Name(s) & Title(s) (Typed)	1.	2.	

The RESIDENT AGENT of the surety in the State of Florida, for the delivery of notice and service of process is:

Name: _____ Address: _____

_____

INSTRUCTIONS

1. This form is authorized for use whenever a bid guaranty is required in connection with construction work or the furnishing of supplies or services. There shall be no deviation from this form without approval by the City.

2. The full legal name and business address of the Principal shall be inserted in the space designated "Principal" on the face of this form. The bond shall be signed by an authorized person. When such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of his authority must be furnished.

3. (a) Corporations executing the bond as sureties must be authorized to act as sureties on bonds for principals in the State of Florida. Where more than a single corporate surety in involved, their names and addresses (city and state) shall be inserted in the spaces (Surety A, Surety B, etc.) Headed "CORPORATE SURETY(IES)." In the space designated "SURETY(IES)" on the face of this form, only the letter identification of the Sureties shall be inserted.

(b) Where individual sureties execute the bond, they shall be two or more fiscally responsible persons. A completed Affidavit of Individual Surety, for each individual surety, shall accompany the bond. Such sureties may be required to furnish additional substantiating information concerning their assets and financial capability as the City may require.

4. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Seal".

5. The name and title of each person signing this bid bond should be typed in the space provided.

CITY OF SAFETY HARBOR (THE CITY)

EXHIBIT H

PAYMENT BOND

PRINCIPAL (Legal name, business address and telephone number)	**Date Bond Executed:** (must be same as or later than contract date)	
	Type Of Organization ("X" one) ❒ Individual ❒ Partnership ❒ Joint Venture ❒ Corporation	
	State of Incorporation	
SURETY(IES) (Name(s, business address(es) and telephone number)	PENAL SUM OF BOND	
	$	
	CONTRACT DATE	CONTRACT NO.

PROJECT (Address and description)

KNOW ALL MEN BY THESE PRESENTS,
that we, the Principal and Surety(ies) hereto, are firmly bound to the City of Safety Harbor (hereinafter called the City) and to all persons, firms, and corporations who may furnish materials for, and perform labor under the contract referred to above, in the above penal sum for the payment of which we bind ourselves, heirs, executors, administrators, and successors, jointly and severally; provided, that, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or action against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sums only as it is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT,
whereas the Principal has entered into the contract identified above,

NOW, THEREFORE,
if the Principal shall promptly make payment to all persons supplying labor and/or material in the prosecution of the work provided for in said contract, and any and all duly authorized modifications of said contract that may hereafter be made, notice of which modification(s) to the Surety(ies) being hereby waived, then this obligation shall be void and of no effect; otherwise, it shall remain in full force and effect. This bond is given to pursuant to the provisions of Florida State law. If any legal action be filed upon this bond, venue shall lie exclusively in Pinellas County, Florida.

The entity identified as the RESIDENT AGENT of the Surety is hereby designated by the Surety as the Resident Agent in the State of Florida to whom any requisite notices may be delivered and on whom service of process may be had in matters arising out of such suretyship as required pursuant to Florida Statute 624.422..

IN WITNESS WHEREOF,
the Principal and Surety(ies) have executed this payment bond and have affixed their seals on the date set forth above.

PRINCIPAL

Signature(s)	Typed Names and Titles	Corporate Seal
1. (seal)	1.	
2. (seal)	2.	

CORPORATE SURETY(IES)

(Surety A) Name & Address		State of Incorporation	Corporate Seal
		Liability Limit $	
Signature(s)	1. (seal)	2. (seal)	
Name(s) & Title(s) (Typed)	1.	2.	

The RESIDENT AGENT of the surety in the State of Florida, for the delivery of notice and service of process is:

Name: _____ Address:_____

_____

CORPORATE SURETY(IES)

(Surety B) Name & Address		State of Incorporation Liability Limit $	Corporate Seal
Signature(s)	1. (seal)	2. (seal)	
Name(s) & Title(s) (Typed)	1.	2.	

The RESIDENT AGENT of the surety in the State of Florida, for the delivery of notice and service of process is:

Name: _____ Address: _____

_____

(Surety C) Name & Address		State of Incorporation Liability Limit $	Corporate Seal
Signature(s)	1. (seal)	2. (seal)	
Name(s) & Title(s) (Typed)	1.	2.	

The RESIDENT AGENT of the surety in the State of Florida, for the delivery of notice and service of process is:

Name: _____ Address: _____

_____

(Surety D) Name & Address		State of Incorporation Liability Limit $	Corporate Seal
Signature(s)	1. (seal)	2. (seal)	
Name(s) & Title(s) (Typed)	1.	2.	

The RESIDENT AGENT of the surety in the State of Florida, for the delivery of notice and service of process is:

Name: _____ Address: _____

_____

INSTRUCTIONS

1. This form is authorized for use in connection with construction work or the furnishing of supplies or services. There shall be no deviation from this form without approval by the City.

2. The full legal name and business address of the Principal shall be inserted in the space designated "Principal" on the face of this form. The bond shall be signed by an authorized person. When such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, a certified copy of the Power of Attorney must be attached . If the amount of the bond exceeds $100,000, the surety(ies) shall be approved for the amount of the bonds, and must hold a certificate of authority from the U.S. Secretary of the Treasury or have obtained reinsurance from a Treasury listed insurer, in accordance with the requirements of Florida.

3. The bond shall be executed by a corporate surety or corporate sureties duly authorized to do business in the State of Florida and licensed by the State of Florida to issue surety bonds. All payment bonds shall comply with Florida Statute 255.05 and comply with the notice and time limitations contained in Florida Statute 255.05(2).

4. Where more than a single corporate surety in involved, their names and addresses (City and State) shall be inserted in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)." In the space designated "SURETY(IES)" on the face of this form, only the letter identification of the Sureties shall be inserted.

5. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Seal".

6. The name and title of each person signing this payment bond should be typed in the space provided.

CITY OF SAFETY HARBOR (THE CITY)

EXHIBIT I

PERFORMANCE BOND

PRINCIPAL (Legal name, business address and telephone number)	**Date Bond Executed:** (must be same as or later than contract date)
	Type Of Organization ("X" one) ❒ Individual ❒ Partnership ❒ Joint Venture ❒ Corporation
	State of Incorporation
SURETY(IES) (Name(s), business address(es) and telephone number(s))	PENAL SUM OF BOND $
	CONTRACT DATE / CONTRACT NO.

PROJECT (Address and description)

KNOW ALL MEN BY THESE PRESENTS,
that we, the Principal and Surety(ies) hereto, are firmly bound to the City of Safety Harbor (hereinafter called the City) in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally; provided, that, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or action against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sums only as it is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

THE CONDITION OF THIS OBLIGATION IS SUCH,
whereas the Principal has entered into the contract identified above,

if the Principal shall faithfully perform and fulfill all the undertakings, covenants, terms, conditions, and agreement of said contract, in accordance with the plans, specifications and contract documents, during the original term of said contract and any extensions thereof that may be granted by the City, with or without notice to the Surety(ies), and during the life of any guaranty required under the contract, and shall also faithfully perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety(ies) being hereby waived, then this Obligation shall be void; otherwise, it shall remain in full force and effect. This bond is given pursuant to the provisions of Florida State law. If any legal action be filed upon this bond, venue shall lie exclusively in Pinellas, Florida.

The entity identified as the RESIDENT AGENT of the Surety is hereby designated by the Surety as the Resident Agent in the State of Florida to whom any requisite notices may be delivered and on whom service of process may be had in matters arising out of such suretyship as required pursuant to Florida Statute 624.422

IN WITNESS WHEREOF,
the Principal and Surety(ies) have executed this performance bond and have affixed their seals on the date set forth above.

PRINCIPAL

Signature(s)	Typed Names and Titles	
1. (seal)	1.	Corporate Seal
2. (seal)	2.	

CORPORATE SURETY(IES)

(Surety A) Name & Address		State of Incorporation	Corporate Seal
		Liability Limit $	
Signature(s)	1. (seal)	2. (seal)	
Name(s) & Title(s) (Typed)	1.	2.	

The RESIDENT AGENT of the surety in the State of Florida, for the delivery of notice and service of process is:

Name: _____ Address: _____

_____

CORPORATE SURETY(IES)

(Surety B) Name & Address		State of Incorporation	Corporate Seal
		Liability Limit $	
Signature(s)	1. (seal)	2. (seal)	
Name(s) & Title(s) (Typed)	1.	2.	

The RESIDENT AGENT of the surety in the State of Florida, for the delivery of notice and service of process is:

Name: _____ Address: _____

_____

(Surety C) Name & Address		State of Incorporation	Corporate Seal
Signature(s)	1. (seal)	2. (seal)	
Name(s) & Title(s) (Typed)	1.	2.	

The RESIDENT AGENT of the surety in the State of Florida, for the delivery of notice and service of process is:

Name: _____ Address: _____

_____

INSTRUCTIONS

1. This form is authorized for use in contracts with construction work or the furnishing of supplies or services. There shall be no deviation from this form without approval by the City.

2. The full legal name and business address of the Principal shall be inserted in the space designated "Principal" on the face of this form. The bond shall be signed by an authorized person. When such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, a certified copy of the Power of Attorney must be attached.

3. The bond shall be executed by a corporate surety or corporate sureties duly authorized to do business in the State of Florida and licensed by the State of Florida to insure surety bonds. All payment bonds shall comply with the Florida Statute 255.05 and comply with the notice and time limitations contained in Florida Statute 255.05(2). If the amount of the bond exceeds $100,000, the surety(ies) shall be approved for the amount of the bonds, and must hold either a certificate of authority from the U.S. Secretary of the Treasury or have obtained reinsurance from a Treasury listed insurer.

4. Where more than a single corporate surety is involved, their names and addresses (City and State) shall be inserted in the spaces (Surety A, Surety B, etc.) headed “CORPORATE SURETY(IES) “ on the face of this form, only the letter identification of the Sureties shall be inserted.

5. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Seal".

6. The name and title of each person signing this performance bond should be typed in the space provided.

DEFINITIONS

The following words and expressions (or pronouns used in their stead) shall, wherever they appear in the Contract Documents, be construed as follows unless a different meaning is clear from the context.

"Addendum" shall mean the additional contract provisions issued in writing by the City, prior to the receipt of Offers.

"City Commissioners" shall mean the City Commissioners of the City of Safety Harbor.

"Bonds" shall mean Bid, Performance and Payment bonds and other instruments of security furnished by the Contractor and his surety in accordance with the Contract documents.

"Change Order" shall mean a written order to the Contractor signed by the City authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time issued after execution of the Agreement.

"City" shall mean the City of Safety Harbor, Florida, a Florida municipal corporation.

“Contract” or “Contract Documents” shall mean and refer to the collection of the agreement between the parties in its entirety, including this Agreement, the Solicitation Offer and Award Form, Schedule, Representations and Certifications, Special Solicitation Instructions and Conditions, Solicitation Instructions and Conditions, Special Provisions, General Provisions, Statement of Work and this Definitions section, together with any addenda thereto.

“Contract Modification” shall mean a changes or alterations made to the contract.

“Contracting Officer” shall have authority to enter into, administer, or terminate contracts, and make related determinations and findings. Contracting Officers may bind the City only to the extent of the authority delegated to them (See Certificate of Appointment). Contracting Officers shall receive from the appointing authority (City Manager) clear instructions in writing regarding the limits of their authority. Information on the limits of the contracting officers’ authority shall be readily available to the public and agency personnel.

"Contractor" shall mean the Offeror who is awarded the contract by the City.

"Contract Price" shall mean the total monies payable to the Contractor under the Contract Documents.

"Contract Time" shall mean the number of calendar days stated in the Contract for the completion of the work.

"Contract Work" or the “Work” shall mean any and all obligations, duties and responsibilities necessary to the successful completion of the project assigned to or undertaken by the Contractor under the Contract Documents, including the furnishing of all labor, materials, equipment, and other incidentals.

"Day" shall mean one calendar day.

"City Engineer" shall mean the City Engineer of the City of Safety Harbor or Consultant if the Consulting Engineer has been retained to administer the contract.

"Final Acceptance" shall mean acceptance of the Work by the City as evidenced by its signature upon the final Certificate of Completion and approval thereof by the City Commission. Such acceptance shall be deemed to have taken place only if and when such signature is affixed to such certificate as evidenced by final payment. The final Certificate of Completion shall be signed only after the City has assured itself by tests, inspection or otherwise that all of the provisions of the Contract have been carried out to its satisfaction.

"Notice" shall mean written notice. Notice shall be served upon the Contractor either personally or by leaving the said notice at his residence or with his Agent in charge of the Work, or addressed to the Contractor at the residence or place of business given in the Bid and deposited in a postpaid wrapper in any post box regularly maintained by the United States Post Office.

"Notice of Award" shall mean the written notice given by the City to the successful Offeror.

"Offer" shall mean the offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the work to be performed.

"Offeror" shall mean any person, firm or corporation submitting a bid proposal for the Work.

"Plans" shall mean only those drawings specifically referred to as such in the Contract Documents or in any Addendum. Drawings issued after the execution of the Contract to explain further, to illustrate, or to show changes in the Work will be known as "Supplementary Drawings" and shall be binding upon the Contractor with the same force as the Plans.

"Professional" shall mean the professional independent Architectural/Engineering firm designated to be in charge of the work by a prior agreement entered into by the City and said firm.

"Project" shall mean the entire improvement of which this Contract forms a part.

“Project Manager” shall mean the individual designated by the City to be the main point of contact for the Contractor for the duration of the Contract.

"Shop Drawings" shall mean all drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a Subcontractor, a manufacturer, supplier or distributor and which illustrate the equipment, material and/or some portion of the work.

"Site" shall mean the area upon or in which the Contractor's operations are carried on and such other areas adjacent thereto as may be designated as such by the City.

"Specifications" shall mean these General Conditions, the Special Conditions and the Technical Specifications.

“Substantial Completion” shall mean placing the entire Work in satisfactory continuous service for the purpose for which it is intended. The Work shall be tested and demonstrated before it can be considered substantially complete.

"Subcontractor" shall mean any person, firm or corporation other than employees of the Contractor who or which contracts with the Contractor to furnish, or actually furnishes labor, materials and/or equipment for the project.

"Surety" shall mean any corporation that executes, as Surety, the Contractor's performance and payment bond securing the performance of this Contract.

"Technical Specifications" shall mean the portion of the Specifications dealing with the technical requirements of the work to be performed under the Contract including materials, equipment and workmanship.

PERMITS

Seminole Park and Mapleway Water Main Replacement Project

- Florida Department of Environmental Protection (FDEP) notice of Acceptance of Use of a General Permit Number 0126315-077-DSGP/02

- Florida Department of Transportation (FDOT)
  Utility Permit Number 2025-H-799-00184

FLORIDA DEPARTMENT OF Environmental Protection

Southwest District
13051 North Telecom Parkway #101
Temple Terrace, Florida 33637-0926

Ron DeSantis
Governor

Alexis A. Lambert
Secretary

Notification of Acceptance of Use of a General Permit

PERMITTEE:
Renee Cooper, Public Works Director
City of Safety Harbor
1200 Railroad Avenue
Safety Harbor, FL 34695
rcooper@cityofsafetyharbor.com

Permit Number: 0126315-077-DSGP/02
Issue Date: March 5, 2025
Expiration Date: March 4, 2030
County: Pinellas
Project Name: Seminole Park and Mapleway Water Main Replacement
Water Supplier: City of Safety Harbor
PWS ID: 652-1576

Dear Renee Cooper:

On February 6, 2025, the Florida Department of Environmental Protection received a "*Notice of Intent to Use the General Permit for Construction of Water Main Extensions for PWSs*" [DEP Form No. 62-555.900(7)], under the provisions of Rule 62-4.530 and Chapter 62-555, Florida Administrative Code (F.A.C.). The proposed project includes the construction of approximately: 2,000 linear feet of two-inch diameter water main pipe(s), 600 linear feet of four-inch diameter water main pipe(s) and 5,600 linear feet of six-inch diameter water main pipe(s). The project is located between 13th Avenue North to 10th Avenue South and Dr. Martin Luther King Jr. Street North to 4th Street South in Safety Harbor.

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

All construction must be in accordance with this permit. Before commencing work on project changes for which a construction permit modification is required per 62-555.536(1), the permittee shall submit to the Department a written request for a permit modification. Each such request shall be accompanied by one copy of a revised construction permit application, the proper processing fee and one copy of either a revised preliminary design report or revised drawings, specifications and design data.

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

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

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

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

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

for Shannon Herbon
Program Administrator
Permitting & Waste Cleanup Program
Southwest District

Enclosures: Clearance Requirements/Utilities Separation Requirements

cc:
Loc Truong, P.E., Ardurra Group, Inc., LTruong@ardurra.com
Camryn Aguilar, Ardurra Group, Inc., caguilar@ardurra.com
Cristina Lacorazza, Ardurra Group, Inc., clacorazza@ardurra.com
Sarah West DEP SWD, Sarah.J.West@FloridaDEP.gov

A Civil Penalty May Be Incurred

if this project is placed into operation before obtaining a clearance from this office.

Requirements for clearance upon completion of projects are as follows:

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

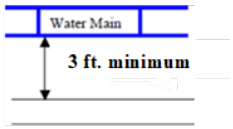
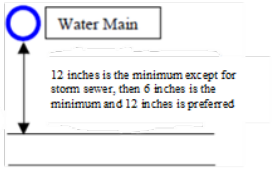
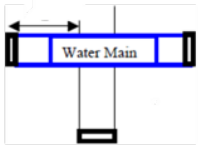
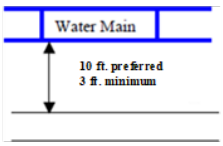
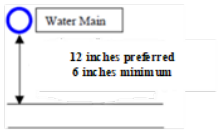
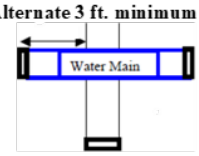
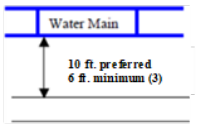
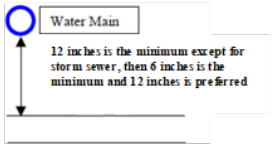
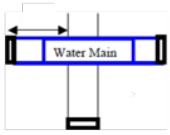
2) **Record Drawings, if deviations were made**
Submission of the portion of record drawings showing deviations from the DEP construction permit, including preliminary design report or drawings and specifications, if there are any deviations from said permit (Note that it is necessary to submit a copy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

3) **Bacteriological Results**
Copies of satisfactory bacteriological analysis (a.k.a. Main Clearance), taken within sixty (60) days of completion of construction, from locations within the distribution system or water main extension to be cleared, in accordance with Rules 62-555.315(6), 62-555.320(12)(d), 62-555.350(6), 62-555.340, and 62-555.330, F.A.C. and American Water Works Association (AWWA) Standard C 651-92, as follows:

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

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

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

Other Pipe	Horizontal Separation	Crossings (1)	Joint Spacing @Crossings (Full Joint Centered)
Storm Sewer, Stormwater Force Main, Reclaimed Water (2)			Alternate 3 ft. minimum 
Vacuum Sanitary Sewer			Alternate 3 ft. minimum 
Gravity or Pressure Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (4)			Alternate 6 ft. minimum 
On-Site Sewage Treatment & Disposal System	10 ft. minimum	---	---

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

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

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

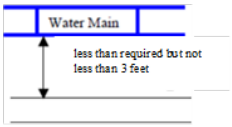
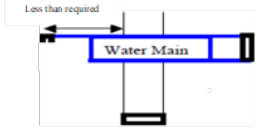
(4) Reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.

EXCEPTIONS TO MINIMUM SEPARATION REQUIREMENTS

Where it is not technically feasible or economically sensible to comply with the requirements of 62-555.314(1) or (2), F.A.C., **the Department shall allow exceptions to these requirements if suppliers of water or construction permit applicants provide technical or economic justification for each exception and provide alternative construction features that afford a similar level of reliability and public health protection**.

Acceptable alternative construction features include the following:

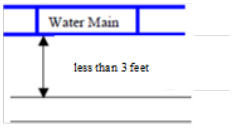
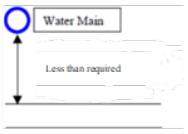
LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH 62-555.314(5)(a), F.A.C.

Other Pipe	Horizontal Separation	Joint Spacing @Crossings (Full Joint Centered)
Gravity or Pressure Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water, Vacuum Sanitary Sewer, Storm Sewer, Stormwater Force Main		

Where an underground water main is being laid **less than the required minimum horizontal distance** from another pipeline and where an underground water main is **crossing another pipeline and joints in the water main are being located less than the required minimum distance from joints in the other pipeline**:

1. Use of pressure-rated pipe conforming to the American Water Works Association standards incorporated into Rule 62- 555.330, F.A.C., for the other pipeline if it is a gravity- or vacuum-type pipeline;
2. Use of welded, fused, or otherwise restrained joints for either the water main or the other pipeline; **or**
3. Use of watertight casing pipe or concrete encasement at least four inches thick for either the water main or the other pipeline.

LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH 62-555.314(5)(b), F.A.C.

Other Pipe	Horizontal Separation	Crossings
Gravity or Pressure Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water, Vacuum Sanitary Sewer, Storm Sewer, Stormwater Force Main		

Where an underground water main is being laid **less than three feet horizontally** from another pipeline and where an underground water main is **crossing another pipeline and is being laid less than the required minimum vertical distance from the other pipeline**:
Use of pipe, or casing pipe, having high impact strength (i.e., having an impact strength at least equal to that of 0.25-inch-thick ductile iron pipe) or concrete encasement at least four inches thick for both the water main **and** for the other pipeline if it is new and is conveying wastewater or reclaimed water.

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

FLORIDA DEPARTMENT OF TRANSPORTATION

UTILITY PERMIT

December 14, 2016

PERMIT NO: 2025-H-799-00184

STATE ROAD INFORMATION

County:	Section:	State Road No:	Beginning Mile Post:	Ending Mile Post:
Pinellas	15050005	SR590	2.147	2.147

APPLICANT INFORMATION

The Utility Agency Owner (UAO) shall be identified in this Applicant Information Box. When the UAO is a City or County and desires to have the Utility Builder make a joint permit applicant, as prescribed in Section 2.1(4) of the 2017 Utility Accommodation Manual (UAM), the Utility Builder shall also be identified in this Applicant Information Box. A Utility Builder alone cannot apply for a utility permit without the City or County adding them as a joint applicant.

Utility Agency/Owner (UAO)

Name: City of Safety Harbor
Contact Person: City of Safety Harbor
Address: 750 Main Street
City: Safety Harbor
State: Florida
Zip: 34695
Telephone: (727) 724-1555 ext. 1706
Email: mgiuliani@cityofsafetyharbor.com

Utility Builder (only applicable when the UAO is a City or County)

Name:
Contact Person:
Address:
City:
State:
Zip:
Telephone:
Email:

WORK DESCRIPTION

The Applicant(s) requests permission from the Florida Department of Transportation (FDOT) to construct, operate, and maintain the utilities as described below and as depicted in the incorporated documentation.

Project includes installation of approximately 10 LF of 6-inch PVC water main, (3) 6" RWGV and (2) deadman that will be installed via open cut in FDOT ROW. The proposed water main will be installed with a minimum cover of 36". The remainder of the project consists of the installation of approximately 2,000 LF of 2-inch PVC water main, 600 LF of 4-inch PVC water main, 5,600 LF of 6-inch PVC water main and reconnection of approximately 91+/- water services outside of FDOT ROW.

Utility Work No:

Additional sheets are attached and are incorporated into this permit Yes ☑ No ☐

For FDEP certification, the FDOT agency report is attached in accordance with UAM Section 2.4.1 (13) Yes ☑ No ☐

TRAFFIC CONTROL (TCP)

☑ The TCP will comply with the following 600 series index(es) 600, 607, 660, ALT

☑ A TCP has been attached and incorporated into this permit application in compliance with UAM Section 2.4.2.

MOT Technician's contact information (may be supplied at the two (2) business day notification to FDOT):

Name: _____ Telephone _____ Email: _____

COMMENCEMENT OF WORK

The UAO and/or Utility Builder shall commence actual construction in good faith within sixty (60) calendar days after approval of the permit application. If the beginning date is more than sixty (60) calendar days from the date of approval, the UAO and/or Utility Builder must review the permit with the FDOT Approving Engineer listed to make sure no changes have occurred to the transportation facility that would affect the permit's continued approval. The UAO and/or Utility Builder shall make good faith efforts to expedite the work and complete the work within the calendar days indicated.

Anticipated Start Date: 9/1/2025

Calendar days needed to completed: 396

Approved
2025-H-799-00184
Michael Lenhart
6/5/2025

Florida Department of Transportation

UTILITY PERMIT

PERMIT NO: 2025-H-799-00184

APPLICANT SIGNATURE

By the below signature(s) the UAO and/or Utility Builder agree(s) to construct, operate, and maintain the work as noted in the above Work Description, shown in plans and incorporated documents, in compliance with the UAM, all instructions noted in the FDOT Special Instructions Box, and special instructions incorporated into this permit. The UAO and/or Utility Builder declares, the location of all existing utilities that it owns or has an interest in, both aerial and underground, are accurately shown on the plans of the work areas. In accordance with UAM Section 2.8, the UAO and/or Utility Builder further declares that a letter of notification was delivered to the owners of other facilities within the work areas and that those listed below are the only facility owners known to be involved or potentially impacted by the proposed work.

Date Notified:	Name of other facility owners (attach additional sheets if necessary).
7/7/2022	Charter Communications
7/7/2022	Clearwater Gas
7/7/2022	Duke Energy - St. Petersburg
7/7/2022	Frontier Communications
7/7/2022	Pinellas County Utilities

Utility Agency/Owner	Utility Builder (when applicable)
Signature: MICHELLE GIULIANI (digital signature) Date: 5/27/2025	Signature: _____ Date: _____
Name (printed): MICHELLE GIULIANI	Name (printed): _____
Title: _____	Title: _____

FDOT PROJECT INFORMATION

Pursuant to UAM Section 2.1(10), the utility work is within FDOT projects listed below and must have a Utility Work Schedule for each project approved prior to commencement of work within the FDOT project limits:

There are NO FDOT constructions (proposed or underway).
This work is NOT related to an approved Utility Work Schedule.

FDOT SPECIAL INSTRUCTIONS

In accordance with UAM Section 2.7, FDOT incorporates the below and attached special instructions into this permit.

Contractor/Permittee is required to contact the local maintaining agency (Webber Infra at 727-573-7672) for roadway lighting locates prior to beginning work in State right-of-way. All work and inspections must be scheduled with Webber Infra (727-573-7672) prior to beginning work in State right-of-way. Permittee shall notify FDOT Regional Traffic Management Center (RTMC) at 813-615-8657 of the exact time any lane closure begins and a second notification when lane closure is removed.

Additional FDOT Special Instructions are attached and incorporated into this permit. Yes ☐ No ☑

PERMIT APPROVAL

By signature below, FDOT gives permission to the UAO and /or Utility Builder to construct, operate, and maintain the utilities indicated in this Utility Permit in compliance with the UAM, all incorporated documents, and special instructions. Any changes to the approved work must be approved by the FDOT's Approving Engineer and attached and incorporated into this permit in accordance with UAM Section 2.11.

Approving Engineer: Michael Lenhart (digital signature) Date: 6/5/2025
Name: Michael Lenhart
Title: OPERATIONS PROGRAM ENGINEER

Notification of Utility Work to be provided to: Telephone (727) 575-8300 ext. _____ or Email: Chris.Gregory@dot.state.fl.us

An FDOT Representative is required to be present on the worksite prior to commencement of work. Yes ☑ No ☐

Rep. Name: Lisa Gallman Telephone 7275737672 Email: lisa.gallman@wwebber.com

Approved
2025-H-799-00184
Michael Lenhart
6/5/2025

Florida Department of Transportation

UTILITY PERMIT

PERMIT NO: 2025-H-799-00184

CERTIFICATION

I, the undersigned UAO and/or Utility Builder, hereby CERTIFY that the utilities were constructed and inspected in compliance with the UAM all incorporated documents, and special instructions. Pursuant to UAM Section 2.11, all changes have been approved by the FDOT's Approving Engineer and incorporated into this permit along with all other material certifications, test results, bore logs, approved plans changes, as-built plans or other required documentation.

I also CERTIFY that work began on _____ and was completed on _____ and that the area was left in as good or better condition than when the work began.

Utility Agency/Owner	Utility Builder (when applicable)
Signature: _____ Date _____	Signature:_____ Date _____
Name (printed): _____	Name (printed): _____
Title: _____	Title: _____

FINAL INSPECTION OF WORK

☐ The work was inspected and found to be in non-compliance as noted below:

☐ All issues of non-compliance listed above have been brought into compliance and/or FDOT has no outstanding issues that need to be addressed by the UAO and/or Utility Builder. However, this final inspection does not release the UAO and/or Utility Builder of their continuing responsibilities pursuant to Rule 14-46.001, the UAM, all incorporated documents, and special instructions.

FDOT Inspector: _____ Date: _____

Name: _____

Title: _____

Approved
2025-H-799-00184
Michael Lenhart
6/5/2025

PERMIT NO.: 2025-H-799-00184

STATE ROAD INFORMATION:

NAME OF OTHER FACILITY OWNERS / DATE NOTIFIED:
Facility Name: MCI (Verizon), Date Notified: 7/7/2022, Facility Name: UnitiFiber, Date Notified: 7/7/2022

FDOT PROJECT INFORMATION:
There are NO FDOT constructions (proposed or underway).
This work is NOT related to an approved Utility Work Schedule.

THE WORK WAS INSPECTED AND FOUND TO BE IN NON-COMPLIANCE AS NOTED BELOW:

Approved
2025-H-799-00184
Michael Lenhart
6/5/2025

REQUIRED NOTIFICATIONS

TWO (2) BUSINESS DAYS BEFORE STARTING WORK:

PERMIT TYPE	WHO TO CONTACT	WHAT TO DO
All Permits and Agreements	**FDOT One-Stop Permitting (OSP)**	• Enter MOT Technician Information. • Click on either "**48 Hour Request to Begin Work**" or "**2 Business Day Notice**".
	FDOT Pinellas Operations Permits Asset Contractor	• Call **Webber** at **727-573-7672** for inspections.
	Sunshine 811	• Call **Sunshine 811** for locates (other than roadway lighting).
	FDOT Regional Traffic Management Center (RTMC)	• Call **FDOT Regional Traffic Management Center** at **813-615-8657** of the Exact Time Any Lane Closure Begins and a Second Notification When Lane Closure is Removed.
Utility Permits	**Highway Lighting and ATMS Locates**	• **Highway Lighting and ATMS are not part of the Sunshine 811 Locate System. Permittee is to Contact the Maintaining Agency/Organization for Highway Lighting and ATMS Locates.**
As-Needed	**FDOT Advanced Dynamic Message Sign (ADMS) Arterial Locates**	• Call **FDOT SunGuide** at **813-615-8613** (prefer email to Romona.Burke@dot.state.fl.us).
Permits in Active FDOT Construction Project	**FDOT Construction Office**	• Call **Jeyson Arroyave** at **727-744-9735** to Coordinate MOT and Work.

Approved
2025-H-799-00184
Michael Lenhart
6/5/2025

THIS FDOT PERMIT COVERS ACCESS TO FDOT RIGHT-OF-WAY FOR PROPOSED WORK.

- - - - - - - - - - -

- PERMITTEE/UAO/CONTRACTOR IS RESPONSIBLE FOR SECURING AUTHORIZATION FROM ANY PROPERTIES OUTSIDE OF THE FDOT RIGHT-OF-WAY THAT MAY BE UTILIZED FOR THE PROPOSED WORK.
- WORKDAYS AND TIMES ARE MONDAY THRU FRIDAY, 7:00 AM TO 5:30 PM.

Approved
2025-H-799-00184
Michael Lenhart
6/5/2025

ARDURRA
COLLABORATE. INNOVATE. CREATE.

July 7, 2022

Jeremy Cornette
Charter Communications
700 Carillon Parkway Suite 6
St. Petersburg, FL 33716

Re: Seminole Park and Mapleway Watermain Replacement
Sunshine Ticket #182205950

Dear Jeremy:

The City of Safety Harbor (City) has requested Ardurra Group, Inc. (Ardurra) to provide design services for the replacement of the existing water mains in the Seminole Park Sub and Mapleway Water service area. The existing watermain will be replaced with new 2-inch, 4-inch, and 6-inch water mains including the replacement of fire hydrants and the water service to the properties' meters along 11th and 12th Ave. South, Main Street .10th, 11th, 12th, 13th Ave. North, Powhatan Street, 3rd street North, Mapleway, Belmont street and Oak Street.

Attached, via email, are PDF Drawings for this project. Please mark up the drawings, indicating any additional details of your utilities (i.e., sizes, depths, offsets, etc.), and return to us so that your utilities may be shown on our plans. Any digital CADD or GIS versions of the utilities would also be greatly appreciated.

On behalf of our Client, thank you for your assistance. Please do not hesitate to call me at (813) 880-8881 or email me at bmcmanus@ardurra.com if you have any questions.

Sincerely,

Brooke McManus
Construction Coordinator

Cristina Lacorazza
Graduate Engineer

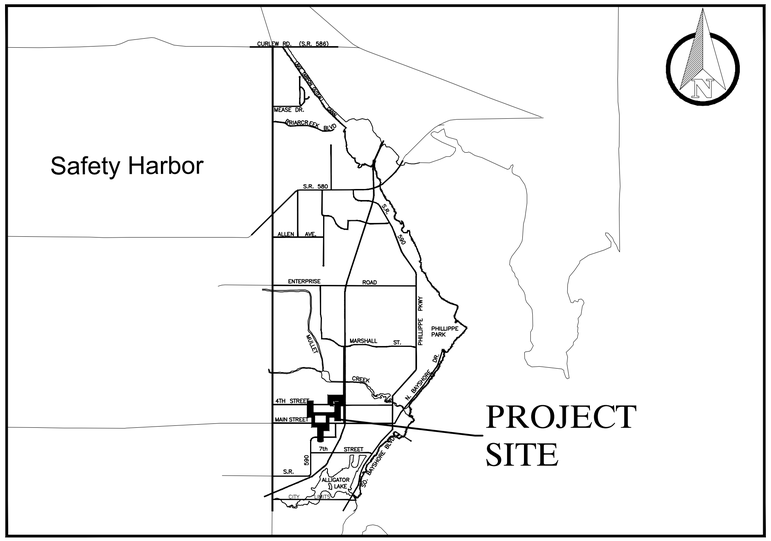
TBM/cel
Enclosure
cc: Loc Truong P.E., Ardurra
File 2022-0998-00

Approved
2025-H-799-00184
Michael Lenhart
6/5/2025

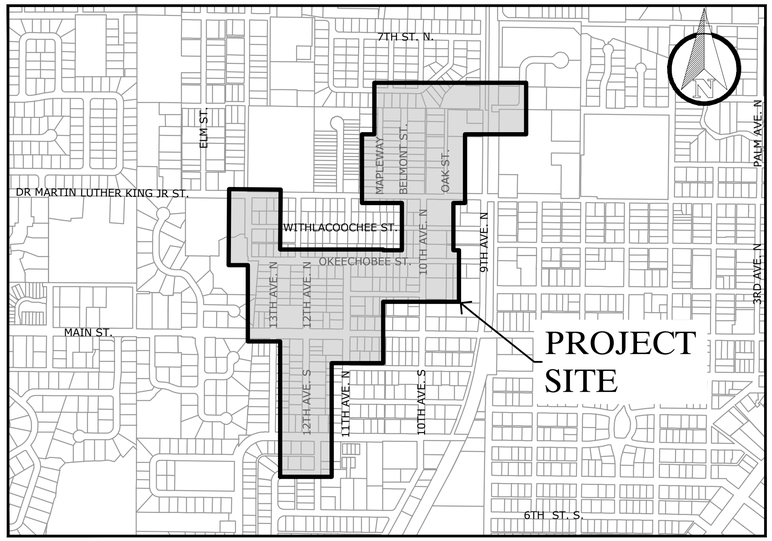
March 13, 2018 O:\ENV_ENG\0279\00026\2022\0998\Production\Drawings\COVER.dwg

SEMINOLE PARK AND MAPLEWAY
WATER MAIN REPLACEMENT (UT0096)

SECTION 04, TOWNSHIP 29 S, RANGE 16 E
CITY OF SAFETY HARBOR



VICINITY MAP



LOCATION MAP

CITY COMMISSION

Joe Ayoub	Mayor
Carlos Diaz	Vice Mayor
Andy Steingold	Commissioner
Nancy Besore	Commissioner
Jacob Burnett	Commissioner
Josh Stefancic	City Manager

FOR:

CITY OF SAFETY HARBOR

750 MAIN STREET
SAFETY HARBOR, FL. 34695
PHONE: (727) 724-1555

BY:

ARDURRA
COLLABORATE. INNOVATE. CREATE.

4921 Memorial Highway
One Memorial Center, Suite 300
Tampa, Florida 33634
Phone: (813) 880-8881
www.Ardurra.com
License #2610

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
It's fast. It's free. It's the law.
www.callsunshine.com

S.S.O.C.O.F. TICKET No. 109101359
DATE: 04/15/2021

This item has been digitally signed and sealed by Loc P. Truong, P.E. 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.

BID DOCUMENTS

NO.	DATE	REVISION	BY

JOB NO:	0279-00026-2022-0998
DATE:	JUNE 2022
SCALE:	AS SHOWN

G0.00

BID DOCUMENTS
05/20/2025

Released for Permitting 2025-05-20 00:00:00 Mayra Linhares 05/20/25

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March 13, 2018 O:\ENV_ENG\0279\00026\2022\0998\Production\Drawings\GENERAL_100.dwg

ABBREVIATIONS

ABN	ABANDONED	JT	JOINT
AC	ASBESTOS CEMENT	LB#	LICENSED BUSINESS NUMBER
APP	APPARENT	LS	LONG SIDE
APPROX	APPROXIMATE	LT	LEFT
ASPH	ASPHALT	MDPE	MEDIUM DENSITY POLYETHYLENE
ASSY	ASSEMBLY	MH	MANHOLE
AVE	AVENUE	MFR	MANUFACTURER
B OR BL	BASELINE	MAX	MAXIMUM
BAV	BALL VALVE	MECH	MECHANICAL
BE	BURIED ELECTRIC	MJ	MECHANICAL JOINT
BF	BLIND FLANGE	MIN	MINIMUM
BFD	BACK FLOW PREVENTOR DEVICE	MOD	MODIFIED
BFV	BUTTERFLY VALVE	N	NORTH OR NORTHING
BLDG	BUILDING	NIC	NOT IN CONTRACT
BLK	BLOCK	NTS	NOT TO SCALE
BLVD	BOULEVARD	NO OR #	NUMBER
BM	BENCH MARK	NPT	NATIONAL PIPE TAPER
BOC	BACK OF CURB	O/S	OFFSET
BT	BURIED TELEPHONE	OD	OUTSIDE DIAMETER
(C)	CALCULATED	O R BOOK	OFFICIAL RECORD BOOK
CAT	CATALOG	PVMT	PAVEMENT
CB	CATCH BASIN	PL	PLATE OR PLACE OR PROPERTY LINE
CF	CUBIC FEET	PNT OR PT	POINT
CI	CAST IRON	PC	POINT OF CURVATURE
CL2	CHLORINE	PI	POINT OF INTERSECTION
CL OR C L	CENTER LINE	PSM	PROFESSIONAL SURVEYOR & MAPPER
CLR	CLEAR OR CLEARANCE	PVI	POINT OF VERTICAL INTERSECTION
CM	CONCRETE MONUMENT	PT	POINT OF TANGENCY
CMP	CORRUGATED METAL PIPE	PVC	POLYVINYL CHLORIDE
CMU	CONCRETE MASONRY UNIT	LB. OR #	POUND
CO	CLEANOUT	PSI	POUNDS PER SQUARE INCH
CONC	CONCRETE	PP	POWER POLE
CONN	CONNECTION	PROP	PROPOSED
CONST	CONSTRUCTION	PS	PUMP STATION
CONT	CONTINUOUS	R	RADIUS
CORP	CORPORATION	RWM	RAW WATER MAIN
CORR	CORRUGATED	RCW	RECLAIMED WATER
CPLG	COUPLING	RD	ROAD
CV	CHECK VALVE	RP	RADIUS POINT
CY	CUBIC YARDS	RED	REDUCER
DBL	DOUBLE	REINF	REINFORCE(ING)
DEPT	DEPARTMENT	RCP	REINFORCED CONCRETE PIPE
DET	DETAIL	REQD	REQUIRED
DI	DUCTILE IRON	ROT	ROTATE
DIA	DIAMETER	RT	RIGHT
DIM	DIMENSION	RWGV	RESILIENT WEDGE GATE VALVE
DIP	DUCTILE IRON PIPE	R/W	RIGHT-OF-WAY
DWG	DRAWING	SAN OR SSWR	SANITARY (SEWER)
E	EAST OR EASTING	SCH	SCHEDULE
EA	EACH	SCO	SANITARY CLEANOUT
ECC	ECCENTRIC	SCP	SURVEY CONTROL POINT
ELEC	ELECTRIC OR ELECTRICAL	SHT	SHEET
EL OR ELEV	ELEVATION	SIR	SET IRON ROD
EOB	EDGE OF BRICK	SIRC	SET IRON ROD AND CAP
EOP	EDGE OF PAVEMENT	SMH	SANITARY MANHOLE
EQUIP	EQUIPMENT	S/W	SIDEWALK
EX OR EXIST	EXISTING	SL	SANITARY SEWER LATERAL
EXP	EXPANSION	SPECS	SPECIFICATIONS
FDOT	FLORIDA DEPT. OF TRANSPORTATION	SS	STAINLESS STEEL OR SHORT SIDE
FHA	FIRE HYDRANT ASSEMBLY	ST	STREET
FIR	FOUND IRON ROD	STD	STANDARD
FIRC	FOUND IRON ROD WITH CAP	STA	STATION
FLEX	FLEXIBLE	STM	STORM
FLG	FLANGE	SQ	SQUARE
FLR	FLOOR	TEL	TELEPHONE
FM	FORCE MAIN	TEMP	TEMPORARY
FND, FN&D	FOUND NAIL & DISK	THD	THREADED
FOC	FIBER OPTIC CABLE	THK	THICK
FOW	FACE OF WALK	TOC	TOP OF CONCRETE
FT	FEET	TRV	SURVEY TRAVERSE POINT
FTG	FITTING OR FOOTING	TS	TRAFFIC SIGN
GA	GAUGE OR GAGE	TS&V	TAPPING SLEEVE AND VALVE
GAL	GALLON	TYP	TYPICAL
GALV	GALVANIZED	UD	UNDERDRAIN
GE	GRATE ELEVATION	UG	UNDERGROUND
GPM	GALLONS PER MINUTE	VCP	VITRIFIED CLAY PIPE
GRD	GRADE	WSC	WATER SERVICE CONNECTION
GS	GROUND SHOT	WM	WATER MAIN
GSP	GALVANIZED STEEL PIPE	WV	WATER VALVE
GV	GATE VALVE		
HDD	HORIZONTAL DIRECTIONAL DRILL		
HDPE	HIGH DENSITY POLYETHYLENE		
HDWL	HEADWALL		
HORIZ	HORIZONTAL		
HWY	HIGHWAY		
ID	INSIDE DIAMETER		
IN	INCH		
INV OR IE	INVERT (ELEVATION)		
IR	IRON ROD		
IV	IRRIGATION VALVE		

LEGEND

- T.U.B. T = TELEPHONE UTILITY BOX
- F.H. = EXISTING FIRE HYDRANT
- F.D.C. = FIRE DEPARTMENT CONNECTION
- U.P. or = UTILITY POLE
- L.P. = LIGHT POLE
- U.L.P. = UTILITY & LIGHT POLE
- G.P. = GUY POLE
- = GUY WIRE
- = ELECTRIC TRANSFORMER
- H.H. = ELECTRIC HAND-HOLE
- U.G.G. = UNDERGROUND GAS LINE MARKER
- T.S.B. = TRAFFIC SIGNAL UTILITY BOX
- T.S.P. = TRAFFIC SIGNAL POLE
- CONC. = CONCRETE
- WSC = EX. WATER SERVICE CONNECTION
- = GRATE INLET
- D.C.O. STM STM = STORM SEWER CLEANOUT, PIPE & MANHOLE
- FIR = FOUND IRON ROD (SIZE AND IDENTIFICATION IF SHOWN)
- FCR = FOUND IRON ROD WITH CAP (SIZE AND IDENTIFICATION IF SHOWN)
- FND = FOUND NAIL & DISK (TYPE AND IDENTIFICATION IF SHOWN)
- FOP = FOUND IRON PIPE (SIZE AND IDENTIFICATION IF SHOWN)
- SIR = SET 1/2" IRON ROD & CAP L.B.#2610
- HA# = HAND AUGER BORING
- G# = SPT BORING
- = SIGN
- = RIGHT OF WAY LINE
- = PROPERTY LINE
- = JURISDICTIONAL LINE
- = EDGE OF PAVEMENT
- = FENCE
- WM = EXISTING WATER MAIN
- FM FM = EXISTING FORCE MAIN
- SAN = EXISTING SANITARY SEWER
- = EXISTING STORM SEWER
- UD UD = EXISTING UNDERDRAIN
- BT BT = EXISTING BURIED TELEPHONE
- FOC = EXISTING BURIED FIBER OPTIC CABLE
- BE BE = EXISTING BURIED ELECTRIC
- CTV = EXISTING BURIED CABLE TV
- GAS = EXISTING GAS MAIN
- OHW = EXISTING OVERHEAD UTILITY LINE
- = PROPOSED WATER MAIN
- = PROPOSED FHA
- MB = EXISTING MAILBOX
- WM = EXISTING WATER METER BOX
- WM = NEW 11"x32" GLASMASTERS METER BOX #S113212F2N08-1 LID #S1132RNO8-1-WA
- CL = CHLORINATION POINT
- C = COMM MANHOLE
- S = SANITARY MANHOLE
- D = STORM MANHOLE
- SP = SAMPLE POINT
- B = TEMPORARY BLOW OFF
- L = LOCATE STATION
- = RESTRAINED PIPE SLEEVE
- = DEADMAN
- = HDD PIT
- = GROUT FILLED & ABANDONED IN PLACE
- = REMOVED

TREE LEGEND

- 12" = 12" UNKNOWN TYPE TREE
- 12" = 12" CHERRY LAUREL
- 12" = 12" WILLOW TREE
- 12" = 12" HOLLY TREE
- 12" = 12" DEAD TREE
- 12" = 12" CHINESE TALLOW TREE
- 12" = 12" CHINABERRY TREE
- 12" = 12" OAK TREE
- 12" = 12" JACARANDA TREE
- 12" = 12" MULBERRY TREE
- 12" = 12" PALM TREE
- 12" = 12" BAY TREE
- 12" = 12" MAGNOLIA TREE
- 12" = 12" CITRUS TREE
- 12" = 12" PECAN TREE
- 12" = 12" EUCALYPTUS TREE
- 12" = 12" CAMPHOR TREE
- 12" = 12" SYCAMORE TREE
- 12" = 12" PINE TREE
- 12" = 12" AUSTRALIAN PINE
- 12" = 12" CEDAR TREE
- 12" = 12" ELM TREE
- 12" = 12" MAPLE TREE
- 12" = 12" WAX MYRTLE TREE
- 12" = 12" PUNK TREE
- 12" = 12" CYPRESS TREE
- 12" = 12" EAR TREE
- 12" = 12" SWEET GUM TREE
- 12" = 12" BIRCH
- 12" = 12" HICKORY
- 12" = TREE HAVING ONE TRUNK AT BREAST HEIGHT, 12" DIA.
- 12" 13" = TREE HAVING MULTIPLE TRUNKS AT BREAST HEIGHT 12" AND 13" DIA.
- 12" = REPRESENTS TREES TO BE REMOVED
- 12" = REPRESENTS TREES TO BE PROTECTED

FDOT CONSTRUCTION NOTES

1. WHEN DIRECTIONAL BORE IS THE METHOD OF INSTALLATION, A MINIMUM 24-INCH SEPARATION SHALL BE MAINTAINED FROM ALL EXISTING UTILITIES, ITS/ATMS LINES, AND STORM DRAIN SYSTEMS WHILE MAINTAINING THE MINIMUM REQUIRED DEPTH UNDER PAVEMENT OR NON-PAVED GROUND.
2. IF THE PROPOSED UTILITY CANNOT BE INSTALLED PER THE APPROVED PERMITTED PLAN AND BY FDOT SPECIFICATIONS, A REVISED PLAN MUST BE PROVIDED TO THE DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE INSTALLATION OF PRODUCTS OR MATERIALS AT THE GIVEN LOCATIONS WHERE CONFLICTS OCCUR.
3. ANY NEW PROPOSED PLAN SHALL INCLUDE CROSS SECTIONS, PLAN VIEWS AND PROFILES OF THE STATE ROAD ADEQUATELY REFLECTING ALL RIGHT-OF-WAY FEATURES INCLUDING BUT NOT LIMITED TO EXISTING UTILITIES, STORM DRAIN SYSTEMS AND ANY ABOVE OR BELOW GROUND APPURTENANCES WHERE APPLICABLE.
4. NO PEDESTRIAN PATHWAY IS TO BE REMOVED, BLOCKED, OR DISTURBED WITHOUT HAVING A SUFFICIENT DESIGNATED TEMPORARY PEDESTRIAN PATHWAY WITH ALL APPROPRIATE PEDESTRIAN MAINTENANCE OF TRAFFIC SIGNS (INDEX 660) IN-PLACE PRIOR TO PATHWAY BEING AFFECTED.
5. ALL TEMPORARY PEDESTRIAN PATHWAYS MUST BE FIRM AND UNYIELDING.
6. ANY SIDEWALK DISTURBED WILL BE REPLACED BY SECTION WITHIN 72 HOURS TO FDOT SPECIFICATIONS.
7. ALL CONCRETE PLACED WITHIN FDOT RIGHT-OF-WAY FOR DRIVEWAYS AND SIDEWALKS SHALL BE A MINIMUM OF 6 INCHES THICK AND BE AN FDOT-APPROVED MIX, CLASS 1 NON-STRUCTURAL, 2,500 PSI WITH FIBER MESH.
8. FDOT RESERVES THE RIGHT TO MAKE ADJUSTMENTS TO ANY PERMITTED METHOD OF INSTALLATION, SCOPE OF WORK, AND RESTORATION THAT MAY BE REQUIRED TO POSITIVELY SUPPORT LIFE, SAFETY, AND ENVIRONMENTAL WELL-BEING OF ALL USERS OF THE TRANSPORTATION SYSTEM.
9. THE PERMITTEE SHALL NOTIFY THE FDOT OF DATE OF COMPLETION, REQUEST A FINAL INSPECTION, AND A NOTICE OF FINAL ACCEPTANCE.
10. ALL CONSTRUCTION AND/OR MAINTENANCE IN THE FDOT RIGHT-OF-WAY SHALL CONFORM TO THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, THE FLORIDA DESIGN MANUAL, AND THE DRAINAGE MANUAL.(LATEST EDITION)
11. PRIOR TO REMOVAL OF EXISTING CURB OR DRIVEWAY, THE EDGE OF TRAVEL SHALL BE SAWCUT TO AVOID DAMAGING THE EXISTING ROADWAY ASPHALT. ALL CONCRETE TO BE REMOVED IN FDOT RIGHT-OF-WAY SHALL BE SAWCUT AND REMOVED FROM THE NEAREST JOINT. (LATEST EDITION)
12. NO LANE CLOSURE OF ANY STATE ROADWAY IS ALLOWED WITHOUT A MINIMUM OF TWO (2) BUSINESS DAYS ADVANCE NOTIFICATION AND APPROVAL FROM FDOT.
13. LANE CLOSURES MUST BE LIMITED TO SUNDAY THROUGH THURSDAY 8:00 PM TO 5:30 AM UNLESS OTHERWISE APPROVED BY FDOT.
14. ANY SIDEWALK DAMAGED BECAUSE OF WORK BEING PERFORMED IN ASSOCIATION WITH THE PERMITTEE AND CONTRACTOR SHALL BE REMOVED AND REPLACED WITH 6-INCH THICK CLASS 1 NON-STRUCTURAL, 2,500 PSI WITH FIBER MESH.
15. OPEN CUTTING OF ANY ROADWAY, DRIVEWAY OR SIDEWALK OUTSIDE THOSE LIMITS IDENTIFIED WITHIN THE PERMIT ARE NOT ALLOWED WITHOUT PRIOR APPROVAL OF FDOT.
16. THE CONTRACTOR SHALL HAVE AN AUTHORIZED PERSON AVAILABLE AT/OR NEAR THE WORK SITE ON A 24-HOUR BASIS, 7 DAYS A WEEK IN ORDER TO ADDRESS EMERGENCY ISSUES ASSOCIATED WITH THE PROJECT.
17. NO STOCKPILING, STORING OR SEMI-PERMANENT USE OF THE RIGHT-OF-WAY IS AUTHORIZED UNLESS SPECIFICALLY IDENTIFIED WITHIN THE PERMIT.
18. NO WORK SHALL BE PERFORMED DURING THE WEEKS OF ANY STATE OR FEDERAL HOLIDAY UNLESS OTHERWISE APPROVED IN WRITING BY FDOT.
19. THE PERMITTED WORK SCHEDULE IS DEFINED AS MONDAY THROUGH FRIDAY 7:00 AM TO 5:30 PM UNLESS OTHERWISE NOTED WITHIN THE PERMIT. ANY WORK DESIRED OUTSIDE OF THIS PERIOD MUST BE REQUESTED IN ADVANCE AND APPROVED BEFORE WORKING THE ALTERNATE SCHEDULE.
20. WHEN WORK IS ASSOCIATED WITH ROADWAY MODIFICATIONS AND/OR SITE DEVELOPMENT, THE CONTRACTOR IS REQUIRED TO HAVE A PRECONSTRUCTION MEETING WITH THE FDOT INSPECTOR TWO WEEKS PRIOR TO ANY CONSTRUCTION BEGINNING WITHIN THE RIGHT-OF-WAY.
21. ALL WORK PERFORMED UNDER THIS PERMIT WITHIN THE RIGHT-OF-WAY IS TO BE SCHEDULED WITH FDOT INSPECTION STAFF.
22. ROADWAY RESTORATION SHALL UTILIZE 100 PSI EXCAVATABLE FLOWABLE FILL MATERIAL AND ASPHALT PLACED WITHIN THE STATE RIGHT-OF-WAY SHALL BE PLACED FULL-DEPTH, TWO 2.5-INCH LIFTS OF SP 12.5, TWO 1.5-INCH LIFTS OF SP 9.5. TYPICAL SECTIONS WILL NEED TO BE PROVIDED WITHIN THE PLANS FOR THE PAVEMENT PLACEMENT. A STAIR STEP METHOD SHOULD BE INCORPORATED, PRIOR TO PLACING ASPHALT, TO AVOID VERTICAL JOINTS. MILLING OF THE PATCH MAY BE REQUIRED BASED ON THE PATCHED SURFACE PERFORMANCE. THE MILLING SHALL BE UTILIZED FOR SURFACE LEVELING TO A THICKNESS EQUAL TO OR GREATER THAN THE EXISTING FRICTION COARSE MATERIAL. THE MILLING LIMITS ARE 50-FOOT OF THE PATCH ALONG THE LONGITUDINAL PATH OF THE LANE, FULL LANE WIDTH AND TO INCLUDE ANY ADJACENT BIKE LANES, SHARED PATH OR URBAN SHOULDER SECTIONS.
23. ANY DISRUPTIONS TO ANY PERMEABLE PEDESTRIAN WAY AND BIKE LANE ARE TO BE RESTORED AS WORK CONTINUES. ALL PATCHES SHALL BE FULL WIDTH FROM OUTSIDE EDGE OF PEDESTRIAN PATH TO WHITE LINE EDGE OF TRAVEL LANE WITH STAIR STEP (STAGGERED) JOINTS. RESTORATION TO INCLUDE BACKFILL WITH EXISTING SUB-GRADE MATERIAL AND #57 STONE AS BASE MATERIAL (COMPACT IN 6-INCH LIFTS) TO BOTTOM OF EXISTING PERVIOUS ASPHALT BASE, FOLLOWED BY PERMEABLE DESIGN MIX (IF AVAILABLE) OR FC-5 (FRICTION COURSE) MIX WITH A MINIMUM OF TWO 2-INCH AND A MAXIMUM OF TWO 3-INCH LIFTS. MAINTAIN INGRESS/EGRESS ON ALL DRIVES AND SIDE STREETS DURING CONSTRUCTION.

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N/A to FDOT PERMIT

N/A to FDOT PERMIT

N/A to FDOT PERMIT

DETAIL DESIGNATION
DETAIL A M3
SHEET ON WHICH WHICH DETAIL IS INDICATED
A VAR
SHOWN VARIOUS SHEETS

DETAIL TITLE TARGET

SECTION DESIGNATION
SECTION 3 M3
SHEET ON WHICH SECTION IS CUT

SECTION TITLE TARGET

SECTION DESIGNATION
3 M11
SHEET ON WHICH SECTION IS DRAWN
DETAIL DESIGNATION
A M12
SHEET ON WHICH DETAIL IS DRAWN

SECTION & DETAIL TARGET

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750 Main Street
Safety Harbor, Florida 34695
Phone (727) 724-1555

NO.	DATE	REVISION	BY

SEMINOLE PARK AND MAPLEWAY WATER MAIN REPLACEMENT (UT0096)

ABBREVIATIONS, LEGEND, FDOT CONSTRUCTION NOTES AND INDEX

JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

G1.01

BID DOCUMENTS 05/20/2025

Reviewed 2025-05-20 09:00184 Mary Brennan 05/20/2025

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March 13, 2018 O:\ENV_ENG\0279\0026\2022\0998\Production\Drawings\GENERAL_100.dwg

REPORT OF SURVEY

1. TYPE OF SURVEY:TOPOGRAPHIC SURVEY. ANY USE OF THIS SURVEY FOR PURPOSES OTHER THAN WHICH IT WAS INTENDED, WITHOUT WRITTEN VERIFICATION, WILL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO THE SURVEYOR. NOTHING HEREIN SHALL BE CONSTRUED TO GIVE ANY RIGHTS OR BENEFITS TO ANYONE OTHER THAN THOSE CERTIFIED TO.
2. NO INSTRUMENTS OF RECORD REFLECTING EASEMENTS, RIGHTS-OF-WAY, AND/OR OWNERSHIP WERE FURNISHED TO OR PURSUED BY THE UNDERSIGNED OTHER THAN THOSE SHOWN HEREON. EASEMENTS OR RESTRICTIONS OF RECORD OTHER THAN THOSE SHOWN HEREON MAY EXIST.
3. NO EXCAVATION WAS PERFORMED TO VERIFY THE LOCATION OR EXISTENCE OF ANY UNDERGROUND IMPROVEMENTS, STRUCTURES, OR FOUNDATIONS. UNDERGROUND UTILITIES SHOWN HEREON ARE SHOWN PER ABOVE GROUND EVIDENCE AND/OR RECORD DRAWINGS OR MUNICIPAL ATLAS INFORMATION AND THE LOCATION OF ALL UNDERGROUND UTILITY LINES ARE APPROXIMATE ONLY. THIS DOCUMENT SHOULD NOT BE RELIED UPON FOR EXCAVATION OR CRITICAL DESIGN FUNCTIONS WITHOUT FIELD VERIFICATION OF UNDERGROUND UTILITY LOCATIONS. UTILITIES OTHER THAN THOSE SHOWN HEREON MAY EXIST.
4. UNLESS IT BEARS THE ORIGINAL SIGNATURE AND SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER THIS DRAWING, SKETCH, PLAT OR MAP AND REPORT IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT VALID.
5. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
6. ADJOINING PROPERTY SHOWN HEREON ARE BASED ON INFORMATION OBTAINED FROM THE COUNTY PROPERTY APPRAISER WEB SITE AND IS FOR INFORMATIONAL PURPOSES ONLY.
7. SEE MAP OF SURVEY FOR ON SITE TEMPORARY BENCHMARKS (TBM).
8. ELEVATIONS SHOWN HEREON ARE IN FEET AND ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). CONTROL MONUMENTS UTILIZED ARE DESIGNATED AS "BOOTH J" (PID = AL0128), HAVING A PUBLISHED ELEVATION OF 13.16 FEET, AND AS "BOOTH H" (PID = AL0127), HAVING A PUBLISHED ELEVATIONS OF 9.69 FEET, PUBLISHED BY THE NATIONAL GEODETIC SURVEY.
9. BEARINGS AND DISTANCES SHOWN HEREON ARE MEASURED UNLESS QUALIFIED OTHERWISE.
10. BEARINGS SHOWN HEREON ARE MEASURED UNLESS OTHERWISE NOTED AND ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD 83 (2011) AND WERE DERIVED BY REDUNDANT GLOBAL POSITIONING SYSTEM (GPS) OBSERVATIONS UTILIZING A VIRTUAL REFERENCE STATION REAL TIME NETWORK (RTN) SOLUTION. BEARINGS SHOWN HEREON, AND QUALIFIED AS (D) FOR DEED, (P) FOR PLAT ARE A MEANS TO REFERENCE THE SURVEYED PARCEL TO THE DEED OR PLAT OF RECORD. MORE SPECIFICALLY THE CONTROL LINE AS SHOWN HEREON, AS BEING NORTH 19°07'12" WEST.
11. BY SCALED DETERMINATION THE SUBJECT PROPERTY APPEARS TO LIE IN FLOOD ZONE X (MINIMAL FLOOD HAZARD)", PER FLOOD INSURANCE RATE MAP, MAP NUMBERS 12103C0089G, MAP EFFECTIVE DATES 9-03-2003. AN ACCURATE ZONE DETERMINATION SHOULD BE MADE BY THE PREPARER OF THE MAP, THE FEDERAL EMERGENCY MANAGEMENT AGENCY, OR THE LOCAL GOVERNMENT AGENCY HAVING JURISDICTION OVER SUCH MATTERS PRIOR TO ANY JUDGMENTS BEING MADE FROM THE ZONE AS NOTED.
12. DISTANCES SHOWN HEREON ARE IN U.S. SURVEY FEET.
13. LAST DATE OF FIELD SURVEY: 02/01/2021
14. AERIAL IMAGERY SHOWN HEREON WAS OBTAINED FROM PINELLAS COUNTY. THE AERIAL IMAGE IS USED AS A BACKGROUND FOR LOCATION PURPOSES ONLY AND IS NOT TO BE CONSIDERED SURVEYED DATA FOR THIS SURVEY.

FLORIDA ONE CALL (IRTH ONE CALL)

1. EXISTING UTILITY INFORMATION WAS PROVIDED VIA IRTH ONE CALL, FIELD TICKET #109101359-000. PER THE DESIGN TICKET, THE FOLLOWING ARE THE UTILITY CONTACTS:
   a. CITY OF SAFETY HARBOR PUBLIC WORKS - JAMIE AHRENS - (727) 724-1550 EXT. 2008
   b. CHARTER COMMUNICATIONS - JEREMY CORNETTE - (863) 581-5734
   c. CLEARWATER GAS - JACINTA CORCOBA - (727) 422-9998
   d. DUKE ENERGY-ST. PETERSBURG - STEPHANIE OLMO - (407) 905-3376
   e. FRONTIER COMMUNICATIONS. - TONI CANNON - (813) 875 - 1014
   f. KNOLOGY (WIDE OPEN WEST) - RICHARD LAGANGA - (727) 422 - 8040
   g. PINELLAS COUNTY HWY/ENG - TREVOR SINGH - (727) 464-8880
   h. MCI VERIZON - TIMOTHY COLE - (800) 624-9675 EXT. 2
   i. UNITI FIBER - CHARLIE CROFT - (251) 214-7059
2. EXISTING UTILITY INFORMATION IS FOR INFORMATIONAL PURPOSES ONLY. EXISTING UTILITIES SHOWN ARE ILLUSTRATED FROM DRAWINGS PROVIDED BY THE UTILITY COMPANIES, COMBINED WITH VISUAL ABOVE GROUND APPURTENANCES AND MARKINGS PLACED BY THE UTILITIES.
3. THE CONTRACTOR SHALL PROVIDE AT LEAST FORTY EIGHT (48) HOURS NOTICE TO ALL EXISTING UTILITY COMPANIES IN ORDER TO ALLOW FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES IN ADVANCE OF CONSTRUCTION. THE CONTRACTOR SHALL CONTACT "SUNSHINE STATE ONE CALL" 48 HOURS PRIOR TO OPERATIONS AT 1-800-432-4770.

GENERAL NOTES

1. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK. THE CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.
2. THE CONTRACTOR SHALL EMPLOY THE SERVICES OF A FLORIDA REGISTERED SURVEYOR AND MAPPER TO ESTABLISH THE PROPOSED PIPELINE, PROPERTY LINES, RIGHT-OF-WAY LINES, EASEMENTS, BASELINES, BENCH MARKS (ELEVATION), CENTER LINES AND STATIONING AS REQUIRED TO CONSTRUCT THIS PROJECT.
3. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, OTHER FEATURES AND PROPOSED FUTURE WORK ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. THERE MAY BE OTHER IMPROVEMENTS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THESE PLANS) AFFECTING HIS WORK. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE OR RE-WORK RESULTING FROM FAILURE TO COMPLY WITH THESE INSTRUCTIONS.
4. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER IMMEDIATELY TO REPORT ANY CONFLICTS BETWEEN WHAT IS SHOWN HEREIN AND ACTUAL CONDITIONS DISCOVERED DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO RESOLVE CONFLICTS THAT MAY ARISE IN THE FIELD DURING CONSTRUCTION.
6. THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY AND OTHER UTILITIES TO OBTAIN SUPPORT FOR UTILITY POLES WHERE CONSTRUCTION MAY CAUSE THE POLE TO LOSE ITS SUPPORT.
7. FIELD CONDITIONS MAY NECESSITATE ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED UTILITIES TO AVOID OBSTACLES, AS APPROVED BY THE ENGINEER OR THE OWNER'S REPRESENTATIVE.
8. EXISTING SANITARY SEWER LATERALS SHOWN ARE FOR INFORMATION PURPOSES ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD LOCATE ALL SERVICE LATERALS PRIOR TO CONSTRUCTION.
9. UTILITY SERVICES SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. EXCEPT FOR MINOR SHUT-DOWNS AS AUTHORIZED BY THE CITY.
10. THE CONTRACTOR, WORKING WITH THE ENGINEER AND THE OWNER, SHALL COORDINATE THE SHUTDOWN, STARTUP AND/OR PARTIAL INTERFERENCE WITH ONGOING SYSTEM OPERATIONS. INSTALLATION AND WORK ON THE EXISTING SYSTEMS ARE NOT TO BE MADE DURING TIMES OF PEAK FLOWS. WRITTEN REQUEST SHALL BE PROVIDED 48 HOURS PRIOR TO SHUTTING DOWN ANY WATER MAIN.
11. CONSTRUCTION OF PORTIONS OF THE PROJECT, AUTHORIZED BY PERMIT OR LICENSE AGREEMENT, ARE SUBJECT TO INSPECTION AND TESTS AS MAY BE NECESSARY BY THE PERMIT GRANTING AUTHORITY. ALL CONTRACTOR SUPERVISORY PERSONNEL SHALL FURNISH INFORMATION TO AND COOPERATE WITH THESE AUTHORITIES IN CONDUCTING THEIR TESTING AND INSPECTION PROGRAM.
12. WORK SHALL BE IN ACCORDANCE WITH THE LATEST APPLICABLE FEDERAL, STATE AND LOCAL AGENCY'S REGULATIONS AND STANDARDS.
13. ALL MATERIALS, INSTALLATION, AND TESTING SHALL BE PERFORMED IN COMPLIANCE WITH THE FDEP "NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWS'S", WHICH HAVE BEEN OBTAINED FOR THIS PROJECT.
14. CONTRACTOR SHALL COMPLY WITH THE "TRENCH SAFETY ACT", CHAPTER 90-96, FLORIDA STATUTES.
15. SIGNS & BARRICADES SHALL BE IN ACCORDANCE WITH LATEST F.D.O.T. MANUAL OF SAFE PRACTICES; REFERENCE F.D.O.T. INDEXES 600 THROUGH 670 AND 17349 PER ROADWAY AND TRAFFIC DESIGN STANDARDS LATEST EDITION.
16. THE CONTRACTOR SHALL NOT ENTER UPON OR IN ANY WAY ALTER ANY WETLAND AREAS THAT MAY BE ENCOUNTERED. ALL WORK IN THE VICINITY OF OPEN WATER AND/OR WETLANDS IS TO BE PERFORMED IN COMPLIANCE WITH THE ENVIRONMENTAL REGULATIONS AND/OR PERMITS FOR THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY FINE RESULTING FROM HIS VIOLATION OF ANY REGULATIONS OR PERMIT CONDITIONS.
17. SPECIAL PIPE FOUNDATIONS, IF REQUIRED, SHALL BE DETERMINED IN THE FIELD AND THE TYPE REQUIRED WILL BE AS DIRECTED BY THE ENGINEER.
18. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED SHEETING AND TRENCH SHORING REQUIRED TO PROTECT EXISTING UTILITIES AND OTHER FACILITIES INTENDED TO REMAIN IN SERVICE.
19. ALL VALVES SHALL BE APPROPRIATELY TAGGED OR LABELED. ALL PIPING, PIPELINES, VALVES, AND OUTLETS SHALL BE COLOR-CODED BLUE, OR OTHERWISE MARKED, ALL VALVE BOX COVERS SHALL BE MARKED "WATER".
20. JOINT RESTRAINT SHALL BE PROVIDED AT ALL FITTINGS UNLESS NOTED OTHERWISE ON PLANS. THE MINIMUM LINEAR FEET RESTRAINED ON BOTH SIDES OF FITTINGS OR VALVES FOR DUCTILE IRON PIPE SHALL BE AS SHOWN ON THE DETAILS PROVIDED IN THESE DRAWINGS.
21. THE CONTRACTOR SHALL LOCATE ANY POTENTIAL UTILITY CONFLICTS AND PROVIDE FITTINGS AND RESTRAINTS AS NECESSARY AHEAD OF PIPE LAYING OPERATIONS.
22. CONTRACTOR SHALL USE TRENCH BOXES, SHEETING AND OTHER MEANS TO LIMIT THE WIDTH OF THE TRENCH AND AVOID ENCROACHMENT AND DAMAGE TO ADJACENT PROPERTY.
23. CONTRACTOR SHALL PROVIDE A DECHLORINATION PLAN AND DESCRIPTION OF THE METHODS FOR DISPOSAL TO THE ENGINEER OF RECORD AND CITY OF SAFETY HARBOR FOR APPROVAL.
24. CONTRACTOR SHALL PROVIDE THE CITY OF SAFETY HARBOR WITH 24 HOUR NOTICE PRIOR TO COMMENCING WORK WITHIN THE CITY LIMITS AND 48 HOUR NOTICE PRIOR TO PERFORMING ANY WET TAP TO THE CITY'S WATER DISTRIBUTION SYSTEM. WET TAPS ARE ONLY PERMITTED TO BE PERFORMED ON MONDAY OR TUESDAY AND BETWEEN THE HOURS OF 9:30AM-1:00PM.
25. ANY DIGGING AND/OR DISTURBANCE TO THE ROADSIDE SWALES WITHIN THE RIGHT-OF-WAY OF THE CITY OF SAFETY HARBOR SHALL BE PROPERLY GRADED, SODDED AND RESTORED. CONTACT THE CITY OF SAFETY HARBOR PUBLIC WORKS DEPARTMENT. HYDROSEED SHALL NOT BE ACCEPTABLE.
26. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING PINELLAS COUNTY & CITY OF SAFETY HARBOR AGENCIES A MINIMUM OF 2 WEEKS IN ADVANCE IN WRITING, OF ANY ROAD CLOSURES, DETOURS AND CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION. THE NOTICE SHALL BE ACCOMPANIED WITH A SCHEDULE OF ROAD CLOSURES AND ANTICIPATED INTERRUPTIONS IN TRAFFIC.

SCHOOL BOARD OF PINELLAS COUNTY
ATTN: CAMMIE WEEKS
TRANSPORTATION DIVISION
CLERK OF ROAD CLOSURES
11111 SOUTH BELCHER ROAD
LARGO, FLORIDA 33773
PHONE: 727-587-2020
E-MAIL:weeksc@pcsb.org

SAFETY HARBOR FIRE DEPARTMENT
ATTN: ANDREW HAWKINS
FIRE CHIEF
700 MAIN STREET
SAFETY HARBOR, FLORIDA 34695
PHONE; 727-724-1535
E-MAIL: ahawkins@cityofsafetyharbor.com

UNITED STATES POST OFFICE
SAFETY HARBOR
ATTN: CRAIG HAUMANN
POST MASTER
303 MAIN STREET
SAFETY HARBOR, FLORIDA 34695
PHONE:727-669-0253
E-MAIL: craig.haumann@usps.gov

CITY OF SAFETY HARBOR PUBLIC WORKS
ATTN: JAMIE AHRENS
ASSISTANT PUBLIC WORKS DIRECTOR
1200 RAILROAD AVENUE
SAFETY HARBOR, FLORIDA 34695
PHONE; 727-724-1550 EXT 2008
E-MAIL: cahrens@cityofsafetyharbor.com

PINELLAS COUNTY SHERIFF'S DEPARTMENT
ATTN: COMMUNICATIONS CENTER
10750 ULMERTON ROAD
LARGO, FLORIDA 33778
PHONE: 727-582-6200
FAX: 727-582-6432
E-MAIL: ssommer@pcsonet.com

27. THROUGHOUT CONSTRUCTION THE CONTRACTOR SHALL MAINTAIN ALL WEATHER EMERGENCY ACCESS AT ALL ROAD CROSSINGS. THE ACCESS MUST WITHSTAND THE WEIGHT OF A 32 TON FIRE TRUCK.
28. CONTRACTOR SHALL MAINTAIN POSTAL SERVICE AND SOLID WASTE PICK UP SERVICE TO ALL RESIDENTS THROUGHOUT CONSTRUCTION.
29. ALL MAILBOXES DISTURBED BY THE CONSTRUCTION ACTIVITIES SHALL BE REMOVED AND REPLACED. ANY DAMAGES TO THE MAILBOXES BY THE CONSTRUCTION SHALL BE REPLACED WITH A COMPARABLE STRUCTURE OR BETTER AT THE CONTRACTORS EXPENSE.
30. CONTRACTOR SHALL STORE AND PROVIDE PROTECTION FOR ALL COMBUSTIBLE PRODUCTS AND MATERIALS FROM VEHICULAR DAMAGE AND VANDALISM.
31. THE CONTRACTOR SHALL APPLY TO THE FDEP FOR COVERAGE UNDER THE GENERIC PERMIT FOR THE DISCHARGE OF PRODUCED GROUNDWATER FROM ANY NON-CONTAMINATED SITE ACTIVITY PURSUANT TO 62-621.300 (2), F.A.C. CONTRACTOR IS RESPONSIBLE FOR ALL ASSOCIATED SAMPLING AND TESTING. A COPY OF THE APPROVED PERMIT SHALL BE PROVIDED TO THE AUTHORITY, ENGINEER OF RECORD AND CITY OF SAFETY HARBOR.
32. CONTRACTOR SHALL SIGN THE STORM WATER POLLUTION PREVENTION PLAN PROVIDED AND SHALL SUBMIT THE REQUIRED NOTICE OF INTENT TO USE GENERIC PERMIT FOR STORM WATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES (FORM 62-621.300(4)(b)) TO THE FDEP.
33. IN ORDER TO MINIMIZE FRAC-OUTS, CONTRACTOR SHALL INSTALL 16" DIAMETER PRESSURE RELIEF WELLS @ 50FT O.C. ALONG THE CENTERLINE OF THE PROPOSED WATERMAIN OR ON EACH SIDE OF EVERY DRIVEWAY, WHICHEVER OCCURS FIRST.
34. PRESSURE RELIEF WELLS SHALL BE FILLED AND COMPACTED AFTER INSTALLATION OF WATERMAIN.
35. UNLESS OTHERWISE NOTED, SHOWN ON THE CROSS SECTIONS TO ACCOMMODATE EXISTING UTILITIES, OR TO PROVIDE CLEARANCE WITH SERVICE LATERALS THE 6" WM INSTALLED VIA HDD SHALL BE INSTALLED AT A DEPTH OF MAXIMUM 36" BELOW GRADE. THE CONTRACTOR IS RESPONSIBLE FOR ANY RESTORATION DUE TO HDD AT NO ADDITIONAL COST TO OWNER. COST FOR RESTORATION DUE TO HDD SHALL BE INCLUDED IN HDD UNIT PRICE.
36. ALL OPEN ENDS OF ABANDONED WATER, SEWER AND OTHER UTILITY LINES ARE TO BE CAPPED.
37. CONTRACTOR SHALL INVESTIGATE EXISTING SITE CONDITION AND ENSURE THEY ARE ACCEPTABLE FOR DRILLING/BORING.
38. ALL DISTURBED HANDICAP CURB RAMPS SHALL BE RESTORED TO MEET ALL CURRENT ADA GUIDELINES THE WORK INCLUDES ALL MATERIALS, MIXING, PLACING, FORMING, CURING OF CONCRETE, ADA MATS IF STRIPING IS IMPACTED BY THE CONSTRUCTION AND ASSOCIATED INCIDENTAL WORK. WHEN CROSSWALK STRIPING IS IMPACTED BY CONSTRUCTION THE ENTIRE SIDEWALK IS TO BE RESTRIPED. THESE ITEMS WILL BE PAID FOR UNDER THE RESTORATION PAY ITEM.
39. CONTRACTOR SHALL RESTORE ALL SIDEWALKS, DRIVEWAYS, BRICK ROADS, ASPHALT, CURB AND ETC. THAT ARE DAMAGED DUE TO CONSTRUCTION OR ABANDONMENT OF THE WATER MAIN.
40. ALL METER BOXES TO BE PLACED 2FT. FROM BACK OF SIDEWALK WHEN SIDEWALK IS GRATER THAT 5 FEET WIDE . IF SIDEWALK IS LESS THAT 5 FEET WIDE, METER BOXES SHALL BE PLACED 3 FEET FROM BACK OF SIDEWALK.
41. ALL SURVEY MONUMENTS DISTURBED BY THE CONSTRUCTION ACTIVITIES SHALL BE REMOVED AND REPLACED. ANY DAMAGES TO SURVEY MONUMENTS BY THE CONSTRUCTION SHALL BE REPLACED WITH A COMPARABLE STRUCTURE OR BETTER AT THE CONTRACTORS EXPENSE.

EROSION AND SEDIMENTATION CONTROL NOTES

1. ALL PRACTICABLE EFFORT SHALL BE TAKEN DURING CONSTRUCTION TO CONTROL AND PREVENT EROSION AND TRANSPORT OF SEDIMENT MATERIALS TO INLETS, SURFACE DRAINS, WETLANDS AND LAKE AREAS, PER FDEP/SWFWMD "BEST MANAGEMENT PRACTICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATION EFFORTS THAT MAY BE REQUIRED.
2. THE CONTRACTOR IS TO CONTROL ALL FUGITIVE DUST ORIGINATING FROM THE PROJECT BY WATERING OR OTHER METHODS AS REQUIRED.
3. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM THE SITE IF NOT REUSABLE ON-SITE AND ASSUMING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AND SWALES AT COMPLETION OF CONSTRUCTION.
4. ADDITIONAL PROTECTION - ON-SITE PROTECTION IN ADDITION TO THE ABOVE MUST BE PROVIDED THAT WILL NOT PERMIT SILT TO LEAVE THE PROJECT CONFINES DUE TO UNFORESEEN CONDITIONS OR ACCIDENTS.
5. THE CONTRACTOR SHALL INSURE THAT ALL EXISTING DRAINAGE STRUCTURES, PIPES, ETC., ARE CLEANED OUT AND WORKING PROPERLY AT THE TIME OF PROJECT COMPLETION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING DIRT AND SEDIMENT FROM ALL CONSTRUCTION EQUIPMENT AND VEHICLES PRIOR TO ENTERING PUBLIC ROAD WAYS.
7. THE CONTRACTOR SHALL CLEAN ALL ROADWAYS WITHIN OR ADJACENT TO THE PROJECT LIMITS ON A DAILY BASIS OR AS NEEDED TO PREVENT TRANSFER OF SEDIMENTATION.
8. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
9. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC OR BALES SHALL BE REPLACED PROMPTLY.
10. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN THE DEPOSITS REACH APPROXIMATELY ONE-THIRD THE HEIGHT OF THE BARRIER.
11. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH EXISTING GRADE, PREPARED AND SEEDED.
12. EXISTING STORM STRUCTURES SHALL BE INSPECTED AFTER EACH RAIN EVENT, REPAIRS MADE TO THE FILTER BARRIERS, AND SILT / SEDIMENT REMOVED FROM PIPES AND STRUCTURES AS NEEDED TO PROVIDE POSITIVE FLOW.
13. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO IT'S ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
14. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS, SPECIFICATIONS AND SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT SPECIFICATIONS AND CRITERIA.
15. FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO: "THE FLORIDA DEVELOPMENT MANUAL - A GUIDE TO SOUND LAND AND WATER MANAGEMENT", FROM THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (F.D.E.P), CHAPTER 6.
16. EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS WHERE THERE IS A POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION.
17. ALL DISTURBED AREAS SHALL BE GRASSED, FERTILIZED, MULCHED AND MAINTAINED UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED.
18. SOD SHALL BE PLACED IN AREAS WHICH MAY REQUIRE IMMEDIATE EROSION PROTECTION TO ENSURE WATER QUALITY STANDARDS ARE MAINTAINED.
19. ANY DISCHARGE FROM DEWATERING ACTIVITY SHALL BE FILTERED AND CONVEYED TO THE OUTFALL IN A MANNER THAT LIMITS THE DISCHARGE TO 29 NTU ABOVE THE BACKGROUND CONCENTRATION OF THE OUTFALL.
20. DEWATERING PUMPS SHALL NOT EXCEED THE CAPACITY OF THAT WHICH REQUIRES A CONSUMPTIVE USE PERMIT FROM THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT.
21. ALL DISTURBED AREAS TO BE STABILIZED THROUGH COMPACTION, SILT SCREENS, HAY BALES AND GRASSING. ALL FILL SLOPES 3:1 OR STEEPER SHALL RECEIVE STAKED SOLID SOD.
22. THESE NOTES INDICATE THE MINIMUM EROSION AND SEDIMENT MEASURES REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE RULES, REGULATIONS AND WATER QUALITY GUIDELINES AND MAY NEED TO INSTALL ADDITIONAL CONTROLS.
23. THE CONTRACTOR SHALL BE REQUIRED TO RESPOND TO ALL FDEP OR WATER MANAGEMENT DISTRICT INQUIRIES, RELATIVE TO THE COMPLIANCE FOR EROSION AND SEDIMENTATION CONTROL.
24. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED.
25. THE CONTRACTOR SHALL EXECUTE THE STORM WATER POLLUTION PREVENTION PLAN PROVIDED ON SHEET G1.03 PRIOR TO INITIATING CONSTRUCTION.

PINELLAS COUNTY RIGHT OF WAY CONSTRUCTION NOTES

1. THE FOLLOWING NOTES SHALL APPLY TO ALL CONSTRUCTION WITHIN THE PINELLAS COUNTY RIGHT-OF-WAY:
   a. ALL DESIGN AND CONSTRUCTION SHALL CONFORM TO THE MINIMUM STANDARDS SET DOWN IN PINELLAS COUNTY LAND DEVELOPMENT, ZONING AND/OR RELATED ORDINANCES, AND MINIMUM TESTING FREQUENCY REQUIREMENTS.
   b. ANY SIDEWALK WHICH BECOMES UNDERMINED SHALL BE REMOVED AND REPLACED, SIDEWALKS ARE TO BE RECONSTRUCTED WITHIN THREE (3) DAYS AFTER REMOVAL. WHEN EXISTING SIDEWALK IS REMOVED, IT IS TO BE REMOVED TO THE NEAREST JOINT.
   c. DISTURBED AREA WITHIN THE RIGHT OF WAY SHALL BE COMPACTED TO 100% OF MAXIMUM DENSITY AND SODDED OR PAVED AS APPROPRIATE.
   d. ANY PORTION OF THE ROADWAY THAT SUSTAINS EXCESSIVE CONSTRUCTION RELATED DAMAGE, IN THE OPINION OF PINELLAS COUNTY OPERATIONS DEPARTMENT, SHALL BE REPAIRED AT THE CONTRACTOR EXPENSE IN A MANNER SPECIFIED BY PINELLAS COUNTY OPERATIONS DEPARTMENT.
   e. PRIOR TO COMMENCEMENT OF WORK AND/OR PRIOR TO START OF RESTORATION, COORDINATE THROUGH A "WALK-THROUGH" WITH PINELLAS COUNTY OPERATIONS DEPARTMENT REPRESENTATIVE TO ENSURE MUTUAL AGREEMENT REGARDING SUCH MATTERS AS EXTENT OF ROADWAY TO BE OVERLAID AFTER PATCHING, THE EXTENT OF DRIVEWAY REPLACEMENT --ESPECIALLY CONCRETE, ETC.
   f. TESTING FREQUENCIES, LIMITS AND DENSITIES COMPLETED UNDER THIS PERMIT IN ASSOCIATION WITH MILLING ARE TO BE OBSERVED BY A COUNTY INSPECTOR.

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Phone (727) 724-1555

NO.	DATE	REVISION	BY

SEMINOLE PARK AND MAPLEWAY WATER MAIN REPLACEMENT (UT0096)

NOTES

JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

G1.02

BID DOCUMENTS
05/20/2025

Approved 2025-0109-00184 Mary Ann Lenhart 10/23/2025

March 13, 2018 O:\ENV_ENG\0279\00026\2022\998\Production\Drawings\GENERAL_100.dwg

SITE DESCRIPTION

PROJECT NAME: SEMINOLE PARK AND MAPLEWAY

SITE LOCATION: AN AREA WITHIN THE CITY LIMITS OF THE CITY OF SAFETY HARBOR, FLORIDA ALONG POWHATAN ST., 13TH AVE. NORTH, 12TH AVE. NORTH, 11TH AVE. NORTH, MAIN ST., OKEECHOBEE ST., 3RD ST. NORTH, 10TH AVE. NORTH, MAPLEWAY, BELMONT ST., 12TH AVE. SOUTH, AND DR. MARTIN LUTHER KING JR ST. NORTH

OWNER OF PROJECT: CITY OF SAFETY HARBOR ENGINEERING DEPARTMENT

OWNER'S ADDRESS: 750 MAIN STREET SAFETY HARBOR, FL 34695

PROJECT COORDINATES: LONGITUDE: 82° 42' 00'' W LATITUDE: 27° 59' 00'' N

DESCRIPTION OF NATURE OF CONSTRUCTION ACTIVITY

INSTALLATION OF APPROXIMATELY 7,300 LINEAR FEET OF WATER DISTRIBUTION MAIN AND RECONNECTION OF APPROXIMATELY 100 ± WATER SERVICES.

SOIL DISTURBING ACTIVITIES INCLUDE:

EROSION CONTROL MEASURES, PIPE TRENCH EXCAVATION AND BACKFILL, PAVEMENT REPLACEMENT AND GRADING, AND PREPARATION FOR FINAL, SODDING, SEED & MULCHING.

RUNOFF COEFFICIENT: N/A

SITE AREA: N/A

SEQUENCE OF MAJOR ACTIVITIES:

1. INSTALL SILT FENCE AND HAY BALES AS REQUIRED
2. EXCAVATE PIPE TRENCHES OR HDD RECEIVING/EXIT PITS OR SERVICE LATERAL PITS
3. STOCK PILE TOP SOIL IF REQUIRED
4. STABILIZE DENUDED AREAS AND STOCKPILES AS SOON AS PRACTICABLE.
5. INSTALL UTILITIES
6. COMPLETE GRADING AND INSTALL PERMANENT SODDING/SEED & MULCHING
7. COMPLETE FINAL PAVING AND GRADING
8. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED, REMOVE ANY TEMPORARY CONTROLS.

NAME OF RECEIVING WATERS: MULLET CREEK

CONTROLS

EROSION AND SEDIMENT CONTROLS

STABILIZATION PRACTICES

WIND EROSION STABILIZATION: THE CONTRACTOR SHALL DENUDE ONLY AREAS WHERE IT IS EXPECTED TO BE EXCAVATED OR ALTERED WITHIN A TWO (2) WEEK TIME-FRAME. FINAL GRADES SHALL BE PERFORMED AND TEMPORARY OR PERMANENT SOIL STABILIZATION SHALL BE APPLIED. AREAS WHERE CONSTRUCTION OPERATIONS WILL BE CONTINUOUS, FUGITIVE DUST SHALL BE MANAGED BY APPLYING A WATER SPRAY TO SATURATE THE SURFACE SOILS ON A DAILY BASIS, OR AS NEEDED TO MAINTAIN MINIMAL DUST TRANSPORT. FUGITIVE DUST SHALL BE MONITORED CONTINUOUSLY AND ADDITIONAL MEASURES MAY NEED TO BE TAKEN TO CONTROL OFF-SITE TRANSPORT OF UNACCEPTABLE LEVELS OF DUST.

TEMPORARY STABILIZATION: TOP SOIL STOCK PILES AND DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR AT LEAST 10 DAYS WILL BE STABILIZED WITH TEMPORARY GRASS AND MULCH NO LATER THAN 5 DAYS FROM THE LAST CONSTRUCTION ACTIVITY. GRASS SEED SHALL BE A MIXTURE OF 20 PARTS OF BERMUDA SEED AND 80 PARTS OF PENSACOLA BAHIA. THE SEPARATE TYPES OF SEED USED SHALL BE THOROUGHLY DRY MIXED IMMEDIATELY BEFORE SOWING. SEED WHICH HAS BECOME WET SHALL NOT BE USED. THE MULCH MATERIAL USED SHALL NORMALLY BE DRY MULCH. DRY MULCH SHALL BE STRAW OR HAY, CONSISTING OF OAT, RYE OR WHEAT STRAW, OR OF PANGOLA, PEANUT, COASTAL BERMUDA OR BAHIA GRASS HAY. ONLY UNDETERIORATED MULCH WHICH CAN BE READILY CUT INTO THE SOIL SHALL BE USED. AREAS OF THE SITE WHICH ARE TO BE PAVED WILL BE TEMPORARILY STABILIZED BY APPLYING STABILIZATION AND BASE.

PERMANENT STABILIZATION: DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED AND RESTORED TO PRECONSTRUCTION CONDITIONS NO LATER THAN 5 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY.

STRUCTURAL PRACTICES

STAKED SILT FENCES: THE STAKED SILT FENCES WILL BE CONSTRUCTED ALONG THE PERIMETER AS PREVIOUSLY EXPLAINED. THESE DEVICES WILL FILTER RUNOFF AND/OR DIVERT RUNOFF TO THE SEDIMENT BASINS (IF NEEDED).

SEDIMENT BASINS: IF NEEDED, SEDIMENT BASINS WILL BE CONSTRUCTED TO A MINIMUM OF 2' BELOW EXISTING GROUND AT THE CONTRACTORS DISCRETION TO ALLOW SILTS TO BE COLLECTED AND REMOVED. EACH BASIN SHALL HAVE SIDE SLOPES NO STEEPER THAN 4:1 AND BE STABILIZED PRIOR TO USE.

STORM WATER MANAGEMENT

STORM WATER DRAINAGE WILL BE PROVIDED BY SWALE, TEMPORARY AND SEDIMENT BASINS, AS NEEDED. SWALES TO BE SODDED AND INCLUDE CHECK DAMS, RIP RAP, HAY BALES OR OTHER CONTROLS TO CONTROL RUNOFF VELOCITY AND TRANSPORT OF SEDIMENT. WHEN CONSTRUCTION IS COMPLETE THE IMPROVED PORTION OF THE SITE WILL DRAIN AS IT DID PRIOR TO THE UTILITY INSTALLATION.

OTHER CONTROLS

WASTE DISPOSAL

WASTE MATERIALS: ALL WASTE MATERIAL WILL BE COLLECTED AND STORED IN DUMPSTERS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTERS. THE DUMPSTERS WILL BE EMPTIED A MINIMUM OF ONCE A WEEK OR MORE OFTEN IF NECESSARY, AND THE TRASH WILL BE HAULED TO A REGISTERED LANDFILL FOR DISPOSAL. NO EXCESS CONSTRUCTION MATERIALS WILL BE BURIED ON-SITE. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES WILL BE POSTED IN THE ON-SITE OFFICE TRAILER AND THE CONSTRUCTION MANGER RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

HAZARDOUS WASTE: ALL HAZARDOUS WASTE MATERIALS, IF ENCOUNTERED, WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.

SANITARY WASTE: ALL SANITARY WASTE WILL BE COLLECTED FROM PORTABLE UNITS A MINIMUM OF THREE TIMES PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR, AS REQUIRED BY LOCAL REGULATION.

OFFSITE VEHICLE TRACKING

THE PAVED STREETS WILL BE CLEANED AS NEEDED TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM/TO THE SITE. DUMP TRUCKS HAULING MATERIAL FROM OR TO THE SITE WILL BE COVERED WITH A TARPAULIN AT ALL TIMES.

TIMING OF CONTROL MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, STAKED SILT BARRIERS, STABILIZED CONSTRUCTION ENTRANCES AND SEDIMENT BASINS WILL BE CONSTRUCTED PRIOR TO CLEARING OR GRADING OF ANY OTHER PORTIONS OF THE SITE. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN 21 DAYS WILL BE STABILIZED WITH A TEMPORARY GRASS AND MULCH WITHIN 5 DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTED ACTIVITY CEASES PERMANENTLY IN THAT AREA, THAT AREA WILL BE RESTORED TO PRECONSTRUCTION CONDITIONS AFTER THE ENTIRE SITE IS STABILIZED, THE ACCUMULATED SEDIMENT WILL BE REMOVED FROM THE TRAPS AND THE STAKED SILT BARRIERS WILL BE REMOVED.

CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS

THE STORM WATER POLLUTION PREVENTION PLAN REFLECTS THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT'S (SWFWMD) REQUIREMENTS FOR STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL, AS ESTABLISHED BY THE FLORIDA ADMINISTRATIVE CODE, CHAPTER 40D-4 AND 40D-40. TO ENSURE COMPLIANCE, THIS PLAN WAS PREPARED IN ACCORDANCE WITH SWFWMD'S "BASIS OF REVIEW FOR SURFACE WATER MANAGEMENT PERMIT APPLICATIONS WITHIN THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT." THIS PLAN ALSO REFLECTS THE REQUIREMENTS OF THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR WORK IN BRANCH 6.

MAINTENANCE INSPECTION PROCEDURES

EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES

THESE ARE THE INSPECTION AND MAINTENANCE PRACTICES THAT SHALL BE USED TO MAINTAIN EROSION AND SEDIMENT CONTROL.

ALL CONTROL MEASURES IN DISTURBED AREAS WILL BE INSPECTED AT LEAST ONCE EACH WEEK AND WITHIN 24 HOURS OF THE END OF ANY STORM EVENT OF 0.25 INCHES OR GREATER BY A CONTRACTORS REPRESENTATIVE. (WHERE SITES HAVE BEEN FINALLY STABILIZED SUCH INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH.) ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT. BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE FENCE. SILT FENCE WILL BE INSPECTED REGULARLY FOR DEPTH OF SEDIMENT, TEARS, TO SEE IF THE FABRIC IS SECURELY ATTACHED TO THE FENCE POSTS, AND TO SEE THAT THE FENCE POSTS ARE FIRMLY IN THE GROUND. THE SEDIMENT BASINS WILL BE INSPECTED FOR DEPTH OF SEDIMENT, AND BUILT UP SEDIMENT WILL BE REMOVED WHEN IT REACHES 10 PERCENT OF THE DESIGN CAPACITY OR AT THE END OF THE JOB. TEMPORARY AND PERMANENT GRASSING, MULCHING AND SODDING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH. A MAINTENANCE INSPECTION REPORT SHALL BE MADE AFTER EACH INSPECTION BY THE CONTRACTOR AND SHALL BE KEPT IN AN ACTIVE LOG READILY AVAILABLE AT THE JOB SITE CONSTRUCTION TRAILER. THE SITE SUPERINTENDENT WILL SELECT INDIVIDUALS WHO WILL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR ACTIVITIES. FILLING OUT THE INSPECTION AND MAINTENANCE REPORT WILL BE BY THE CONTRACTOR. PERSONNEL SELECTED FOR AND MAINTENANCE RESPONSIBILITIES WILL RECEIVE TRAINING FROM THE SITE SUPERINTENDENT. THEY WILL BE TRAINED IN ALL MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ON-SITE IN GOOD WORKING ORDER.

NON-STORM WATER DISCHARGES

IT IS EXPECTED THAT THE FOLLOWING NON-STORM WATER DISCHARGES WILL OCCUR FROM THE SITE DURING THE CONSTRUCTION PERIOD:

WATER FROM DEWATERING, WATER LINE FLUSHING, WATER USED TO SPRAY OFF LOOSE SOILS FROM VEHICLES, DUST CONTROL, PAVEMENT WASH WATERS (WHERE NO SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE OCCURRED). ALL NON-STORM WATER DISCHARGES WILL BE DIRECTED TO A SEDIMENT BASIN PRIOR TO DISCHARGE.

GROUNDWATER DEWATERING ACTIVITIES ARE NOT COVERED BY THIS PERMIT. THE CONTRACTOR SHALL APPLY FOR COVERAGE UNDER THE GENERIC PERMIT FOR THE DISCHARGE OF PRODUCED GROUNDWATER FROM ANY NON-CONTAMINATED SITE ACTIVITY PURSUANT TO 62-621.300 (2), F.A.C.

INVENTORY FOR POLLUTION PREVENTION PLAN

THE MATERIALS OR SUBSTANCES LISTED BELOW ARE EXPECTED, BUT NOT LIMITED TO, BE PRESENT ON SITE DURING CONSTRUCTION:

- CONCRETE
- DETERGENTS
- PAINTS (ENAMEL AND LATEX)
- METAL TRENCH BOXES
- TAR (PAVEMENT)
- SAND
- FERTILIZERS
- PETROLEUM BASED PRODUCTS AND FUELS
- CLEANING SOLVENTS
- WOOD
- STONE

SPILL PREVENTION

MATERIAL MANAGEMENT PRACTICES

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF.

GOOD HOUSEKEEPING:

THE FOLLOWING GOOD HOUSEKEEPING PRACTICES SHALL BE FOLLOWED ON-SITE DURING THE CONSTRUCTION PROJECT.

AN EFFORT SHALL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER CONTAINED ENCLOSURE. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL MANUFACTURER'S LABELED CONTAINERS. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER. WHENEVER POSSIBLE, ALL OF A PRODUCT SHALL BE USED UP BEFORE DISPOSING OF THE CONTAINER. MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED. THE SITE SUPERINTENDENT SHALL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ON-SITE.

HAZARDOUS PRODUCTS:

THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS.

PRODUCTS SHALL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHALL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION. IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURERS' OR LOCAL AND STATE RECOMMENDED METHODS OF PROPER DISPOSAL SHALL BE FOLLOWED.

THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON-SITE:

PETROLEUM PRODUCTS:

ALL ON-SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ON-SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS:

FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS:
ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURERS' INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS:

CONTRACTOR SHALL DESIGNATE AN AREA FOR DISCHARGE OF SURPLUS CONCRETE OR DRUM WASH WATER AND SHALL INSTALL A CONTAINMENT BERM AROUND THIS AREA TO PREVENT RUNOFF TO THE REMAINDER OF THE SITE. HARD DEBRIS SHALL BE DISPOSED OF BY CONTRACTOR IN ACCORDANCE WITH LOCAL RULES AND REGULATIONS UPON COMPLETION OF THE PROJECT.

SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.

MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON-SITE. EQUIPMENT AND MATERIALS WILL INCLUDE, BUT NOT BE LIMITED TO, BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS. SPECIFICALLY FOR THIS PURPOSE.

ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.

THE SPILL AREAS WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.

THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.

THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. HE WILL DESIGNATE OTHER SITE PERSONNEL WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ON-SITE.

NOTICE OF INTENT AND NOTICE OF TERMINATION

THE CONTRACT SHALL BE RESPONSIBLE FOR FILING A NOTICE OF INTENT (NOI) IN COMPLIANCE WITH FDEP 62-621.300 F.A.C. A COPY OF THE NOI SHALL BE PROVIDED TO THE OWNER.

A NOTICE OF TERMINATION WILL BE SUBMITTED TO FDEP AFTER THE CONSTRUCTION HAS BEEN COMPLETED AND THE SITE HAS UNDERGONE FINAL STABILIZATION.

POLLUTION PREVENTION PLAN CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS HAVE BEEN READ BY ME OR MY DESIGNATED REPRESENTATIVE AND UNDERSTAND THAT THIS SYSTEM HAS BEEN PREPARED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

CONTRACTOR REPRESENTATIVE

SIGNED: _____

NAME AND TITLE: _____

COMPANY: CITY OF SAFETY HARBOR ENGINEERING DEPARTMENT

ADDRESS: 750 MAIN STREET
SAFETY HARBOR, FL 34695

DATE: _____

CONTRACTOR'S CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERIC STORM WATER PERMIT ISSUED PURSUANT TO SECTION 403.0885, F.S., THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION.

SIGNATURE FOR	RESPONSIBLE FOR	
_____ NAME: _____ TITLE: _____ DATE: _____	COMPANY: _____ ADDRESS: _____ _____ PHONE: _____	GENERAL CONTRACTOR TBD
_____ NAME: _____ TITLE: _____ DATE: _____	COMPANY: _____ ADDRESS: _____ _____ PHONE: _____	TEMPORARY AND PERMANENT STABILIZATION
_____ NAME: _____ TITLE: _____ DATE: _____	COMPANY: _____ ADDRESS: _____ _____ PHONE: _____	STABILIZED CONSTRUCTION ENTRANCE, EARTH DIKES, SEDIMENT BASIN

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NO.	DATE	REVISION	BY

SEMINOLE PARK AND MAPLEWAY WATER MAIN REPLACEMENT (UT0096)

STORMWATER POLLUTION PREVENTION PLAN

JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

G1.03

Approved
2025-0799-00134
Michael Brennan
6/2/2025

BID DOCUMENTS
05/20/2025

May 20, 2025 O:\ENV_ENG\0279\0026\2022\0998\Production\Drawings\G-200.dwg

NOTES:

1. SAMPLE AND CHLORINATION POINTS SHALL BE FIELD LOCATED NOT TO EXCEED 1,200 FEET APART.
2. CONTRACTOR SHALL CUT AND CAP ALL EXISTING WATER SERVICE LATERALS AT THE ROW UPON CONNECTION OF PRIVATE PROPERTIES TO THE NEW WATER SERVICE LATERAL. SEE DETAIL B ON D1.01.
3. DUE TO SCALE, NOTE THAT PROPOSED VALVES AND LOCATE STATIONS DO NOT APPEAR ON THIS DRAWING. CONTRACTOR SHALL REFER TO DRAWINGS C1.01 THROUGH C1.13 FOR LOCATIONS OF VALVES AND LOCATE STATIONS.
4. CONTRACTOR TO VERIFY WITH CITY ENGINEER THE EXACT LOCATION OF ALL SAMPLE POINTS AND CHLORINATION POINTS.
5. FOLLOWING ABANDONMENT OF EXISTING WATER MAINS, THE CONTRACTOR SHALL CLOSE ALL EXISTING VALVES AND REMOVE ALL EXISTING VALVE BOXES, WHETHER SHOWN HEREIN OR NOT.
6. CONTRACTOR SHALL RESTORE ALL ROADS, SIDEWALK, SOD OR ANY DAMAGE CAUSED FROM ABANDONMENT OF PIPES OR VALVES.
7. PROPOSED WATER VALVES SHALL NOT BE INSTALLED WITHIN ADA RAMPS. CONFLICTS SHALL BE DISCUSSED WITH THE CITY PRIOR TO INSTALLATION.
8. ALL EXISTING FIRE HYDRANTS TO BE REMOVED SHALL BE CUT AT THE STRINGER LINE.

LEGEND

- EX. WATER MAINS / SIZE
- EX. WATER MAINS / SIZE TO BE ABANDONED & GROUT FILLED OR CUT & CAP
- EX. VALVE
- PROP. WM/SIZE
- PROP. VALVE
- CHLORINATION POINT
- SAMPLE POINT

0 150 300
SCALE: FEET

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NO.	DATE	REVISION	BY

SEMINOLE PARK AND MAPLEWAY WATER MAIN REPLACEMENT (UT0096)

OVERALL EXISTING WATERMAIN ABANDONMENT SITE PLAN

JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

G2.00

BID DOCUMENTS
05/20/2025

Signed
2025.05.20 09:18:4
Michael Wennhar
05/20/25

0 200 400
SCALE: FEET

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SEMINOLE PARK AND MAPLEWAY WATER MAIN REPLACEMENT (UT0096)

OVERALL PROJECT SITE PLAN AND KEY MAP

JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

C1.00

BID DOCUMENTS
05/20/2025

Approved
2025-EOR-00184
Matthew Brennan
5/21/2025

May 20, 2025 O:\ENV_ENG\0279\00026\2022\0998\Production\Drawings\C-100-KEY.dwg

May 29, 2025 O:\ENV_ENG\0279\00026\2022\0998\Production\Drawings\C-100.DWG

NOTES:

1. WHERE THE ALIGNMENT OF THE WM IS WITHIN AN EXISTING TREES CRITICAL ROOT ZONE AS SHOWN ON D1.01, THE CONTRACTOR SHALL INSTALL THE WM VIA HDD WITH A MINIMUM OF 4' OF COVER. THIS APPLIES TO ALL TREES 24'' OR GREATER IN DIAMETER.
2. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER IMMEDIATELY TO REPORT ANY CONFLICTS BETWEEN WHAT IS SHOWN HEREIN AND ACTUAL CONDITIONS DISCOVERED DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO RESOLVE CONFLICTS THAT MAY ARISE IN THE FIELD DURING CONSTRUCTION.
4. THE LOCATIONS OF THE PROPOSED FIRE HYDRANTS, METERS AND LOCATE STATIONS ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY WITH THE CITY ENGINEER THE EXACT LOCATIONS PRIOR TO INSTALLATION. LOCATE STATIONS ARE NOT NEEDED IF A VALVE BOX IS PRESENT.
5. ANY SIDEWALK REMOVED FOR GREATER THAN FIVE (5) WORKING DAYS SHALL BE TEMPORARILY RESTORED BY THE CONTRACTOR WITH ASPHALT MILLING, UNTIL THE PERMANENT CONCRETE SIDEWALK IS RESTORED.
6. THE CITY MAY REQUEST THE CONTRACTOR TO INSTALL ADDITIONAL LOCATE WIRE TEST STATIONS IN ADDITION TO THE LOCATE STATIONS SHOWN ON THE PLANS. THE ACTUAL LOCATION FOR THE LOCATE WIRE TEST STATIONS SHALL BE FIELD VERIFIED BY THE CITY PRIOR TO INSTALLATION.
7. ALL THE DISTURBED HANDICAP CURB RAMPS SHALL BE RESTORED TO MEET ALL CURRENT ADA GUIDELINES. THE WORK INCLUDES ALL MATERIALS, MIXING, PLACING, FORMING, AND CURING OF CONCRETE AND ADA MATS IF STRIPING IS IMPACTED BY CONSTRUCTION THE ENTIRE CROSSWALK IS TO BE RESTRIPED. THESE ITEMS WILL BE PAID FOR UNDER THE RESTORATION PAY ITEM.
8. ALL SIDEWALKS SHALL BE INSTALLED 6" THICK.
9. INSTALL REFLECTIVE PAVEMENT MARKERS (RPM) AT ALL FIRE HYDRANT LOCATIONS.
10. EXISTING SAN. SEWER LATERALS SHOWN FOR INFORMATIONAL PURPOSES. CONTRACTOR TO CONFIRM HORIZONTAL & VERTICAL LOCATIONS PRIOR TO CONSTRUCTION.

4TH ST. S (SR 590)

12TH AVE. S

LANDFIELD AVE.

1275 1220 1200 1258 1130 1255 1129 1125 1128 325 295 222 220

SANITARY MANHOLE
N RIM EL= 40.73
UNABLE TO ACCESS INVERTS

MAXIMUM OPEN CUT TRENCH
SHALL BE 20' LONG x 6' WIDE x 4' DEEP

POTENTIAL 20'x10'
HDD PIT LOCATION

APP. R/W LINE (TYP.)

APP. PROPERTY LINE (TYP.)

DOUBLE SERVICE (LS)
1" WATER SERVICE SEE
DETAILS W5 & W12
SHT D1.02 & D1.03
(TYP.)

LOCATE STATION
SEE DETAIL W29
SHT. D1.05
STA:2+00, 15' RT

0+00 1+00 CONSTRUCTION BASELINE 2+00

3'-9" FROM E.O.P

PROP. 6" PVC WATER MAIN
BY HDD

1 C2.00

A C2.02

WV TOP NUT
EL= 38.48

WV TOP NUT
EL= 39.95

BORE HA/HC17
EL=41.2

EX. 1 1/2" WM CUT/CAP
& ABANDONED IN PLACE

EX. SANITARY SEWER
LATERAL (TYP.)

(SS) 1" WATER SERVICE
SEE DETAIL W14
SHT D1.03 (TYP.)

CONTRACTOR TO FIELD VERIFY
DEPTH OF EX. GAS MAIN PRIOR
TO THE START OF CONSTRUCTION

MATCH LINE, SEE SHEET C1.02

0 20 40
SCALE: FEET

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NO.	DATE	REVISION	BY

SEMINOLE PARK AND MAPLEWAY
WATER MAIN REPLACEMENT (UT0096)

12TH AVE S PLAN
STA. 0+00 TO STA. 2+87

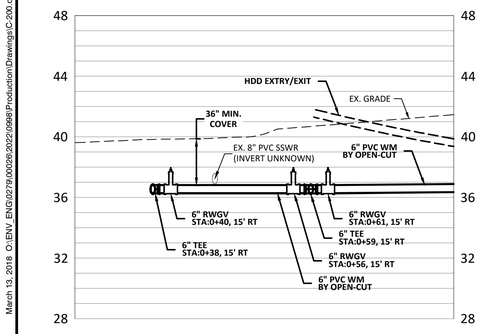
JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

C1.01

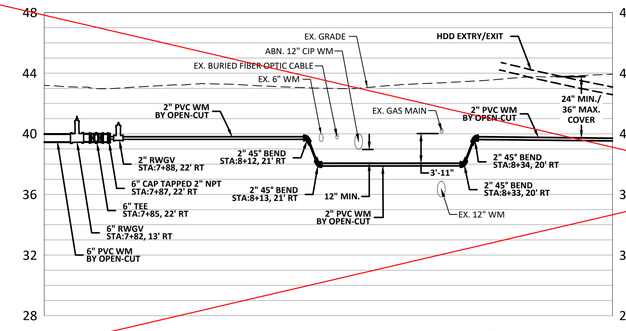
BID DOCUMENTS
05/20/2025

Approved
2025-11-06-00184
Michael Brennan
06/2/2025

March 13, 2018 O:\ENV_ENG\0279\00026\2022\0998\Production\Drawings\C-200.dwg



SECTION
SCALE: 1"=10' HORZ.
1"= 5' VERT.
1 C1.01



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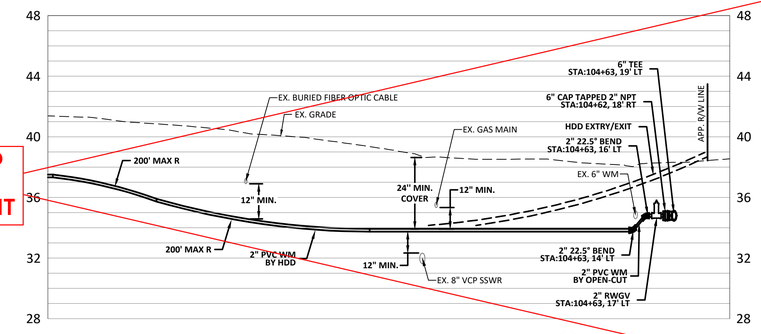
2 C1.02

N/A to FDOT PERMIT



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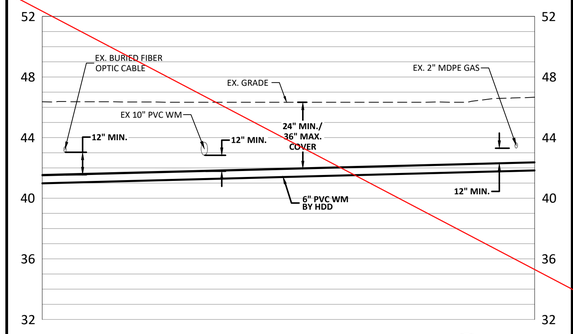
3 C1.03



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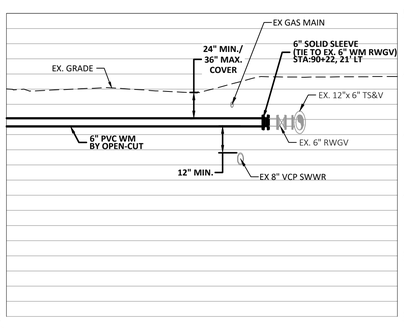
4 C1.04



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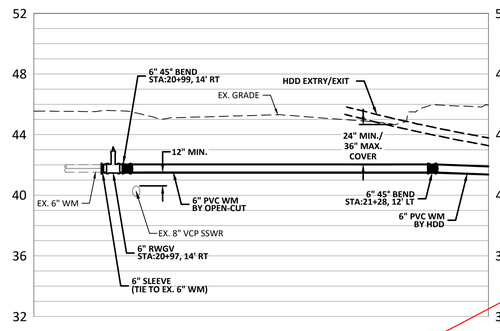
5 C1.04



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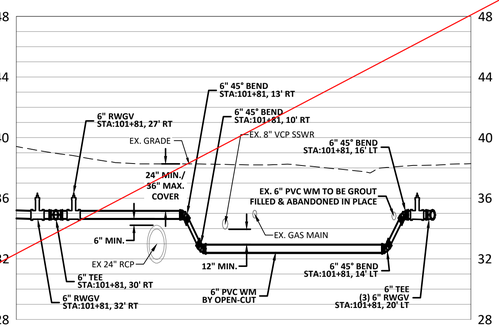
6 C1.04



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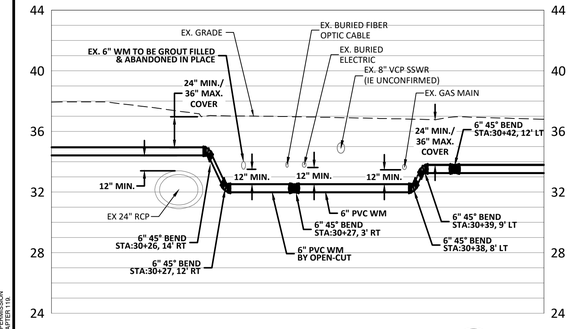
7 C1.05



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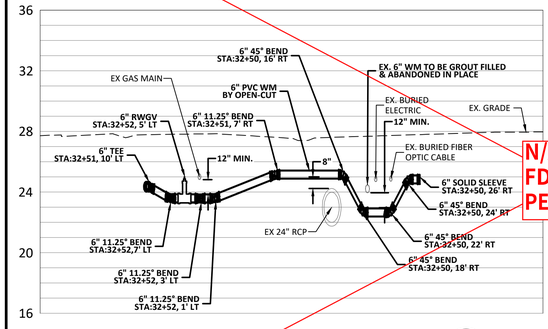
8 C1.05



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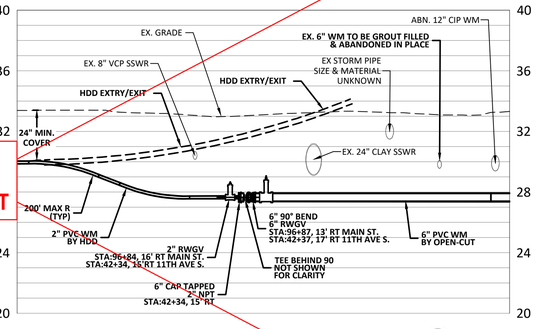
9 C1.05

N/A to FDOT PERMIT



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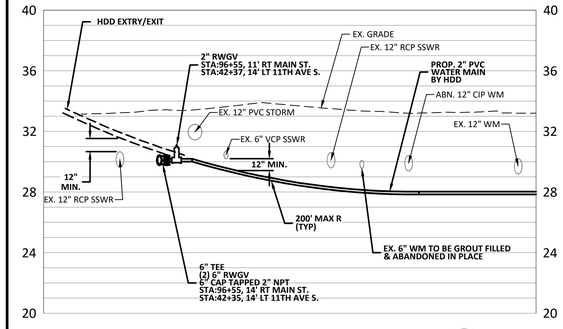
11A C1.06



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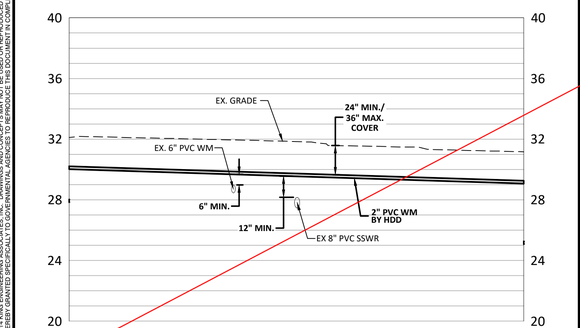
11B C1.06



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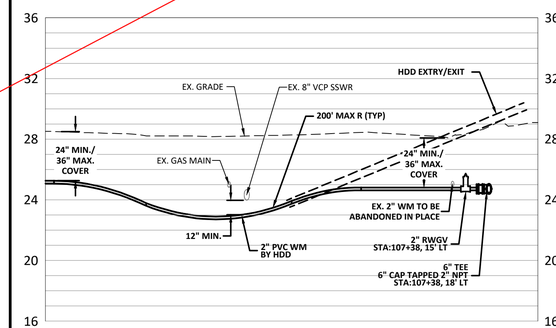
12 C1.07



SECTION
SCALE: 1"=10' HORZ.
1"= 5' VERT.
13 C1.07

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NO.	DATE	BY	REVISION

SEMINOLE PARK AND MAPLEWAY WATER MAIN REPLACEMENT (UT0096)

CROSS SECTIONS (1)

JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

C2.00

BID DOCUMENTS
05/20/2025

Approved 2025-11-20-00184 Meghan Linnehan 11/20/2025

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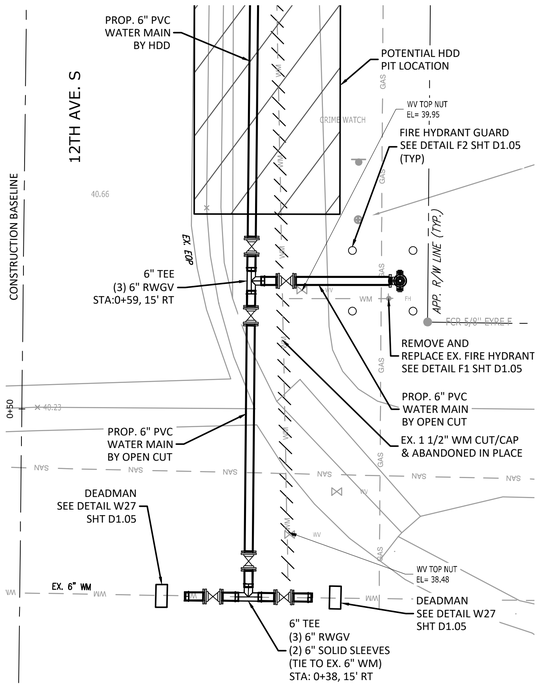
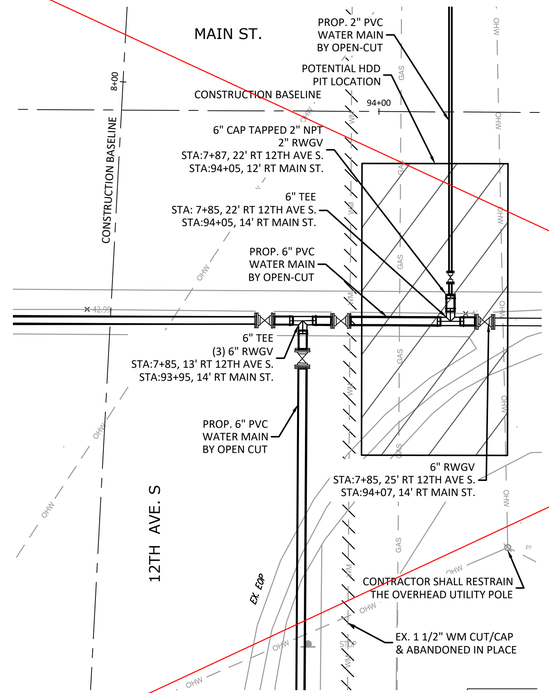


ENLARGED PLAN
SCALE: 1" = 5'
A C1.01



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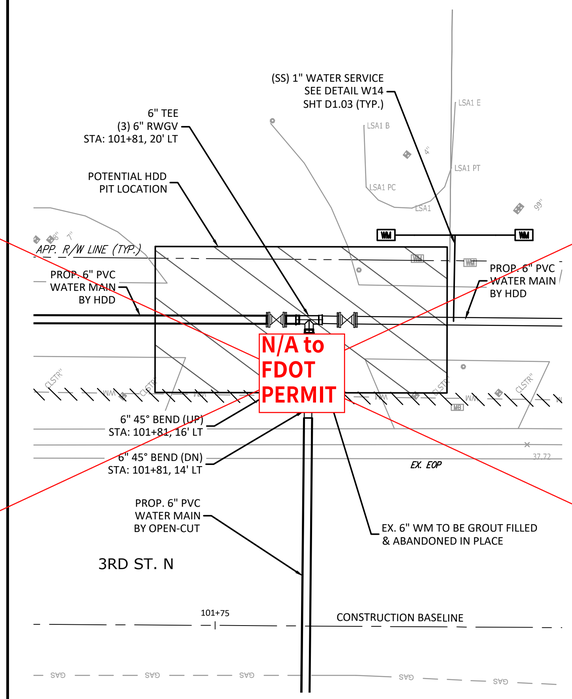
B C1.02



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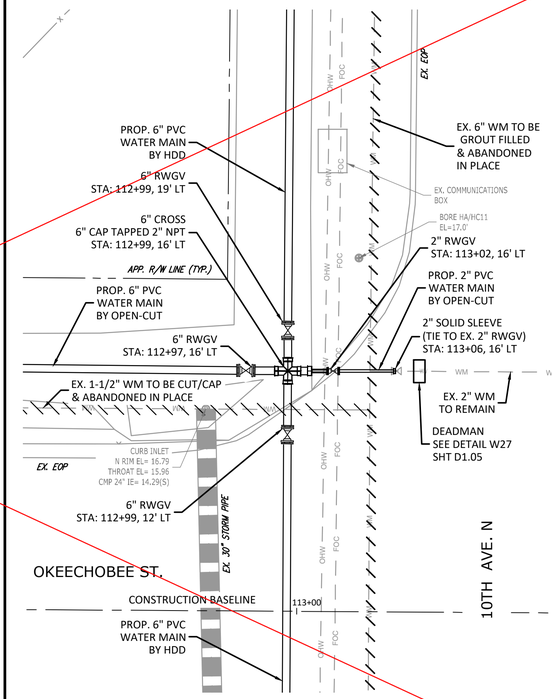
C C1.05



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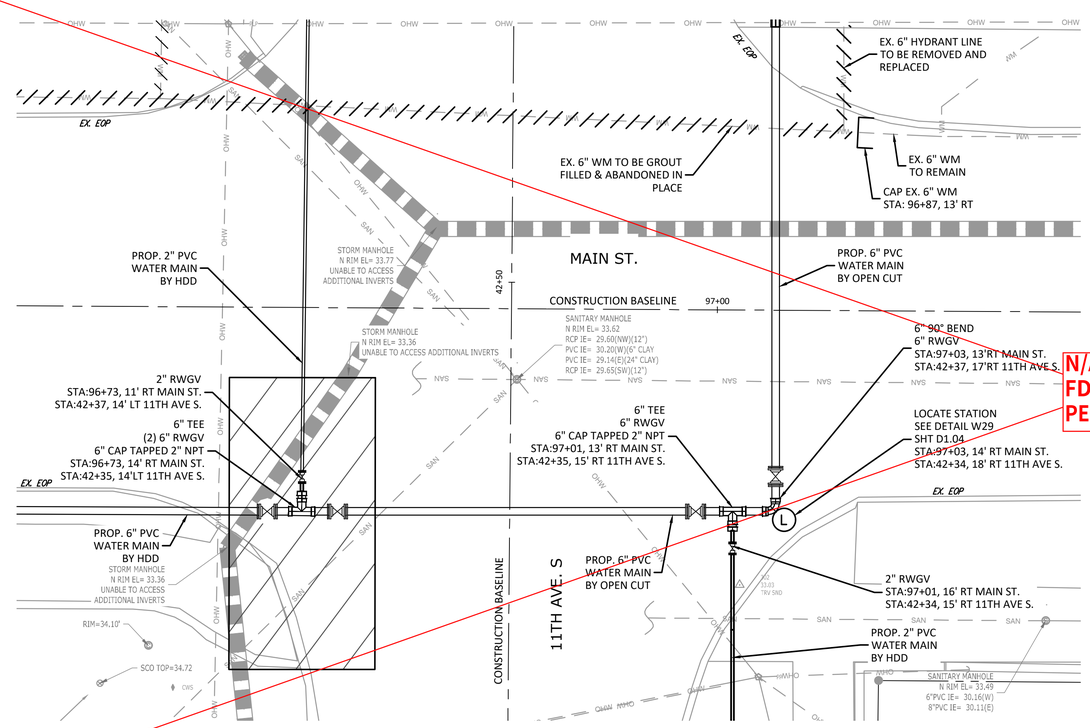

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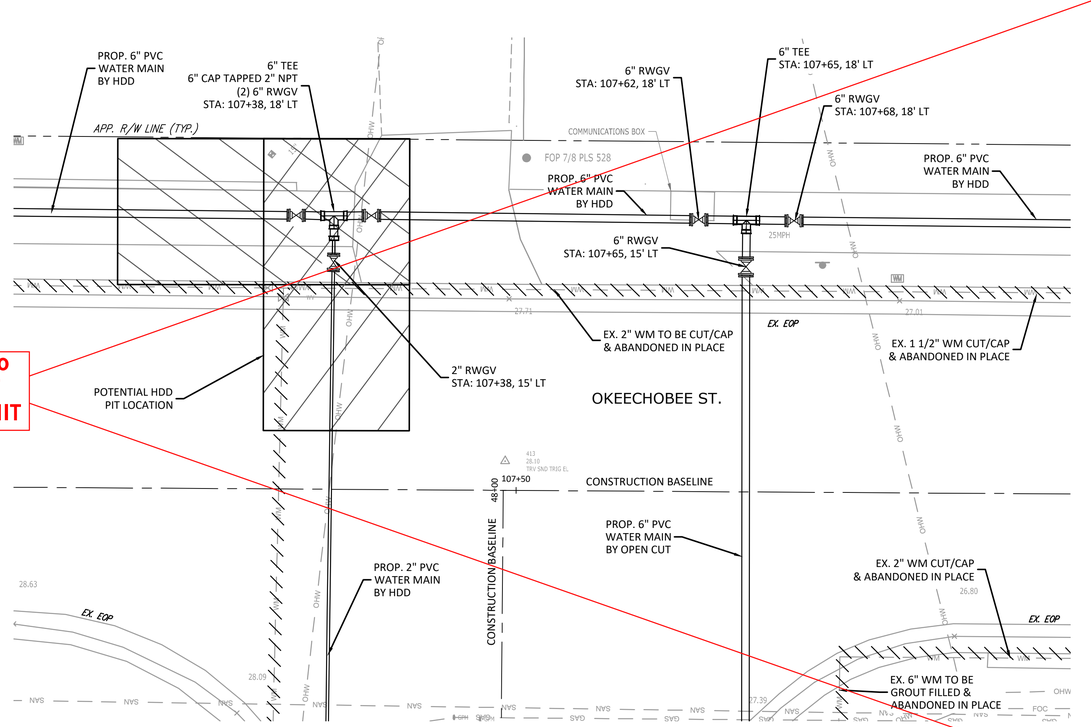

ENLARGED PLAN
SCALE: 1" = 5'
F C1.07

N/A to FDOT PERMIT

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NO.	DATE	REVISION	BY

SEMINOLE PARK AND MAPLEWAY WATER MAIN REPLACEMENT (UT0096)

WATER MAIN ENLARGED CONNECTION DETAILS (1)

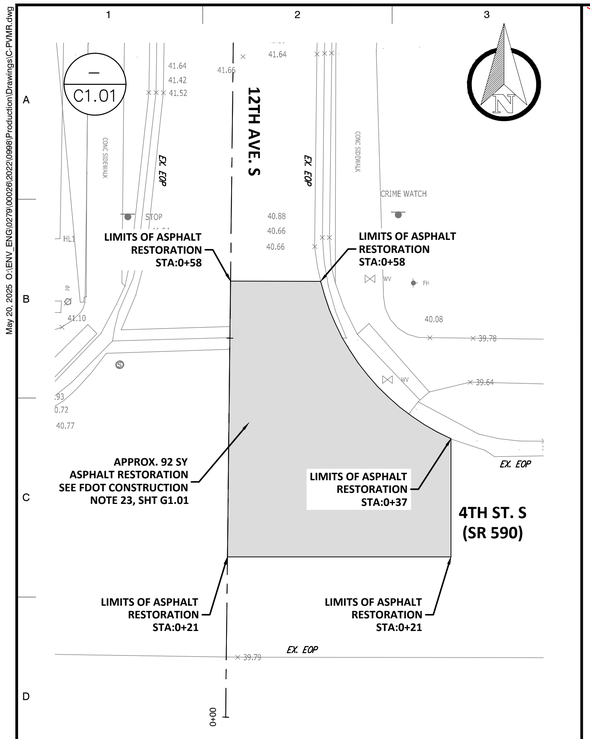
JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

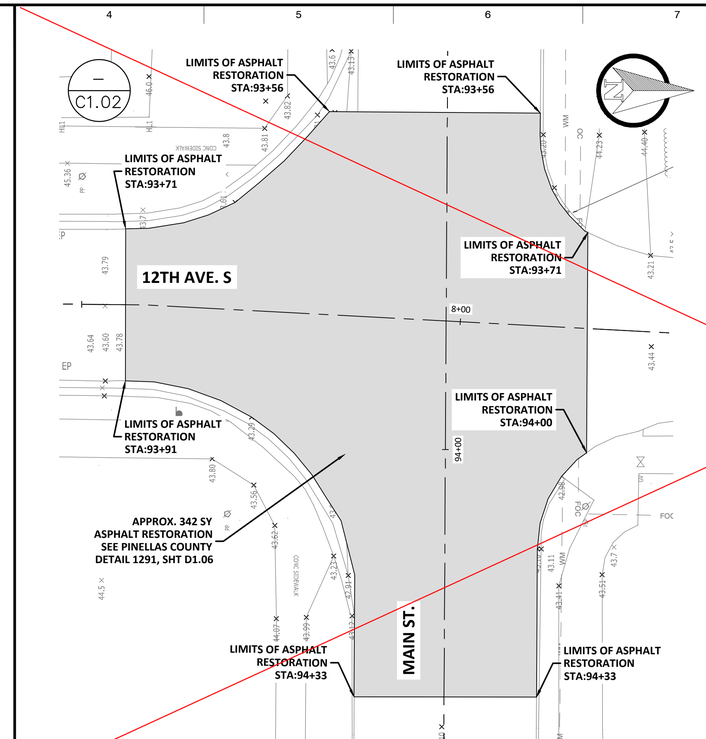
C2.02

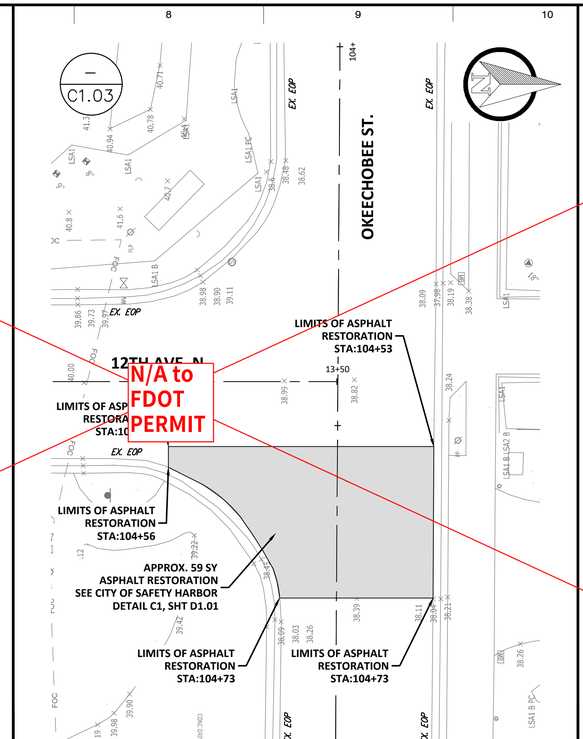
BID DOCUMENTS
05/20/2025

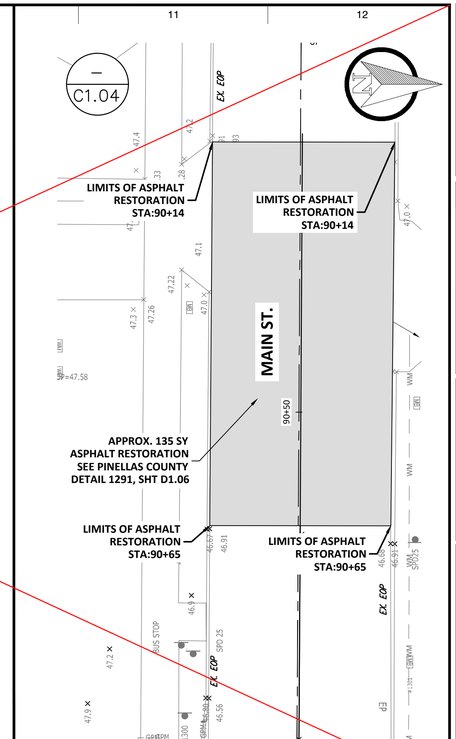
Digitally signed by Matthew Mennenhan 2025.05.20 09:00:34 -04'00'

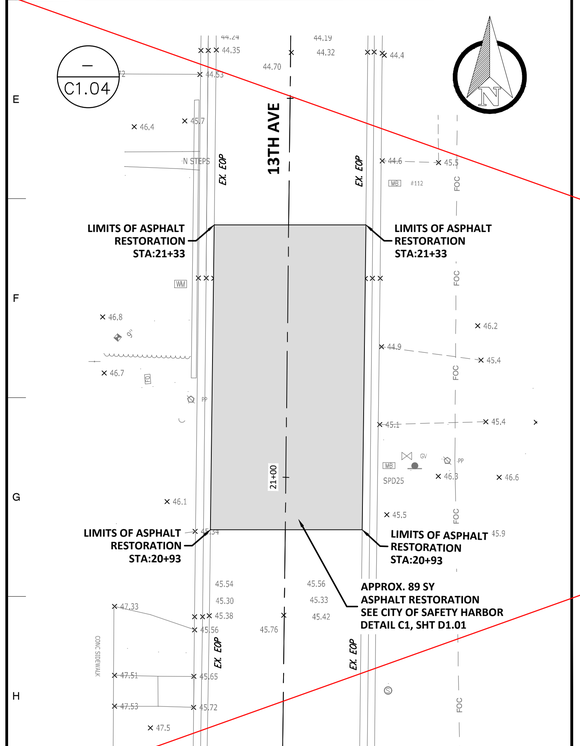
May 20, 2025 - O:\ENV_ENG\0279\00026\2022\0998\Production\Drawings\C-PWMR.dwg

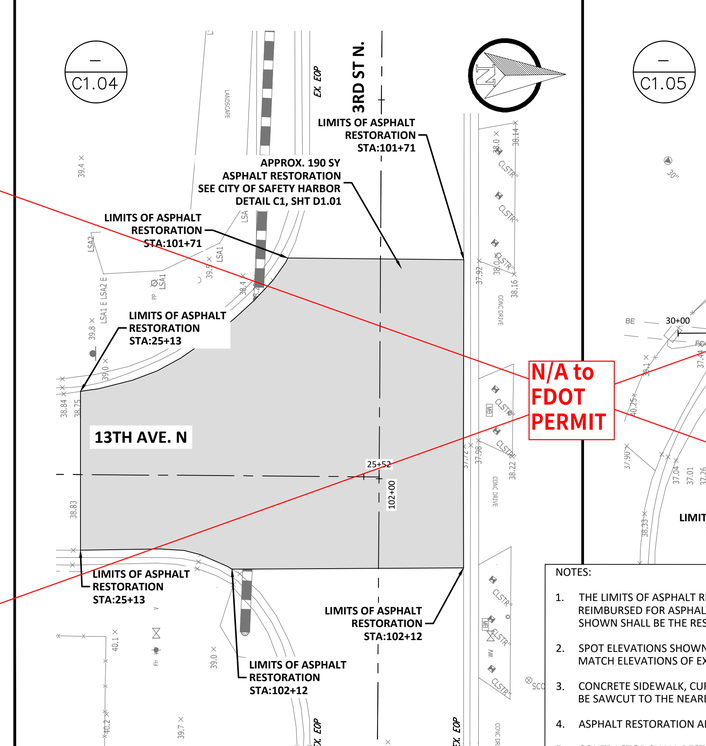


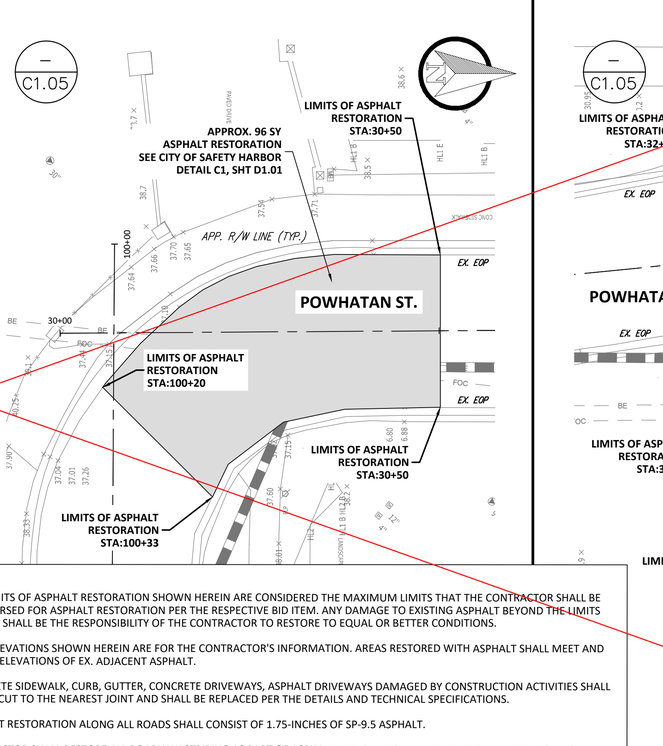


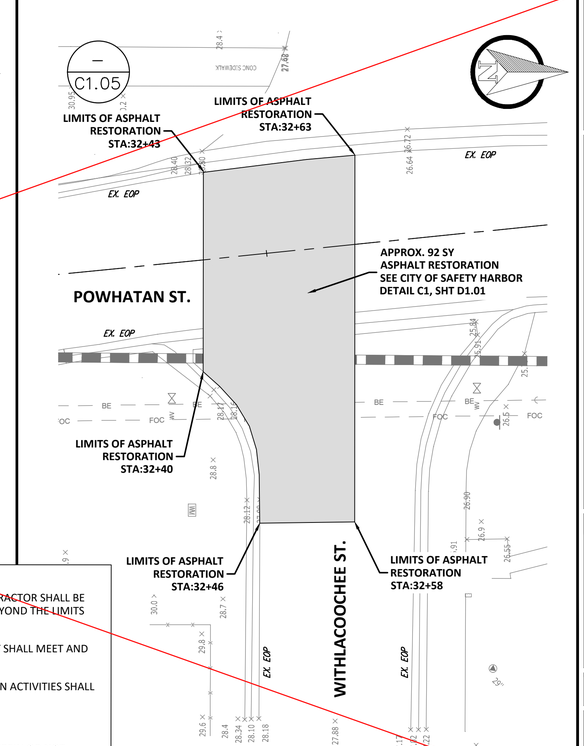












N/A to FDOT PERMIT

N/A to FDOT PERMIT

NOTES:

1. THE LIMITS OF ASPHALT RESTORATION SHOWN HEREIN ARE CONSIDERED THE MAXIMUM LIMITS THAT THE CONTRACTOR SHALL BE REIMBURSED FOR ASPHALT RESTORATION PER THE RESPECTIVE BID ITEM. ANY DAMAGE TO EXISTING ASPHALT BEYOND THE LIMITS SHOWN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESTORE TO EQUAL OR BETTER CONDITIONS.
2. SPOT ELEVATIONS SHOWN HEREIN ARE FOR THE CONTRACTOR'S INFORMATION. AREAS RESTORED WITH ASPHALT SHALL MEET AND MATCH ELEVATIONS OF EX. ADJACENT ASPHALT.
3. CONCRETE SIDEWALK, CURB, GUTTER, CONCRETE DRIVEWAYS, ASPHALT DRIVEWAYS DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE SAWCUT TO THE NEAREST JOINT AND SHALL BE REPLACED PER THE DETAILS AND TECHNICAL SPECIFICATIONS.
4. ASPHALT RESTORATION ALONG ALL ROADS SHALL CONSIST OF 1.75-INCHES OF SP-9.5 ASPHALT.
5. CONTRACTOR SHALL RESTORE ALL ROADWAY STRIPING AS PART OF ASPHALT RESTORATION WHETHER SHOWN HEREIN OR NOT.

0 10 20
SCALE: FEET

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Phone (727) 724-1555

NO.	DATE	REVISION	BY

SEMINOLE PARK AND MAPLEWAY WATER MAIN REPLACEMENT (UT0096)

PAVEMENT RESTORATION (1)

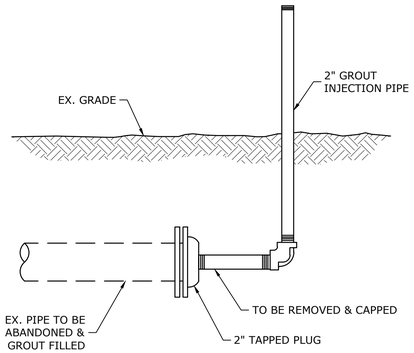
JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

C3.01

BID DOCUMENTS
05/20/2025

Approved
2025-0519-00184
Mary Wennhak
05/20/2025

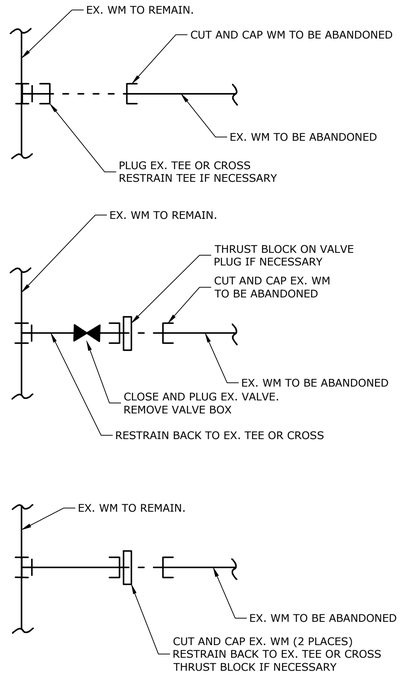
March 13, 2018 O:\ENV_ENG\0279\0009\2022\0998\Production\Drawings\DETAILS.dwg



4" & LARGER WM ABANDONMENT & GROUT FILL DETAIL

B

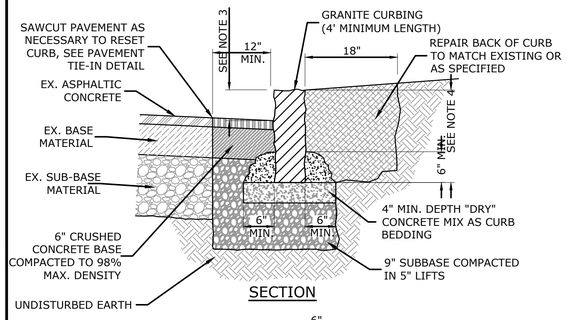
NTS



WATER MAIN ABANDONMENT DETAIL

C

NTS



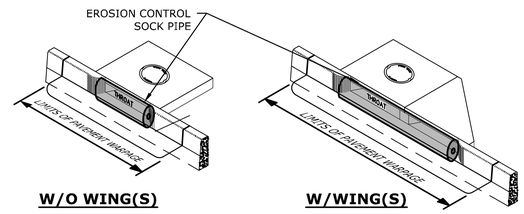
NOTES:

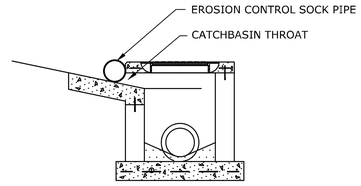
1. CONTRACTOR TO REMOVE AND STORE EX. GRANITE CURB TO BE RE-INSTALLED AS NECESSARY OR AS DIRECTED BY THE CITY REPRESENTATIVES.
2. EXPANSION JOINT MATERIAL SHALL BE INSTALLED WHEN CURB IS SET AGAINST NEW OR EXISTING SIDEWALK / DRIVEWAYS OR AS ORDERED BY THE ENGINEER
3. A 6" CURB REVEAL SHALL BE MAINTAINED, FOR CURB RESETTING OR REPLACEMENT, MATCH EXISTING REVEAL
4. CURB HEIGHT SHALL BE 18" AND CURB LENGTH SHALL BE 4 FEET MIN. OR MATCH EXISTING
5. CONTRACTOR TO REPLACE ANY CURB DAMAGED DURING REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST TO THE OWNER.

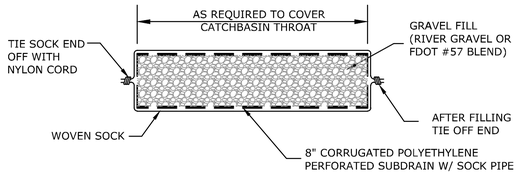
GRANITE CURB RESET OR REPLACEMENT DETAIL

D

NTS



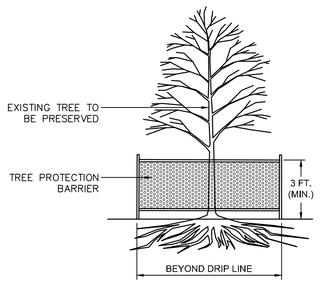




CURB INLET FILTER SOCK SEDIMENTATION CONTROL DETAIL

E

NTS



GENERAL NOTES:

1. A TEMPORARY PROTECTIVE BARRIER SHALL BE PLACED AT THE DRIP LINE OF THE TREE(S) TO BE SAVED. THE PROTECTIVE BARRIER SHALL BE APPROVED BY THE CITY ARBORIST AND REMAIN IN PLACE UNTIL LAND ALTERATION, SITE CLEARING, AND CONSTRUCTION ACTIVITIES ARE COMPLETE.
2. FOR (2) INCH CALIPER TREES OR SMALLER, THE PROTECTIVE RADIUS SHALL BE A MINIMUM OF (6) FOOT DIAMETER.
3. THE TEMPORARY PROTECTIVE BARRIER SHALL COMPLETELY ENCIRCLE THE TREE(S) CREATING A PROTECTIVE RADIUS AROUND THE TREE(S) TO BE SAVED, IF THE DRIP LINE OF THE TREE(S) CANNOT BE BARRICADED DUE TO CONSTRUCTION ACCESS THE PROTECTIVE BARRIER SHALL BE INSTALLED AT THE GREATEST EXTENT POSSIBLE WITH THE REMAINDER OF THE DRIP LINE TO BE MULCHED AT A DEPTH OF (3) TO (6) INCHES TO PREVENT COMPACTION OF THE ROOT SYSTEM DURING CONSTRUCTION ACTIVITIES. MULCH TO BE REMOVED FOLLOWING THE COMPLETION OF CONSTRUCTION ACTIVITIES.
4. AT A MINIMUM, THE TEMPORARY PROTECTIVE BARRIER SHALL BE (3) FEET IN HEIGHT AND BE CONSTRUCTED OF (2) INCH x (2) INCH VERTICAL POSTS INSTALLED (6) INCHES BELOW GRADE. POSTS SHALL BE INSTALLED AT A MAXIMUM OF (10) FEET ON CENTER, AVOID DRIVING POSTS INTO MAJOR ROOTS. ORANGE MESH FENCING SHALL BE SECURELY ATTACHED TO POSTS ENCIRCLING THE TREE(S) AND DEFINING THE PROTECTIVE RADIUS.
5. FOR TREES (12) INCH DBH OR LARGER THE PROTECTIVE BARRIER SHALL BE CONSTRUCTED OF CHAIN LINK FENCING WITH POSTS INSTALLED AT A MAXIMUM OF (10) FEET ON CENTER.
6. DEAD TREES, SCRUB, OR UNDERGROWTH SHALL BE CUT FLUSH WITH ADJACENT GRADE. THERE WILL BE NO SOIL DISTURBANCE WITHIN THE PROTECTIVE BARRIER OF TREES TO BE PRESERVED.
7. TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION: FOR ROOTS OVER (1) INCH IN DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHOULD BE TEMPORARILY COVERED WITH (2) INCH MINIMUM DEPTH DAMP MULCH AS SOON AS POSSIBLE TO PREVENT DRYING.
8. NO EQUIPMENT OR MACHINERY SHALL BE USED WITHIN THE PROTECTIVE BARRIER. WORK WITHIN THE PROTECTIVE BARRIER SHALL BE DONE MANUALLY.
9. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE IS ALLOWED WITHIN THE LIMIT OF THE PROTECTIVE BARRIER.

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	11/01/2017
Phone (727) 724-1555	BD	12/31/2019
	SCALE: N.T.S.	
TREE PROTECTIVE BARRIER	DATE: APRIL 2015	
	DETAIL NUMBER: LA1	

FIGURE 1

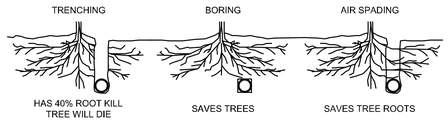


FIGURE 2

ROOT PRUNING SPECIFICATIONS

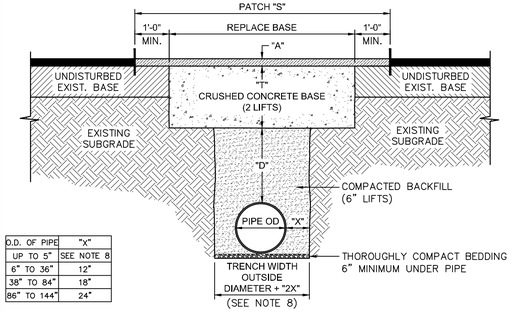
WHEN CONSTRUCTION ACTIVITIES AFFECT PROTECTED TREES SO THAT THE CRITICAL ROOT ZONE (SEE FIGURE 1) IS DISTURBED, ADHERENCE TO THE FOLLOWING ARBORICULTURAL TECHNIQUES IS REQUIRED.

UTILITIES SHALL BE ROUTED IN THE CRITICAL ROOT ZONE AREA OF A PROTECTED TREE BY BORING AND AIR SPADING. THESE PROCEDURES WILL PREVENT DAMAGE TO THE TREE'S ROOT SYSTEM.

ROOT PRUNING: WHEN CRITICAL ROOT ZONE AREA IS DISTURBED, AFFECTED ROOTS MUST BE SEVERED BY CLEAN PRUNING CUTS AT THE POINT WHERE CONSTRUCTION IMPACTS THE ROOTS. A STUMP GRINDER, CHAIN SAW, HAND SAW AND LOPPER ARE TOOLS THAT WILL MAKE A CLEAN CUT.

ROOT PRUNING IN THE CRITICAL ROOT ZONE REQUIRES APPROVAL BY THE CITY ARBORIST. ROOT PRUNING SHALL BE DONE A MINIMUM OF 5 (FIVE) TIMES THE TRUNK DIAMETER AND ONLY ON ONE SIDE. LARGER TREES WILL REQUIRE MORE DISTANCE.

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	11/01/2017
Phone (727) 724-1555	BD	12/31/2019
	SCALE: N.T.S.	
ROOT PRUNING SPECIFICATIONS	DATE: JULY 22, 2015	
	DETAIL NUMBER: LA3	



O.D. OF PIPE	"X"
UP TO 5"	SEE NOTE 8
6" TO 36"	12"
38" TO 84"	18"
86" TO 144"	24"

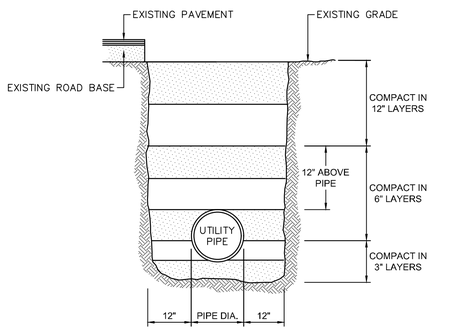
SCHEDULE

	ITEM	ALLEY / DRIVE	STANDARD ROAD	COMMERCIAL ROAD	REMARKS
A	ASPHALT THICKNESS (MIN.)	1" TYPE SP9.5	1–¼" TYPE SP9.5	2–¼" TYPE SP12.5	
T	BASE THICKNESS (MIN.)	REPLICATE EXISTING BASE THICKNESS + 2"			MAY BE SUBSTITUTED WITH ASPHALT OR AS DIRECTED BY CITY ENGINEER
S	PATCH WIDTH (MIN.)	24"	10'	10'	
D	COVER DEPTH (MIN.)	30"	36"	36"	

NOTES:

1. ALL PAVING PREPARATION SHALL MEET CITY OF SAFETY HARBOR'S STANDARD SPECIFICATIONS.
2. TRENCH BACKFILL SHALL BE PLACED IN 6-INCH LIFTS, EACH LIFT COMPACTED TO 100% OF THE MAXIMUM DENSITY BY AASHTO T-99. FLOWABLE FILL MAY BE SUBSTITUTED FOR BACKFILL ON A CASE BY CASE BASIS. FLOWABLE FILL SHALL MEET FDOT STANDARD SPECIFICATIONS, AS APPROVED BY THE CITY ENGINEER.
3. CLAY IS NOT AN ACCEPTABLE BACKFILL MATERIAL.
4. PAVEMENT JOINTS SHALL BE MECHANICALLY SAW CUT IN NEAT LINES 1-FOOT BEYOND ANY SETTLED OR BROKEN AREAS.
5. BASE MATERIAL SHALL BE CRUSHED CONCRETE OF THE THICKNESS SHOWN (MIN. LBR 100) AND SHALL BE PLACED IN 6" COMPACTED LAYERS TO 98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 (MODIFIED).
6. AS AN ALTERNATIVE TO COMPACTED BASE AND IN WET AREAS, FULL-LIFT ASPHALTIC CONCRETE, FINE TRAFFIC LEVEL C TYPES SP9.5 OR 12.5, SHALL BE PLACED IN 2" COMPACTED LAYERS WITH A MINIMUM THICKNESS EQUAL TO THE EXISTING BASE (6" MIN.).
7. INSTALL CLEAN DRY COMPACTABLE MATERIAL AROUND THE PIPE.
8. FOR PIPES/CONDUITS LESS THAN 5-INCHES OD, DITCH WIDTH MAY BE REDUCED TO A WIDTH OF A MECHANICAL TAMPER. BACKFILL WITH DRY 15:1 SAND/CEMENT MIX, OR OTHER APPROVED MATERIAL, TO 4 -INCHES ABOVE.
9. DENSITY TESTS WILL BE PERFORMED AT THE CONTRACTOR'S EXPENSE FOR EACH 6-INCH LIFT OF COMPACTED MATERIAL PLACED AND COMPACTED AT LOCATIONS DESIGNATED BY THE CITY ENGINEER. ALL DENSITY REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
10. CONTRACTOR TO SUBMIT BEDDING SHOP DRAWING FOR CITY APPROVAL.

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	12/31/2019
Phone (727) 724-1555	SS	07/05/2022
	SCALE: N.T.S.	
OPEN CUT PAVEMENT TRENCH	DATE: JANUARY 2011	
	DETAIL NUMBER: C1	



NOTES:

1. TRENCHES LOCATED UNDER PAVEMENT SHALL BE COMPACTED TO 100% OF MAXIMUM DENSITY BY A.A.S.H.T.O. T-99, METHOD C.
2. TRENCHES NOT LOCATED UNDER PAVEMENT SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY BY A.A.S.H.T.O. T-99.
3. TRENCH BACKFILL SHALL BE PLACED IN 6-INCH LIFTS, EACH LIFT COMPACTED TO 100% OF THE MAXIMUM DRY DENSITY BY A.A.S.H.T.O. T-99. FLOWABLE FILL MAY BE SUBSTITUTED FOR BACKFILL ON A CASE BY CASE BASIS. FLOWABLE FILL SHALL MEET FDOT STANDARD SPECIFICATIONS, AS APPROVED BY THE CITY ENGINEER.
4. CLAY IS NOT AN ACCEPTABLE BACKFILL MATERIAL.
5. INSTALL CLEAN DRY COMPACTABLE MATERIAL AROUND THE PIPE.
6. DENSITY TESTS WILL BE PERFORMED AT THE CONTRACTOR'S EXPENSE FOR EACH 6-INCH LIFT OF COMPACTED MATERIAL PLACED AND COMPACTED AT LOCATIONS DESIGNATED BY THE CITY ENGINEER. ALL DENSITY REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
7. REPLACEMENT OF PAVED SURFACES SHALL BE MADE IN ACCORDANCE WITH SAFETY HARBOR CITY STANDARDS.

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	12/31/2019
Phone (727) 724-1555	SS	05/25/2022
	SCALE: N.T.S.	
TRENCH BACKFILL	DATE: APRIL 2003	
	DETAIL NUMBER: C2	

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Safety Harbor, Florida 34695
Phone (727) 724-1555

NO.	DATE	BY	REVISION

SEMINOLE PARK AND MAPLEWAY WATER MAIN REPLACEMENT (UT0096)

MISCELLANEOUS DETAILS (1)

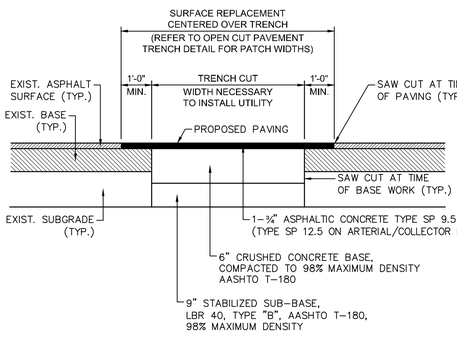
JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

D1.01

BID DOCUMENTS
05/20/2025

Approved
2025-11-750-00184
Michael Brennan
06/2/2025

March 13, 2018 O:\ENV_ENG\2979\0009\2022\0998\Production\Drawings\DETAILS.dwg



NOTE:

TIE-IN MUST PAVE ONE LANE WIDTH.
IF WORK AFFECTS TWO INTERSECTING STREETS, ENTIRE INTERSECTION MUST BE PAVED AND MUST MEET ADA REQUIREMENTS.

CITY OF SAFETY HARBOR
Engineering Department
750 Main Street, Safety Harbor, FL 34695
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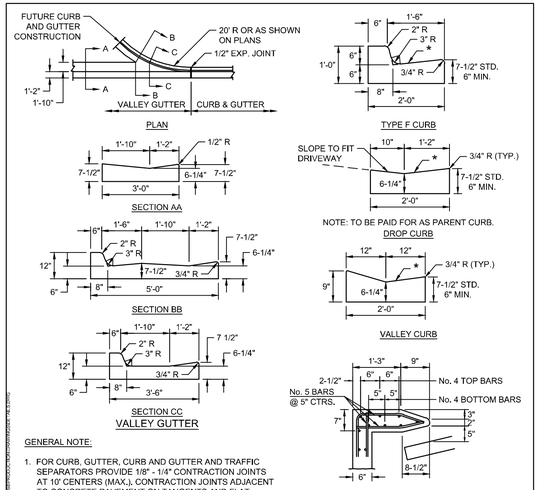
TYPICAL PAVEMENT TIE-IN & TYPICAL PAVEMENT SECTION

REVISIONS	
BY	DATE
BD	11/01/2017
SS	05/25/2022
SCALE: N.T.S.	
DATE: MAY 2014	
DETAIL NUMBER: C3	



GENERAL NOTE:

1. FOR CURB, GUTTER, CURB AND GUTTER AND TRAFFIC SEPARATORS PROVIDE 1/8" - 1/4" CONTRACTION JOINTS AT 10' CENTERS (MAX.). CONTRACTION JOINTS ADJACENT TO CONCRETE PAVEMENT ON TANGENTS AND FLAT CURVES ARE TO MATCH THE PAVEMENT JOINTS, WITH INTERMEDIATE JOINTS NOT TO EXCEED 10' CENTERS.

★NOTE: WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT. THE THICKNESS OF THE LIP SHALL BE 6", UNLESS OTHERWISE SHOWN ON PLANS.

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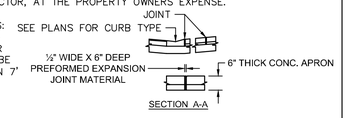
CURB DETAILS

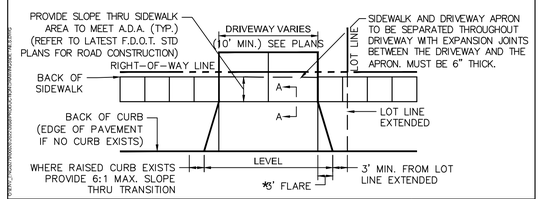
REVISIONS	
BY	DATE
SCALE: N.T.S.	
DATE: NOVEMBER 2003	
DETAIL NUMBER: C10	

NOTES

1. THE LOCATION OF DRIVEWAYS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. CONCRETE DRIVEWAYS WITHIN THE RIGHT-OF-WAY SHALL BE 6" THICK AND REINFORCED BY 6" X 6" X 10 GAUGE WIRE MESH PLACED IN THE CENTER OF THE FORM. EXPANSION JOINTS SHALL BE PROVIDED AT THE EDGE OF CURB OR PAVEMENT AT THE SIDEWALK JOINTS AND AT THE PROPERTY LINE. CONCRETE SHALL BE 3,000 PSI.
3. EXCEPT AS SPECIFIED ABOVE, THE ENGINEER SHALL DETERMINE IN THE FIELD WHAT MATERIALS SHALL BE USED IN THE CONSTRUCTION OF DRIVEWAYS.
4. CONSTRUCTION OF APRON / DRIVEWAY CROSS SLOPES SHALL COMPLY WITH LATEST F.D.O.T. STANDARD PLANS FOR ROAD CONSTRUCTION INCLUDING A.D.A. REQUIREMENTS.
5. REMOVE ALL TREE ROOTS WITHIN 10' OF PROPOSED GRADE.
6. IF THIS IS AN ASSESSMENT PROJECT AND THE DISTANCE BETWEEN THE APRON AND THE EXISTING DRIVEWAY IS 2'-0" OR LESS, THE CONTRACTOR SHALL EXTEND APRON CONSTRUCTION TO CONNECT TO EXISTING DRIVEWAY (PAYABLE UNDER THIS CONTRACT). IF THIS DISTANCE IS GREATER THAN 2'-0", CONSTRUCTION OF THE DRIVEWAY SHALL BE AGREED UPON THE PROPERTY OWNER AND CONTRACTOR, AT THE PROPERTY OWNERS EXPENSE.

★CITY DEVELOPMENT STANDARDS: ARTICLE X, SEC.149.00(E): THE DRIVEWAY ENTRANCE FLARE OR CURB TRANSITION SHALL NOT BE LESS THAN 3' NOR MORE THAN 7' IN WIDTH AT THE EDGE OF PAVEMENT OR CURB LINE.





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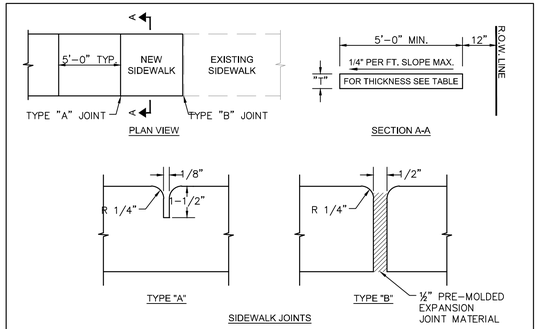
Engineering Department
750 Main Street, Safety Harbor, FL 34695
Phone (727) 724-1555

DRIVEWAY APRON

REVISIONS	
BY	DATE
BD	04/22/2016
SS	05/25/2022
SCALE: N.T.S.	
DATE: NOVEMBER 2003	
DETAIL NUMBER: C11	



WIDTH OF SIDEWALKS	
WIDTH	TYPE OF ROADWAY
5'	LOCAL AND RESIDENTIAL ROADWAYS
6'	MAJOR AND MINOR ARTERIAL ROADWAYS

NOTES:
1. CONCRETE SHALL BE 3,000 P.S.I.
2. WELDED WIRE FABRIC (WWF) MAY BE REQUIRED FOR SIDEWALKS UNDER TREE CANOPIES AT THE DISCRETION OF THE CITY.
3. ALTERNATE FOR FIBERMESH IN SOME LOCATIONS.
4. SIDEWALK WITHIN CITY RIGHT-OF-WAY SHALL BE 6" THICK.

TABLE OF SIDEWALK JOINTS	
TYPE	LOCATION
"A"	5'-0" CENTER TO CENTER ON SIDEWALKS
"B"	WHERE A SIDEWALK ABUTS EXISTING WALKS, CURBS, DRIVEWAYS, ETC. AND AT A MAXIMUM 50 LF CENTER TO CENTER.

TABLE OF SIDEWALK THICKNESS	
DISTANCE FROM BACK OF CURB OR EDGE OF PAVEMENT W/ NO CURB	"T"
GREATER THAN OR EQUAL TO 6 FEET	4"
LESS THAN 6 FEET	6"

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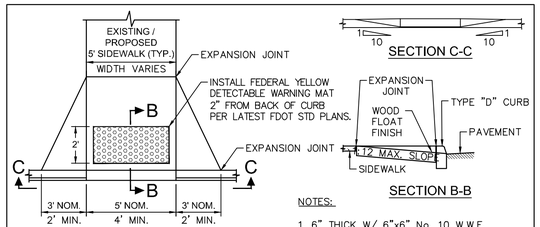
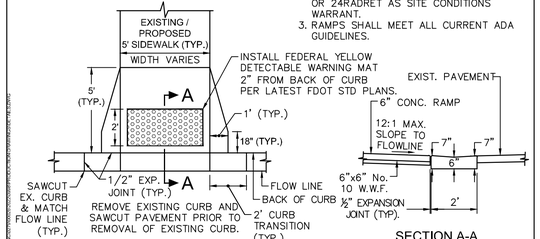
750 Main Street, Safety Harbor, FL 34695
Phone (727) 724-1555

SIDEWALK DETAILS

REVISIONS	
BY	DATE
BD	11/01/2017
SS	05/25/2022
SCALE: N.T.S.	
DATE: NOVEMBER 2003	
DETAIL NUMBER: C12	





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Engineering Department
750 Main Street, Safety Harbor, FL 34695
Phone (727) 724-1555

HANDICAP RAMP

REVISIONS	
BY	DATE
BD	11/01/2017
SS	07/07/2022
SCALE: N.T.S.	
DATE: DECEMBER 2012	
DETAIL NUMBER: C13	

NOTES:

1. TAPS, TESTING AND INSPECTIONS ARE TO BE SCHEDULED 48 HOURS IN ADVANCE WITH THE PUBLIC WORKS WATER/WASTEWATER DIVISION. CALL 727-724-1550.
2. TAPS SHALL ONLY BE ALLOWED ON MONDAY AND TUESDAY TO ALLOW AMPLE TIME FOR BACTERIOLOGICAL TESTS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PRESSURE TESTING (150PSI MINIMUM - 155PSI MAXIMUM) AND CHLORINATING THE NEW WATER MAIN FOR TWO HOURS. THE CITY WILL PROVIDE BACTERIOLOGICAL TESTING (MONDAYS/TUESDAYS ONLY). THE CITY OF SAFETY HARBOR WILL FLUSH AND PULL THE WATER SAMPLES AND SUBMIT TO LAB FOR TESTING.
4. FIRST ROUND OF WATER SAMPLES WILL BE COVERED BY THE CITY OF SAFETY HARBOR. IF A FAILURE IS PRESENT, REQUIRING A SECOND SET OF SAMPLES OR MORE, CONTRACTOR WILL BE BILLED BY THE CITY OF SAFETY HARBOR FOR ALL COST ASSOCIATED INCLUDING THE WATER THAT IS UTILIZED DURING THE FLUSHING PROCESS.
5. CONTRACTOR IS ALWAYS RESPONSIBLE TO HAVE PROPER DECHLORINATING EQUIPMENT (APPROVED BY CITY STAFF) WHILE FLUSHING WATER MAINS UNDER SUPERVISION OF CITY STAFF.
6. A CHLORINATION AND SAMPLING PLAN MUST BE SUBMITTED FOR ANY NEW WATER MAIN INSTALLATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHLORINATE THE WATER MAIN PER AWWA GUIDELINES AND FDEP REGULATIONS. CITY OF SAFETY HARBOR WILL BE ON SITE TO INSPECT THE CHLORINATING PROCESS.
7. WATER TAPS SHALL NOT BE INSTALLED UNDER DRIVEWAYS. NO SIZE ON SIZE TAPS ALLOWED.
8. METER BOXES SHALL NOT BE INSTALLED IN DRIVEWAYS. MINIMUM 3' CLEARANCE FROM EDGE OF DRIVEWAY SHALL BE LEFT FOR MAINTENANCE PURPOSE.
9. WATER MAIN SHALL BE INSTALLED AT A DEPTH OF 24" MINIMUM AND 36" MAXIMUM.
10. RISERS ON FIRE HYDRANTS SHALL NOT BE INSTALLED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY DEPTH AND ORDER CORRECT SIZE HYDRANT AND FOLLOW FIRE PREVENTION CODE ON MOST CURRENT PORT HEIGHT REQUIREMENTS.
11. NO GLUE JOINT FITTINGS WILL BE ALLOWED ON WATER MAIN OR SERVICE CONNECTIONS UP TO METER.
12. VALVE BOXES OR LOCATE STATIONS SHALL NOT BE IN ADA RAMPS WHENEVER POSSIBLE.
13. LOCATE STATIONS SHALL BE INSTALLED AT EVERY FITTING OR CHANGE IN DIRECTION OF WATER MAIN OR WERE DESIGNATED BY CITY OFFICIAL.
14. EXISTING WATER VALVE(S) ARE TO BE OPERATED BY CITY STAFF ONLY.
15. ALL JOINTS SHALL BE MECHANICALLY RESTRAINED (CONTRACTOR MAY OPT TO UTILIZE SDR-17 PVC RESTRAINED JOINT PIPE).
16. NEW WATER MAINS SHALL BE THE FOLLOWING MATERIALS: PVC WATER LINES AND FITTINGS 2" AND SMALLER SHALL BE SDR-21. LARGER PVC WATER MAINS SHALL BE IN ACCORDANCE WITH AWWA C-900 AND MEET THE REQUIREMENTS OF DR-14, OR DR-18 FOR FIRE MAINS.
17. WATER METER BOXES SHALL NOT BE INSTALLED IN SIDEWALKS UNLESS OTHERWISE APPROVED BY CITY STAFF. METER BOX SHALL BE INSTALLED TO HAVE STRAIGHT ACCESS TO CURB STOP AND METER AND BACKFLOW.
18. FIRE HYDRANT STINGER LINES SHALL NOT BE ALLOWED TO BE TAPPED UNDER ANY CIRCUMSTANCES.
19. CITY OF SAFETY HARBOR MUST APPROVE ALL MATERIALS UTILIZED ON WATER MAINS. SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO DELIVERY.
20. A LICENSED PLUMBER MUST MAKE ALL CONNECTIONS FROM THE CITY'S METER TO THE CUSTOMER'S CONNECTION.
21. CURB STOP LOCK RING (HOLE) NEEDS TO POINT IN DIRECTION OF FLOW WHEN OPEN. THE HOLES SHOULD LINE UP WHEN CURB STOP IS CLOSED.
22. MATERIAL WILL NEED TO BE INSPECTED BY CITY STAFF PRIOR TO INSTALL.
23. 4" AND LARGER WET TAPS, SADDLE MUST BE PRESSURE TESTED TO 150 PSI FOR 15 MINUTES IN PRESENCE OF CITY STAFF.
24. TAPS WILL NOT BE ALLOWED UNTIL METER AND BACKFLOW HAS BEEN PURCHASED THROUGH BILLING DEPARTMENT. METER AND BACKFLOW SHALL BE PURCHASED FIRST PRIOR SCHEDULING OF ANY TAPS.
25. CONTRACTOR SHALL PURCHASE CONSTRUCTION METER IF NEEDED FOR WATER USE.
26. NO PEX TUBING ALLOWED FOR CONNECTING TO METER.

CITY OF SAFETY HARBOR
Engineering Department
750 Main Street, Safety Harbor, FL 34695
Phone (727) 724-1555

WATER NOTES

REVISIONS	
BY	DATE
SCALE: N.T.S.	
DATE: OCTOBER 2019	
DETAIL NUMBER: W1	

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

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

DISCLAIMER-THIS DOCUMENT IS PROVIDED FOR YOUR CONVENIENCE ONLY.
PLEASE REFER TO F.A.C. RULE 62-555.314 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.

1. WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.
2. 3 FT. FOR GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.

CITY OF SAFETY HARBOR
Engineering Department
750 Main Street, Safety Harbor, FL 34695
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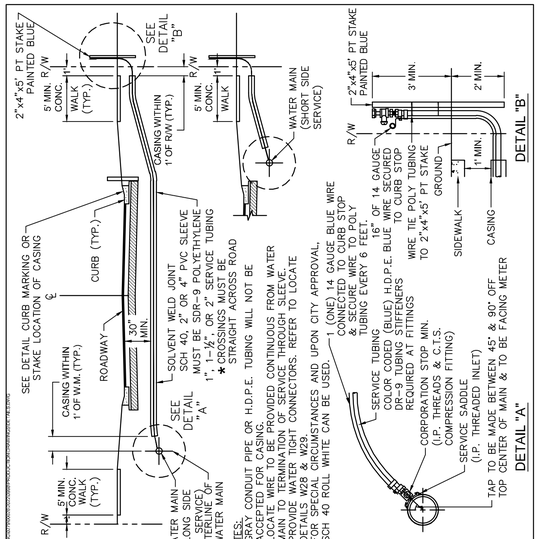
UTILITY SEPARATION REQUIREMENTS F.A.C. RULE 62-555.314

REVISIONS	
BY	DATE
BD	11/01/2017
SCALE: N.T.S.	
DATE: MARCH 2012	
DETAIL NUMBER: W2	



CITY OF SAFETY HARBOR
Engineering Department
750 Main Street, Safety Harbor, FL 34695
Phone (727) 724-1555

TYPICAL ROAD CROSSING FOR WATER SERVICE LINES

REVISIONS	
BY	DATE
BD	12/31/2019
SS	05/25/2022
SCALE: N.T.S.	
DATE: NOVEMBER 2003	
DETAIL NUMBER: W5	

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750 Main Street
Safety Harbor, Florida 34695
Phone (727) 724-1555

NO.	DATE	REVISION	BY

SEMINOLE PARK AND MAPLEWAY WATER MAIN REPLACEMENT (UT0096)

MISCELLANEOUS DETAILS (2)

JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

D1.02

BID DOCUMENTS
05/20/2025

Approved
2025-11-700-00184
Mary Greenhalgh
6/2/2025

March 13, 2018 O:\ENV_ENG\2979\0009\2022\0998\Production\Drawings\DETAILS.dwg

PIPE SIZE	FITTING TYPE						
	90°	45°	22-1/2°	11-1/4°	DEAD END	TEE	VALVE
2"	3	1	1	1	4	3	3
4"	3	1	1	1	4	3	3
6"	4	2	1	1	6	4	4
8"	5	2	1	1	9	5	5
10"	6	3	1	1	10	6	6
12"	7	3	2	1	11	7	7
16"	8	4	2	1	14	8	8
20"	9	4	2	1	18	11	11
24"	10	4	2	1	22	13	13

TABLE APPLIES TO 20 FOOT PIPE LENGTHS @ 150 P.S.I.G. FOR 2 HOURS. (PER AWWA SPECIFICATIONS). TEST PRESSURE WITH 24" MIN., 36" MAX. OF COVER OVER PIPE. NUMBERS SHOWN IN TABLE ARE THE NUMBER OF BELL JOINTS FOR EACH SIDE OF FITTING. CONTINUE TO PLACE THE NEXT PIPE WITH NUMBER OF RESTRAINED BELL JOINTS AS CALLED OUT IN THE TABLE.

NOTES:

1. NO GLUED JOINTS WILL BE ALLOWED. RESTRAINERS ARE THE ONLY ACCEPTABLE METHOD OF RESTRAINT.
2. APPLIED TO WATER AND FORCE MAIN INSTALLATIONS.
3. EBAA IRON WORKS MEGALUG ONLY (HAND TORQUED TO MANUFACTURERS SPECIFICATIONS).
4. APPLY TO EXISTING PIPE IN GROUND. ALL NEW INSTALLS ARE REQUIRED TO BE RESTRAINED.

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Engineering Department
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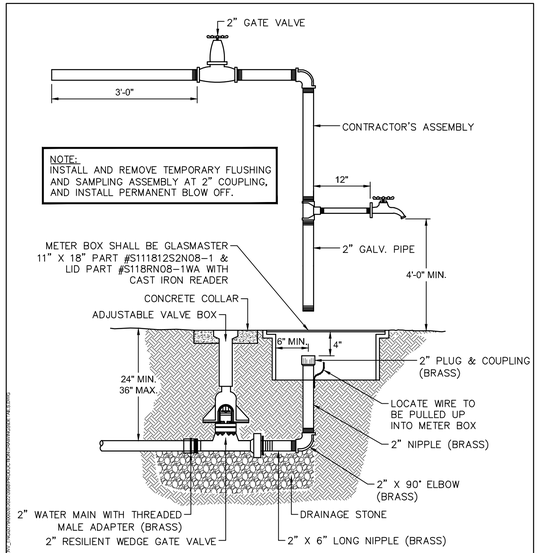
RESTRAINED JOINT REQUIREMENTS

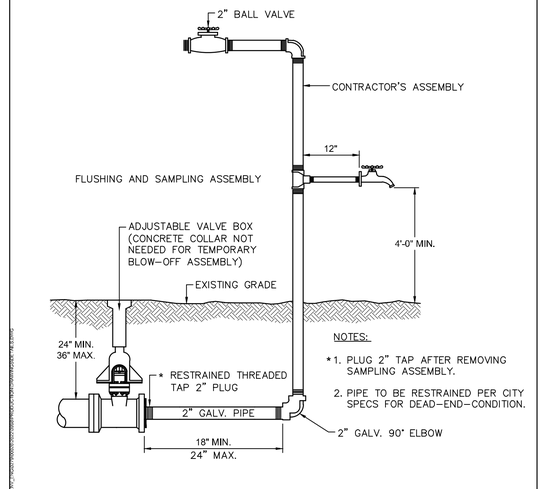
REVISIONS	
BY	DATE
BD	11/01/2017
BD	12/31/2019
SCALE: N.T.S.	
DATE: NOVEMBER 2003	
DETAIL NUMBER: W6	



CITY OF SAFETY HARBOR
Engineering Department
750 Main Street, Safety Harbor, FL 34695
Phone (727) 724-1555

2" PERMANENT BLOW-OFF ASSEMBLY

REVISIONS	
BY	DATE
BD	11/01/2017
BD	12/31/2019
SCALE: N.T.S.	
DATE: JUNE 2013	
DETAIL NUMBER: W7	



NOTES:

*1. PLUG 2" TAP AFTER REMOVING SAMPLING ASSEMBLY.

2. PIPE TO BE RESTRAINED PER CITY SPECS FOR DEAD-END-CONDITION.

CITY OF SAFETY HARBOR
Engineering Department
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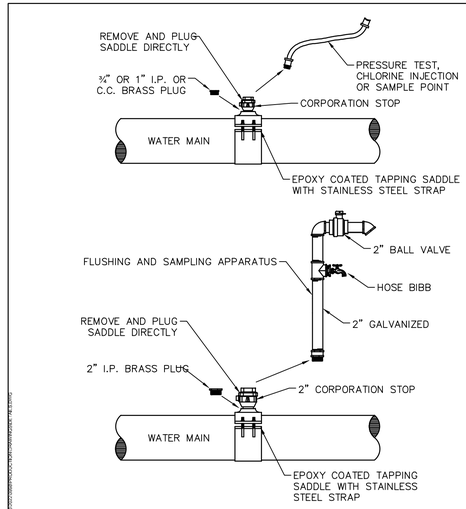
Phone (727) 724-1555

2" TEMPORARY BLOW-OFF ASSEMBLY

REVISIONS	
BY	DATE
BD	12/31/2019
SS	05/27/2022
SCALE: N.T.S.	
DATE: JUNE 2013	
DETAIL NUMBER: W8	



NOTE:
ALL INJECTION, SAMPLE POINTS AND STAND PIPES MUST BE REMOVED AND PLUGGED AFTER APPROVAL BY F.D.E.P.

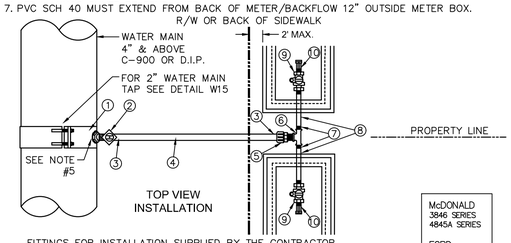
CITY OF SAFETY HARBOR
Engineering Department
750 Main Street, Safety Harbor, FL 34695
Phone (727) 724-1555

BLOW-OFF REMOVAL PROCEDURE TEMPORARY BLOW-OFF

REVISIONS	
BY	DATE
BD	11/01/2017
SS	05/25/2022
SCALE: N.T.S.	
DATE: JULY 2008	
DETAIL NUMBER: W9	

NOTES:

1. FOR A NEW SERVICE WHEN AN EXISTING METER IS NOT PRESENT, THE CITY WILL SUPPLY AND INSTALL THE FOLLOWING: 3/4" OR 1" WATER METER, DOUBLE CHECK VALVE ASSEMBLY, AND METER BOX WITH A READER LID. CUSTOMER MUST PAY FOR PARTS, IN ADVANCE, THROUGH THE CITY'S UTILITY BILLING DEPARTMENT.
2. FOR ALL CAPITAL IMPROVEMENT PROJECTS OR SUBDIVISION DEVELOPMENTS, THE CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING THE METER BOXES WITH A READER LID.
3. CONTRACTOR TO RECONNECT TO CUSTOMER'S EXISTING SERVICE LINE.
4. CUSTOMER'S SERVICE LINE MUST EXIT THROUGH THE MOUSE HOLE OF METER BOX. METER BOX SHALL NOT BE ALTERED.
5. DRILL BIT OR SHELL CUTTER SIZE MUST BE 7/8".
6. ALL FITTINGS SHALL BE LEAD FREE.
7. PVC SCH 40 MUST EXTEND FROM BACK OF METER/BACKFLOW 12" OUTSIDE METER BOX.



FITTINGS FOR INSTALLATION SUPPLIED BY THE CONTRACTOR

1. SADDLE WITH S.S. STRAP (INLET 1" MIN. I.P. THREADS)
2. 1" CORPORATION STOP (I.P. THREADS BY COMPRESSION) (FORD F1100-4 OR McDONALD 4704-22)
3. TWO (2) 1" INSERT STIFFENER S.S. NOT SHOWN (MUELLER PART # 528705 or McDonald Part # 6133T WILL ONLY BE ACCEPTED)
4. 1" BLUE POLYETHYLENE TUBING (SDR-9)
5. 1" CTS COMP x MNPT FORD C8444 OR MCDONALD 4753Q
6. 1" BRASS TEE (IMPORTS ACCEPTED)
7. TWO (2) 1" x 3/4" BRASS REDUCERS (McDONALD 747014)
8. TWO (2) 3/4" x 6" BRASS NIPPLES
9. TWO 3/4" BALL VALVES WITH LOCK WINGS (FORD B11-233W OR MCDONALD 3/4"x5/8"x3/4" 6101W)
10. FOUR METER COUPLINGS (McDONALD 3/4" 5030-005, 1" 5124-111, AND FORD 3/4" C38-23-2-5-NL, 1" C38-24-2-5-NL)

McDONALD 3846 SERIES 4845A SERIES

FORD 202BS STYLE FC202 STYLE FCP-202 STYLE

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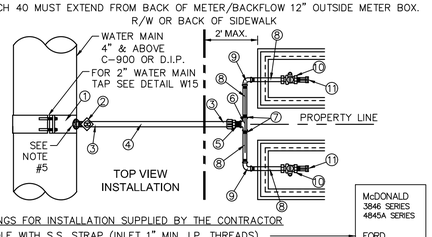
DOUBLE SERVICE

REVISIONS	
BY	DATE
BD	12/31/2019
SS	07/06/2022
SCALE: N.T.S.	
DATE: MARCH 2012	
DETAIL NUMBER: W12	

NOTES:

1. FOR A NEW SERVICE WHEN AN EXISTING METER IS NOT PRESENT, THE CITY WILL SUPPLY AND INSTALL THE FOLLOWING: 3/4" OR 1" WATER METER, DOUBLE CHECK VALVE ASSEMBLY, AND METER BOX WITH A READER LID. CUSTOMER MUST PAY FOR PARTS, IN ADVANCE, THROUGH THE CITY'S UTILITY BILLING DEPARTMENT.
2. FOR ALL CAPITAL IMPROVEMENT PROJECTS OR SUBDIVISION DEVELOPMENTS, THE CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING THE METER BOXES WITH A READER LID.
3. CONTRACTOR TO RECONNECT TO CUSTOMER'S EXISTING SERVICE LINE.
4. CUSTOMER'S SERVICE LINE MUST EXIT THROUGH THE MOUSE HOLE OF METER BOX. METER BOX SHALL NOT BE ALTERED.
5. DRILL BIT OR SHELL CUTTER SIZE MUST BE 7/8".
6. ALL FITTINGS SHALL BE LEAD FREE.
7. PVC SCH 40 MUST EXTEND FROM BACK OF METER/BACKFLOW 12" OUTSIDE METER BOX.



FITTINGS FOR INSTALLATION SUPPLIED BY THE CONTRACTOR

1. SADDLE WITH S.S. STRAP (INLET 1" MIN. I.P. THREADS)
2. 1" CORPORATION STOP (I.P. THREADS BY COMPRESSION) (FORD F1100-4 OR McDONALD 4704-22)
3. TWO (2) 1" INSERT STIFFENER S.S. NOT SHOWN (MUELLER PART #528705 OR McDONALD PART #6133T WILL ONLY BE ACCEPTED)
4. 1" BLUE POLYETHYLENE TUBING (SDR-9)
5. 1" CTS COMP x MNPT FORD C8444 OR MCDONALD 4753Q
6. 1" BRASS TEE (IMPORTS ACCEPTED)
7. TWO (2) 1" x 3/4" BRASS REDUCERS (McDONALD 747014)
8. FOUR (4) 3/4" x 8" BRASS NIPPLES
9. TWO (2) 3/4" BRASS 90° BEND (IMPORTS ACCEPTED)
10. TWO 3/4" BALL VALVES WITH LOCK WINGS (FORD B11-233W OR MCDONALD 3/4"x5/8"x3/4" 6101W)
11. FOUR METER COUPLINGS (McDONALD 3/4" 5030-005, 1" 5124-111, AND FORD 3/4" C38-23-2-5-NL, 1" C38-24-2-5-NL)

McDONALD 3846 SERIES 4845A SERIES

FORD 202BS STYLE FC202 STYLE FCP-202 STYLE

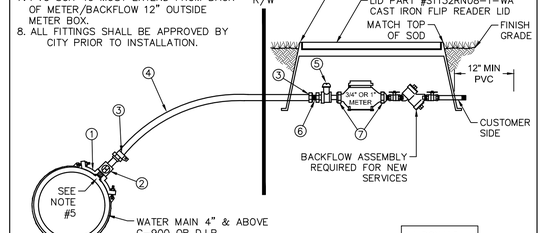
CITY OF SAFETY HARBOR
Engineering Department
750 Main Street, Safety Harbor, FL 34695
Phone (727) 724-1555

DOUBLE SERVICE (FOR DIFFERENT CIRCUMSTANCES)

REVISIONS	
BY	DATE
BD	12/31/2019
SS	07/06/2022
SCALE: N.T.S.	
DATE: MARCH 2012	
DETAIL NUMBER: W13	

NOTES:

1. FOR A NEW SERVICE WHEN AN EXISTING METER IS NOT PRESENT, THE CITY WILL SUPPLY AND INSTALL THE FOLLOWING: 3/4" OR 1" WATER METER, DOUBLE CHECK VALVE ASSEMBLY, AND METER BOX WITH A READER LID. CUSTOMER MUST PAY FOR PARTS, IN ADVANCE, THROUGH THE CITY'S UTILITY BILLING DEPARTMENT.
2. FOR ALL CAPITAL IMPROVEMENT PROJECTS OR SUBDIVISION DEVELOPMENTS, THE CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING THE METER BOXES WITH A READER LID.
3. CONTRACTOR TO RECONNECT TO CUSTOMER'S EXISTING SERVICE LINE.
4. CUSTOMER'S SERVICE LINE MUST EXIT THROUGH THE MOUSE HOLE OF METER BOX. METER BOX SHALL NOT BE ALTERED.
5. DRILL BIT OR SHELL CUTTER SIZE MUST BE 7/8". A 3/4" SERVICE LINE WILL NOT BE ACCEPTED.
6. ALL FITTINGS SHALL BE LEAD FREE.
7. PVC SCH40 MUST EXTEND FROM BACK OF METER/BACKFLOW 12" OUTSIDE METER BOX.
8. ALL FITTINGS SHALL BE APPROVED BY CITY PRIOR TO INSTALLATION.



FITTINGS FOR INSTALLATION:

1. SADDLE WITH S.S. STRAP (I.P. INLET THREADS)
2. 1" CORPORATION STOP (I.P. THREADS BY COMPRESSION) (FORD F1100-4 OR McDONALD 4704-22)
3. TWO (2) 1" INSERT STIFFENER S.S. NOT SHOWN (MUELLER 528705 OR McDONALD 6133T)
4. 1" BLUE POLYETHYLENE TUBING (SDR-9)
5. 1" BALL VALVE WITH LOCK WINGS (FORD #B 11-344W OR McDONALD 1" X 3/4" X 1" - 6101W)
6. 1" TCTS COMP X MNPT (FORD C8444 OR McDONALD 4753Q)
7. METER COUPLINGS (McDONALD 3/4" 5030-005, 1" 5124-111, OR FORD 3/4" C38-23-2-5-NL, 1" C38-24-2-5-NL) IF NEEDED INSTALL BRASS 1"X3/4" REDUCER (McDONALD 747014)

McDONALD 3846 SERIES 4845A SERIES

FORD 202BS STYLE FC202 STYLE FCP-202 STYLE

CITY OF SAFETY HARBOR
Engineering Department
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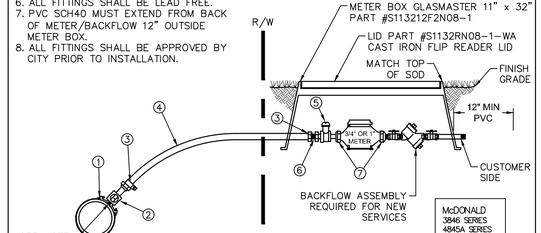
1" SINGLE SERVICE (4" W.M. OR ABOVE)

REVISIONS	
BY	DATE
BD	12/31/2019
SS	07/06/2022
SCALE: N.T.S.	
DATE: SEPTEMBER 2012	
DETAIL NUMBER: W14	

NOTES:

1. FOR A NEW SERVICE WHEN AN EXISTING METER IS NOT PRESENT, THE CITY WILL SUPPLY AND INSTALL THE FOLLOWING: 3/4" OR 1" WATER METER, DOUBLE CHECK VALVE ASSEMBLY, AND METER BOX WITH A READER LID. CUSTOMER MUST PAY FOR PARTS, IN ADVANCE, THROUGH THE CITY'S UTILITY BILLING DEPARTMENT.
2. FOR ALL CAPITAL IMPROVEMENT PROJECTS OR SUBDIVISION DEVELOPMENTS, THE CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING THE METER BOXES WITH A READER LID.
3. CONTRACTOR TO RECONNECT TO CUSTOMER'S EXISTING SERVICE LINE.
4. CUSTOMER'S SERVICE LINE MUST EXIT THROUGH THE MOUSE HOLE OF METER BOX. METER BOX SHALL NOT BE ALTERED.
5. DRILL BIT OR SHELL CUTTER SIZE MUST BE 7/8". A 3/4" SERVICE LINE WILL NOT BE ACCEPTED.
6. ALL FITTINGS SHALL BE LEAD FREE.
7. PVC SCH40 MUST EXTEND FROM BACK OF METER/BACKFLOW 12" OUTSIDE METER BOX.
8. ALL FITTINGS SHALL BE APPROVED BY CITY PRIOR TO INSTALLATION.



FITTINGS FOR INSTALLATION SUPPLIED BY THE CONTRACTOR

1. SADDLE WITH S.S. STRAP (I.P. INLET THREADS) 2" PVC SCH 40, 2" CLASS 200 OR 2" GALVANIZED PIPE
2. 1" CORPORATION STOP (I.P. THREADS BY COMPRESSION) (FORD F1100-4 OR McDONALD 4704-22)
3. TWO (2) 1" INSERT STIFFENER S.S. NOT SHOWN (MUELLER 528705 OR McDONALD 6133T)
4. 1" BLUE POLYETHYLENE TUBING (SDR-9)
5. 1" BALL VALVE WITH LOCK WINGS (FORD #B 11-344W OR McDONALD 1" X 3/4" X 1" - 6101W)
6. 1" CTS COMP X MNPT (FORD C8444 OR McDONALD 4753Q)
7. METER COUPLINGS (McDONALD 3/4" 5030-005, 1" 5124-111, OR FORD 3/4" C38-23-2-5-NL, 1" C38-24-2-5-NL) IF NEEDED INSTALL BRASS 1"X3/4" REDUCER (McDONALD 747014).

CITY OF SAFETY HARBOR
Engineering Department
750 Main Street, Safety Harbor, FL 34695
Phone (727) 724-1555

SERVICE - 2"x1" TAP

REVISIONS	
BY	DATE
BD	12/31/2019
SS	07/06/2022
SCALE: N.T.S.	
DATE: SEPTEMBER 2012	
DETAIL NUMBER: W15	

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750 Main Street
Safety Harbor, Florida 34695
Phone (727) 724-1555

NO.	DATE	REVISION	BY

SEMINOLE PARK AND MAPLEWAY
WATER MAIN REPLACEMENT (UT0096)

MISCELLANEOUS DETAILS (3)

JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

D1.03

BID DOCUMENTS
05/20/2025

Approved
2025-11-750-00184
Melissa Brenhan
10/2/2025

March 13, 2018 O:\ENV_ENG\2979\0009\2022\0998\Production\Drawings\DETAILS.dwg

THIS LIST IS NOT A QUANTITY LIST. CONTRACTOR IS RESPONSIBLE TO CHECK THE DETAIL CONFIGURATION AND TOTAL THE ITEMS.

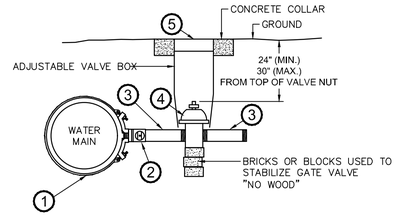
1. 2" I.P. INLET THREADS SADDLE WITH S.S. STRAP.
2. 2" BALL CORPORATION STOP MALE BY FEMALE (FORD FB-1700-7 OR MCDONALD 3149B)
3. 2" x 6" BRASS NIPPLE
4. 2" RESILIENT WEDGE GATE VALVE
5. ONE (1) ADJUSTABLE TOP VALVE BOX – TYLER / UNION 6850 OR EQUIVALENT

McDONALD 3846 SERIES 4845A SERIES

FORD 202BS STYLE FC202 STYLE FCP-202 STYLE

NOTES:
1. DRILLING BIT SHELL OR HOLE CUTTERS MUST BE 1-7/8". IF INSTALLATION CAN'T BE DONE USING DETAIL W16, THEN USE DETAIL W17. CITY INSPECTOR MUST RETRIEVE COUPON.
2. ALL FITTINGS SHALL BE LEAD FREE.

★IF WATER MAIN HAS 30" OF COVER OR LESS, USE THIS DETAIL PROVIDING NO UTILITY CONFLICTS.



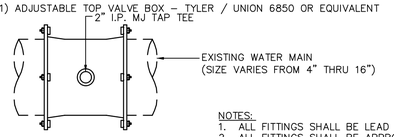
SIDE VIEW INSTALLATION

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	11/01/2017
Phone (727) 724-1555	BD	12/31/2019
	SCALE: N.T.S.	
	DATE:	MARCH 2012
2" TAP INSTALLATION (30" OR LESS OF COVER)	DETAIL NUMBER:	W16

THIS LIST IS NOT A QUANTITY LIST. CONTRACTOR IS RESPONSIBLE TO CHECK THE DETAIL CONFIGURATION AND TOTAL THE ITEMS.

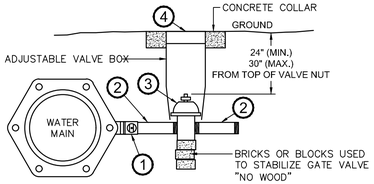
1. 2" BALL CORPORATION STOP MALE BY FEMALE (FORD FB-1700-7 OR MCDONALD 3149B)
2. 2" x 6" BRASS NIPPLE
3. 2" RESILIENT WEDGE GATE VALVE
4. ONE (1) ADJUSTABLE TOP VALVE BOX – TYLER / UNION 6850 OR EQUIVALENT

★IF WATER MAIN HAS 30" OF COVER OR LESS, USE THIS DETAIL PROVIDING NO UTILITY CONFLICTS.



FRONT VIEW INSTALLATION

NOTES:
1. ALL FITTINGS SHALL BE LEAD FREE.
2. ALL FITTINGS SHALL BE APPROVED BY CITY STAFF PRIOR TO INSTALLATION.

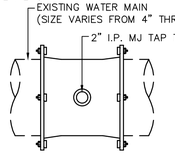


SIDE VIEW INSTALLATION

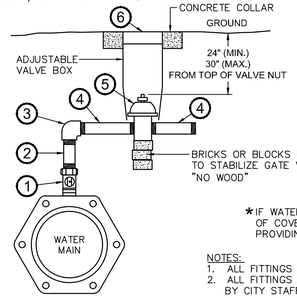
CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	12/31/2019
Phone (727) 724-1555	SS	05/26/2022
	SCALE: N.T.S.	
	DATE:	NOVEMBER 2015
2" MJ TAP TEE (30" OR LESS OF COVER)	DETAIL NUMBER:	W18

THIS LIST IS NOT A QUANTITY LIST. CONTRACTOR IS RESPONSIBLE TO CHECK THE DETAIL CONFIGURATION AND TOTAL THE ITEMS.

1. 2" BALL CORPORATION STOP MALE BY FEMALE (FORD FB-1700-7 OR MCDONALD 3149B)
2. 2" BRASS NIPPLE x (MAY VARY DEPENDING ON DEPTH OF WATER MAIN)
3. 2" BRASS 90° BEND
4. 2" x 6" BRASS NIPPLE
5. 2" RESILIENT WEDGE GATE VALVE
6. ONE (1) ADJUSTABLE TOP VALVE BOX – TYLER / UNION 6850 OR EQUIVALENT



FRONT VIEW INSTALLATION

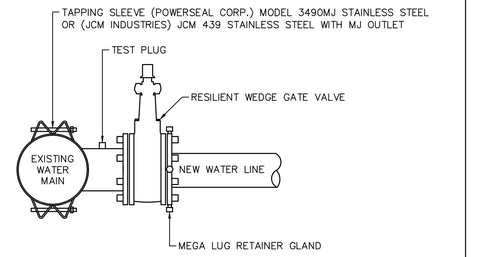


★IF WATER MAIN HAS OVER 30" OF COVER, USE THIS DETAIL PROVIDING NO UTILITY CONFLICTS.

NOTES:
1. ALL FITTINGS SHALL BE LEAD FREE.
2. ALL FITTINGS SHALL BE APPROVED BY CITY STAFF PRIOR TO INSTALLATION.

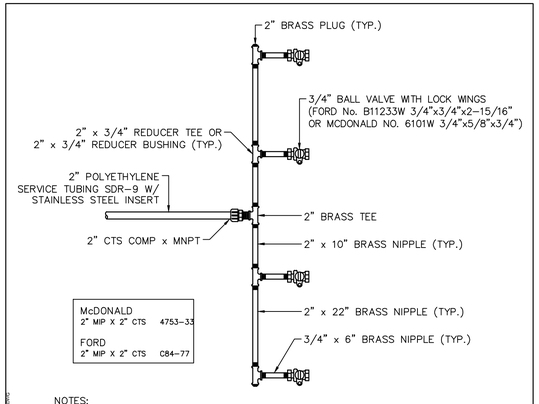
SIDE VIEW INSTALLATION

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	12/31/2019
Phone (727) 724-1555	SS	05/26/2022
	SCALE: N.T.S.	
	DATE:	APRIL 2016
2" MJ TAP TEE (GREATER THAN 30" OF COVER)	DETAIL NUMBER:	W19



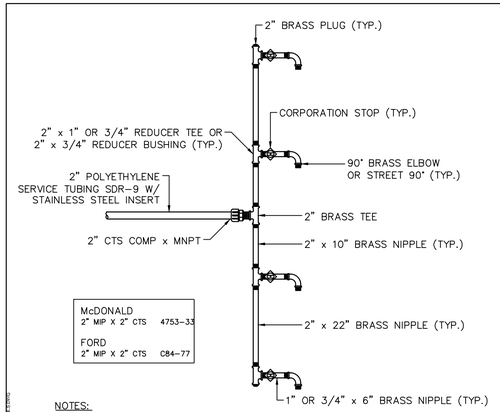
NOTES:
1. CITY INSPECTOR MUST BE PRESENT FOR TAP & COLLECTION OF THE COUPON.
2. PRESSURE TEST @ 150 P.S.I. FOR 15 MINUTES IN THE PRESENCE OF A CITY INSPECTOR.
3. NO SIZE ON SIZE TAPS WILL BE PERMITTED.

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	TAW	07/01/2015
Phone (727) 724-1555		
	SCALE: N.T.S.	
	DATE:	NOVEMBER 2003
WET TAP (6" PIPE & LARGER)	DETAIL NUMBER:	W20



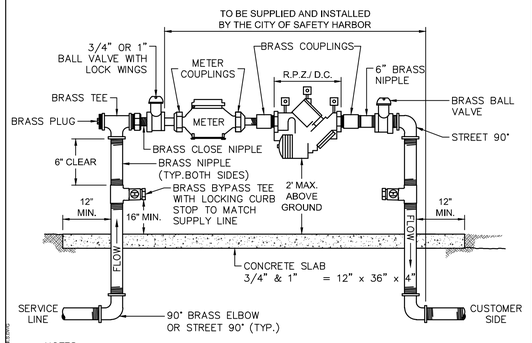
NOTES:
1. ALL PIPES & FITTINGS TO BE BRASS (LEAD FREE).
2. ALL FITTINGS SHALL BE APPROVED BY CITY STAFF PRIOR TO INSTALLATION.
3. LOCK WINGS SHALL OPEN TOWARD THE METER.
4. FOR A NEW SERVICE WHEN AN EXISTING METER IS NOT PRESENT, THE CITY WILL SUPPLY AND INSTALL THE FOLLOWING: 3/4" WATER METER, DOUBLE CHECK VALVE ASSEMBLY, AND METER BOX WITH A READER LID. CUSTOMER MUST PAY FOR PARTS, IN ADVANCE, THROUGH THE CITY'S UTILITY BILLING DEPARTMENT.
5. FOR ALL CAPITAL IMPROVEMENT PROJECTS OR SUBDIVISION DEVELOPMENTS, THE CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING THE METER BOXES WITH A READER LID.
6. ASSEMBLY MAY BE MODIFIED FOR SPECIAL CIRCUMSTANCES WITH APPROVAL FROM CITY STAFF.

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	12/31/2019
Phone (727) 724-1555	SS	05/26/2022
	SCALE: N.T.S.	
	DATE:	NOVEMBER 2003
MANIFOLD SERVICE FOR BELOW GROUND METER ASSEMBLY	DETAIL NUMBER:	W21



NOTES:
1. ALL PIPES & FITTINGS TO BE BRASS (LEAD FREE).
2. ALL FITTING SHALL BE APPROVED BY CITY STAFF PRIOR TO INSTALLATION.
3. FOR A NEW SERVICE WHEN AN EXISTING METER IS NOT PRESENT, THE CITY WILL SUPPLY AND INSTALL THE FOLLOWING: 3/4" OR 1" WATER METER, DOUBLE CHECK VALVE ASSEMBLY, AND METER BOX WITH A READER LID. CUSTOMER MUST PAY FOR METER AND BACKFLOW, IN ADVANCE, THROUGH THE CITY'S UTILITY BILLING DEPARTMENT.
4. FOR ALL CAPITAL IMPROVEMENT PROJECTS OR SUBDIVISION DEVELOPMENTS, THE CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING THE METER BOXES WITH A READER LID.
5. ASSEMBLY MAY BE MODIFIED FOR SPECIAL CIRCUMSTANCES WITH APPROVAL FROM CITY STAFF.

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	SS	07/06/2022
Phone (727) 724-1555		
	SCALE: N.T.S.	
	DATE:	OCTOBER 2019
2" MANIFOLD SERVICE	DETAIL NUMBER:	W22

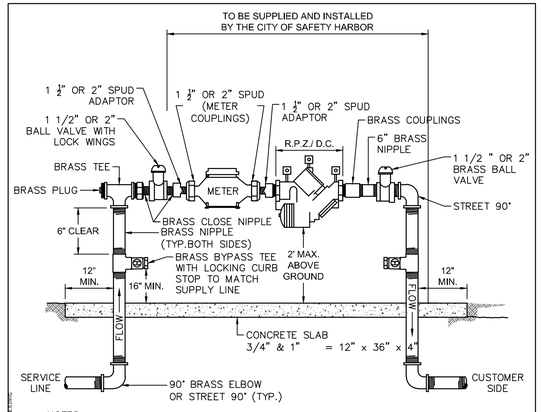


NOTES:
1. TO PREVENT DAMAGE TO DEVICE, TURN WATER ON VERY SLOWLY.
2. ADDITIONAL FITTINGS MAY BE REQUIRED THAT HAVE NOT BEEN REPRESENTED ON THE DETAIL. CONTRACTOR SHALL SUPPLY ALL NECESSARY FITTINGS TO ENSURE THAT THE SYSTEM IS COMPLETE AND FUNCTIONAL.
3. METER BYPASS SHALL NOT BE USED AS A CONNECTION POINT FOR TEMPORARY WATER USE.

SIDE VIEW

SIZES: 3/4" OR 1"

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	12/31/2019
Phone (727) 724-1555	SS	07/22/2022
	SCALE: N.T.S.	
	DATE:	SEPTEMBER 2012
REDUCED PRESSURE BACKFLOW ASSEMBLY ¾"OR 1"	DETAIL NUMBER:	W25



NOTES:
1. TO PREVENT DAMAGE TO DEVICE, TURN WATER ON VERY SLOWLY.
2. ADDITIONAL FITTINGS FOR 1 ½" OR 2" METER MAY BE REQUIRED THAT HAVE NOT BEEN REPRESENTED ON THE DETAIL. CONTRACTOR SHALL SUPPLY ALL NECESSARY FITTINGS TO ENSURE THAT THE SYSTEM IS COMPLETE AND FUNCTIONAL.
3. METER BYPASS SHALL NOT BE USED AS A CONNECTION POINT FOR TEMPORARY WATER USE.

SIDE VIEW

SIZES: 1 1/2" OR 2"

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	SS	07/22/2022
Phone (727) 724-1555		
	SCALE: N.T.S.	
	DATE:	SEPTEMBER 2012
REDUCED PRESSURE BACKFLOW ASSEMBLY 1-½" OR 2"	DETAIL NUMBER:	W25B

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Engineering Dept.
750 Main Street
Safety Harbor, Florida 34695
Phone (727) 724-1555

NO.	DATE	REVISION	BY

SEMINOLE PARK AND MAPLEWAY WATER MAIN REPLACEMENT (UT0096)

MISCELLANEOUS DETAILS (4)

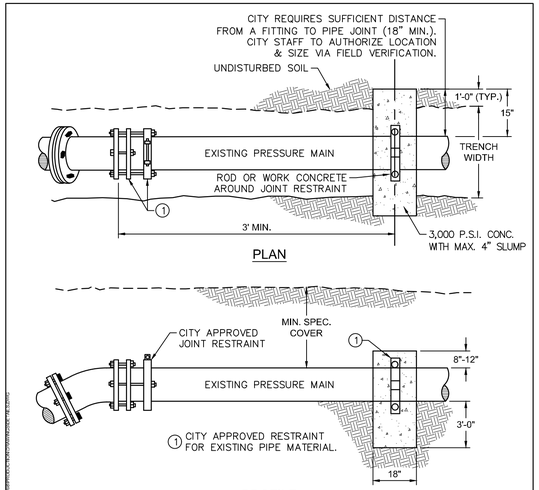
JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

D1.04

BID DOCUMENTS 05/20/2025

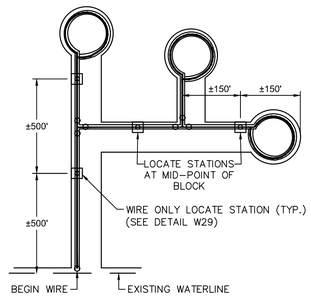
Approved 2025-11-19-00184 Mary Brennan 11/19/2025

March 13, 2018 O:\ENV_ENG\2979\0009\2022\0998\Production\Drawings\DETAILS.dwg



NOTE:
FITTING CONNECTION TO EXISTING PIPE AND DEADMAN MUST BE PART OF ONE INTEGRAL JOINT OF PIPE.

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	12/31/2019
Phone (727) 724-1555	SS	05/26/2022
DEADMAN	SCALE: N.T.S.	
	DATE: AUGUST 2006	
	DETAIL NUMBER: W27	

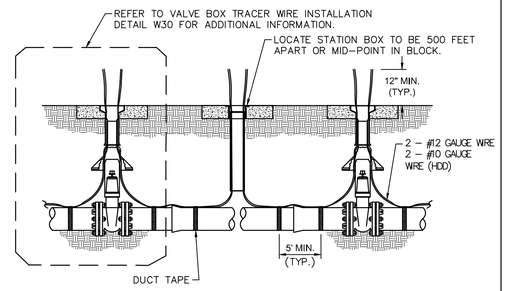


TOP VIEW

NOTES:

1. WIRE LOCATE STATIONS ARE TO BE INSTALLED EVERY 500' UNLESS BLOCK IS LESS THAN 500'. THEN LOCATE STATIONS ARE TO BE INSTALLED AT MID-POINT OF BLOCK.
2. WIRE LOCATE STATIONS ARE TO BE INSTALLED AT EVERY TURN/FITTING.
3. WIRE TO CONTINUE THROUGH TEES ON MAIN LINES AND BROUGHT UP IN LOCATE STATION AT MID-BLOCK LOCATIONS.
4. WIRE SHALL BE CONTINUOUS, UTILIZING WATERPROOF CONNECTORS ONLY AT WIRE SPOOL TERMINATION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING LOCATE WIRES PRIOR TO PROJECT COMPLETION.

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	11/01/2017
Phone (727) 724-1555	BD	12/31/2019
LOCATOR WIRE INSTALLATION (TOP VIEW)	SCALE: N.T.S.	
	DATE: NOVEMBER 2003	
	DETAIL NUMBER: W28	



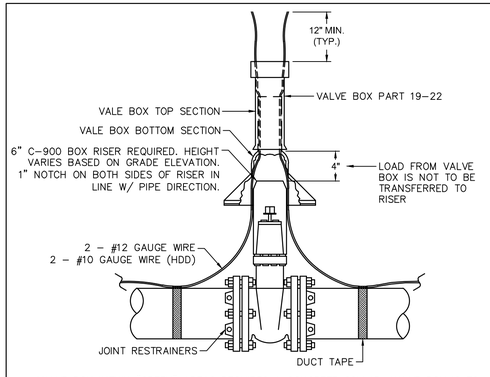
SIDE VIEW

LOCATE STATION BOX WITHIN "GREEN" AREAS REQUIRES A CONCRETE COLLAR. LOCATE STATION BOX IS TO CONSIST OF A USF #7621 HANDHOLE RING & COVER, MARKED "W" FOR WATER OR "S" FOR SEWER, ENCASED IN A CONCRETE COLLAR PER CITY OF SAFETY HARBOR STANDARDS. NO CONCRETE COLLAR IS REQUIRED FOR LOCATE STATIONS WITHIN PAVEMENT OR SIDEWALK UNLESS OTHERWISE DIRECTED BY CITY STAFF.

NOTES:

1. USE 2 #12 GAUGE COPPERHEAD HIGH STRENGTH WIRE; 2 #10 GAUGE FOR HDD. BLUE IN COLOR FOR WATER MAIN. GREEN IN COLOR FOR FORCE MAIN. WIRE TO RUN CONTINUOUSLY THRU TEST STATIONS FOR THE ENTIRE LENGTH OF THE PIPE LINE.
2. LEAVE ENOUGH "SLACK" IN WIRE SO IT CAN BE EXTENDED 12" ABOVE THE VALVE BOX AT TEST STATION.
3. ATTACH WIRE ON TOP OF PIPE LINE 5'–0" ON CENTER, USING DUCT TAPE OR APPROVED EQUAL.
4. **DO NOT** WRAP WIRES AROUND OPERATING NUT ON VALVE.
5. CONNECTIONS BETWEEN WIRES SHALL BE MADE USING WATERPROOF CONNECTORS.

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	11/01/2017
Phone (727) 724-1555	SS	07/22/2022
LOCATOR WIRE INSTALLATION (SIDE VIEW)	SCALE: N.T.S.	
	DATE: NOVEMBER 2003	
	DETAIL NUMBER: W29	

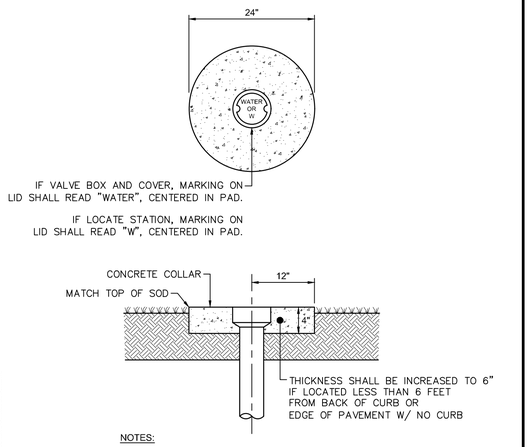


VALVE BOX WITHIN "GREEN" AREAS REQUIRES A CONCRETE COLLAR. VALVE BOX IS TO CONSIST OF A RUSSELL PIPE & FOUNDRY 2–PIECE HANDHOLE RING & COVER (PART# 19–22), MARKED "WATER" FOR WATER, ENCASED IN A CONCRETE COLLAR PER CITY OF SAFETY HARBOR STANDARDS. NO CONCRETE COLLAR IS REQUIRED FOR VALVE BOXES WITHIN PAVEMENT OR SIDEWALK UNLESS OTHERWISE STATED.

NOTES:

1. USE 2–#12 GAUGE COPPERHEAD HIGH STRENGTH WIRE; 2–#10 GAUGE FOR HDD. BLUE IN COLOR FOR WATER MAIN. WIRE TO RUN CONTINUOUSLY THRU TEST STATIONS FOR THE ENTIRE LENGTH OF THE PIPE LINE.
2. LEAVE ENOUGH "SLACK" IN WIRE SO IT CAN BE EXTENDED 12" ABOVE THE VALVE BOX AT TEST STATION.
3. ATTACH WIRE ON TOP OF PIPE LINE 5'–0" ON CENTER, USING DUCT TAPE OR APPROVED EQUAL.
4. **DO NOT** WRAP WIRES AROUND OPERATING NUT ON VALVE.
5. CONNECTIONS BETWEEN WIRES SHALL BE MADE USING WATERPROOF CONNECTORS.

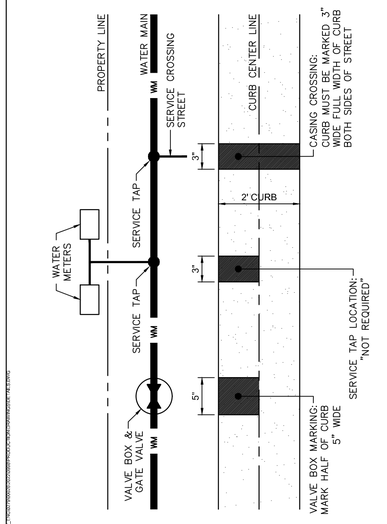
CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	11/01/2017
Phone (727) 724-1555	SS	07/07/2022
VALVE BOX TRACER WIRE INSTALLATION	SCALE: N.T.S.	
	DATE: FEBRUARY 2016	
	DETAIL NUMBER: W30	



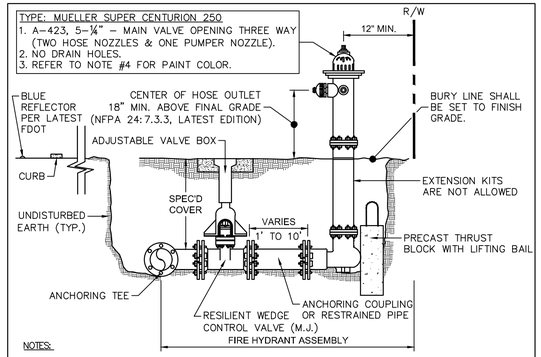
NOTES:

1. NO RISERS TO BE USED IN NEW INSTALLATIONS.
2. VALVE BOX MUST BE CENTERED OVER OPERATING NUT.
3. VALVE BOX MAY BE IMPORTED OR DOMESTIC.
4. VALVE BOX MUST BE SCREW TYPE.

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	11/01/2017
Phone (727) 724-1555	SS	05/26/2022
CONCRETE COLLAR (WATER)	SCALE: N.T.S.	
	DATE: JUNE 2013	
	DETAIL NUMBER: W31	



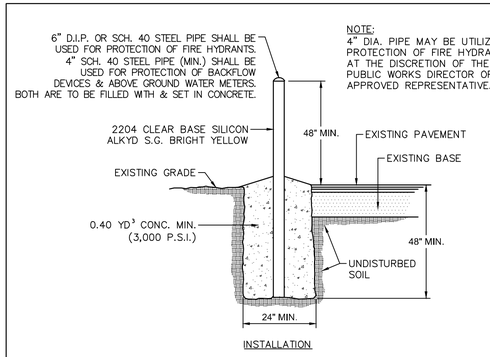
CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695		
Phone (727) 724-1555		
WATER CURB MARKINGS	SCALE: N.T.S.	
	DATE: NOVEMBER 2003	
	DETAIL NUMBER: W32	



NOTES:

1. IF VALVE(S) IS TO BE LOCATED WITHIN A PAVED SURFACE, OR WITHIN 3' FROM PLUG, IT IS TO BE ENCASED IN A CONCRETE COLLAR PER CITY OF SAFETY HARBOR STANDARDS.
2. IF FIRE HYDRANT IS TO BE LOCATED WITHIN 15 FEET OR LESS OF A VEHICULAR TRAVELED AREA, GUARD POSTS ARE TO BE INSTALLED PER CITY OF SAFETY HARBOR STANDARDS UNLESS OTHERWISE DIRECTED BY THE DIRECTOR OF PUBLIC WORKS OR APPROVED REPRESENTATIVE.
3. A SECOND VALVE MAY BE REQUIRED, AS DIRECTED BY THE DIRECTOR OF PUBLIC WORKS, THE CITY ENGINEER OR AN APPROVED REPRESENTATIVE, IF DISTANCE BETWEEN VALVE AND HYDRANT IS EXCESSIVE.
4. ALL PUBLIC FIRE HYDRANTS TO BE PAINTED WITH 2204 CLEAR BASE SILICON ALKYD S.G. BRIGHT YELLOW ENAMEL OR EQUAL (2 COATS). ALL PRIVATE FIRE HYDRANTS TO BE PAINTED RUST–OLEUM OR KRYLON OSHA SAFETY RED OR SIMILAR (2 COATS).
5. ALL FIRE HYDRANT WEEP HOLES ARE TO BE PLUGGED.
6. DISTANCE FROM FIRE HYDRANT MAIN PORT TO EDGE OF SIDEWALK SHALL BE A MINIMUM OF 2'.
7. CONCRETE COLLAR MAY VARY BY LOCATION. REFER TO DETAIL W31.
8. SHOULD EXISTING CONDITIONS NOT MEET CRITERIA, CONTRACTOR TO NOTIFY CITY ENGINEERING DEPARTMENT FOR REVIEW.
9. AT ALL HYDRANT LOCATIONS, INSTALL BLUE REFLECTIVE PAVEMENT MARKERS PER LATEST F.D.O.T. STD PLANS.
10. PER FLORIDA FIRE PREVENTION CODE 18.5.7.1, A 36–INCH CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS EXCEPT AS OTHERWISE REQUIRED OR APPROVED BY THE FIRE MARSHAL.

CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	12/31/2019
Phone (727) 724-1555	SS	07/06/2022
FIRE HYDRANT	SCALE: N.T.S.	
	DATE: NOVEMBER 2003	
	DETAIL NUMBER: F1	



CITY OF SAFETY HARBOR	REVISIONS	
Engineering Department	BY	DATE
750 Main Street, Safety Harbor, FL 34695	BD	12/31/2019
Phone (727) 724-1555	SS	05/26/2022
FIRE HYDRANT GUARDS	SCALE: N.T.S.	
	DATE: NOVEMBER 2003	
	DETAIL NUMBER: F2	

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750 Main Street
Safety Harbor, Florida 34695
Phone (727) 724-1555

NO.	DATE	BY	REVISION

SEMINOLE PARK AND MAPLEWAY WATER MAIN REPLACEMENT (UT0096)

MISCELLANEOUS DETAILS (5)

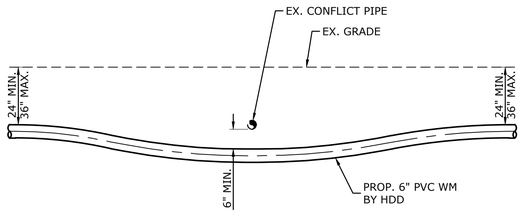
JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

D1.05

Approved
2025-11-700-00184
Michael Wennhar
10/2/2025

BID DOCUMENTS
05/20/2025

March 13, 2018 O:\ENV_ENG\0279\0000\0026\2022\0998\Production\Drawings\DETAILS.dwg



TYPE I

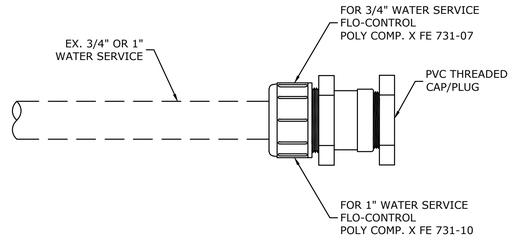
NOTES:

1. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 6 INCHES.
2. BOTTOM OF WATER MAIN SHALL BE AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SEWER. 6 INCHES ABOVE ALL OTHER UTILITIES.
3. ALL SEPARATION DISTANCES ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.

HDD UTILITY CONFLICT DETAIL

NTS

A



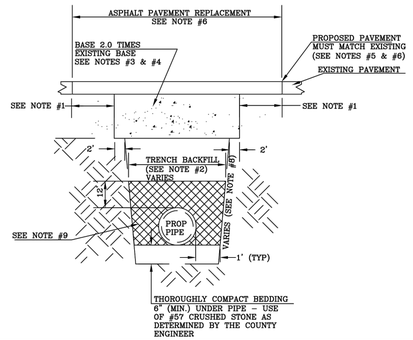
2" & SMALLER WM & SERVICES ABANDONMENT DETAIL

NTS

B

NOTES:

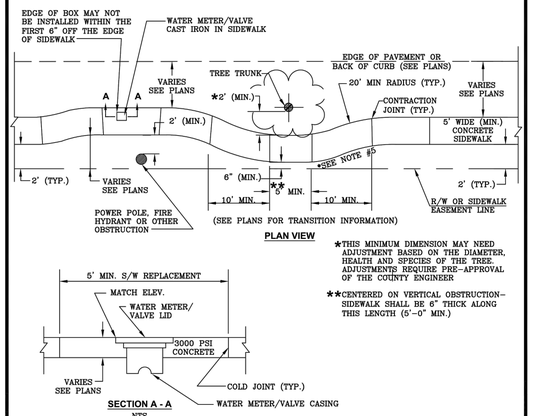
1. MILLING AND RESURFACING LIMITS: 3'-0" FOR RESIDENTIAL ROADWAYS; 25'-0" FOR ALL OTHER TYPES OF ROADWAYS. MUST INCLUDE ENTIRE LANE WIDTH.
2. BACKFILL FOR TRENCH MUST BE PLACED IN 6" COMPACTED LAYERS TO 100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99. (EXCAVATABLE FLOWABLE FILL OPTION IS SUBJECT TO COUNTY ENGINEER'S APPROVAL). TEST REPORTS ARE REQUIRED AND MUST BE SUBMITTED TO PINELLAS COUNTY.
3. BASE MATERIAL MUST BE LIME ROCK OR CRUSHED CONCRETE (MIN. LBR 100) AND MUST BE PLACED IN 6" COMPACTED LAYERS TO 98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 (MODIFIED) (TEST REPORTS ARE REQUIRED AND MUST BE SUBMITTED TO PINELLAS COUNTY) (12" MIN.).
4. AS AN ALTERNATIVE TO COMPACTED BASE AND IN WET AREAS, FULL-LIFT ASPHALTIC CONCRETE, FINE TRAFFIC LEVEL C TYPE 12.5, MUST BE PLACED IN 2" COMPACTED LAYERS WITH A MINIMUM THICKNESS EQUAL TO THE EXISTING BASE (6" MIN.).
5. ASPHALTIC CONCRETE PAVEMENT JOINTS MUST BE SAW-CUT AND ALL SURFACES TACK COATED.
6. ASPHALT SURFACE MUST BE CONSISTENT WITH EXISTING GRADE. IN ACCORDANCE WITH PINELLAS COUNTY SPECIFICATIONS, THE FOLLOWING ROADWAY CLASSIFICATION TYPE/THICKNESS ARE REQUIRED: ARTERIAL-3" MIN. TYPE SP-12.5 FINE TRAFFIC LEVEL "C"; COLLECTOR-2" MIN. TYPE SP-12.5 FINE TRAFFIC LEVEL "C"; RESIDENTIAL-1½" MIN. TYPE SP-9.5 TRAFFIC LEVEL "C" (TEST REPORTS ARE REQUIRED AND MUST BE SUBMITTED TO PINELLAS COUNTY).
7. OVERLAY OF CONSTRUCTION SCARS TO PAVEMENT AND TRENCH MUST BE REQUIRED AS DIRECTED BY THE COUNTY ENGINEER.
8. EXCAVATION MUST COMPLY WITH THE TRENCH SAFETY ACT REQUIREMENTS.
9. INSTALL DRY COMPACTABLE MATERIAL AROUND THE PIPE.
10. ALL MATERIAL, WORK AND TESTING MUST MEET PINELLAS COUNTY STANDARD SPECIFICATIONS.
11. CONTRACTOR MUST RESTORE PAVEMENT TO MATCH THE GRADES THAT EXISTED PRIOR TO CONSTRUCTION. ANY ADDITIONAL SURVEY NECESSARY TO ENSURE THAT THIS REQUIREMENT IS MET MUST BE PERFORMED AT THE CONTRACTOR'S EXPENSE.



PINELLAS COUNTY	DETAIL INDEX I.D.: 1291
PAVEMENT CUTS, EXCAVATION AND RESTORATION	DATE: FEB/2022

NOTES:

1. ADJUST SIDEWALK TO AVOID OBSTRUCTIONS, AS SHOWN, OR AS DIRECTED BY THE ENGINEER, IN ACCORDANCE WITH F.D.O.T. MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION, AND MAINTENANCE FOR STREETS AND HIGHWAYS -- LATEST EDITION ("FLORIDA GREEN BOOK").
2. CONSTRUCTION OF SIDEWALKS SHALL MEET ADA REQUIREMENTS AS SPECIFIED IN F.D.O.T. STANDARD PLANS 522-001.
3. POWER POLES SHALL BE MOVED WHEN POSSIBLE.
4. TREES SHALL BE PRUNED BY AN ISA CERTIFIED ARBORIST IN ACCORDANCE WITH ANSI-A300 GUIDELINES TO MAINTAIN VERTICAL CLEARANCE: 10 FT. FOR SIDEWALKS AND 16 FT. FOR ROADS.
5. MAXIMUM LATERAL DEFLECTION SHALL BE 5:1.
6. FOR ROOT REMOVAL, SEE PC DETAIL 1111.



PLAN VIEW

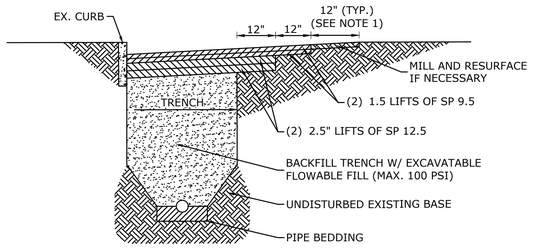
★THIS MINIMUM DIMENSION MAY NEED ADJUSTMENT BASED ON THE DIAMETER, HEALTH AND SPECIES OF THE TREE. ADJUSTMENTS REQUIRE PRE-APPROVAL OF THE COUNTY ENGINEER

★★CENTERED ON VERTICAL OBSTRUCTION-- SIDEWALK SHALL BE 8" THICK ALONG THIS LENGTH (5'-0" MIN.)

SECTION A - A

NTS

PINELLAS COUNTY	DETAIL INDEX I.D.: 1357
GUIDELINES FOR SIDEWALK ALIGNMENT	DATE: FEB/2022



NOTES:

1. STAIR STEP LIFTS TO AVOID VERTICAL JOINTS
2. ROADWAY RESTORATION WILL UTILIZE 100 PSI EXCAVATABLE FLOWABLE FILL AND ASPHALT PLACED WITHIN THE STATE RIGHT-OF-WAY SHALL BE PLACED "FULL DEPTH", (2) 2.5" LIFTS OF SP 12.5, (2) 1.5" LIFTS OF SP 9.5. TYPICAL SECTIONS WILL NEED TO BE PROVIDED WITHIN THE PLANS FOR THE PAVEMENT PLACEMENT. A STAIR STEP METHOD SHOULD BE INCORPORATED, PRIOR TO PLACING ASPHALT, TO AVOID VERTICAL JOINTS.
3. MILLING OF THE PATCH MAY BE REQUIRED BASED ON THE PATCHED SURFACE PERFORMANCE. THE MILLING SHALL BE UTILIZED FOR SURFACE LEVELING TO A THICKNESS EQUAL TO OR GREATER THAN THE EXISTING FRICTION COURSE MATERIAL.
4. THE MILLING LIMITS ARE 50 FEET OF THE PATCH ALONG THE LONGITUDINAL PATH OF THE LANE, FULL LANE WIDTH AND TO INCLUDE ANY ADJACENT BIKE LANES, SHARED PATH, OR URBAN SHOULDER SECTIONS.
5. THE FLOWABLE FILL AND ASPHALT WILL NEED TO COME FROM A FDOT APPROVED PLANT.

TRENCH CUTS AND RESTORATIONS ACROSS FDOT ROADWAYS

NTS

C

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City of Safety Harbor, Florida
Home of the Mineral Springs
Engineering Dept.
750 Main Street
Safety Harbor, Florida 34695
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NO.	DATE	REVISION	BY

SEMINOLE PARK AND MAPLEWAY WATER MAIN REPLACEMENT (UT0096)

MISCELLANEOUS DETAILS (6)

JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

D1.06

BID DOCUMENTS
05/20/2025

Approved
2025-11-700-00184
Mark Leonhardt
10/2/2025

May 9, 2025 W:\ENV_ENG\0279\00026\2022\0998\Production\Drawings\TCP-100.dwg

WORK ZONE TRAFFIC CONTROL GENERAL NOTES:

1. ALL WORK ZONE TRAFFIC CONTROL (WZTC) DEVICES SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF CONSTRUCTION AND SHALL BE PROPERLY MAINTAINED AND OPERATED THROUGHOUT THE PERIOD OF EACH PHASE / STAGE CONSTRUCTION. ALL TEMPORARY SIGNS, PAVEMENT MARKINGS, WARNING DEVICES, WARNING LIGHTS, ETC. NECESSARY FOR THE WZTC SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION) AND THE FDOT DESIGN STANDARDS (FY 2022-23).
2. THE EXISTING POSTED SPEED LIMITS WILL BE MAINTAINED UNLESS OTHERWISE NOTED IN THE PLANS.
3. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING PEDESTRIAN OR BICYCLIST TRAFFIC, WHEN AN EXISTING PATH IS LOCATED WITHIN THE WZTC PROJECT LIMITS AT ALL TIMES DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT A SAFE AND UNOBSTRUCTED ACCESSIBLE PATH EXISTS FOR PEDESTRIANS OR BICYCLISTS. REFER TO STANDARD INDEX 102-660, AND MUTCD LATEST EDITION. ALL TEMPORARY PEDESTRIANS WAYS OR CURB RAMPS TO BE AMERICAN WITH DISABILITIES (ADA) COMPLIANT.
4. A DISCUSSION OF ANY PROPOSED LANE CLOSURE OPERATIONS WILL BE MADE PART OF ALL PRECONSTRUCTION CONFERENCES. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A WRITTEN PLAN WHICH DETAILS EACH ACTIVITY INVOLVED IN THE LANE CLOSURE. THE PLAN SHALL INCLUDE BACK-UP PLANS FOR ACTIVITIES CRITICAL TO REOPENING LANES TO TRAFFIC. THE BACK-UP PLAN SHALL INCLUDE PROVISIONS FOR ALL SUBCONTRACTOR OPERATIONS AS WELL AS THE PRIME CONTRACTOR'S. NO LANE CLOSURE WILL BE ALLOWED WITHOUT A PLAN TO ACHIEVE REOPENING ACCORDING TO THE CONTRACT. AN EXAMPLE OF AN ACCEPTABLE BACK-UP PLAN WOULD INCLUDE THE CONTRACTOR CHOOSING TO HAVE TEMPORARY TAPE ON HAND. TIMELY REOPENING OF ANY CLOSED LANE(S) IS CRITICAL FOR THIS PROJECT AND THE CONTRACTOR SHALL TAKE ALL ACTIONS POSSIBLE TO ENSURE REOPENING TAKES PLACE AS STIPULATED.
5. THE CONTRACTOR SHALL PLACE A PORTABLE CHANGEABLE MESSAGE SIGN FOR ALL LANE CLOSURES. REFER TO STANDARD INDEX 102-600.
6. EXISTING SIGNS SHALL BE MAINTAINED AT ALL TIMES. DURABLE OPAQUE SHEET OVERLAY PANELS SHALL BE USED TO COVER INAPPROPRIATE INFORMATION ON NEW OR EXISTING SIGNS WHERE REQUIRED BY THE ENGINEER. THE PANEL SHALL BE PLACED IN A MANNER THAT DOES NOT DAMAGE THE EXISTING SIGN. NO FABRIC OR PLASTIC FILM WILL BE ALLOWED.
7. ALL REFLECTIVE PAVEMENT MARKINGS, EXISTING AND TEMPORARY, SHALL BE MAINTAINED DURING CONSTRUCTION UNLESS NOTED OTHERWISE.
8. FOR DROP-OFFS IN WORK ZONES THE CONTRACTOR IS DIRECTED TO THE REQUIREMENTS OF STANDARD INDEX NO. 102-600. THE CONTRACTOR SHALL ONLY EXCAVATE OR MILL AN AREA THAT CAN BE BROUGHT BACK WITHIN THE DROP-OFF CRITERIA OF INDEX NO. 102-600 WITHIN THE SAME DAY / NIGHT OPERATION. FOR CLEAR ZONE WIDTHS FOR WORK ZONES, SEE FDOT INDEX NO. 102-600. ALL TRENCHES SHALL BE BACKFILLED COMPLETELY TO PROVIDE SAFE CROSSING BY THE END OF EACH WORK DAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE.
9. WHENEVER CONSTRUCTION EQUIPMENT IS BEING DRIVEN OR TRANSPORTED ON THE OPEN TRAVEL LANES, THE CONTRACTOR SHALL UTILIZE INDEX NO. 102-607.
10. THE CONTRACTOR SHALL MAINTAIN PROPER DRAINAGE FOR ALL PHASES OF CONSTRUCTION. ADDITIONAL DETAILS AND STRUCTURES NOT SHOWN IN THE WZTC PLANS MAY BE NECESSARY DEPENDING UPON CONTRACTOR METHODS OF CONSTRUCTION.
11. ALL SIGNS, WITH THE EXCEPTION OF FLAGGING, SHALL BE POST MOUNTED.
12. CONTRACTOR SHALL PROVIDE AT LEAST ONE WEEK OF NOTICE THROUGH THE USE OF MESSAGE BOARDS FOR THE WORK SCHEDULED.
13. FOR ALL STREETS WITH POSTED SPEED LIMITS OF 45 MPH OR LESS, CONTRACTOR SHALL UTILIZE ONLY LOW PROFILE BARRIER WHEN USE OF BARRIER IS REQUIRED FOR DROP-OFFS.
14. MAINTAIN/REROUTE PEDESTRIAN TRAFFIC PER FDOT INDEX 102-660 AND MUTCD, LATEST EDITION. ALL TEMPORARY PEDESTRIAN WAYS OR CURB RAMPS SHOULD BE AMERICANS WITH DISABILITIES (ADA) COMPLIANT.
15. ALL CONSTRUCTION ACTIVITIES, INCLUDING EQUIPMENT AND/OR MATERIAL STAGING MUST BE DONE IN THE WORK ZONE. PROTECT WORK ZONE FROM VEHICULAR AND PEDESTRIAN INTRUSION. UTILIZE TYPE III BARRICADES AND TEMPORARY BARRIER TO PREVENT VEHICULAR INTRUSION AND LONGITUDINAL CHANNELIZATION DEVICES TO PREVENT PEDESTRIAN INTRUSION. ALL APPLICABLE DEVICES SHOULD BE LISTED ON THE FDOT APL.
16. FOR ANY WORK ACTIVITIES WITHIN THE EXISTING ROADWAY RIGHT-OF-WAY BUT NO CLOSER THAN 2' TO THE EDGE OF TRAVEL, FDOT INDICES 102-601 AND 102-602 SHALL APPLY.
17. ROAD CLOSURES SHALL NOT OCCUR OVER CONSECUTIVE INTERSECTIONS.
18. PERMITTED WORK SCHEDULE SHALL BE LIMITED TO OCCUR BETWEEN MONDAY TO FRIDAY AND FROM 8:00 AM TO 5:00 PM
19. PLACE AN ADVANCE WARNING, INCLUDING AT LEAST ONE CHANGEABLE MESSAGE SIGN (CMS), A MINIMUM OF TWO WEEKS BEFORE THE ROAD CLOSURE. THE CMS MUST DISPLAY THE CLOSURE TIMEFRAME. COORDINATE WITH THE CONSTRUCTION MANAGER TO FINALIZE THE MESSAGE CONTENT.

WORK ZONE A - LONG-TERM SHOULDER CLOSURE

1. MAINTAIN EXISTING TRAVEL LANES UNLESS OTHERWISE SHOWN. MAINTAIN POSTED SPEED LIMITS FOR TRAVEL LANES.
2. INSTALL SHOULDER CLOSURE PER FDOT STANDARD PLANS INDEX 102-602.
3. DIRECTLY ADJACENT TEMPORARY WORK ZONES MAY BE UTILIZED DURING ACTIVE WORK TIMES.
4. CONSTRUCT UTILITY IMPROVEMENTS.
5. RESTORE DISTURBED AREA.
6. REMOVE TRAFFIC CONTROL DEVICES.
7. UTILIZE FDOT STANDARD PLANS INDEX 102-607 DURING PAVEMENT MILLING AND RESURFACING OPERATIONS.

WORK ZONE B - LONG-TERM ROAD CLOSURE

1. REFER TO PLAN WORKZONE CALLOUT FOR APPLICABLE CONDITION (A OR B) OR DETOUR. CONDITIONS ARE ONLY APPLICABLE FOR LOCAL ROADS AND DO NOT REQUIRE DETOURS. DETOURS ARE ONLY APPLICABLE FOR NON-LOCAL ROADS (MAIN ST). ROAD CLOSURE SHALL BE PER MUTCD PART 6 FIGURE 6H-20, DETOUR FOR A CLOSED STREET.
2. INSTALL ROAD CLOSURE.
3. DIRECTLY ADJACENT TEMPORARY WORK ZONES MAY BE UTILIZED DURING ACTIVE WORK TIMES.
4. CONSTRUCT UTILITY IMPROVEMENTS.
5. RESTORE DISTURBED TRAVEL LANES.
6. REMOVE TRAFFIC CONTROL DEVICES TO ALLOW TRAFFIC TO UTILIZE RESTORED TRAVEL LANES.
7. UTILIZE FDOT STANDARD PLANS INDEX 102-607 DURING PAVEMENT MILLING AND RESURFACING OPERATIONS.

WORK ZONE C - LONG-TERM INTERSECTION CLOSURE

1. REFER TO PLAN WORKZONE CALLOUT FOR APPLICABLE CONDITION (C) OR DETOUR. CONDITIONS ARE ONLY APPLICABLE FOR LOCAL ROADS AND DO NOT REQUIRE DETOURS. DETOURS ARE ONLY APPLICABLE FOR NON-LOCAL ROADS (MAIN ST). ROAD CLOSURE SHALL BE PER MUTCD PART 6 FIGURE 6H-20, DETOUR FOR A CLOSED STREET.
2. INSTALL ROAD CLOSURE.
3. DIRECTLY ADJACENT TEMPORARY WORK ZONES MAY BE UTILIZED DURING ACTIVE WORK TIMES.
4. CONSTRUCT UTILITY IMPROVEMENTS.
5. RESTORE DISTURBED TRAVEL LANES.
6. REMOVE TRAFFIC CONTROL DEVICES TO ALLOW TRAFFIC TO UTILIZE RESTORED TRAVEL LANES.
7. UTILIZE FDOT STANDARD PLANS INDEX 102-607 DURING PAVEMENT MILLING AND RESURFACING OPERATIONS.

WORK ZONE D - TEMPORARY SINGLE LANE CLOSURE

1. CLOSE SINGLE LANE WITH FLAGGER OPERATION AS PER FDOT STANDARD PLANS INDEX 102-603.
2. DIRECTLY ADJACENT TEMPORARY WORK ZONES MAY BE UTILIZED DURING ACTIVE WORK TIMES.
3. CONSTRUCT UTILITY IMPROVEMENTS.
4. RESTORE DISTURBED TRAVEL LANES. IF NOT SUFFICIENT TO ALLOW TRAFFIC TO UTILIZE THE LANES AT THE END OF THE WORK PERIOD, STEEL PLATES MAY BE UTILIZED TO REOPEN TRAVEL LANES. COMPLETE RESTORATION.
5. REMOVE TRAFFIC CONTROL DEVICES TO ALLOW TRAFFIC TO UTILIZE RESTORED TRAVEL LANES.
6. UTILIZE FDOT STANDARD PLANS INDEX 102-607 DURING PAVEMENT MILLING AND RESURFACING OPERATIONS.

WORK ZONE E - TEMPORARY ROAD CLOSURE

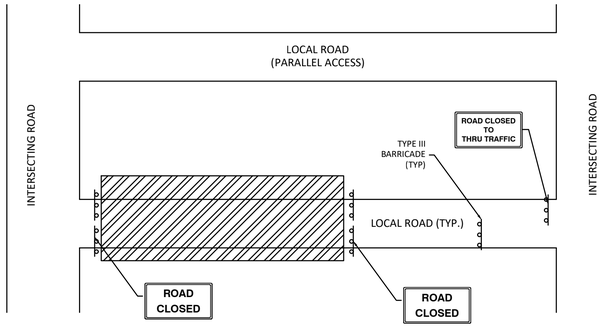
1. REFER TO PLAN WORKZONE CALLOUT FOR APPLICABLE CONDITION (A OR B) OR DETOUR. CONDITIONS ARE ONLY APPLICABLE FOR LOCAL ROADS AND DO NOT REQUIRE DETOURS. DETOURS ARE ONLY APPLICABLE FOR NON-LOCAL ROADS (MAIN ST). ROAD CLOSURE SHALL BE PER MUTCD PART 6 FIGURE 6H-20, DETOUR FOR A CLOSED STREET.
2. INSTALL ROAD CLOSURE.
3. CONSTRUCT UTILITY IMPROVEMENTS.
4. RESTORE DISTURBED TRAVEL LANES. IF NOT SUFFICIENT TO ALLOW TRAFFIC TO UTILIZE THE LANES AT THE END OF THE WORK PERIOD, STEEL PLATES MAY BE UTILIZED TO REOPEN TRAVEL LANES. COMPLETE RESTORATION.
5. REMOVE TRAFFIC CONTROL DEVICES TO ALLOW TRAFFIC TO UTILIZE RESTORED TRAVEL LANES.
6. UTILIZE FDOT STANDARD PLANS INDEX 102-607 DURING PAVEMENT MILLING AND RESURFACING OPERATIONS.

WORK ZONE F - TEMPORARY INTERSECTION CLOSURE

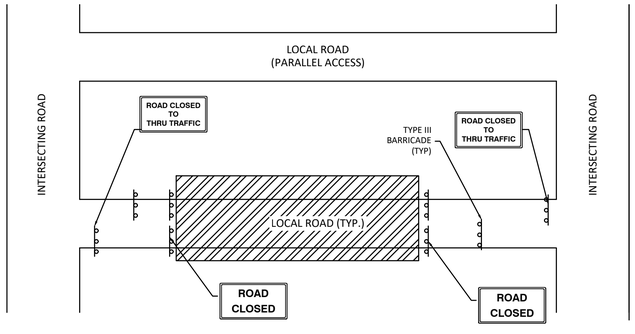
1. REFER TO PLAN WORKZONE CALLOUT FOR APPLICABLE CONDITION (C) OR DETOUR. CONDITIONS ARE ONLY APPLICABLE FOR LOCAL ROADS AND DO NOT REQUIRE DETOURS. DETOURS ARE ONLY APPLICABLE FOR NON-LOCAL ROADS (MAIN ST). ROAD CLOSURE SHALL BE PER MUTCD PART 6 FIGURE 6H-20, DETOUR FOR A CLOSED STREET.
2. INSTALL ROAD CLOSURE.
3. DIRECTLY ADJACENT TEMPORARY WORK ZONES MAY BE UTILIZED.
4. CONSTRUCT UTILITY IMPROVEMENTS.
5. RESTORE DISTURBED TRAVEL LANES. IF NOT SUFFICIENT TO ALLOW TRAFFIC TO UTILIZE THE LANES AT THE END OF THE WORK PERIOD, STEEL PLATES MAY BE UTILIZED TO REOPEN TRAVEL LANES. COMPLETE RESTORATION.
6. REMOVE TRAFFIC CONTROL DEVICES TO ALLOW TRAFFIC TO UTILIZE RESTORED TRAVEL LANES.
7. 7. UTILIZE FDOT STANDARD PLANS INDEX 102-607 DURING PAVEMENT MILLING AND RESURFACING OPERATIONS.

WORK ZONE G - TEMPORARY SHOULDER CLOSURE

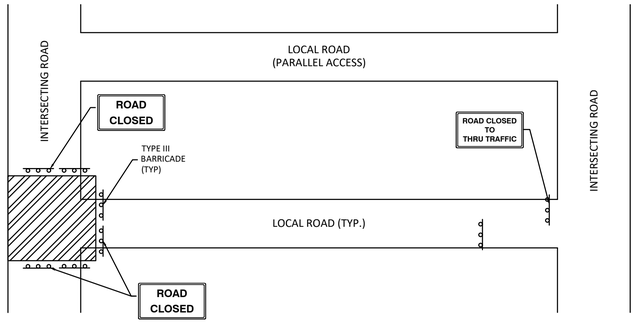
1. MAINTAIN EXISTING TRAVEL LANES UNLESS OTHERWISE SHOWN. MAINTAIN POSTED SPEED LIMITS FOR TRAVEL LANES.
2. INSTALL SHOULDER CLOSURE PER FDOT STANDARD PLANS INDEX 102-602. CLOSE SINGLE TRAVEL LANE AS NEEDED PER FDOT INDEX 102-613.
3. DIRECTLY ADJACENT TEMPORARY WORK ZONES MAY BE UTILIZED DURING ACTIVE WORK TIMES.
4. CONSTRUCT UTILITY IMPROVEMENTS.
5. RESTORE DISTURBED AREA.
6. REMOVE TRAFFIC CONTROL DEVICES.
7. UTILIZE FDOT STANDARD PLANS INDEX 102-607 DURING PAVEMENT MILLING AND RESURFACING OPERATIONS.



CONDITION A - WHEN WORK ZONE IS NEAREST THE INTERSECTING ROAD



CONDITION B - WHEN WORK ZONE IS FURTHER THAN THE NEAREST/FIRST ACCESS DRIVE FROM THE INTERSECTING ROAD



CONDITION C - WHEN WORK ZONE IS IN INTERSECTION OF LOCAL ROAD AND INTERSECTING ROAD

LEGEND

WORK ZONE TYPE III BARRICADE

LOCAL ROAD CLOSURE DETAIL
(N.T.S.)

City of Safety Harbor, Florida
Home of the Mineral Springs
Engineering Dept.
750 Main Street
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NO.	DATE	REVISION	BY

SEMINOLE PARK AND MAPLEWAY WATER MAIN REPLACEMENT (UT0096)

TRAFFIC CONTROL PLAN 1

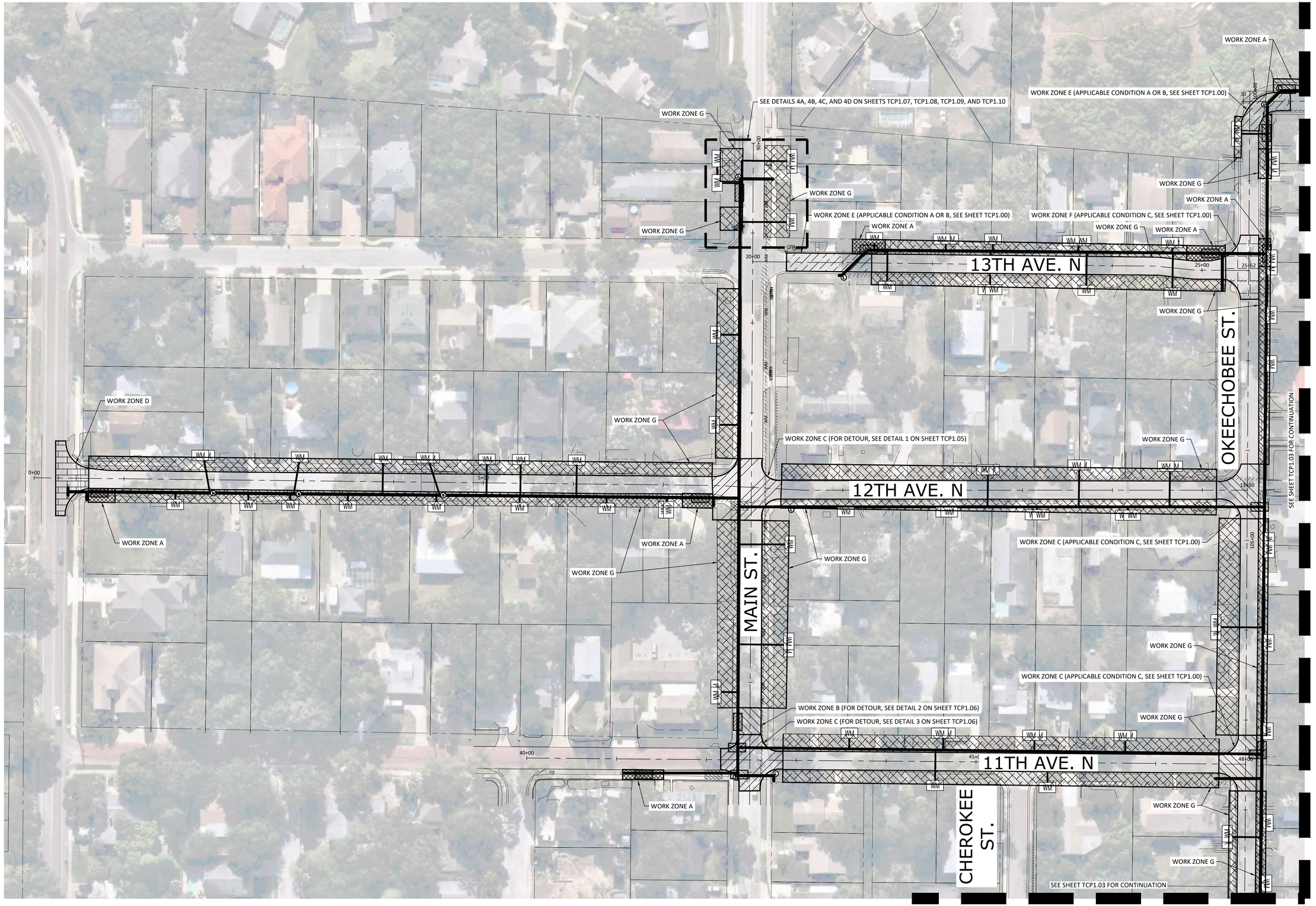
JOB NO: 0279-00026-2022-0998

TCP1.01

BID DOCUMENTS
05/15/2025

Digitally signed by Michael Mehlenhaus
2025.05.15 09:00:34 -04'00'

May 9, 2025 W:\ENV_ENG\0279\00026\2022\0998\Production\Drawings\TCP-100.dwg



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SCALE: FEET

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NO.	DATE	REVISION	BY

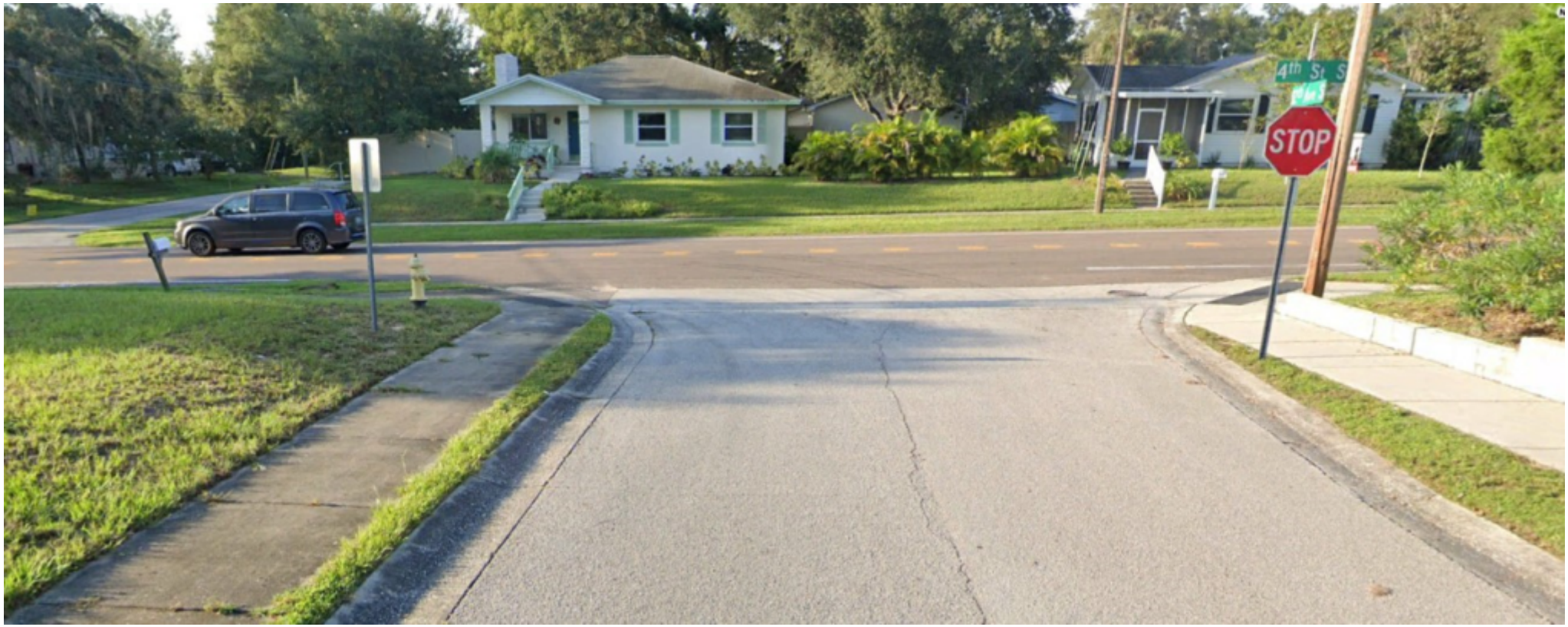
SEMINOLE PARK AND MAPLEWAY WATER MAIN REPLACEMENT (UT0096)

TRAFFIC CONTROL PLAN 2

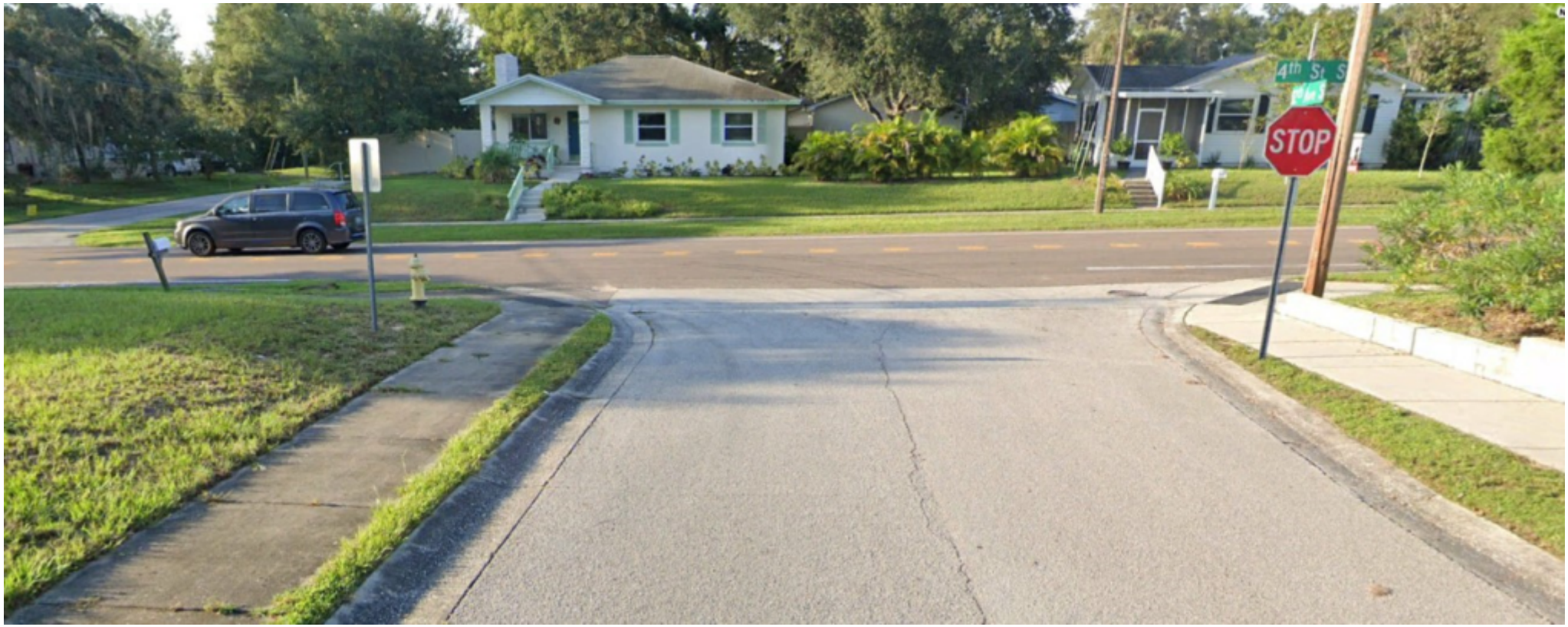
JOB NO: 0279-00026-2022-0998
DATE: JUNE 2022

TCP1.02

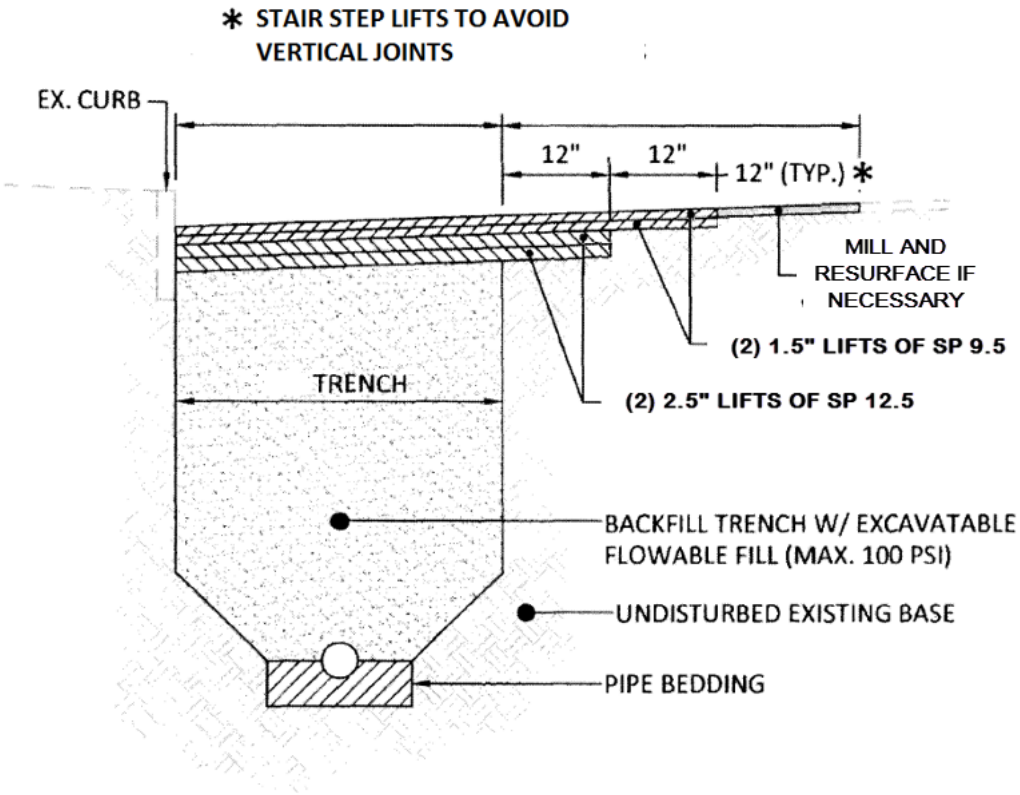
BID DOCUMENTS
05/15/2025



Approved
2025-H-799-00184
Michael Lenhart
6/5/2025



Approved
2025-H-799-00184
Michael Lenhart
6/5/2025



TRENCH SECTION

N.T.S.

ROADWAY RESTORATION WILL UTILIZE 100 PSI EXCAVATIBLE FLOWABLE FILL AND asphalt placed within the State Right of Way shall be placed "Full Depth", (2) 2.5" lifts of SP 12.5, (2) 1.5" lifts of SP 9.5. Typical sections will need to be provided within the plans for the pavement placement. A stair step method should be incorporated, prior to placing asphalt, in order to avoid vertical joints.

Milling of the patch may be required based on the patched surface performance. The milling shall be utilized for surface leveling to a thickness equal to or greater than the existing friction course material.

The milling limits are 50ft of the patch along the longitudinal path of the lane, full lane width and to include any adjacent bike lanes, shared path, or urban shoulder sections.

The flowable fill and asphalt will need to come from a FDOT approved plant.

Approved
2025-H-799-00184
Michael Lenhart
6/5/2025

REPORT

Seminole Park and Mapleway Water Main Replacement Project

Driggers Engineering Services, Inc.
Geotechnical Engineering Services Report

REPORT OF THE
GEOTECHNICAL INVESTIGATION
WATER MAIN REPLACEMENT

SEMINOLE PARK SUBDIVISION AND MAPLEWAY
SAFETY HARBOR, FLORIDA

Driggers Engineering Services Incorporated

DRIGGERS ENGINEERING SERVICES INCORPORATED
Geotechnical Engineering & Construction Materials Testing

September 20, 2022

Ardurra Group, Inc.
4921 Memorial Highway, Suite 300
Tampa, FL 33634

Attn: Cristina E. Lacorazza

RE: Report of the Geotechnical Investigation
Water Main Replacement
Seminole Park Subdivision and Mapleway
Safety Harbor, Florida
Our File: DES 228958

Dear Cristina:

DRIGGERS ENGINEERING SERVICES, INC. has completed the requested subsurface investigation program for the subject project. Presented herein are the results of our field and laboratory tests, together with a discussion of our findings and recommendations.

SUBSURFACE INVESTIGATION PROGRAM

Plate I of the report illustrations identifies the respective positioning of a series of test borings that have been completed to investigate subsurface conditions. The program consisted of seventeen (17) classification or hand auger borings. The borings were advanced to a depth of 10 feet below existing grade. The hand auger boring method was utilized to collect soil samples for soil classification in conjunction with the static hand cone penetrometer test that was used in advance of the hand auger to provide a measure of the relative density or consistency of the soils.

Logs of all the test borings are presented in the report attachments reflecting visual together with estimated Unified Soil Classification. Soils were logged in the field by our geotechnician, with representative soil samples sealed in glass jars and returned to the laboratory for further examination by the project engineer and development of boring logs. A log of each hand auger boring is attached.

LABORATORY INVESTIGATION

A limited laboratory testing program was undertaken to aid in characterizing the engineering properties of the subsurface soils. Our laboratory tests included grainsize analyses and Atterberg Limits determination testing. The results of our laboratory tests are included in the report attachments.

GENERALIZED SUBSURFACE CONDITIONS

SOIL PAVEMENT SECTION CONDITIONS – The borings have identified fine sands with variable silt and clay fines from existing grade to the termination depth of the borings at 10 feet below grade. The sandy soils within these are classified as SP, SP-SM, SM and SM-SC by the Unified Classification System.

GROUNDWATER CONDITIONS – Groundwater was recorded in late-June to early-July of 2022 at 3.5 to 9.0 feet below grade at the current investigation test locations. Please note that a couple borings (HA-14 and HA-15) did not encounter the groundwater table above a depth of 10 feet below existing grade. The variations in the groundwater depths are most likely attributed to surface elevation changes along the proposed alignment. Considering the minimal amounts of rain accumulation that occurred during this time at the beginning of the wet season, we would expect the groundwater levels to rise at least 2 to 3 feet during the peak wet season and/or during a tropical storm type event.

EVALUATION AND GEOTECHNICAL RECOMMENDATIONS

PROJECT DESCRIPTION – The project consists of the installation of a nominal 2, 4 and 6 inch diameter PVC water line using open-cut direct burial along with utilizing directional drilling methods for some sections of the project. It is our understanding that the pipeline embedment for the directional drill is planned at about 3 - 4 feet below existing grade and that open-cut installation sections of the water main will be embedded at about 3 - 4 feet below existing grade.

HORIZONTAL DIRECTIONAL DRILLING SEGMENTS – As previously mentioned, it has been planned that directional drill installation methods will be utilized for installation of the 2, 4 and 6 inch water line at a depth of about 3 - 4 feet below existing grade and 5 feet under trees. The borings indicated that the soils at this depth range are fine sands with variable silt and clay content.

During any horizontal directional drilling operation and considering the close nature of the pipe embedment to the ground surface, the contractor should exercise appropriate ways and means to minimize any potential for an escape of drilling fluids to the surface (fracking) or the development of excessive fluid pressures that could result in damage or displacement of structures and utilities and yet maintain a stable borehole to prevent collapse of overburden soils.

DIRECT EMBEDMENT PORTION – It is our understanding that certain sections of the pipeline may be direct embedded with a minimum of 3 feet of cover. Thus, one would anticipate that the pipe embedment would typically be in the range of perhaps 3.0 to 4.0 feet below existing grade.

The soils typically encountered within and just below this anticipated depth of embedment would predominately consist of fine sands with variable silt and clay content, which should be suitable for pipe support as well as provide suitable material for backfill placement. Careful geotechnical inspection is recommended during construction to help identify any unsuitable soils or materials including highly organic soils or higher plasticity clay soils which may include soils considered A-2-6 with a plasticity index (PI) of greater than 15, A-4, A-5, A-6 or A-7 or other objectionable material that may warrant removal and replacement. Where evidenced and deemed unsuitable, these unsuitable materials should be removed and replaced with suitable bedding material as directed by the project engineer. Furthermore, such zones with excessive silt, clay and organic content may not meet project specification requirements with respect to their usage as suitable backfill. Where directed, these soils should be removed and disposed as directed by project specification requirements. It may be prudent to conduct offset borings at the appropriate time to aid in better identifying potential deleterious soils that may warrant removal and replacement.

All backfill soils underneath the roadway should be compacted to at least 98% of the Modified Proctor maximum dry density per ASTM D-1557. All other areas should be compacted to at least 95% of the Modified Proctor maximum dry density. It is also beneficial to adjust moisture contents to within ±2% of the optimum moisture as established by the Modified Proctor moisture-density relationship as set forth in ASTM D-1557 or AASHTO T-180.

EXCAVATION STABILITY AND MANAGEMENT OF GROUNDWATER – It is anticipated that the direct embedded pipeline section of the project will be constructed in an open excavation or perhaps utilizing trench box construction. With all the excavation activities and considering the existing shallow groundwater level at various locations along the alignment, it is

anticipated that control and management of groundwater will be important to maintain excavation stability, allow appropriate placement of piping to line and grade, and to permit proper backfill placement and compaction. It is recommended that groundwater levels be maintained no less than one (1) foot below the maximum depth of excavation or deeper as needed, dependent upon the ways and means of construction. It is envisioned that the de-watering where needed will be accomplished utilizing an appropriately-designed well-point system. Open excavation areas should be appropriately sloped in accordance with applicable OSHA Trench Safety requirements. The excavation contractor should certainly exercise due care with respect to identification and protection of any existing structures or utilities that are within the area of influence of his work activities.

LIMITATIONS

The geotechnical investigation herein was performed to obtain subsurface information to help facilitate the design of the planned utilities. Our geotechnical investigation may not have included gathering of all information that may be desired by the respective contractor in the preparation of his bid proposal or in the development of his ways and means of construction. Each contractor is encouraged to conduct such additional investigative effort or testing that he may deem appropriate to prepare his bid proposal and construction plan.

DRIGGERS ENGINEERING SERVICES appreciates the opportunity to serve you and we trust that if you have any questions concerning our report, you will not hesitate to contact this office at your convenience.

Respectfully Submitted,
DRIGGERS ENGINEERING SERVICES, INC.

Jeffry A. Driggers, P.E.
Vice President
FL Registration No. 70598

JAD\nja
JAD-REP\228958
Copies submitted: (1) Email

APPENDIX

PLATE I - BORING LOCATION PLAN

HAND AUGER BORING / HAND CONE SOUNDING LOGS

SUMMARY OF LABORATORY TEST RESULTS

GRAINSIZE ANALYSES

METHOD OF TESTING

PLATE I - BORING LOCATION PLAN

DATE: 7/7/22

CAD / ENGINEER	SHEET TITLE	PROJECT NO.
R.D.B. / J.A.D.	BORING LOCATION PLAN	DES 228958
PREPARED BY	PROJECT NAME	SHEET NO.
DRIGGERS ENGINEERING SERVICES, INCORPORATED	WATER MAIN REPLACEMENT SEMINOLE PARK SUBDIVISION & MAPLEWAY SAFETY HARBOR, FLORIDA	PLATE I-A

DATE: 7/7/22

CAD / ENGINEER	SHEET TITLE	PROJECT NO.
R.D.B. / J.A.D.	BORING LOCATION PLAN	DES 228958
PREPARED BY	PROJECT NAME	SHEET NO.
DRIGGERS ENGINEERING SERVICES, INCORPORATED	WATER MAIN REPLACEMENT SEMINOLE PARK SUBDIVISION & MAPLEWAY SAFETY HARBOR, FLORIDA	PLATE I-B

LEGEND:

▲ HAND AUGER BORING/
HAND CONE SOUNDING LOCATION

0 50 100 200
SCALE IN FEET

DATE: 7/7/22

SHEET TITLE	PROJECT NO.
BORING LOCATION PLAN	DES 228958
PROJECT NAME	SHEET NO.
WATER MAIN REPLACEMENT SEMINOLE PARK SUBDIVISION & MAPLEWAY SAFETY HARBOR, FLORIDA	PLATE I–C
CAD / ENGINEER	
R.D.B. / J.A.D.	
PREPARED BY	

DRIGGERS ENGINEERING SERVICES, INCORPORATED

DATE: 7/7/22

CAD / ENGINEER	SHEET TITLE	PROJECT NO.
R.D.B. / J.A.D.	BORING LOCATION PLAN	DES 228958
PREPARED BY	PROJECT NAME	SHEET NO.
DRIGGERS ENGINEERING SERVICES, INCORPORATED	WATER MAIN REPLACEMENT SEMINOLE PARK SUBDIVISION & MAPLEWAY SAFETY HARBOR, FLORIDA	PLATE I-D

HAND AUGER BORING / HAND CONE SOUNDING LOGS

DRIGGERS ENGINEERING SERVICES INCORPORATED

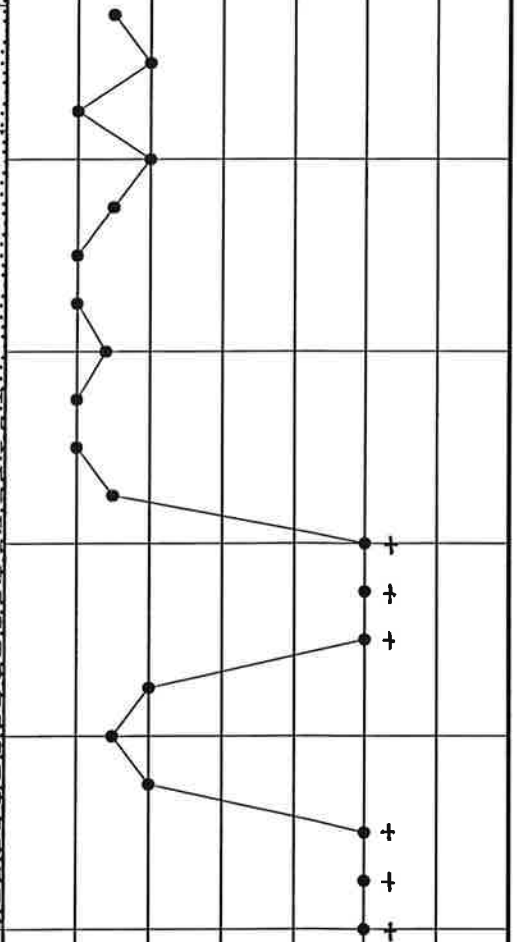
HAND AUGER BORING/HAND CONE SOUNDING LOG

PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	**CLIENT:** Ardurra Group, Inc. **WATER TABLE:** 3.5' **DATE:** 7/6/22
TECHNICIAN: K.A.	**DATE:** 7/6/22 **COMPLETION DEPTH:** 10.0'
LOCATION: See Plate I-A	**TEST NUMBER:** HA-1

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL
	Dark grayish-brown Fine SAND with roots (SP) (A-3)	0	
	Dark grayish-brown Fine SAND (SP) (A-3)		
	Grayish-brown Fine SAND (SP) (A-3)	2	
		4	
	Brown slightly silty Fine SAND (SP-SM) (A-3)	6	
		8	
		10	
		12	
		14	

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70



LEGEND:

● + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING/HAND CONE SOUNDING LOG

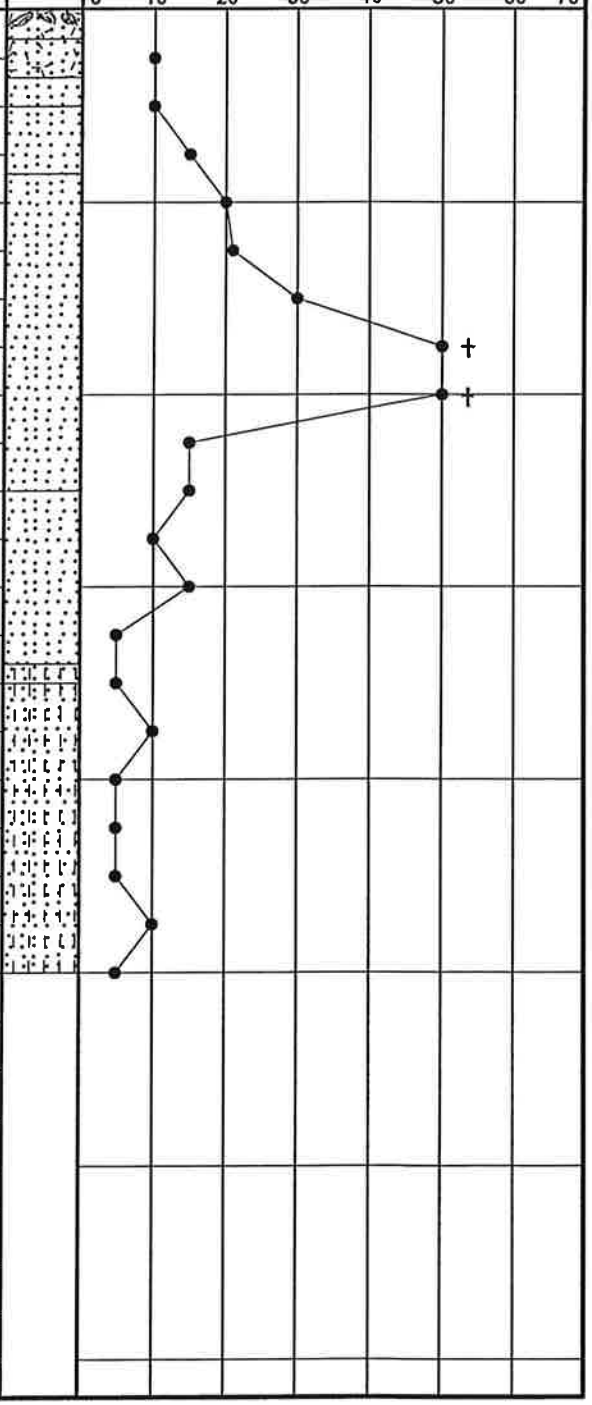
PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	**CLIENT:** Ardurra Group, Inc.
TECHNICIAN: K.A.	**WATER TABLE:** 4.9' — **DATE:** 7/6/22
LOCATION: See Plate I-A	**DATE:** 7/6/22 — **COMPLETION DEPTH:** 10.0'
	TEST NUMBER: HA-2

ELEV. (FT)	DESCRIPTION	DEPTH (FT)
	Gray Fine SAND with roots and leaves (SP) (A-3)	0
	Gray Fine SAND with roots (SP) (A-3)	
	Gray Fine SAND (SP) (A-3)	
	Light grayish-brown Fine SAND (SP) (A-3)	2
	Brown Fine SAND (SP) (A-3)	
		4
	Grayish-brown Fine SAND (SP) (A-3)	
		6
	Light brown slightly silty Fine SAND (SP-SM) (A-3)	
	Brown slightly silty Fine SAND (SP-SM) (A-3)	8
		10
		12
		14

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70



LEGEND:

● + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

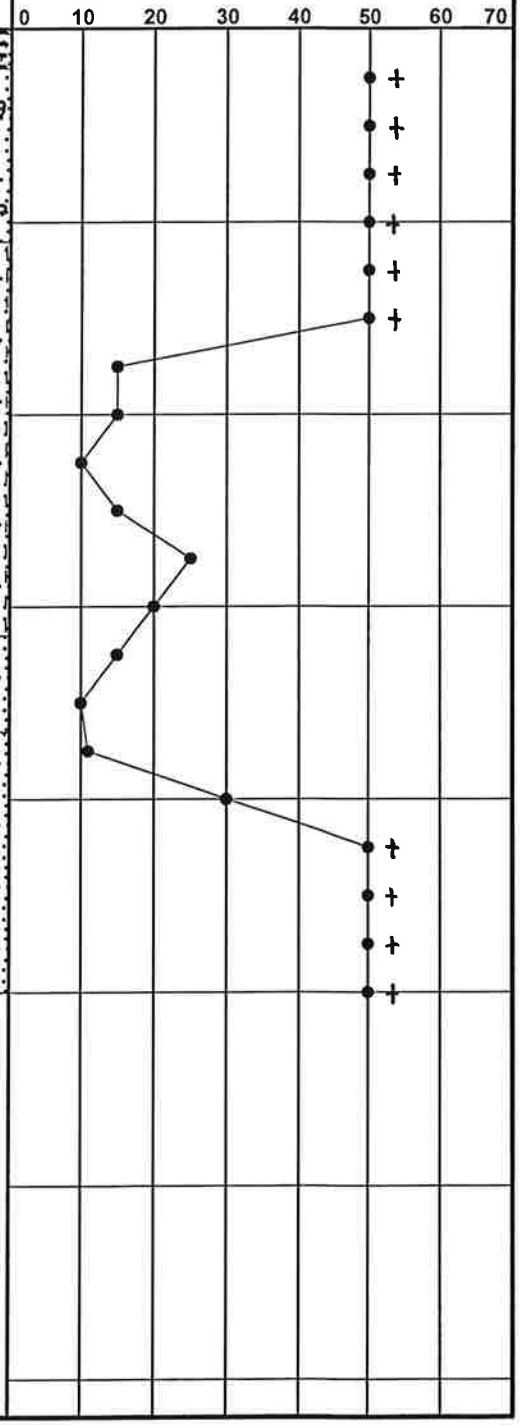
HAND AUGER BORING/HAND CONE SOUNDING LOG

PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	**CLIENT:** Ardurra Group, Inc.
TECHNICIAN: K.A.	**WATER TABLE:** 6.2' / **DATE:** 7/6/22
LOCATION: See Plate I-A	**DATE:** 7/6/22 / **COMPLETION DEPTH:** 10.0'
	TEST NUMBER: HA-3

ELEV. (FT)	DESCRIPTION	DEPTH (FT)
	Dark gray slightly organic Fine SAND with roots (SP) (A-3)	0
	Light brown Fine SAND with rock fragments (SP) (A-3)	2
	Light brown slightly silty Fine SAND (SP-SM) (A-3)	4
		6
	Grayish-brown Fine SAND (SP) (A-3)	
	Brown Fine SAND (SP) (A-3)	8
		10
		12
		14

SYMBOL

HAND CONE TIP RESISTANCE (TSF)



LEGEND:

- \+ Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

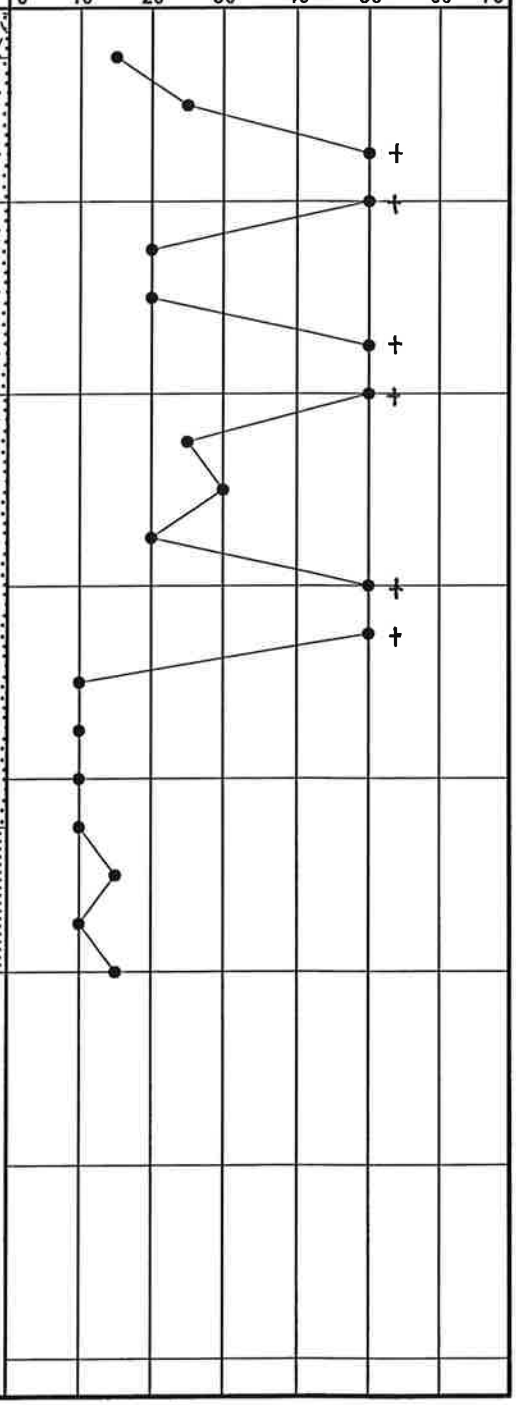
HAND AUGER BORING/HAND CONE SOUNDING LOG

PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	CLIENT: Ardurra Group, Inc. WATER TABLE: 5.9' DATE: 6/30/22
TECHNICIAN: K.A.	DATE: 6/30/22 COMPLETION DEPTH: 10.0'
LOCATION: See Plate I-B	TEST NUMBER: HA-4

ELEV. (FT)	DESCRIPTION	DEPTH (FT)
	Dark grayish-brown Fine SAND with roots (SP) (A-3)	0
	Grayish-brown Fine SAND with trace of rock fragments (SP) (A-3)	
	Grayish-brown Fine SAND (SP) (A-3)	2
	Light grayish-brown Fine SAND (SP) (A-3)	4
		6
		8
	Light grayish-brown silty Fine SAND (SM) (A-2-4)	10
		12
		14

SYMBOL

HAND CONE TIP RESISTANCE (TSF)



LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING/HAND CONE SOUNDING LOG

PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	**CLIENT:** Ardurra Group, Inc.
TECHNICIAN: S.F.	**WATER TABLE:** 5.6' / **DATE:** 7/1/22
LOCATION: See Plate I-A	**DATE:** 7/1/22 / **COMPLETION DEPTH:** 10.0'
	TEST NUMBER: HA-5

ELEV. (FT)	DESCRIPTION	DEPTH (FT)
	Dark gray Fine SAND with roots (SP) (A-3)	0
	Dark grayish-brown Fine SAND (SP) (A-3)	2
	Light gray slightly silty Fine SAND (SP-SM) (A-3)	
	Brown Fine SAND (SP) (A-3)	4
	Tan slightly silty Fine SAND (SP-SM) (A-3)	6
		8
		10
		12
		14

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70

LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING/HAND CONE SOUNDING LOG

PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	CLIENT: Ardurra Group, Inc.
	WATER TABLE: 4.3'
	DATE: 7/1/22
TECHNICIAN: S.F.	DATE: 7/1/22
	COMPLETION DEPTH: 10.0'
LOCATION: See Plate I-A	TEST NUMBER: HA-6

ELEV. (FT)	DESCRIPTION	DEPTH (FT)
	Dark grayish-brown Fine SAND with roots (SP) (A-3)	0
	Grayish-brown Fine SAND (SP) (A-3)	
	Gray Fine SAND with trace of shell (SP) (A-3)	2
	Grayish-brown Fine SAND (SP) (A-3)	
	Brownish-gray Fine SAND (SP) (A-3)	
	Dark brown slightly silty Fine SAND (SP-SM) (A-3)	4
		6
	Brown Fine SAND (SP) (A-3)	
		8
		10
		12
		14

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70

LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

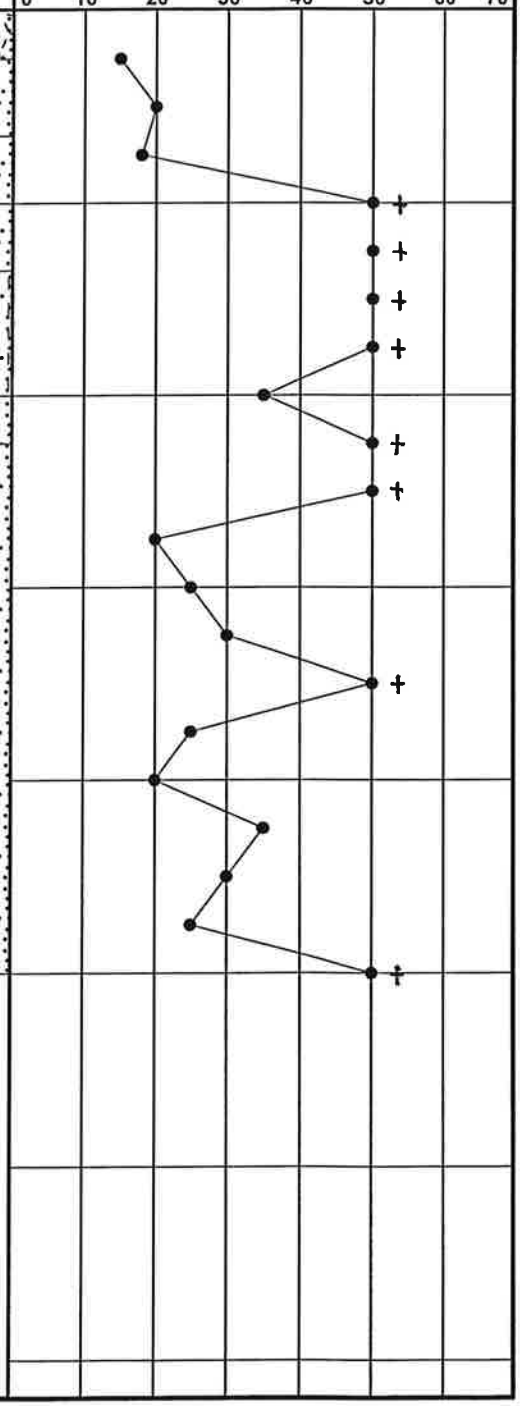
HAND AUGER BORING/HAND CONE SOUNDING LOG

PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	CLIENT: Ardurra Group, Inc.
	WATER TABLE: 6.4' / DATE: 7/6/22
TECHNICIAN: K.A.	DATE: 7/6/22 / COMPLETION DEPTH: 10.0'
LOCATION: See Plate I-A	TEST NUMBER: HA-7

ELEV. (FT)	DESCRIPTION	DEPTH (FT)
	Grayish-brown Fine SAND with roots (SP) (A-3)	0
	Gray Fine SAND (SP) (A-3)	
	Light gray Fine SAND (SP) (A-3)	2
	Gray Fine SAND (SP) (A-3)	
	Dark grayish-brown slightly silty Fine SAND (SP-SM) (A-3)	4
	Dark brown Fine SAND (SP) (A-3)	
	Tan Fine SAND (SP) (A-3)	6
		8
		10
		12
		14

SYMBOL

HAND CONE TIP RESISTANCE (TSF)



LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING/HAND CONE SOUNDING LOG

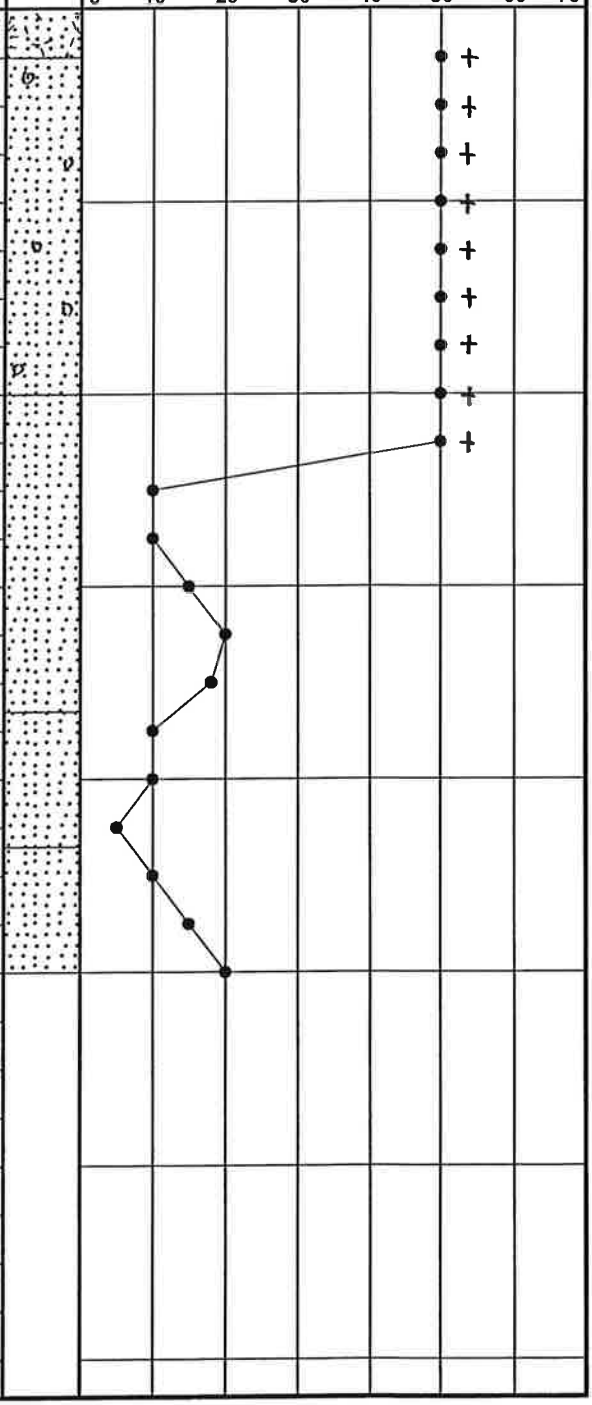
PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	CLIENT: Ardurra Group, Inc. WATER TABLE: 6.8' DATE: 6/27/22
TECHNICIAN: K.A.	DATE: 6/27/22 COMPLETION DEPTH: 10.0'
LOCATION: See Plate I-B	TEST NUMBER: HA-8

ELEV. (FT)	DESCRIPTION	DEPTH (FT)
	Grayish-brown Fine SAND with roots (SP) (A-3)	0
	Grayish-brown Fine SAND with trace of rock fragments (SP) (A-3)	2
	Light grayish-brown Fine SAND (SP) (A-3)	4
		6
	Gray Fine SAND (SP) (A-3)	8
	Gray and light gray Fine SAND (SP) (A-3)	10
		12
		14

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70



LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING/HAND CONE SOUNDING LOG

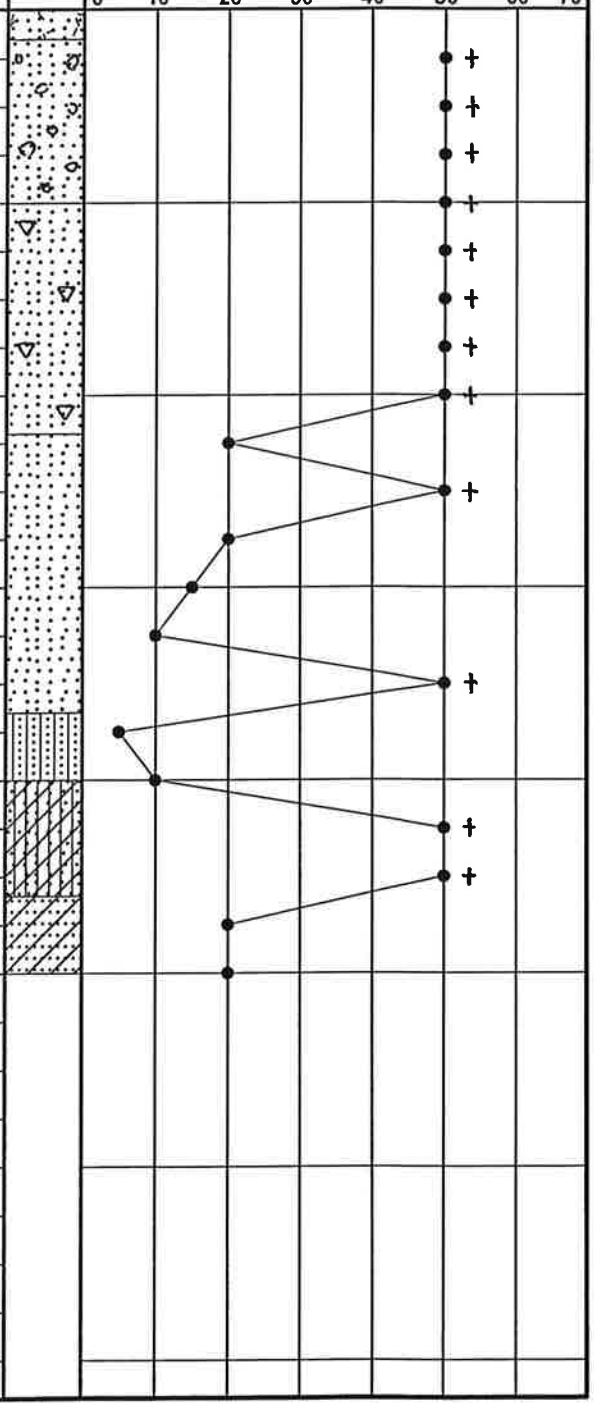
PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	**CLIENT:** Ardurra Group, Inc. **WATER TABLE:** 8.0' **DATE:** 6/27/22
TECHNICIAN: K.A. **DATE:** 6/27/22	**COMPLETION DEPTH:** 10.0'
LOCATION: See Plate I-B	**TEST NUMBER:** HA-9

ELEV. (FT)	DESCRIPTION	DEPTH (FT)
	Grayish-brown Fine SAND with roots (SP) (A-3)	0
	Gray Fine SAND with rock fragments (SP) (A-3)	
	Gray Fine SAND with trace of shell (SP) (A-3)	2
	Light grayish-brown Fine SAND (SP) (A-3)	4
	Light grayish-brown silty Fine SAND (SM) (A-2-4)	6
	Light grayish-brown and orange silty, clayey Fine SAND (SM-SC) (A-2-6)	8
	Light grayish-brown clayey Fine SAND (SC) (A-2-6)	10
		12
		14

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70



LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING/HAND CONE SOUNDING LOG

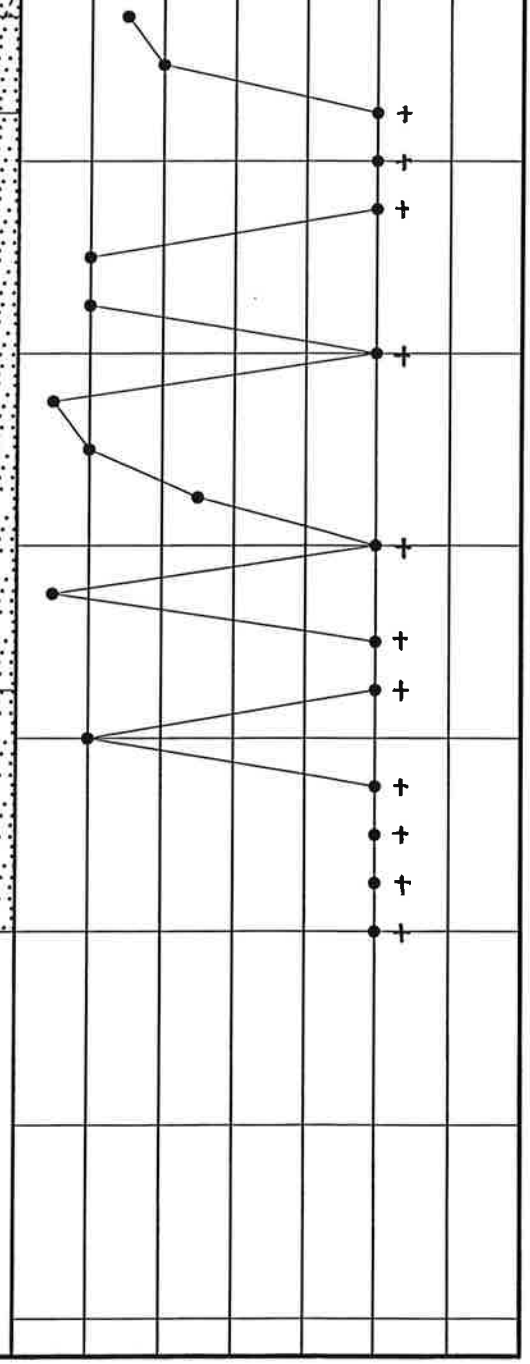
PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	**CLIENT:** Ardurra Group, Inc.
TECHNICIAN: K.A.	**WATER TABLE:** 4.2' — **DATE:** 6/28/22
LOCATION: See Plate I-B	**DATE:** 6/28/22 — **COMPLETION DEPTH:** 10.0'
	TEST NUMBER: HA-10

ELEV. (FT)	DESCRIPTION	DEPTH (FT)
	Dark gray Fine SAND with roots (SP) (A-3)	0
	Grayish-brown Fine SAND (SP) (A-3)	
	Light grayish-brown Fine SAND (SP) (A-3)	2
		4
		6
	Brown Fine SAND (SP) (A-3)	8
		10
		12
		14

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70



LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING/HAND CONE SOUNDING LOG

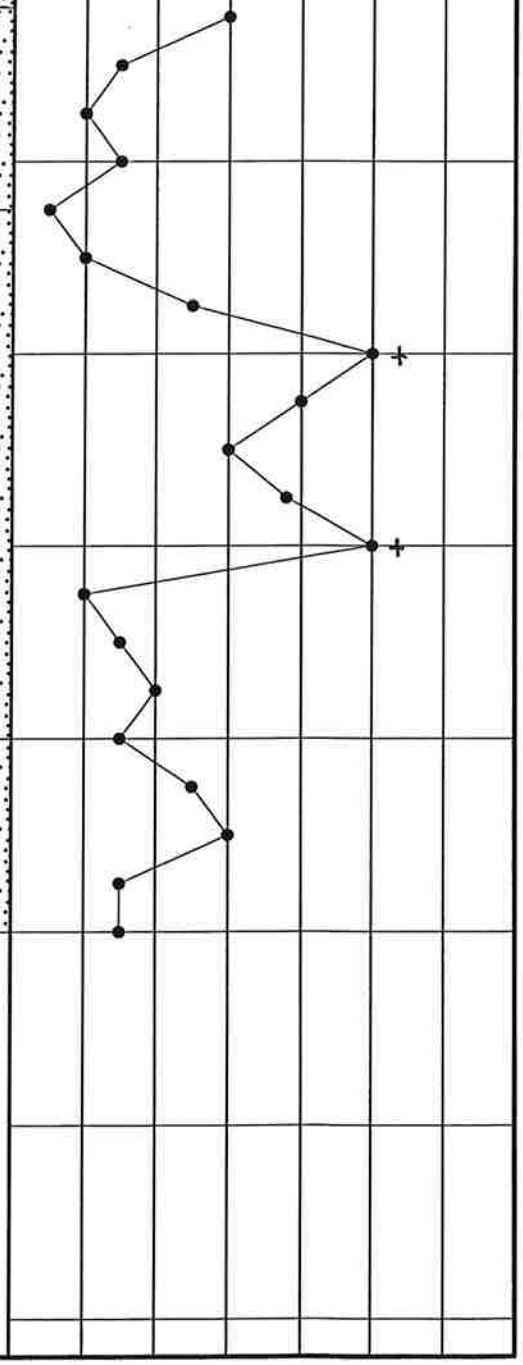
PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	**CLIENT:** Ardurra Group, Inc.
TECHNICIAN: K.A.	**WATER TABLE:** 3.7' / **DATE:** 7/6/22
LOCATION: See Plate I-C	**DATE:** 7/6/22 / **COMPLETION DEPTH:** 10.0'
	TEST NUMBER: HA-11

ELEV. (FT)	DESCRIPTION	DEPTH (FT)
	Dark gray Fine SAND with roots (SP) (A-3)	0
	Grayish-brown Fine SAND (SP) (A-3)	2
	Tan Fine SAND (SP) (A-3)	4
		6
	Light tan Fine SAND (SP) (A-3)	8
		10
		12
		14

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70



LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

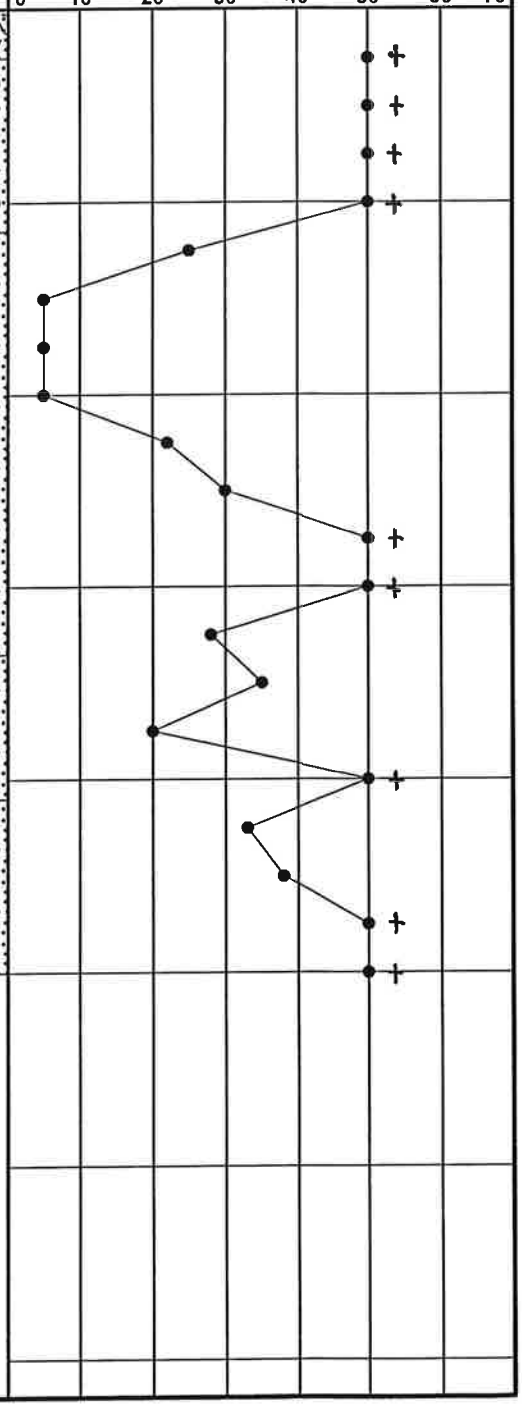
HAND AUGER BORING/HAND CONE SOUNDING LOG

PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	**CLIENT:** Ardurra Group, Inc.
TECHNICIAN: K.A.	**WATER TABLE:** 4.7' — **DATE:** 6/290/22
LOCATION: See Plate I-C	**DATE:** 6/29/22 — **COMPLETION DEPTH:** 10.0'
	TEST NUMBER: HA-12

ELEV. (FT)	DESCRIPTION	DEPTH (FT)
	Dark gray Fine SAND with roots (SP) (A-3)	0
	Light brown Fine SAND with rock fragments (SP) (A-3)	2
	Light brown Fine SAND (SP) (A-3)	4
		6
	Light grayish-brown Fine SAND (SP) (A-3)	8
	Tan Fine SAND (SP) (A-3)	10
		12
		14

SYMBOL

HAND CONE TIP RESISTANCE (TSF)



LEGEND:

● + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING/HAND CONE SOUNDING LOG

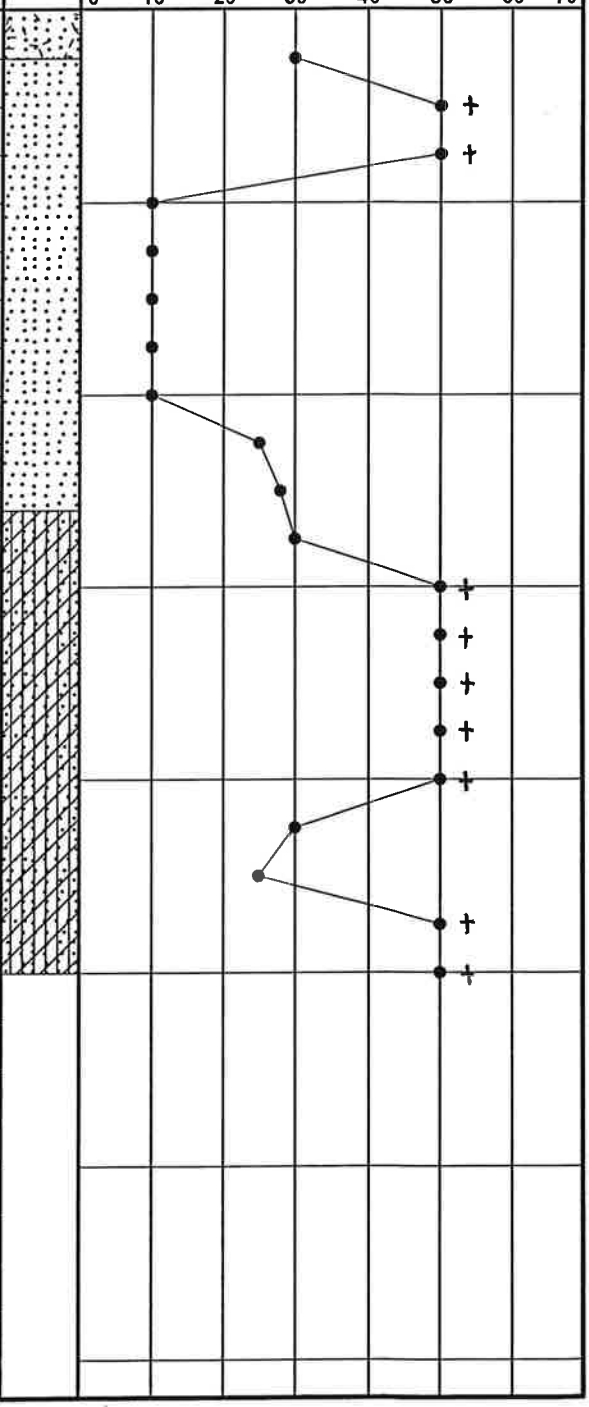
PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	**CLIENT:** Ardurra Group, Inc.
TECHNICIAN: K.A.	**WATER TABLE:** 4.0' / **DATE:** 7/6/22
LOCATION: See Plate I-C	**DATE:** 7/6/22 / **COMPLETION DEPTH:** 10.0'
	TEST NUMBER: HA-13

ELEV. (FT)	DESCRIPTION	DEPTH (FT)
	Dark grayish-brown Fine SAND with roots (SP) (A-3)	0
	Brown Fine SAND (SP) (A-3)	2
		4
	Grayish-brown silty, clayey Fine SAND (SM-SC) (A-2-6)	6
		8
		10
		12
		14

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70



LEGEND:

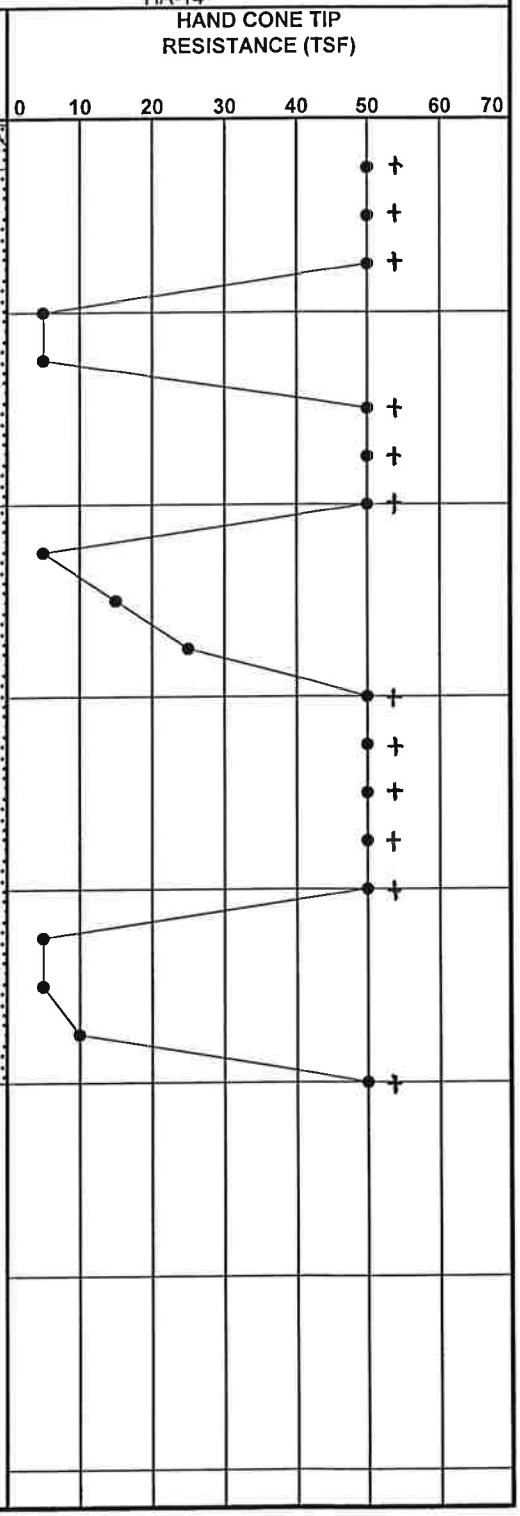
• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING/HAND CONE SOUNDING LOG

PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	**CLIENT:** Ardurra Group, Inc.
TECHNICIAN: K.A.	**WATER TABLE:** See "Note" / **DATE:** 6/27/22
LOCATION: See Plate I-D	**DATE:** 6/27/22 / **COMPLETION DEPTH:** 10.0'
	TEST NUMBER: HA-14

ELEV. (FT)	DESCRIPTION	DEPTH (FT)
	Brownish-gray Fine SAND with roots and rock fragments (SP) (A-3)	0
	Light brown Fine SAND (SP) (A-3)	2
	Tan Fine SAND (SP) (A-3)	4
		6
		8
		10
	Note: Water Table not encountered within depth of 10.0'.	12
	LEGEND: • + Denotes Penetration Resistance in excess of 50 TSF	14



DRIGGERS ENGINEERING SERVICES INCORPORATED

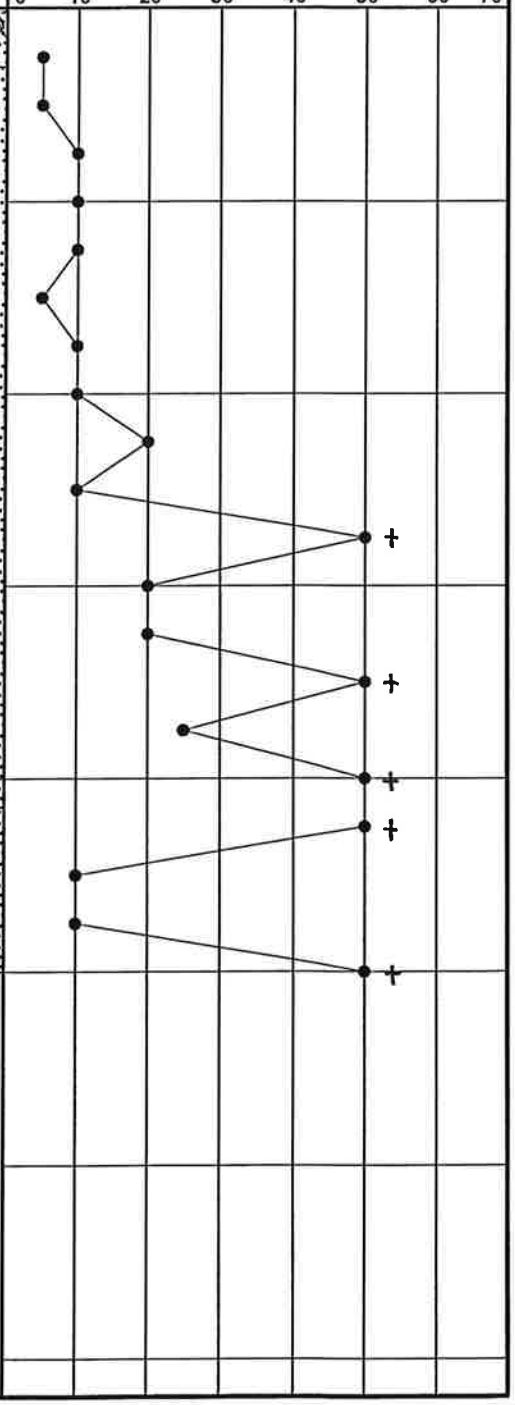
HAND AUGER BORING/HAND CONE SOUNDING LOG

PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	**CLIENT:** Ardurra Group, Inc.
TECHNICIAN: K.A.	**WATER TABLE:** See "Note" / **DATE:** 6/27/22
LOCATION: See Plate I-D	**DATE:** 6/27/22 / **COMPLETION DEPTH:** 10.0'
	TEST NUMBER: HA-15

ELEV. (FT)	DESCRIPTION	DEPTH (FT)
	Grayish-brown Fine SAND with roots and leaves (SP) (A-3)	0
	Tan Fine SAND (SP) (A-3)	2
		4
		6
		8
	Orangish-tan Fine SAND (SP) (A-3)	
	Brown Fine SAND (SP) (A-3)	10
	Note: Water Table not encountered within depth of 10.0'.	12
	LEGEND: • + Denotes Penetration Resistance in excess of 50 TSF	14

SYMBOL

HAND CONE TIP RESISTANCE (TSF)



DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING/HAND CONE SOUNDING LOG

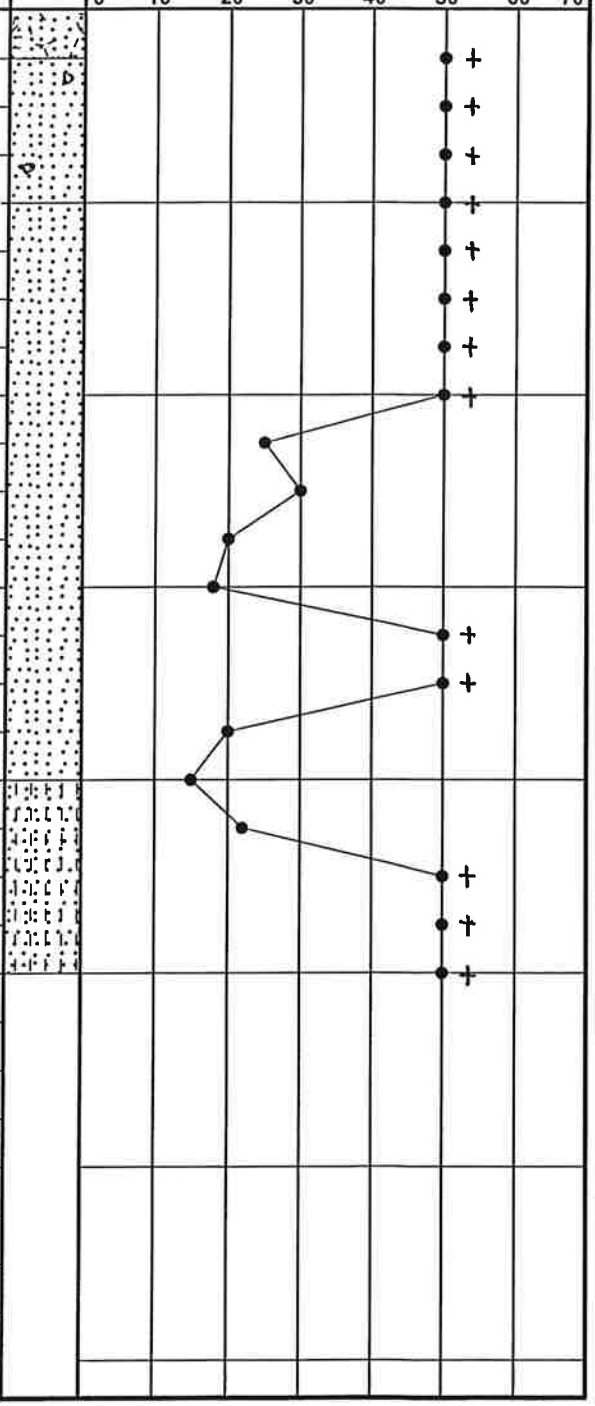
PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	**CLIENT:** Ardurra Group, Inc.
TECHNICIAN: K.A.	**WATER TABLE:** 4.5' — **DATE:** 6/290/22
LOCATION: See Plate I-D	**DATE:** 6/29/22 — **COMPLETION DEPTH:** 10.0'
	TEST NUMBER: HA-16

ELEV. (FT)	DESCRIPTION	DEPTH (FT)
	Grayish-brown Fine SAND with roots (SP) (A-3)	0
	Grayish-brown Fine SAND with trace of rock fragments (SP) (A-3)	
	Light grayish-brown Fine SAND (SP) (A-3)	2
		4
		6
	Brown slightly silty Fine SAND (SP-SM) (A-3)	8
		10
		12
		14

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70



LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

HAND AUGER BORING/HAND CONE SOUNDING LOG

PROJECT: Water Main Replacement Seminole Park Subdivision & Mapleway Safety Harbor, Florida Project No.: DES 228958	**CLIENT:** Ardurra Group, Inc. **WATER TABLE:** 9.0' **DATE:** 6/290/22
TECHNICIAN: K.A.	**DATE:** 6/29/22 **COMPLETION DEPTH:** 10.0'
LOCATION: See Plate I-D	**TEST NUMBER:** HA-17

ELEV. (FT)	DESCRIPTION	DEPTH (FT)	SYMBOL	HAND CONE TIP RESISTANCE (TSF)
	Brown Fine SAND with roots (SP) (A-3)	0		
	Light brown Fine SAND (SP) (A-3)			
	Tan Fine SAND (SP) (A-3)	2		
		4		
		6		
		8		
	Brown Fine SAND (SP) (A-3)	10		
		12		
		14		

0 10 20 30 40 50 60 70

LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

SUMMARY OF LABORATORY TEST RESULTS

SUMMARY OF LABORATORY TEST RESULTS

BORING NO.	DEPTH (ft)	DESCRIPTION	W %	Y d (pcf)	G s	ATTERBERG LIMITS			P.P. (tsf)	U.C.	CON.	G.S.	ORG. (%)	pH	Cl. (ppm)	SO 4 (ppm)	RES. (ohm-cm)
						LL	PL	PI									
HA-1	4.4-7.5	Brown slightly silty Fine SAND										*					
HA-3	2.0-6.3	Light brown slightly silty Fine SAND										*					
HA-5	2.2-3.0	Light gray slightly silty Fine SAND										*					
HA-5	4.0-10.0	Tan slightly silty Fine SAND										*					
HA-7	2.7-4.0	Dark grayish-brown slightly silty Fine SAND										*					
HA-9	7.3-8.0	Light grayish-brown silty Fine SAND										*					
HA-9	8.5-9.1	Light grayish-brown and orange silty, clayey Fine SAND	18.2			36	18	18				** 39.5					
HA-11	3.7-8.0	Tan Fine SAND										*					
HA-13	5.1-10.0	Grayish-brown silty, clayey Fine SAND	10.1			30	21	9				** 20.7					
HA-16	2.0-5.0	Light grayish-brown Fine SAND										*					

W % = Water Content
Y d (pcf) = Dry Density
G_S = Specific Gravity
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
P.P. (tsf) = Pocket Penetrometer
U.C. = Unconfined Compression

Con. = Consolidation Test
G.S. (+1) = Grainsize Analysis (Hydrometer)
ORG. (%) = Organic Content
Cl. (ppm) = Total Chloride
SO_4 (ppm) = Total Sulfate
RES. (ohm-cm) = Lab Resistivity
* = See Test Curves
** = Percent Passing No. 200 Sieve

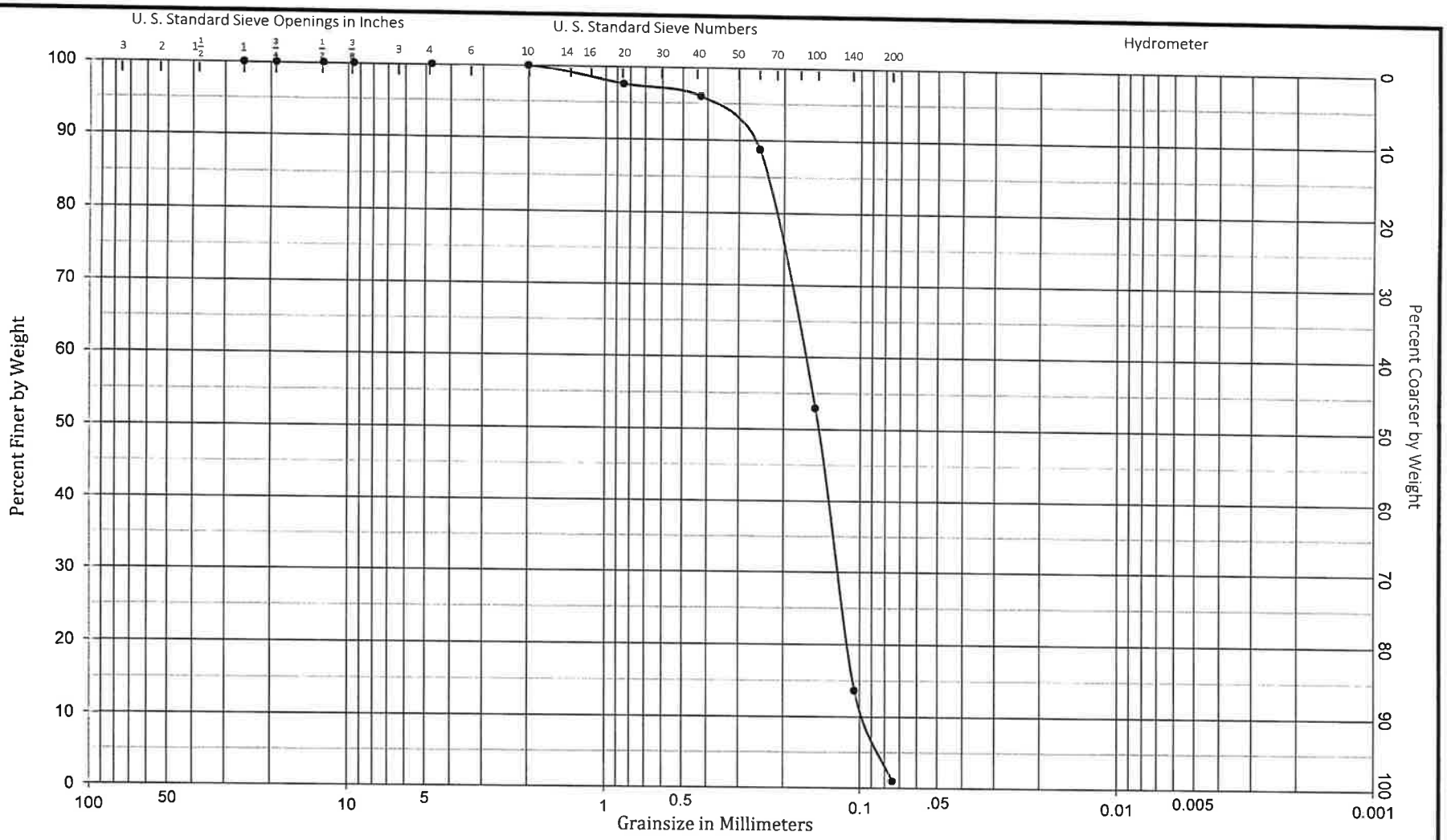
CLIENT: Ardurra Group, Inc.

PROJECT: Water Main Replacement, Seminole Park Subdivision & Mapleway, Safety Harbor, Florida

FILE: DES 228958

GRAINSIZE ANALYSES

DRIGGERS ENGINEERING SERVICES, INC.



	GRAVEL	SAND			SILT or CLAY
		Coarse	Medium	Fine	

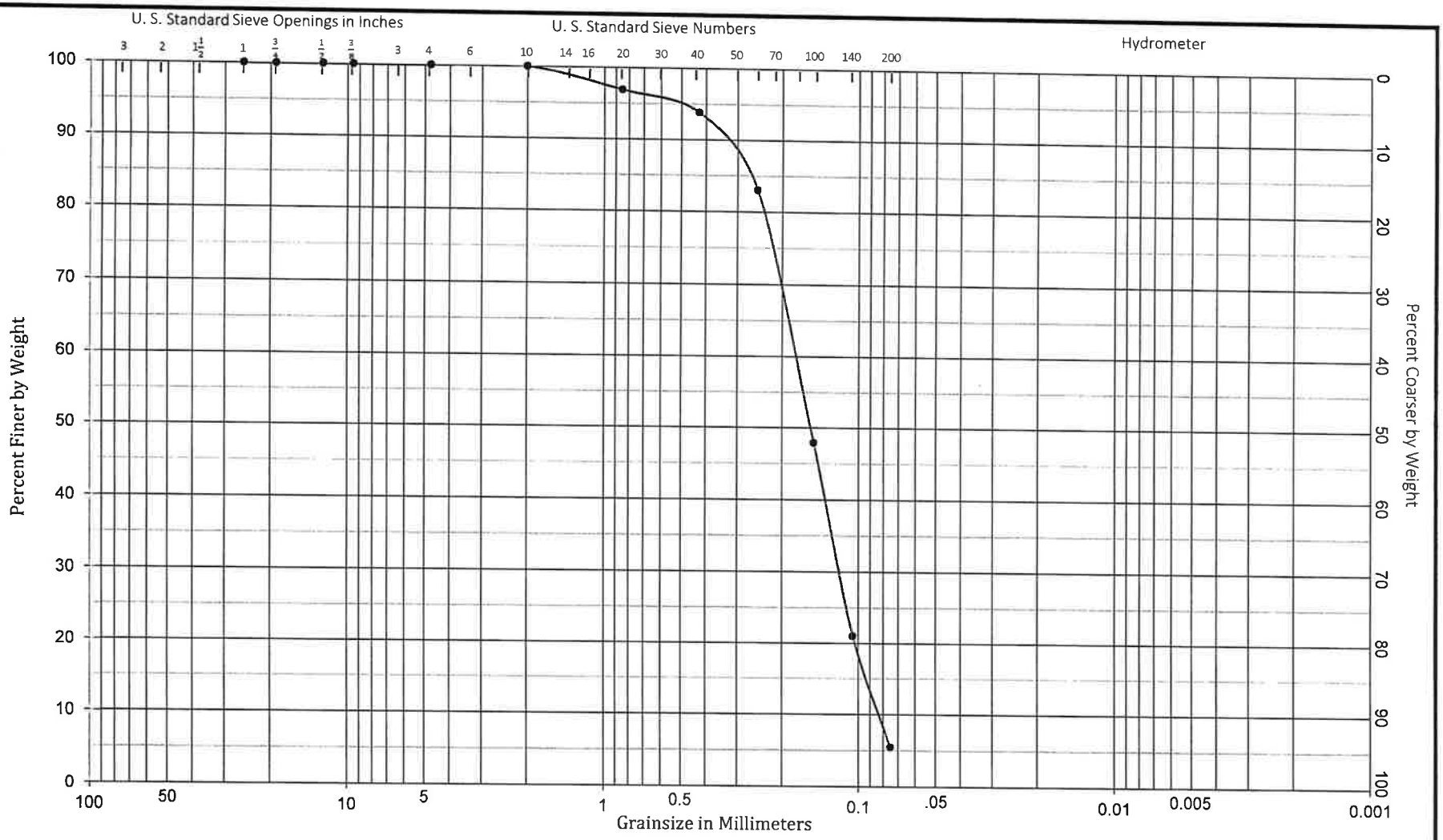
Number	Depth	Moisture	L.L.	P.L.	P.I.	Classification
HA-1	4.4'-7.5'					Brown slightly silty Fine SAND

CLIENT: Ardurra Group, Inc.

PROJECT: Water Mains, Seminole Park & Mapleway

FILE: DES 228958

DRIGGERS ENGINEERING SERVICES, INC.



GRAVEL	SAND			SILT or CLAY
	Coarse	Medium	Fine	

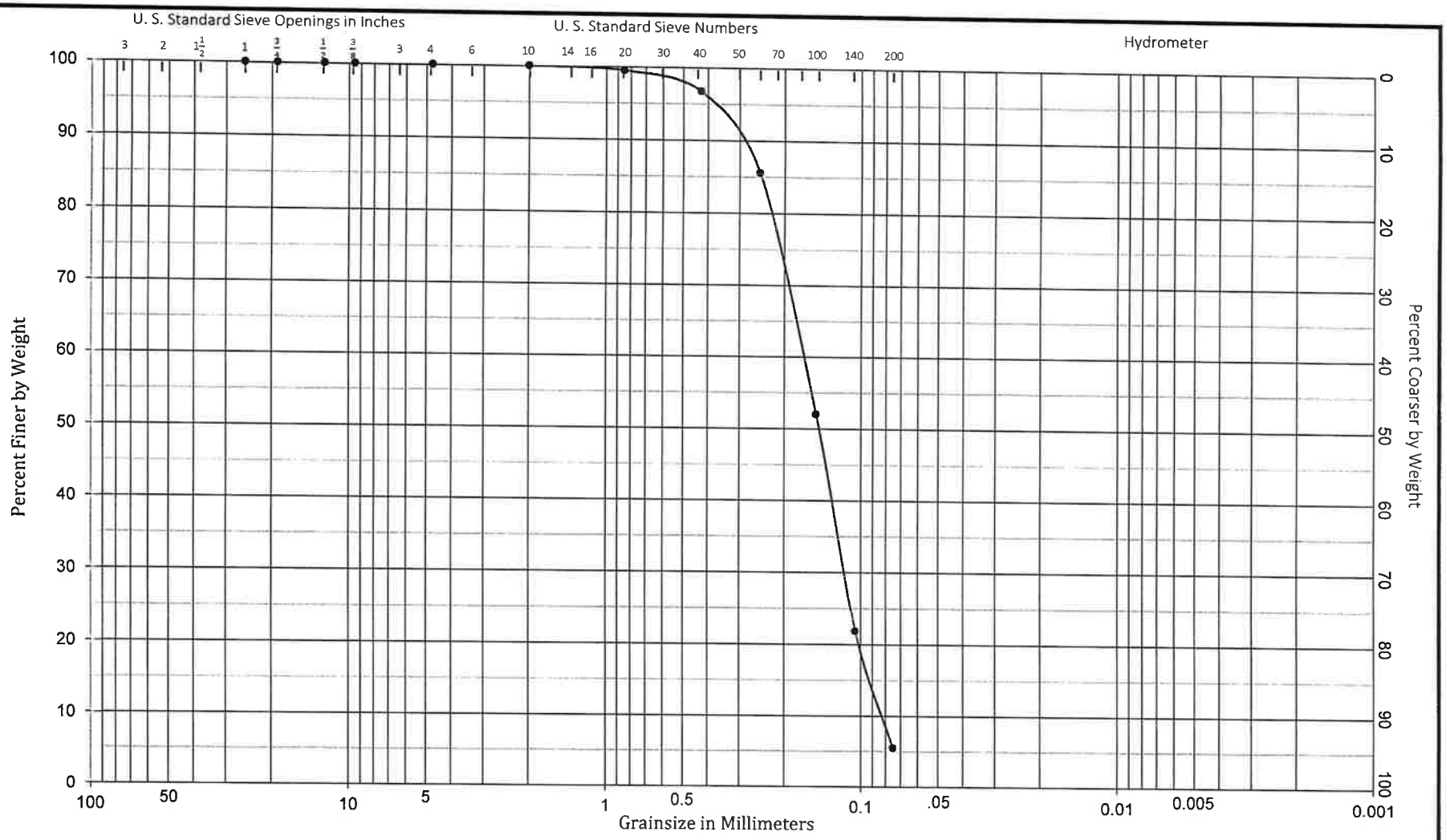
Number	Depth	Moisture	L.L.	P.L.	P.I.	Classification
HA-3	2.0'-6.3'					Light brown slightly silty Fine SAND

CLIENT: Ardurra Group, Inc.

PROJECT: Water Mains, Seminole Park & Mapleway

FILE: DES 228958

DRIGGERS ENGINEERING SERVICES, INC.



GRAVEL	SAND			SILT or CLAY
	Coarse	Medium	Fine	

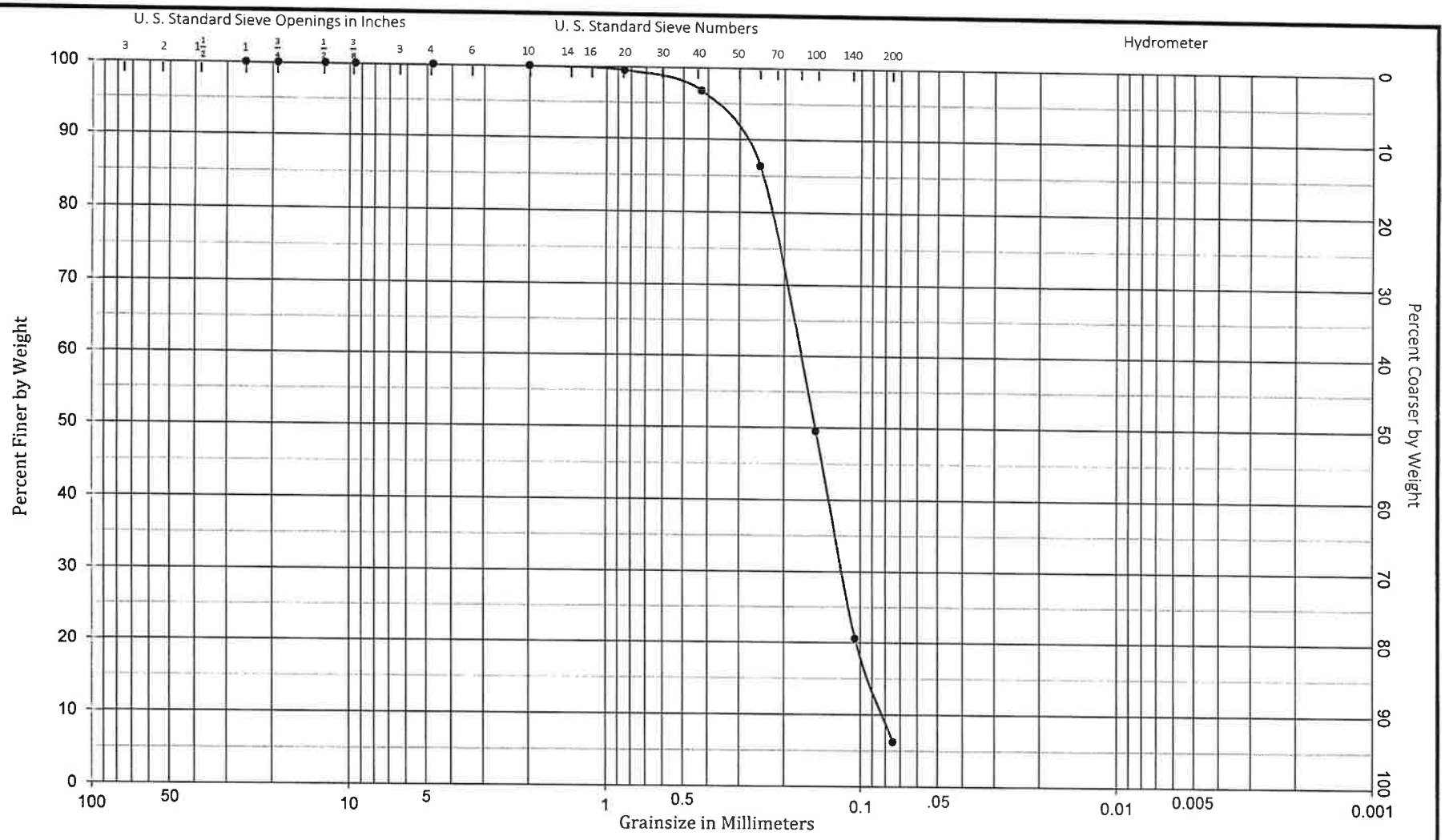
Number	Depth	Moisture	L.L.	P.L.	P.I.	Classification
HA-5	2.2'-3.0'					Light gray slightly silty Fine SAND

CLIENT: Ardurra Group, Inc.

PROJECT: Water Mains, Seminole Park & Mapleway

FILE: DES 228958

DRIGGERS ENGINEERING SERVICES, INC.



GRAVEL	SAND			SILT or CLAY
	Coarse	Medium	Fine	

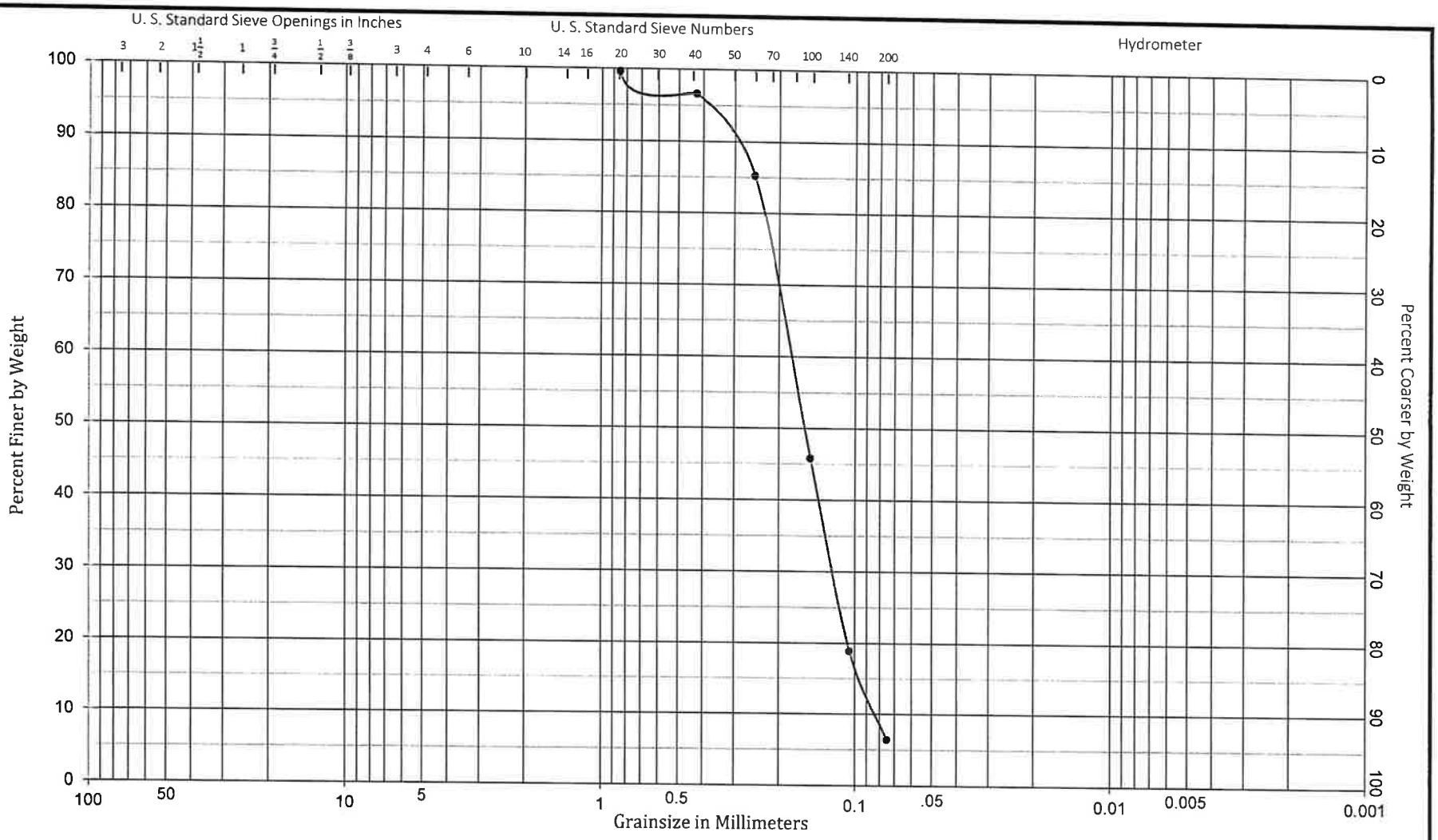
Number	Depth	Moisture	L.L.	P.L.	P.I.	Classification
HA-5	4.0'-10.0'					Tan slightly silty Fne SAND

CLIENT: Ardurra Group, Inc.

PROJECT: Water Mains, Seminole Park & Mapleway

FILE: DES 228958

DRIGGERS ENGINEERING SERVICES, INC.



GRAVEL	SAND			SILT or CLAY
	Coarse	Medium	Fine	

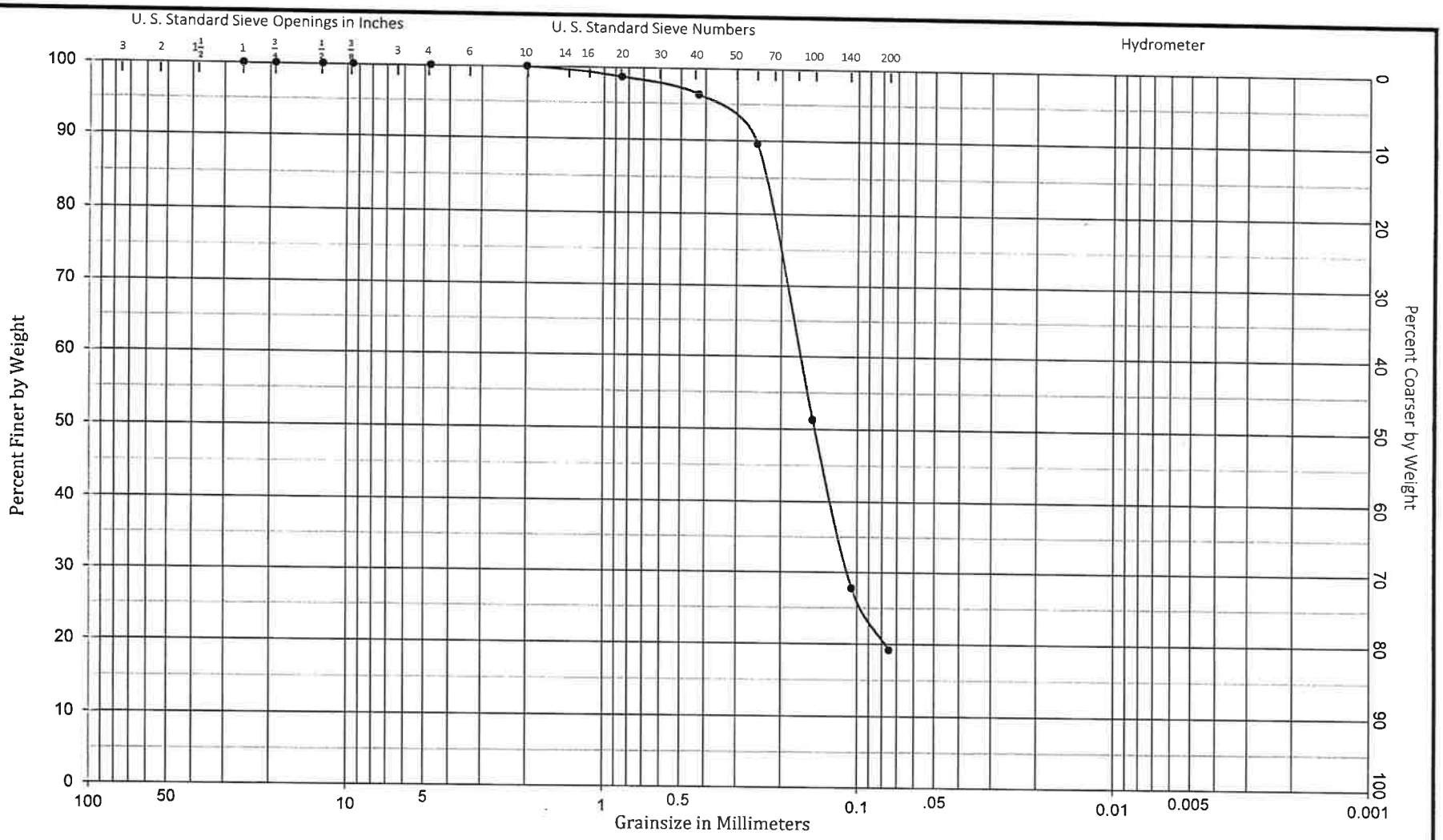
Number	Depth	Moisture	L.L.	P.L.	P.I.	Classification
HA-7	2.7'-4.0'					Dark grayish-brown slightly silty Fine SAND

CLIENT: Ardurra Group, Inc.

PROJECT: Water Mains, Seminole Park & Mapleway

FILE: DES 228958

DRIGGERS ENGINEERING SERVICES, INC.



GRAVEL	SAND			SILT or CLAY
	Coarse	Medium	Fine	

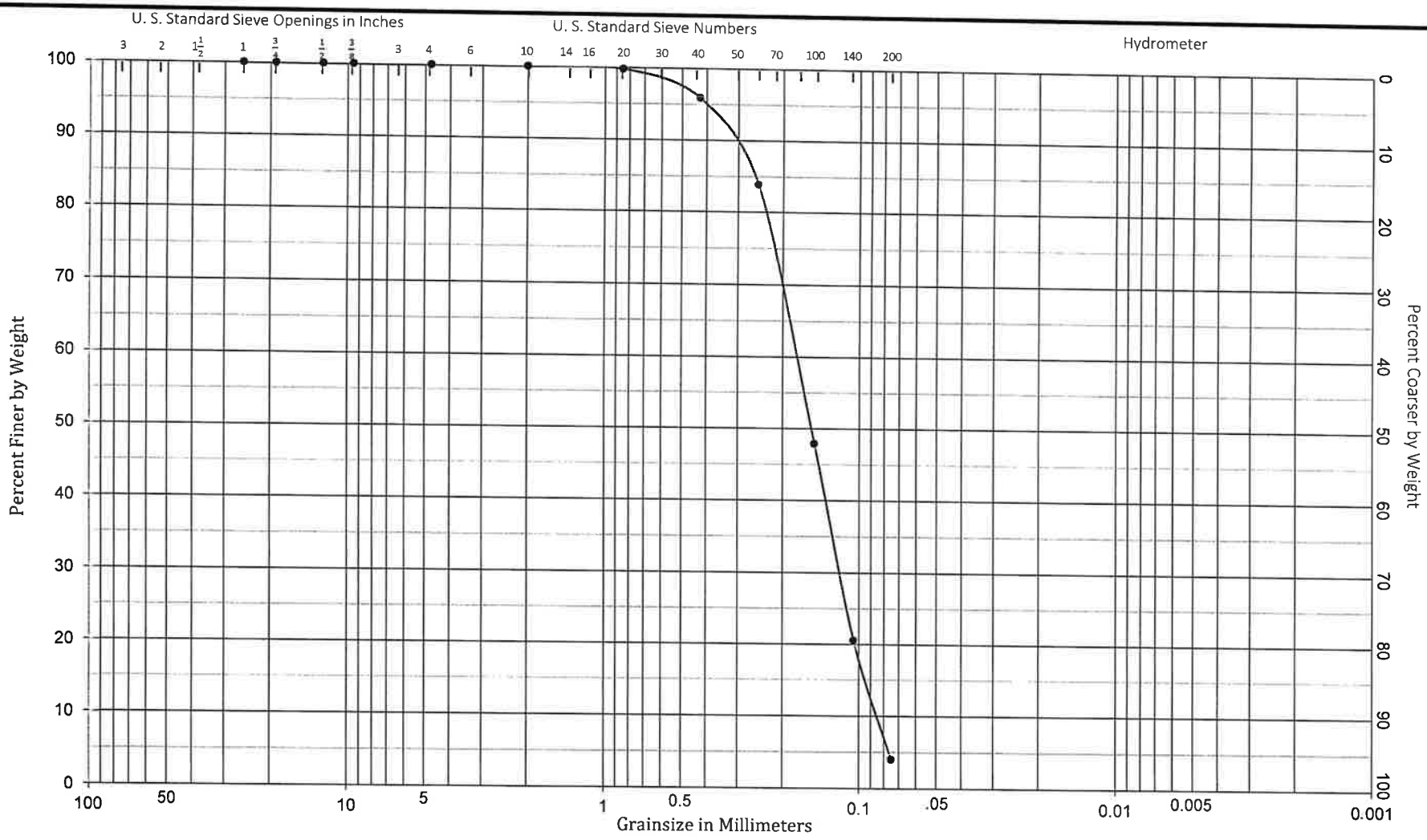
Number	Depth	Moisture	L.L.	P.L.	P.I.	Classification
HA-9	7.3'-8.0'					Light grayish-brown silty Fine SAND

CLIENT: Ardurra Group, Inc.

PROJECT: Water Mains, Seminole Park & Mapleway

FILE: DES 228958

DRIGGERS ENGINEERING SERVICES, INC.



	GRAVEL	SAND			SILT or CLAY
		Coarse	Medium	Fine	

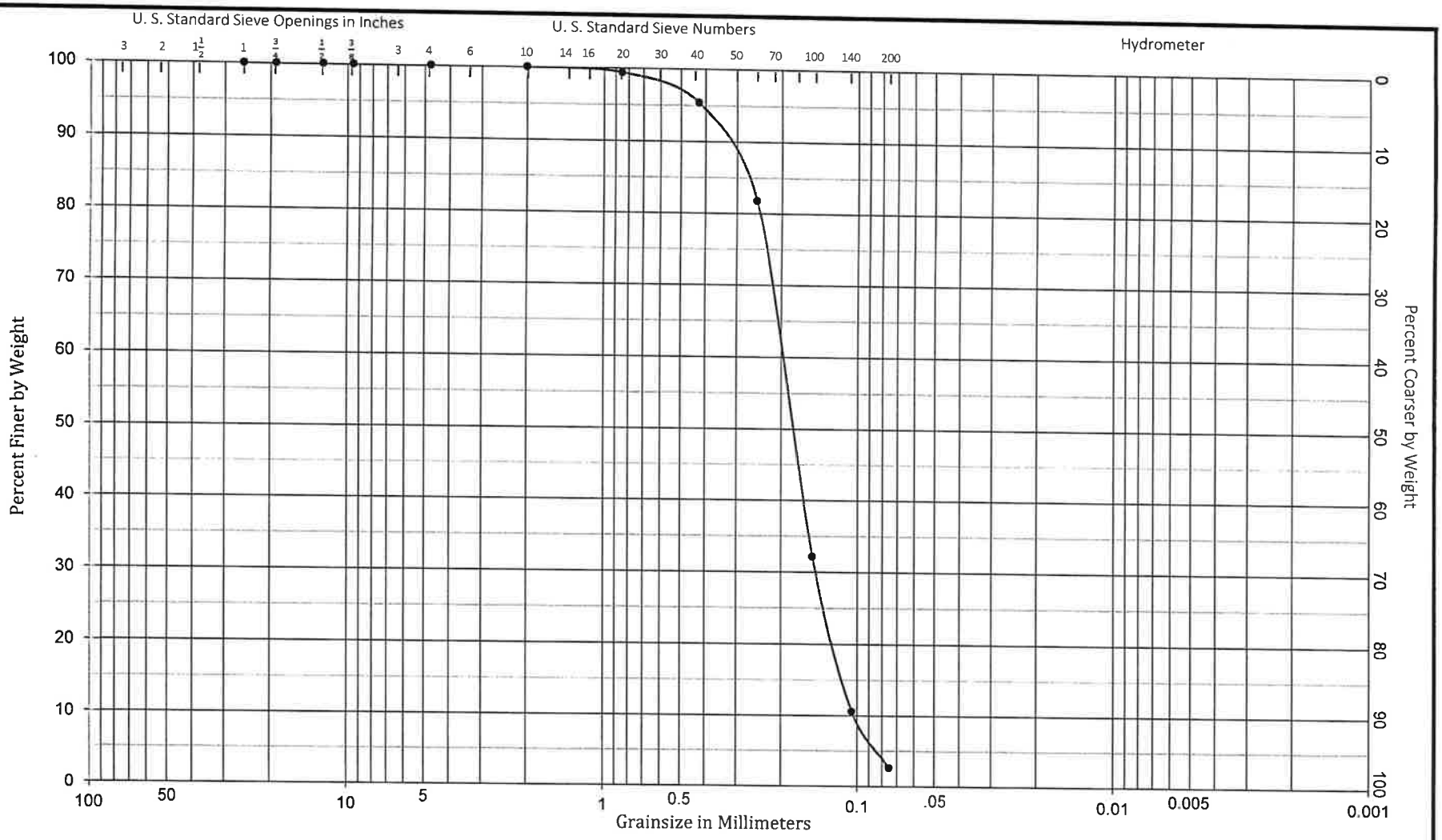
Number	Depth	Moisture	L.L.	P.L.	P.I.	Classification
HA-11	3.7'-8.0'					Tan Fine SAND

CLIENT: Ardurra Group, Inc.

PROJECT: Water Mains, Seminole Park & Mapleway

FILE: DES 228958

DRIGGERS ENGINEERING SERVICES, INC.



GRAVEL	SAND			SILT or CLAY
	Coarse	Medium	Fine	

Number	Depth	Moisture	L.L.	P.L.	P.I.	Classification
HA-16	2.0'-5.0'					Light grayish-brown Fine SAND

CLIENT: Ardurra Group, Inc.

PROJECT: Water Mains, Seminole Park & Mapleway

FILE: DES 228958

METHOD OF TESTING

HAND CONE PENETRATION TEST

The cone penetration test was performed using a DGSI Model S-215 double rod Static Cone Penetrometer.

Dual rods enable the cone stress to be measured directly. Soil friction on the outer rod does not influence the reading. Depending upon the application, either the maximum bearing for an increment of push or the least bearing for an increment can be reported. If you were investigating for soft spots, you would take the least reading. In typical use, you would force the cone into the soil 6 inches, retract the cone slightly until the gauge reads zero, then advance an additional 6-inch increment. If you meet with refusal, the cone can be removed and the hole opened with a hand auger to permit a continuation of measurements against depth.

The tool has been designed to allow a maximum force of 250 lbs. to be applied, somewhat more than the average weight of an operator. The unit can be operated in a vertical or horizontal position. The cone tip has an included angle of 60 degrees. The cone has a section area of 1.5 cm^2. The maximum total bearing (Q_c) is 70 kg/cm^2.

The reading (Q_c) is in kg/cm^2 which is essentially equal to ton/ft^2.

The cone index (Q_c) is read directly. The correlation between the cone index and soil constants is not absolute. Generally, the following results have been determined through extensive field use of the unit. Further verification of correlation in your local soil types is essential.

Standard Penetration (Sands) N=Standard Penetration Test Blowcount $Q_c = 4N$	**Strength and Cohesion** Q_u - Unconfined compression (kg/cm^2) c - Cohesion (kg/cm2) Uniform clay and silty clays: $Q_c = 5\ Q_u$ $Q_c = 10\ c$ Clayey Silts: $Q_c = (10 \text{ to } 20)\ Q_u$ $Q_c = (20 \text{ to } 40)\ c$