



# CITY OF TAMPA

Bob Buckhorn, Mayor

CONTRACT ADMINISTRATION DEPARTMENT

David L. Vaughn, AIA, Director

## ADDENDUM NO. 2

DATE: January 23, 2014

Contract 14-C-00011; Channel District: East Madison Street Improvements  
Project 1000327

Bidders on the above referenced project are hereby notified that the following addendum is made to the Contract Documents. BIDS TO BE SUBMITTED SHALL CONFORM TO THIS NOTICE.

- Item 1: Specifications, Table of Contents, Technical Specifications: **INSERT** Section 327 – Milling of Existing Asphalt Pavement, page no's. 327-1 thru 327-4.
- Item 2. Specifications, Proposal: **REPLACE** Proposal pages P-3R thru P-9R included in Addendum No. 1, with the revised Proposal pages P-3RR thru P-9RR, included herein (7 pages). Revision added Item No. 327-1 and revised Note 4 and 7.
- Item 3. Specifications, Specific Provisions: **REPLACE** the entire Section included in Addendum No. 1, with the revised Section included herein (22 pages).
- Item 4. Specifications, Specific Provisions SP-7.08: **CLARIFICATION** that sands need to be free of clays and deleterious material; also, the #57 stone bedding is a requirement per the City of Tampa Type-B bedding for stormwater structures and piping.
- Item 5. Specifications, Section 327 – Milling of Existing Asphalt Pavement: **INSERT** entire Section included herein (4 pages).

All other provisions of the Contract Documents and Specifications not in conflict with this Addendum shall remain in full force and effect. Questions are to be e-mailed to Contract Administration@tampagov.net.

*Jim Greiner*

Jim Greiner, P.E., Contract Management Supervisor







Item No.	Description	Unit	Approx. Quantity	Unit Price in Words	Unit Price	Total Computed Price
C2.09-3	Mech Joint Restr., Wedge-action, 12 in. (F&I)	LF	310		\$	\$
C2.10-1	Water Service Connection, 2" (Irrigation)	EA	1		\$	\$
C2.11-1	Polyethylene Wrap, 6", D.I. (F&I)	LF	10		\$	\$
C2.11-2	Polyethylene Wrap, 8", D.I. (F&I)	LF	24		\$	\$
C2.11-3	Polyethylene Wrap, 12", D.I. (F&I)	LF	310		\$	\$
						<b>SUB TOTAL</b> \$
<b>WASTEWATER CONSTRUCTION</b>						
4900-1	Connection to Existing Manhole	EA	1		\$	\$
5000-1	6"-8" Wastewater Pipe Removal	LF	400		\$	\$
5000-2	Sanitary Sewer Manhole Removal	EA	1		\$	\$
0700-1	Wastewater Pipe (F&I) (6" PVC) Depth < 5'	LF	117		\$	\$
0700-2	Wastewater Pipe (F&I) (6" PVC) Depth 5' to 10'	LF	118		\$	\$
						<b>SUB TOTAL</b> \$
<b>HARDSCAPE SURFACES</b>						
02511-1	Colored Shell Aggregate Concrete	SF	6,100		\$	\$
02510-1	Saw Cut Concrete	SY	560		\$	\$
02775-1	6" Thick Concrete Sidewalk	SY	61		\$	\$
02780	Paver Replacement Along Meridian Avenue	SY	184		\$	\$
						<b>SUB TOTAL</b> \$
<b>PLANT MATERIAL &amp; IRRIGATION</b>						
02900-1	Bald Cypress	EA	2		\$	\$
02900-2	Sky Climber Live Oak	EA	10		\$	\$



Item No.	Description	Unit	Approx. Quantity	Unit Price in Words	Unit Price	Total Computed Price
SP-5.04-3	6" Conduit, Lighting, Install Underground	LF	4,370		\$	\$
SP-5.04-4	Electrical Manhole (Install Only)	EA	3		\$	\$
					SUB TOTAL	\$
					SUB TOTAL OF ABOVE SUB TOTALS	\$
					ALLOWANCE (REFERENCE SECTION 01020)	\$
						130,000.00
					TOTAL BID	\$

Item No.	Description	Unit	Approx. Quantity	Unit Price in Words	Unit Price	Total Computed Price
	<p>Notes:</p> <p>1) It is assumed franchised utility providers to perform their relocations as necessary. Costs to be paid directly to the utility providers by the City.</p> <p>2) Contractor to design and provide MOT per FDOT design standards.</p> <p>3) All surveying work associated with construction are incidental to the overall project coordination. This includes, but is not limited to, construction staking, certified as-built survey, etc.</p> <p>4) All Permit and Impact fees associated with City issued permits will be paid by the City of Tampa. Permits required to construct within the FDOT right-of-way will be obtained and paid for by the Contractor.</p> <p>5) Complete road demolition and reconstruction within the project limits is required. The Contractor is to coordinate changes with the Utility Company.</p> <p>6) Undergrounding of overhead electrical is based on design information provided by TECO.</p> <p>7) All utility and storm sewer system trenches select backfill material cost shall be included as part of the unit price of installation.</p> <p>8) For general information, approximate quantity of 235 LF applies if needed for Pay Item No. 0700-1 or 0700-2.</p>					

## SPECIFIC PROVISIONS

### INDEX OF SUBJECTS

- SP- 1 GENERAL**
- SP- 2 ADMINISTRATION**
- SP- 3 MAINTENANCE OF TRAFFIC**
- SP- 4 COMPACTION, STABILIZATION, AND DEWATERING**
- SP- 5 GENERAL UTILITY WORK**
- SP- 6 WATER MAIN CONSTRUCTION**
- SP- 7 STORMWATER CONSTRUCTION**
- SP- 8 ROADWAY AND SIDEWALK CONSTRUCTION**
- SP- 9 TREES, PLANTS, AND IRRIGATION WORK**
- SP- 10 MISCELLANEOUS ITEMS**
- SP- 11 SIGNAGE**
- SP- 12 HARDSCAPE AND FURNISHINGS**

#### **SP- 1.01 DPW TECHNICAL SPECIFICATIONS:**

The work on this project shall comply with the FDOT Standard Specifications for Road and Bridge Construction (2013), and the FDOT Roadway and Traffic Design Standards (2013), except as noted herein. The Engineer shall be notified of any discrepancy between either the FDOT Standard Specifications for Road and Bridge Construction or FDOT Roadway and Traffic Design Standards and these Technical Specifications or City specifications and standards.

It is required that the maintenance of the traffic conform to the Manual of Uniform Minimum Standards For Design, Construction and Maintenance For Streets and Highways (Florida Greenbook), the FDOT Standard Specifications for Road and Bridge Construction (2013), and the FDOT Roadway and Traffic Design Standards (2013).

#### **SP- 2.01 BID ITEMS:**

It is the intent of these Contract Documents that any items of work and all costs for which compensation is not directly provided by a bid item but are incidental to various project items of work, shall be prorated and included in the bid item for which they are required. Failure of the Contractor to follow this procedure shall be basis for rejection of its bid. Items related to the construction of the park shall be included in the lump sum bid amount for the park.

#### **SP-2.02 LINES AND GRADES:**

The General Provisions Section G-8.01 through G-8.04 are revised to read as follows:

##### **G-8.01 GENERAL**

All work done under this contract shall be constructed in accordance with the lines and grades as shown on the plans or as directed by the Engineer. The full responsibility for keeping alignment and grade shall rest upon the Contractor.

The Engineer will establish Bench Marks and baseline controlling points only. All elevations indicated or specified refer to the North American Vertical Datum of 1988.

## G-8.02 SURVEYS

The Contractor shall furnish and maintain stakes and other such material as may be required for setting reference marks, and shall establish all working or construction lines and grades as required from the reference marks set by the Engineer's Surveyor, and shall be solely responsible for the accuracy thereof. The Contractor shall, however, be subject to check and review by the Engineer's Surveyor. The cost of this work shall be included in the pay item for Mobilization, and no separate payment shall be made.

Pay items requiring survey information, such as embankment or excavation, shall be documented by a Florida Registered Professional Surveyor and Mapper hired and/or employed by the Contractor. In addition, plotted cross sections and quantity computations must be supplied and certified. All surveys shall be in accordance with the Minimum Technical Standards set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 61G17-6, Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

## G-8.03 SAFEGUARDING MARKS

Add the following paragraph to General Provision Section G-8.03:

The Contractor shall, with no additional payment, furnish and install reference stakes at all even and half-stations along the project survey baseline. These stakes shall be maintained for the duration of construction for the purpose of the Engineer's reference

## G-8.04 DATUM PLANE

All elevations indicated or specified refer to the North American Vertical Datum of 1988 (NAVD88).

## **SP-2.03 REQUIREMENTS FOR CONTROL OF THE WORK:**

Prior to the start of the work included in this contract, a Pre-construction Conference will be held by the Engineer to be attended by the Contractor and representatives of the various utilities and others for the purpose of establishing a schedule of operations which will coordinate the work to be done under this contract with all related work to be done by others within the limits of the project. The Contractor shall be prepared for this meeting and shall present a comprehensive construction schedule for all items of work to be accomplished, which will be used as the basis for the development of an overall operational schedule and a list of subcontractors and material suppliers to be used on this work.

All items of work in this contract shall be coordinated so that progress on each related work item will be continuous from week to week. The progress of the work will be reviewed by the Engineer at the end of each week, and if the progress on any item of work during that week is found to be unsatisfactory, the Contractor shall be required to adjust the rate of progress on that item or other items as directed by the Engineer.

The Contractor shall conduct operations in such a manner as will result in the minimum of inconvenience to occupants of adjacent homes and business establishments and shall provide temporary access as directed or as conditions in any particular location may require.

Access to adjacent residential, public and commercial properties shall be provided at all times during the contract period. The Contractor shall restore to its previous condition as directed by the Engineer any private property, City property, or utilities damaged by its construction. No payment shall be made to the Contractor for any required restoration of private property, City property or utilities, unless otherwise noted.

**SP-2.04 CONTRACTOR'S WEEKLY SCHEDULE:**

In order that the Department of Public Works personnel may be advised of the work to be performed, the Contractor shall be required to submit weekly to the Engineer of its designated representative a schedule indicating the proposed work plan for the forthcoming week. Such shall be delivered to DPW not later than Friday preceding the work plan week unless other arrangements have been made for this submittal.

**SP-2.05 MONTHLY CONSTRUCTION ESTIMATES AND RELEASE OF LIEN:**

The Contractor shall prepare on or about the first day of each month an estimate of the work completed in the preceding month. Said estimate shall be prepared on standard forms provided by the Engineer, and three (3) signed originals shall be provided by the Contractor. Monthly construction estimates shall include separate breakdowns for each base bid and alternates. Any disputed quantities shall be adjusted as directed by the Engineer prior to each partial payment, as provided for in Article 10.05 of the Agreement.

Certification that all subcontractors have been paid for the previous month's work shall be submitted with each partial payment request on forms provided by the Engineer.

An update of the overall project schedule shall be submitted with each partial payment request.

**SP-2.06 CONTRACTOR'S REPRESENTATIVE:**

Add the following paragraph to Article 8.02 of the Agreement:

"The Contractor shall submit in writing to the Engineer the name of its duly authorized representative who will be present on the job during all work activities and is authorized to make decisions for the Contractor. Any change in the contractor's representative shall require written notification to the Engineer prior to such change".

**SP-2.07 SANITARY FACILITIES**

Contractor shall at all times provide a lockable sanitary facility available for engineer's use for the duration of the project.

**SP-2.08 DAMAGE TO ADJACENT STREETS:**

Any streets (including detour routes) consisting of travel lanes, curbs, gutters and shoulders, outside the project area (not designated for construction), which are determined by the Engineer to have been damaged due to construction related operations and/or equipment, shall be restored by the Contractor to its original or better condition without any cost to the City and to the satisfaction of the Engineer.

**SP-2.09 PROJECT PHOTOGRAPHS:**

The Contractor will not be required to furnish photographs of the project; however, the Engineer may or may not take photographs of the area immediately prior to and after completion of the construction for record and information. To assure that there will not be any conflict with this photography, the Contractor shall not perform clearing operations or actions which will disturb any street or area within the project until the Engineer has been advised thereof and has had adequate opportunity to perform the desired photography.

**SP-2.10 PROJECT VIDEOTAPES:**

The Contractor shall submit to the Engineer for approval prior to commencing work a DVD containing a continuous color video recording including complete coverage of pre-construction conditions of all surface features within the construction's zone of influence, (including detour routes) simultaneously produced audio commentary and electronic display of time and date. The video recording shall be sufficient to fulfill the technical and forensic requirements of the project and provide continuous unedited coverage, establishing locations and viewer orientation with clear, bright, steady and sharp video images with accurate colors free of distortion or other imperfections. The video must be accompanied by a detailed log of the recorded contents including date, locations, track numbers and features. No work shall be allowed to commence until the completed video and Log are approved by the Engineer.

The cost of providing this work should be included under the pay item for Mobilization and no separate payment shall be made.

**SP-2.11 PROJECT CLEAN-UP:**

Clean-up on this project is extremely important and the Contractor will be responsible for keeping the construction site neat and clean with debris being removed regularly as the work progresses.

If project cleanliness and/or dust control reaches an unacceptable level in the opinion of the Engineer, the Engineer will notify the Contractor in writing. If the Contractor does not act to correct the situation within 4 hours in the case of dust control or within 24 hours in the case of general cleanliness, the Engineer may call upon outside forces to provide the appropriate services. Cost of all such activities shall be charged to the Contractor via contract change order.

**SP-2.12 PERMITS:**

The Contractor shall be responsible for obtaining all applicable City permits for this project. These can include but may not be limited to: Rights-of-Way permit(s), Site Clearing/Tree Removal permit(s), and Drainage /Earthwork permit(s). The Contractor shall supply any required plans or other information to the issuing department.

The time required to prepare, submit, review, and issue the permits shall be included in the contract time and no payment shall be made for any delay incurred by this process.

Cost for obtaining City permits shall be included in the pay item for Mobilization, and no separate payment shall be made. The fee for a Rights-of-Way Construction Permit shall be waived by the City.

Copies of the Southwest Florida Water Management District Environmental Resource Permit and FDEP Water Permit will be provided to the Contractor prior to commencement of construction.

**SP-3.01 STREET CLOSURE AND MAINTENANCE OF TRAFFIC:**

A temporary street closure permit, to be secured by the Contractor, will be required for closure of a street, lane, or sidewalk within Rights-of-Way under the jurisdiction of the City of Tampa, Florida Department of Transportation, and Tampa Hillsborough Expressway Authority.

These permits will establish the requirements for the closure related to number of lanes and/or time of day lanes or street may be closed. The Contract shall adhere to the requirements as described in the permit(s). The cost for

obtaining temporary street closure permits shall be included in the pay item for Maintenance of Traffic and no separate payment will be made.

Maintenance of Traffic (MOT) on Meridian Avenue is restricted. There will be no lane closures between the hours of 5:00 AM and 9:00 AM and 3:00 PM through 7:00 PM, Monday through Friday. In addition, due to the Tampa Bay Times Forum event schedule, other restrictions may apply. Contractor shall coordinate any lane closures with the respective agencies a minimum of Forty-Eight (48) Hours in advance.

Vehicular (both personal and commercial) and pedestrian access to adjacent properties shall be maintained at all times. Unless approved otherwise by the City of Tampa one lane of traffic shall remain open during construction.

The cost for the various items associated with maintenance of traffic shall reflect the cost for placing and maintaining the item for the duration of construction.

Payment shall be made under:

Item No. SP-3.01-1	Maintenance of Traffic	LS
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**SP-3.02 TRAFFIC INFORMATION SIGNS:**

The Contractor's attention is directed to Section 10 of the General Provisions, PROTECTION OF WORK AND PUBLIC, and to the consideration therein for providing Advanced Notice information signs advising the public of scheduled closures, thereby creating better understanding and relations during the construction. Variable message signs shall be set in-place at least two weeks prior to the closing.

Payment shall be made under:

Item No. SP-3.02-1	Mobilization	LS
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**SP-3.03 PROJECT SIGN:**

The Contractor shall furnish one (1) project signs in conformance with the general configuration and dimensions as shown on the attachment SIGN-1 and SIGN-2, which is made a part of these specifications. The signs shall be maintained in good condition until the completion of the project, and shall be located as instructed by the Engineer.

The cost of furnishing and maintaining the signs shall be included in the pay item for Mobilization and no separate payment shall be made.

**SP-3.04 NIGHT WORK:**

No work shall be performed at night unless approved by the City and/or Engineer prior.

**SP-4.01 DENSITY REQUIREMENTS:**

Refer to applicable sections of FDOT Standard Specifications (2013). Soil density testing shall be provided by the City of Tampa.

**SP-4.02 SOIL STABILIZATION:**

Refer to applicable sections of FDOT Standard Specifications (2013).

Payment shall be made under:

Item No. SP-4.02-1	Stabilization Type B (12")	SY
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**SP-4.03 SOIL BORING INFORMATION:**

A subsurface geotechnical investigation has been completed and is included with the contract documents. Refer to Geotechnical Engineering Report East Madison Street by Terracon Consultants, Inc dated August 12, 2013. Additional investigation required during construction will be at no cost to the City of Tampa.

**SP-4.04 TEMPORARY STOCKPILING:**

For temporary stockpiling of the excavated material within project limits (and anywhere within City limits) the Contractor shall adhere to the following procedure:

Public Right of Way

- A. The Contractor will not be allowed to stockpile suitable, excavated material within right-of-way for a period in excess of 30 calendar days. Unsuitable excavated material shall not be stockpiled within public right-of-way for a period in excess of 7 calendar days.

Location other than Public Right-of-Way

- B. The Contractor shall:
  - 1. Obtain written permission from the owner of the property where stockpiling is desired.
  - 2. At its own expense present the above letter and a contour plan of the site to the Engineer for approval of stockpiling site.
  - 3. At the conclusion of the stockpiling activity, the Contractor shall obtain a signed letter of release from the property owner that he/she is completely satisfied with the stockpiling operation and with the restoration of their property. A copy of the letter shall be furnished to the Engineer.

The time periods of stockpiling shall be specified by the Contractor in writing. Upon removal of stockpiled material, the Contractor shall clean up and grade the site to its original contours and conditions.

The City of Tampa shall not be a party to any agreement between the Contractor and private property owner(s). Regardless of the location of stockpiling, it shall be the Contractor's responsibility to make sure that stockpiling in no way constitutes a public hazard, nuisance and does not interfere with the natural surface runoff in the area.

**SP-4.05 DEWATERING:**

Dewatering operations shall be performed with consideration to possible effects to adjacent structures. The condition of adjacent structures and surrounding areas that may be affected by the lowering of the groundwater level shall be surveyed and documented prior to beginning dewatering operations. Upon completion of dewatering activities the contractor shall inspect adjacent structure and surrounding areas to determine if any damage may have occurred. Contractor shall document the results of this inspection.

The dewatering shall be done by an experienced contractor. The Contractor shall submit a dewatering plan signed and sealed by a professional engineer registered in the state of Florida detailing the proposed methodology by which dewatering is to be accomplished and shall include a list of the structures and areas to be surveyed for potential damage.

Discharges from dewatering activities shall meet State and Federal regulatory criteria. Dewatering permitting, as regulated by the Southwest Florida Water Management District, shall be the responsibility of the Contractor.

Any dewatering requiring discharge to the City of Tampa sanitary sewer system shall be metered. The Contractor shall submit the meter details and specifications to the Engineer for approval prior to installation. The discharge shall not exceed 250 gallons per minute as directed by the City of Tampa Wastewater Department. The dewatering discharge connection to a sewer manhole or pipe shall meet the City of Tampa criteria.

Dewatering will only be allowed for one (1) calendar year from the issuance of a Service Commitment by the City of Tampa Wastewater Department. Should the dewatering activities need to extend past this date, the Contractor is to notify the Engineer 30-days in advance of the expiration of the Commitment to allow sufficient time for the Service Commitment to be extended. A copy of the Service Commitment will be provided to the Contractor prior to commencement of dewatering activities on Madison Street. The Contractor will be required to create a temporary customer service account with the City of Tampa for to allow for meter reading and inspection of the meter. The Contractor shall provide the City with the meter serial number and the meter shall be maintained and used on-site throughout the duration of the project dewatering activities. The City may, at its discretion, sample the discharge into the sewer system. Payment will be made to the Contractor for the fee paid to the City for the disposal of the discharge on the City sanitary sewer system.

Payment shall be made under:

Item SP-4.05-1	Dewatering Discharge Disposal	Allowance
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**SP-4.06 REMOVAL OF UNSUITABLE SOILS:**

Refer to Geotechnical Engineering Report East Madison Street by Terracon Consultants, Inc dated August 12, 2013 and included with the contract documents for unsuitable material classification and locations. The Contractor shall be responsible for excavation, removal, and disposal of all material deemed unsuitable, and replace with suitable backfill. Payment will be made to the Contractor per ton of unsuitable soil removed measured by the truckload.

Payment shall be made under:

Item SP-4.06-1	Removal of Unsuitable Soils	Tons
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**SP-5.01 UTILITY PROTECTION CONSIDERATIONS:**

The Contractor shall protect all utilities and other facilities within and adjacent to the construction area, unless a utility firm has conclusively indicated, or such is shown on the plans, that the certain adjustment, removal, reconstruction, or protection of the utility's facility will be performed by that respective utility.

The Contractor shall make every effort to protect all water mains. If the main is damaged or lost, the Contractor shall replace the affected line in strict accordance with the City of Tampa Water Department Specifications and Construction Standards, latest, edition, at no extra cost to the City, and he shall assure that service is maintained at all times.

The Contractor shall make every effort to protect all sanitary sewer lines. If the main is damaged or lost, the Contractor shall replace the affected line in strict accordance with the City of Tampa Wastewater Specifications and Construction Standards, latest edition, at no extra cost to the City.

It will be the Contractor's responsibility to preserve all existing sanitary sewer services without interruption--unless noted otherwise--during the construction of storm sewers or the repairs or reconstruction of sanitary sewers. When the construction of storm sewers, repair or reconstruction of sanitary sewers has been completed, all temporary connections shall be removed. Sewers shall be cleaned of all settled solids and debris removed and disposed of properly.

The cost of handling sanitary sewers during construction, including cost of all labor, materials, and equipment or other items incidental to completing the job, shall be included in the contract price as bid for the contract items and no separate payment shall be made.

It will be the Contractors responsibility to preserve all existing ditches, swales, force main, gravity main, laterals, etc., and other stormwater appurtenances and facilities pertaining thereto whether owned or controlled by City, other governmental bodies or privately owned by individuals, firms or corporations.

Any temporary measures constructed shall first be approved by the Engineer. The cost of such temporary measures shall be included in the contract price for storm sewer items and no separate payment shall be made.

The Contractor shall furnish, install, and remove sheeting and shoring and other protective measures as may be necessary to satisfactorily accomplish the construction of this project. The cost of such sheeting and shoring and other protective measures shall be included in the unit prices as bid for the storm sewer items and no separate payment shall be made.

In the event that a utility line is located within the limits shown in Diagram P of these specifications, the following exceptions may be made:

- a) If the utility is incorrectly shown on the plans and the actual location is found to be completely within the limits of Zone B, the Contractor will be eligible to receive compensation for steel sheeting and shoring to be furnished, installed, and removed to protect the portions of such utility line lying within Zone B as directed and approved by the Engineer.
- b) If the utility is incorrectly shown on the plans and the actual location is found to be within the limits of Zone A so that relocation will be necessary, as determined by the Engineer, the Contractor will be compensated for performing the relocation construction when directed and approved by the Engineer, at applicable contract unit prices.

The above provisions shall only apply to water, sanitary sewer and drainage lines, which are, in general parallel to the lines under construction.

The limits and the definitions of Zones A and B are not intended to define any excavation requirements and shall in no way cause any conflict with any authorized safety requirements or applicable governmental laws and regulations.

Utility lines which are correctly located on the plans and fall within the limits of Zone B or A of Diagram P shall not be considered as being either exception (a) or (b) and are not eligible for compensation.

Compensation for steel sheeting and shoring furnished, installed and removed shall be paid for as extra work in accordance with Article 7.02, EXTRA WORK, on Page A-8 of the Tampa Agreement when approved for use by the Engineer. Such approval shall be for its use only, and the Contractor shall have full responsibility for the design, installation, and removal of the sheeting and shoring. The Contractor shall obtain the services of a registered Professional Engineer to design and certify the sheeting and shoring plans.

**SP-5.02 ADJUSTMENT OF UTILITIES AND PUBLIC SERVICE INSTALLATIONS:**

Storm and sanitary sewer manhole covers, valve covers or boxes, water meter boxes, fire hydrants, and vaults located within the limits of construction of the pavement or sidewalk area to be constructed, reconstructed or overlaid shall be relocated or adjusted by the Contractor to conform with the new pavement or sidewalk elevation as a part of the work of constructing or reconstructing the pavement or sidewalk and no separate payment will be made.

Appurtenances of other utilities will be relocated or adjusted by the utility company owning or having jurisdiction over the respective utility.

**SP-5.03 REMOVAL OR ADJUSTMENT OF PUBLIC UTILITIES:**

The Contractor will make necessary arrangements with public utility companies for removal or adjustments of existing utilities, whether shown or not shown on the plans, where such removal or adjustment is determined by the Engineer to be essential to the performance of the required construction, provided normal construction procedures are used by the Contractor.

Relocations or adjustments requested by the Contractor on the basis of the use of a particular method of construction or a particular type of equipment shall not be considered as being essential to the construction of the project if other commonly used methods or equipment could be employed without the necessity of relocating or adjusting the utility. The Engineer will determine the responsibility for any such adjustment of utilities.

Relocations or adjustments requested for the Contractor's convenience or because of delivery of materials to the job site shall be the responsibility of and at the expense of the Contractor.

The Contractor shall be required to coordinate its activities with relocation work by the utilities. This schedule may be adjusted to "fit" the Contractor's proposed schedule, but it will include periods during which the Contractor's ability to perform work in the relocation area will be limited, with no additional compensation.

**SP-5.04 UNDERGROUND ELECTRICAL**

The Contractor shall provide all labor, equipment, and other incidentals necessary to install 2-inch, 4-inch, and 6-inch diameter "SCH 40" PVC pipe and appurtenances at the locations shown on the Utility Adjustment Plans. The material is being furnished by Tampa Electric Company (TECO) including the PVC Conduit Pipe, Couplings, Elbows, Glue, and Mule Tape (aka Pull Tape). The Contractor is required to pick up the material at the TECO storage yard at the NE corner of 78th Street and Palm River Road. TECO is requesting that the contractor provide 45 days' notice prior to the date the contractor wants the material so they can order it and have it on-site for the day when the contractor desires to pick it up. The cost of transporting the material to the job site shall be included in the unit price for installing the conduit.

Where shown on the plan, the Contractor shall "Stub-out" the conduit runs aboveground at each light pole location and at the locations of future handholes to be installed by TECO. Mule tape shall be installed with compressed air after the complete installation of conduit with the appropriate size mandrel or "rabbit" blown through the conduit with mule tape attached to it. After installation of each stub-out, the pipes shall be supported by tying to a wooden or metal stake and the ends of pipe above ground shall be sealed off from the elements.

The cost for installing the conduits shall also include the capping of existing service conduits indicated in the plans to be abandoned.

Payment shall be made under:

Item No. SP- 5.04-1	2” PVC Conduit (Install only) (Direct Burial)	LF
Item No. SP-5.04-2	4” PVC Conduit (Install only) (Direct Burial)	LF
Item No. SP-5.04-3	6” PVC Conduit (Install only) (Direct Burial)	LF
Item No. SP-5.04-4	Electrical Manhole(Install only)	EA

**SP-6.01 USE OF CITY WATER SYSTEM:**

A Tampa Water Department portable meter shall be utilized when obtaining water from the City system. The Contractor will be responsible for obtaining the meter from the City and no separate payment will be made for the meter or water usage.

**SP-6.02 WATER MAIN CONSTRUCTION:**

All materials and workmanship shall be in accordance with the Specific Provisions, Contract Pay Items, Construction Details, & Material Specifications for Water Main Relocation (WR) made a part of these specifications. The Contractor shall also comply with any applicable sections of the City of Tampa Water Department Technical Specifications and Construction Standards and Materials Specifications, latest edition available from the Tampa Water Department, with the exception that pipe joint gaskets shall be made of EPDM Rubber.

Use only brass or cast iron fittings for 3” and less water main tapped connections. Use of galvanized fittings for 3” and less water main tapped connections is not allowed.

**SP-7.01 FILLING LOW AREAS WITHIN CITY LIMITS:**

The Contractor under Sec. 21-27 (Permit Requirements) of the City of Tampa Code is prohibited from filling any area public or private (except where shown on the construction plans) within the project limits or anywhere within the City limits without a permit.

For filling and/or grading any area, the owner of such area shall obtain a permit from the Stormwater Department, City of Tampa. The owner shall submit existing and proposed contour plans of the area to be filled and the adjacent land for determination if a permit could be issued. Drainage patterns cannot be altered to the detriment of neighboring property owners or public rights-of-way.

Concurrently the permit application will be reviewed by the Parks Department. The Contractor will be required to verify with City of Tampa Transportation Department the extent of the work covered under the Right-of-Way use permit and seek additional permits from the City of Tampa as necessary.

The Contractor shall not deposit any fill material within the City limits without an approved permit. A copy of the permit shall be submitted to the Engineer, by the Contractor prior to any filling or grading operation.

**SP-7.02 ENVIRONMENTAL PROTECTION:**

The Contractor will be held liable for the violation of any and all environmental regulations. Violation citations carry civil penalties, and in the event of willful violation, could result in criminal penalties. Even though permits are issued to the City does not relieve the Contractor in any way of its environmental obligations and responsibilities associated with environmental protection under the law.

The City will secure the NPDES permit prior to commencement of construction. The contractor will be responsible for compliance with the conditions of the permit. The conditions of the permit may include and are not limited to: installation, maintenance of erosion control devices and other best management practices, and filing a NPDES Stormwater Notice of Termination with the FDEP upon completion of construction and once stormwater discharges associated with construction activity have ceased.

### **SP-7.03 REINFORCED CONCRETE PIPE/BOX:**

All reinforced concrete pipe, storm drain, and sewer pipe, all reinforced concrete elliptical pipe and all pre-cast reinforced concrete box sections shall be inspected and accepted by a testing laboratory approved by the Engineer.

Each pipe/box shall bear the stamp of acceptance of the testing laboratory and the Engineer shall be supplied with a copy of each inspection report, including a certification of "D-load", absorption test and conformance to the dimensional and all other designations of ASTM specifications. The cost of such inspection services shall be included in the unit prices for the respective pipe/box items.

Unless specified otherwise on plans or specifications, or directed by the Engineer, all storm sewer and culvert pipes shall be ASTM Class III, B wall thickness. All steel shall be grade 60.

All joints in elliptical concrete pipe and round R.C.P. shall be provided with filter fabric or concrete jacket as per FDOT Standard Index No. 280 and as directed by the Engineer. Filter fabric shall be provided at all joints, except the last two joints not supported by a structure; these joints shall be provided with a concrete collar.

The cost of the filter fabric jackets and concrete collars shall be included in the unit cost of pipe. No separate payment will be made for such jackets or collars.

All round and elliptical reinforced concrete pipe and all pre-cast concrete box sections shall be manufactured and installed without lift holes. The Contractor shall install the pipe/box with the use of slings, hooks or other methods approved by the Engineer.

All round and elliptical reinforced concrete pipe shall be manufactured without visible corrugations on the internal wall. Any pipe with visible corrugations on the internal wall shall be rejected.

The City does not require stormwater pipes to be televised and/or laser profiled, nor does the City allow resilient connectors.

Prior to any putting the system into operation or allowing the flow of any discharges, the stormwater system shall be cleaned thoroughly of soil, debris, and any fine particles, subject to the Engineer's approval.

The Contractor shall provide all labor, equipment, and materials to furnish and install the reinforced concrete pipe. The furnish and installation of the reinforced concrete pipe shall include, but may not be limited to:

1. Excavating the trench and removal of excess material if necessary;
2. Maintaining the trench which shall include de-watering and sheeting and bracing as required by OSHA or as directed by the Engineer;
3. Cleaning dirt and foreign material from within pipe and bell;

4. Furnishing and installing approved pipe and pipe shorts as part of the pipeline;
5. Backfilling, compaction and consolidation shall be done in accordance with the requirements of the FDOT Standard Specifications for Road and Bridge Construction;
6. All necessary restoration including but not limited to sod, landscaping, curb, sidewalk, and restoring the roadway or right-of-way in conformance with the Standard Details;
7. Cleaning up and removing excess water main pipe and appurtenances;

Payment shall be made under:

Item No. SP-7.03-1	Pipe Conc. Culv. (Class III)(18" RCP)	LF
Item No. SP-7.03-2	Pipe Conc. Culv. (Class III)(30" x19" ERCP)	LF
Item No. SP-7.03-3	Pipe Conc. Culv. (Class III)(24" RCP)	LF

#### **SP-7.04 DRAINAGE STRUCTURES:**

1. All inlets and manholes will be constructed according to the FDOT Standard Specifications, Section 425 and according to the specifications herein. All manholes shall be traffic bearing type.
  - a) The minimum distance from the top of the opening for the highest pipe to the bottom of the top slab shall be ten inches (10"); 12"+ from top of pipe to bottom of top slab, before "stack" is used.
  - b) The minimum diameter for stacks shall be as follows:
    - Twenty-four inches (24") for four feet (4') heights, Thirty-six inches (36") for four feet (4') to six feet (6') heights, and Forty-eight inches (48") for heights over six feet (6').
    - The stacks shall be symmetrical about the openings, five inches (5") minimum wall thickness, reinforced, and keyed (unless constructed of brick) as per the appropriate FDOT standard.
  - c) The minimum distance between pipe openings shall be nine inches (9").
  - d. For four-sided structures having openings in one or more corners, individual shop drawings must be submitted for prior approval.
2. If warranted by field conditions and directed by the Engineer, the Contractor shall, at such locations, construct rectangular brick drainage structures (in place of concrete drainage structures), according to the standards specified below:

Brick construction shall be as follows:

- a. Wall thickness minimum eight inches (8") up to eight feet (8') height, unless specified otherwise.
- b. Wall thickness minimum twelve inches (12") up to twelve feet (12') height, unless specified otherwise.
- c. Brick shall be laid in 1:2 (Portland cement-sand) mortar.
- d. Before laying the bricks in mortar, the bricks shall be thoroughly sprinkled with clean water (not to saturation extent).

- e. Brick for manhole and inlet structures shall be laid in stretcher courses, with every sixth course a header course.
  - f. All brick structures shall be plastered smooth inside and outside with 1/2" thick, 1:2 (Portland cement-sand) mortar.
  - g. No "unsound" brick shall be used. As a test, if a light hammer blow, with the brick held lightly in hand, does not produce a uniform crisp ringing sound, the brick shall be construed to have crack(s), or otherwise unsound and shall be rejected.
  - h. All bricks shall be solid clay.
3. No additional compensation shall be paid for brick structures.
4. For all types of manholes, the top and bottom slabs shall be as per applicable FDOT standards, even if brick is allowed to be used in the manhole walls. The following criteria shall apply to slab thicknesses and steel reinforcements:
- a. Top and bottom slabs shall have the same thicknesses and reinforcements in any manhole structure.
  - b. The minimum slab thickness and reinforcement shall be: 8" thick and #6 bars at 6" centers both ways.
  - c. 4'x6' or larger manholes including circular manholes with inside diameter of 5.0' or larger shall have 10" thick slabs with #7 bars at 6" centers both ways.
  - d. Unless specified on the plans, four sided structures with both inside dimensions in excess of 8.0' and circular structures with inside diameter in excess of 8.0' shall not be covered by D.O.T. and the above criteria.
5. All grate inlets shall conform to the City of Tampa design standards.
6. Grates on inlets, as well as all other structures, shall be Traffic Bearing Type, unless specified otherwise, and subject to approval of the Engineer. All grate inlets shall be fitted with an approved metal frame at the top to seat the grates.
7. All Type-P and Type-J manholes shall be bid at one average unit price regardless of size and shape unless indicated otherwise in the proposal.
8. Vertical support columns (one in case of Type 5 inlet) shall be constructed by the contractor, as a part of the FDOT Type 5 and 6 curb inlets, where and as directed by the Engineer.
9. Side openings in curb and grate type inlets may be specified in the plans to meet site conditions. The Contractor shall provide such openings as part of the required work and no separate payment shall be made.
10. When precast drainage structures are requested as substitutions for poured in place concrete structures, Contractor shall meet the following additional requirements:
- a. Minimum height of the base structure (manhole or inlet barrel) unless restricted by design, shall be 5'-0" before extending the structure height by another precast "barrel". The minimum height of the top (extension) precast "barrel" shall be 1'-6". "Barrel" extensions of less than 1'-6" height shall be cast in place with continuous reinforcement.

- b. Four-side structures may be considered as an alternate to circular structures, but not the reverse.
  - c. For City type curb inlets, unless specified otherwise, directed by the Engineer, or to accommodate larger pipes, the Contractor may use 3'x4' (inside dimensions) substructures. This structure shall have same slab and wall thicknesses and steel reinforcing as specified for "Type E" grate inlet.
  - d. When circular structures are precast in accordance with ASTM C478, the following limitations will apply:
    - (i) Maximum inside diameter shall not exceed 96".
    - (ii) Minimum wall thickness for 42" and 48" diameter substructures shall be 6"; 7" for 72" diameter, 8" for 84" and 96" diameters.
    - (iii) Vertical reinforcement in walls shall be equal in area to the required circumferential reinforcement area. Reinforcement spacing shall not exceed 12" O.C. in either direction.
  - e. The location of the pipe holes and adequate basic substructures height, unless directed otherwise by the Engineer, shall be the responsibility of the Contractor.
  - f. Contractor shall submit shop drawings only as specified below:
    - (i) One each-typical for different type of structures.
    - (ii) For structures directed by the Engineer, and/or requiring change with respect to design plans, or as otherwise required by these specifications.
  - g. No compensation shall be paid to the Contractor for precast drainage structures which are unusable due to site conditions or changes in plans.
  - h. Provide material testing acceptance reports by a licensed private laboratory verifying:
    - (i) That the structures were constructed in accordance with detail shown on the plans and/or typical Drawings.
    - (ii) Specific reference shall be made to the exact design criteria adhered to; if more than one, identify which criteria applies to which structures.
    - (iii) Identify the project title, project number, file number, date cast, structure, plan sheet number and station.
    - (iv) Reinforcement size, spacing, amount and cover.
    - (v) Concrete placement, curing and strength.
    - (vi) The testing laboratory stamp shall be placed on each structure prior to shipment.
11. All manhole and inlet structures shall be set on a minimum of a six-inch thick layer of compacted # 57 size coarse aggregate unless noted otherwise in the plans or specifications or unless the Engineer determines a thicker layer is required due to soil and/or water conditions. The layer of stone shall be wrapped in a filter fabric in accordance with SP-7.05 of these Specifications. Payment for the stone shall be included in the price of the structure.

12. All excavation for structures is included under these pay items.

Payment shall be made under:

Item No. SP-7.04-1	Drainage Structure Modify	EA
Item No. SP-7.04-2	FDOT Curb Inlet Type P-5<10'	EA
Item No. SP-7.04-3	FDOT Curb Inlet Type J-5<10'	EA
Item No. SP-7.04-4	FDOT MH Type P-7, Partial	EA
Item No. SP-7.04-5	FDOT MH Type P-8<10'	EA

**SP-7.05 STANDARD FOR FILTER FABRIC:**

Unless specified otherwise on the plans, filter fabric shall be nonwoven fabric per FDOT Standard Specification, Sections 514 and 985. Payment for furnishing and placing the filter fabric shall be included in the contract price for the item or items to which it is incidental.

**SP-7.06 CONNECTION TO EXISTING INLET OR MANHOLE:**

The Contractor shall provide all labor, equipment and materials necessary to connect the proposed pipeline into an existing inlet or manhole as shown on the Plans, or as specified, and directed by the Engineer.

The work includes all excavation, breaking into the existing structure, closing of the existing slot, removal and disposal of rubble and excess materials, installation of storm sewer pipe, sealing the voids around the pipe, backfilling, compacting and all other work incidental to connection to existing inlet or manhole.

The cost of this work shall be included in the contract unit price for the size of pipe installed and no separate payment shall be made.

**SP-7.07 EROSION CONTROL:**

The Contractor shall implement erosion control measures as shown on the Construction Plans. The Contractor shall be required to submit an erosion control plan to the Engineer at the time of the pre-construction conference.

The erosion control plan shall indicate in detail all measures proposed by the Contractor to meet its erosion control obligations, including all items required to meet permitting conditions for the project. Any phasing of the erosion control plan shall also be shown.

Inspection reports shall be done by the Engineer in compliance with the SWPPP, and the Contractor will be notified of any activities that are not in compliance. In accordance with the SWPPP, the Contractor is required to initiate any necessary repairs within 24 hours of notification of Non-compliance. If the Contractor does not comply, then the Contractor shall cease work on the project until the repairs are made to the satisfaction of the Engineer.

The cost of providing, revising, updating, implementing the erosion control plan and maintaining of the Best Management Practices for the work on E Madison Street detailed in the plan shall be made under:

Item No. SP-7.07-1	Implementation & Maintenance of Erosion Controls	LS
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**SP-7.08 DRAINAGE STRUCTURE AND PIPE BEDDING:**

The Contractor shall furnish and install Bedding Material consisting of compacted FDOT #57 crushed stone material as approved by the Engineer.

For Drainage Structures:

- All manhole and inlet structures shall be set on a minimum of a six-inch thick layer of compacted # 57 size coarse aggregate unless the Engineer determines a thicker layer is required due to soil and/or water conditions. The layer of stone shall be wrapped in a filter fabric.

For Pipe Bedding:

- All pipe shall be set on City of Tampa Class B bedding consisting of a layer of compacted #57 size coarse aggregate the width of the trench at a depth that is a minimum of 4” below the outside diameter of the pipe to a height of one half of the outside diameter of the pipe. The bedding and pipe shall be wrapped in filter fabric and AASHTO Class A-1 or A-3 sands shall be placed the width of the trench to a height of 6” above the outside diameter of the pipe.

All filter fabric shall be in accordance with SP-7.05 of these specifications. Payment for the bedding material shall be included with the unit price for the structure or pipe contract item.

**SP-8.01 PAVEMENT SURFACES:**

Where shown on the plans the Contractor shall meet existing sidewalks, driveways and parking areas (concrete or asphalt) when possible with the proposed street replacement. At locations where existing sidewalks and driveways are not at the same elevations as the new grades, the Contractor may be required to reconstruct a portion of the sidewalk or driveway as directed by the Engineer. There will be no payment if existing sidewalks or driveways must be reconstructed due to negligence of the Contractor.

New pavement surfaces shall meet applicable sections of the FDOT Standard Specifications (2013) and the requirements of Sections 02510 – Saw-Cut Concrete Sidewalk, 02511- Shell Aggregate Concrete Sidewalk. Any areas of impact to existing pavers shall be reinstalled according to the appropriate details on the streetscape design plans.

Payment shall be made under:

Item No. 02511-1	Shell Aggregate Concrete	SF
Item No. 02510-1	Saw-Cut Concrete	SF

**SP-8.02 PRIME/TACK COAT:**

Refer to applicable sections of the FDOT Standard Specifications (2013).

**SP-8.03 BASE MATERIAL:**

Refer to applicable sections of the FDOT Standard Specifications (2013).

Payment shall be made under:

Item No. SP-8.03-1	Base Group 9 (LBR-150) (10")	SY
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**SP-8.04 PEDESTRIAN RAMPS:**

Refer to applicable sections of the FDOT Standard Specifications (2013).

Payment shall be made under:

Item No. SP-8.04-1	Concrete Pedestrian Ramp (6")	EA
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**SP-8.05 CONCRETE CURB AND CURB AND GUTTER**

Refer to applicable sections of the FDOT Standard Specifications (2013).

Payment shall be made under:

Item No. SP-8.05-1	Concrete curb (Type F)	LF
Item No. SP-8.05-2	Concrete curb (Type D)	LF
Item No. SP 8.05-3	Concrete curb (Drop Curb)	LF

**SP-8.06 TURNOUTS**

Concrete turnouts shall meet FDOT design standards and standard specifications. Refer to applicable sections of the FDOT Standard Specifications (2010).

Payment shall be made under:

Item No. SP-8.06-1	Turnout Construction, Concrete (6")	SY
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**SP-9.01 RESTORATION OF LANDSCAPING WITHIN RIGHT-OF-WAY:**

Existing landscaping including small trees and shrubbery, walkways, planters, and irrigation systems may need to be removed or relocated to facilitate construction. The Contractor shall make provision for relocating and/or reconstructing any existing landscaping items as directed by the Engineer.

Cost of removing, relocating, and/or reconstructing the above items shall be included in the lump sum price for Clearing and Grubbing, and no separate payment shall be made.

**SP-9.02 TREE PROTECTION:**

The Contractor shall make provisions for tree protection to the satisfaction of the Engineer prior to any excavation or clearing and grubbing. All applicable site inspections by the City of Tampa Parks Department and all permits required for tree work shall be obtained by the Contractor prior to commencing work.

Tree barricades shall be constructed and maintained at the locations indicated on the Demolition Plan and/or as directed by the Engineer. Generally, barricades are to be placed ten (10) feet from the trunk of each protected tree, but a minimum of six (6) feet is acceptable when in conflict with the proposed construction and when approved by the City.

Barricades shall be constructed of commercially available pine lumber, as follows: Vertical members shall be 2" x 2" or larger, generally spaced six (6) feet apart. Horizontal members shall consist of one (1) 1" x 2" board.

Payment for tree protection shall be included in the lump sum price bid for Clearing and Grubbing and no separate payment shall be made.

**SP-9.03 TREE TRIMMING:**

The Contractor shall provide the services of an approved Certified Arborist when it is necessary to trim or cut a branch from a tree.

Payment for tree cutting or trimming shall be included in the lump sum price bid for clearing and grubbing and no separate payment shall be made.

**SP-9.04 LANDSCAPE INSTALLATION:**

The Contractor shall provide all labor, equipment and materials necessary to furnish and install plant material and mulch as shown on the Planting and Irrigation Plans. The work shall be in accordance with City of Tampa Parks Department Specification Section 02900 that is made a part of these specifications.

Any costs associated with the work that is not directly provided for by a bid item, but incidental to completion of the Landscaping, shall be prorated and included in the various contract pay items, and no separate payment shall be made.

Payment shall be made under:

Item No. 02900-1	Bald Cypress	EA
Item No. 02900-2	Sky Climber Live Oak	EA
Item No. 02900-3	Washington Palm (12' c.t.)	EA
Item No. 02900-4	Indian Hawthorne	EA
Item No. 02900-5	Variegated Flax Lily	EA
Item No. 02900-6	Dwarf Asian Jasmine	EA
Item No. 02900-7	Mulch	CY
Item No. 02900-8	Planting Mix	CY
Item No. 02910-1	Structural Soil	CY

Planting Soil Mix shall be subservient to each individual planting item.

**SP-9.05 IRRIGATION SYSTEM CONSTRUCTION:**

The Contractor shall provide all labor, equipment and materials necessary to construct irrigation systems as shown on the Landscape and Irrigation Plans. The work shall be in accordance with the City of Tampa Parks Department Specification Section 02440 that is made a part of these specifications.

Payment shall be made under:

Item No. 02440-1	Irrigation System	LS
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**SP-10.01 EXISTING PUBLIC FACILITIES:**

Existing public facilities as defined in G-1.03 that are removed by the Contractor to facilitate construction operations shall be properly stored to protect from damage and returned in good condition to a location designated by the Engineer. These items shall also include, but not be limited to, all public benches, light poles, shelters, roadway signs, etc., and removal/reinstallation of all public facilities shall be considered incidental to the cost of construction and no separate payment will be made.

**SP-10.02 WATER FOR DUST CONTROL:**

The work specified in this section consists of the application of water within the limits of construction or on streets used as detour routes in connection with the project. All dust control operations shall be performed by the Contractor at the time, location, and in the amount ordered by the Engineer. The application of water shall be under the control of the Engineer at all times. No water will be used to control dust without authorization of the Engineer. Water ordered by the Engineer to be applied on Saturdays, Sundays, or legal holidays will be considered part of the required work and no additional compensation will be allowed therefore.

Water used for dust control shall be free from pollution to the extent that its use will not constitute a nuisance or health hazard to anyone living in close proximity to the areas where it is used.

Cost of providing water shall be considered incidental to the project and included in the lump sum price for Maintenance of Traffic, and no separate payment shall be made.

**SP-10.03 RESTORATION OF EXISTING FENCE:**

The Contractor shall re-establish any existing fence that was damaged, destroyed, or removed in the course of the construction project, and no separate payment will be made.

**SP-10.04 RESTORATION OF MONUMENTATION:**

The Contractor shall re-establish any permanent survey or mapping monumentation, which is disturbed or destroyed in the course of the construction project, and no separate payment will be made.

**SP-11.00 SIGNAGE:**

Refer to applicable sections of the FDOT Standard Specifications (2010). Replace if necessary at locations shown in the Construction Plans.

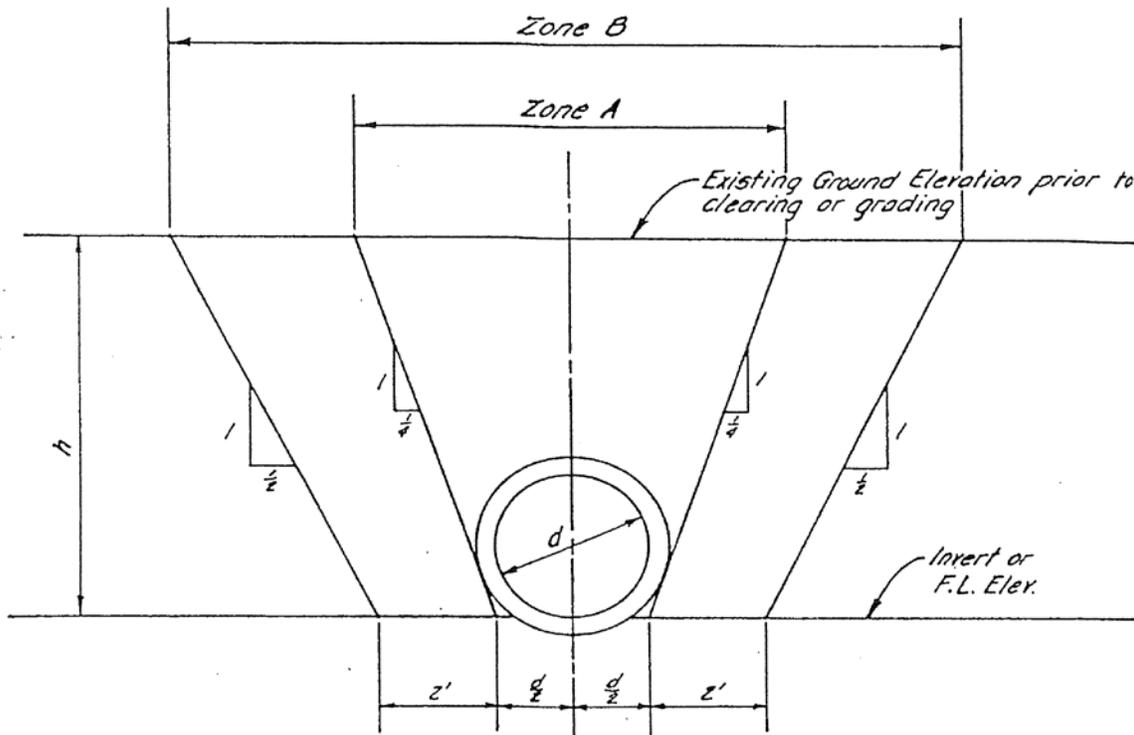
Payment shall be made under:

Item No. 700-20-11	Single Post Sign (F&I)	EA
Item No. 700-20-40	Relocate Existing Sign (Single Post)	EA

**SP-12.01 SITE FURNISHINGS**

Refer to drawings for specifications. Payment shall be made under:

SP-12.01-1	Bench - LandscapeForms	EA
SP-12.01-2	Trash Receptacle, LandscapeForms	EA
SP-12.01-3	Bicycle Rack, LandscapeForms	EA
SP-12.01-3	Pooch Station, Modern Dog Kit	EA



$$A = d + 0.5h$$

$$B = 4' + d + h$$

$d$  = Inside diameter of storm sewer pipe or inside width of box culvert.

$h$  = Depth per existing gravel to invert or flow line elevation.

DIAGRAM P

END OF SECTION SPECIFIC PROVISIONS

**SECTION 327**  
**MILLING OF EXISTING ASPHALT PAVEMENT**

**327-1 Description.**

**327-1.1 General:** Remove existing asphalt concrete pavement by milling to improve rideability and cross slope of the finished pavement, to lower the finished grade adjacent to existing curb prior to resurfacing, or to completely remove existing pavement.

When milling to improve rideability, the Plans will specify an average depth of cut.  
Take ownership of milled material.

**327-2 Equipment.**

Provide a milling machine capable of maintaining a depth of cut and cross slope that will achieve the results specified in the Contract Documents. Use a machine with a minimum overall length (out to out measurement excluding the conveyor) of 18 feet and a minimum cutting width of 6 feet.

Equip the milling machine with a built-in automatic grade control system that can control the transverse slope and the longitudinal profile to produce the specified results.

To start the project, the Engineer will approve any commercially manufactured milling machine that meets the above requirements. If it becomes evident after starting milling that the milling machine cannot consistently produce the specified results, the Engineer will reject the milling machine for further use.

The Contractor may use a smaller milling machine when milling to lower the grade adjacent to existing curb or other areas where it is impractical to use the above described equipment.

Equip the milling machine with means to effectively limit the amount of dust escaping during the removal operation.

For complete pavement removal, the Engineer may approve the use of alternate removal and crushing equipment in lieu of the equipment specified above.

**327-3 Construction.**

**327-3.1 General:** Remove the existing raised reflective pavement markers prior to milling. Include the cost of removing existing pavement markers in the price for milling.

When milling to improve rideability or cross slope, remove the existing pavement to the average depth specified in the Plans, in a manner that will restore the pavement surface to a uniform cross-section and longitudinal profile. The Engineer may require the use of a string line to ensure maintaining the proper alignment.

Establish the longitudinal profile of the milled surface in accordance with the milling plans. Ensure that the final cross slope of the milled surface parallels the surface cross slope shown in the Plans or as directed by the Engineer. Establish the cross slope of the milled surface by a second sensing device near the outside edge of the cut or by an automatic cross slope control mechanism. The Plans may waive the requirement of automatic grade or cross slope controls where the situation warrants such action.

Operate the milling machine to minimize the amount of dust being emitted. The Engineer may require prewetting of the pavement.

Provide positive drainage of the milled surface and the adjacent pavement.  
Perform this operation on the same day as milling. Repave all milled surfaces no later than the day after the surface was milled unless otherwise stated in the Plans.

If traffic is to be maintained on the milled surface prior to the placement of the new asphalt concrete, provide suitable transitions between areas of varying thickness to create a smooth longitudinal riding surface. Produce a pattern of striations that will provide an acceptable riding surface. The Engineer will control the traveling speed of the milling machine to produce a texture

that will provide an acceptable riding surface.

Prior to opening an area which has been milled to traffic, sweep the pavement with a power broom or other approved equipment to remove, to the greatest extent practicable, fine material which will create dust under traffic. Sweep in a manner that will minimize the potential for creation of a traffic hazard and to minimize air pollution.

Sweep the milled surface with a power broom prior to placing asphalt concrete.

In urban and other sensitive areas, use a street sweeper or other equipment capable of removing excess milled materials and controlling dust. Obtain the Engineer's approval of such equipment, contingent upon its demonstrated ability to do the work.

Perform the sweeping operation immediately after the milling operations or as directed by the Engineer.

**327-3.2 Quality Control Requirements:** Furnish an electronic level with a length of 4 feet and an accuracy of plus or minus 0.1 degree approved by the Engineer for the control of cross slope. Make this electronic level available at the jobsite at all times during milling operations. Calibrate and compare electronic levels in accordance with 330-9.3.1 at a minimum frequency of once per day before any milling operation.

Multiple cuts may be made to achieve the required pavement configuration or depth of cut. Measure the cross slope of the milled surface by placing the level at the center location of a lane and perpendicular to the roadway centerline. Record all the measurements to the nearest 0.1% on an approved form and submit to the Engineer for documentation.

1. Tangent Sections: Measure the cross slope per lane at a minimum frequency of one measurement every 100 feet. Calculate the absolute deviation of cross slope at each measurement and then average the absolute deviation of ten consecutive cross slope measurements. The absolute deviation is the positive value of a deviation. When the average absolute deviation cross slope is consistently within the acceptance tolerance as shown in Table 327-1 and upon approval by the Engineer, the frequency of the cross slope measurements can be reduced to one measurement every 200 feet during milling operations.

2. Superelevated Sections: Measure the cross slope every 100 feet per lane within the length of full superelevation. Calculate the absolute deviation of each measurement and then average the absolute deviation of ten consecutive cross slope measurements. For every transition section, measure the cross slope at control points identified in the Plans or, if not shown in the Plans, at a control point at a location of 0.0% cross slope. For curves where the length of the fully superelevated section is less than 250 feet, measure the cross slope at the beginning point, midpoint and ending point of the fully superelevated section, calculate the absolute deviation and average. When the number of measurements is less than ten and the length of full superelevation is greater than 250 feet, average the absolute deviation of all measurements.

If the average absolute deviation of the cross slope measurements falls outside the acceptance tolerance shown in Table 327-1, stop the milling operations and make adjustments until the problem is resolved to the satisfaction of the Engineer. If an individual cross slope deviation falls outside the acceptance tolerance as shown in Table 327-1, make corrections only in the deficient area to the satisfaction of the Engineer at no cost to the **City**. For pavement with multiple cuts, the deficient areas not caused by the final cut may be left in place upon approval of the Engineer. All milling corrections shall be completed before placement of the asphalt course unless stated otherwise in the Plans or as determined by the Engineer.

The limits of deficient areas requiring correction may be verified and adjusted with more accurate measurement methods, including survey instruments, upon approval by the Engineer at no cost to the **City**. Should the Contractor wish to have any corrections waived, submit a request to the Engineer for approval. The Engineer may waive the corrections at no reduction in payment if an engineering determination indicates that the deficiencies are

sufficiently separated so as not to significantly affect the final cross slope or project grade.

For intersections, tapers, crossovers, transitions at the beginning and end of the Project, bridge approaches and similar areas, adjust the cross slope to match the actual site conditions, or as directed by the Engineer.

Table 327-1  
 Cross Slope Milling Acceptance Tolerance

Roadway Feature	Individual Absolute Deviation	Average Absolute Deviation
Tangent Section (Including turn lanes)	0.45%	0.20%
Superelevated curve	0.40%	0.20%
Shoulder	0.50%	0.50%

In the event that the distance between tow edges of deficient areas is less than 100 feet, the correction work shall include the area between the deficient sections.

**327-3.3 Verification:** The Engineer will verify the Contractor’s cross slope measurements by randomly taking a minimum of ten cross slope measurements per lane per mile in tangent sections, control points in transition sections, and a minimum of three cross slope measurements on fully superelevated sections. The Engineer will measure the cross slope of the milled surface by placing the level at the center location of a lane and perpendicular to the roadway centerline. If the average absolute deviation or an individual cross slope deviation falls outside the acceptance tolerance as shown in Table 327-1, immediately make a comparison check at the QC test locations to verify the QC measurements in the questionable section. If the comparisons are beyond the acceptable comparison tolerance in accordance with 327-3.2, stop the milling operation until the problem is resolved to the satisfaction of the Engineer. Correct any cross slope not meeting the individual deviation acceptance tolerance at no cost to the **City**. The Engineer reserves the right to check the cross slope of the milled surface at any time by taking cross slope measurements at any location.

**327-4 Milled Surface.**

Provide a milled surface Provide a milled surface with a reasonably uniform texture, within 1/4 inch of a true profile grade, and with no deviation in excess of 1/4 inch from a straightedge applied to the pavement perpendicular to the centerline. Ensure that the variation of the longitudinal joint between multiple cut areas does not exceed 1/4 inch. The Engineer may accept areas varying from a true surface in excess of the above stated tolerance without correction if the Engineer determines that they were caused by a pre-existing condition which could not have reasonably been corrected by the milling operations. Correct any unsuitable texture or profile, as determined by the Engineer, at no additional expense to the **City**.

The Engineer may require remilling of any area where a surface lamination causes a non-uniform texture to occur.

**327-5 Method of Measurement.**

The quantity to be paid for will be the plan quantity area, in square yards, over which milling is completed and accepted.

**327-6 Basis of Payment.**

Price and payment will be full compensation for all work specified in this Section,  
Including hauling off and stockpiling or otherwise disposing of the milled material.

Payment will be made under:

Item No. 327-1	Milling Existing Asphalt Pavement	SY
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END OF SECTION 327