

FURNISH AND INSTALL STORM DRAIN PIPE

****From Barre City FEGC F026-1(34) C/2**

- xx. DESCRIPTION. This work shall consist of furnishing and installing an underground storm drain pipe utilizing trenching or trenchless methods and materials approved by the Engineer.
- xx. LOCATION. This work is specified for installing an underground storm drain pipe between two adjacent building foundations in the alley at approximate station 600+95 RT.
- xx. GENERAL. In recognition of the site constraints within the alley where the pipe will be installed, the Contractor may devise its own means and methods for completing the proposed pipe installation.
- xx. MATERIALS. Materials shall meet the following requirements:
- (a) General. Materials shall be approved for the installation method selected, shall be appropriate for conveying the stormwater flow, and shall be approved by the Engineer prior to use.
- Material(s) furnished in accordance with Sections 710 and/or 711 shall have a Type A or Type D Certification in accordance with Subsection 700.02, unless otherwise specified herein.
- (b) Pipe. Pipe shall be RCP, PVC, or High Density Polyethylene (HDPE) pipe with a minimum inside diameter of 600 mm (24 inches) is allowed. Pipe shall meet the requirements of ASTM D 2447, ASTM D 3350, and ASTM F 714.
- A Type A Certification shall be furnished in accordance with Subsection 700.02.
- (c) Concrete. Concrete for walkway shall meet the requirements of Section 541 for Concrete, Class B.
- xx. DESIGN REQUIREMENTS. The storm pipe assembly and end connections shall have a design service life of 100 years.
- xx. SUBMITTALS.
- (a) General. Submittals shall be made as Fabrication Drawings in accordance with Subsection 105.03.
- (b) Work Plan. Prior to commencing the work and after completing all necessary exploratory field investigations, the Contractor shall submit for approval a detailed installation plan describing, methods, materials, schedule, emergency safety plan, and any other relevant information specific to this installation.
- (c) Equipment. The Contractor shall submit specifications on equipment to be used to ensure the adequacy for completing the work.

- (d) Materials. Specifications on material to be used, including pipe and method(s) for joining pipe, shall be submitted to the Engineer for approval.
- (e) Qualifications. The Contractor shall submit information to the Engineer to verify that the installer meets the required qualifications specified in QUALITY ASSURANCE of this Section. Include contact information of the responsible party for each installation listed.
- xx. QUALITY ASSURANCE. The requirements set forth herein specify a wide range of procedural precautions necessary to ensure that the very basic, essential aspects of a proper storm drain installation are adequately controlled. Strict adherence shall be required under specifically covered conditions outlined in this specification. Adherence to the specifications contained herein, or the Engineer's approval of any aspect of any installation operation covered by this specification, shall in no way relieve the Contractor of their ultimate responsibility for the satisfactory completion of the work authorized under the Contract.
- (a) Qualifications. The installer shall have demonstrated by previous experience the ability to do this work. The required previous experience shall consist of having performed a minimum of five substantial storm drain installations using 300 mm (12 inch) or greater diameter pipe for a distance of over 30 m (100 feet) and installed by the same method proposed for this installation.
- xx. EQUIPMENT REQUIREMENTS. No pipe ramming or any installation that imposes hydraulic or pneumatic hammer vibrations on the adjacent structures will be permitted.
- xx. CONSTRUCTION REQUIREMENTS.
- (a) General. The Engineer shall be notified 48 hours in advance of starting work. The installation shall not begin until the Engineer is present at the job site and agrees that proper preparations for the operation have been made. The Engineer approval for beginning the installation shall in no way relieve the Contractor of the ultimate responsibility for the satisfactory completion of the work as authorized under the Contract.
- If open trenching is utilized, construction shall be performed in accordance with Section 204.
- Concrete for walkway shall be replaced to match existing conditions.
- (b) Personnel. All personnel shall be fully trained in their respective duties as part of the installation crew and in proper safety protocol for performing the work.
- (c) Installation.

- (1) Site Preparation. Prior to any alterations to the work site, the Contractor shall ensure that the requirements of Special Provision No. 17 NOTICE TO BIDDERS - BUILDING INSPECTION have been met and that appropriate pedestrian mobility and safety requirements have been provided for the work area.
- (2) Monitoring. The stabilization and constant monitoring of adjacent structures is the responsibility of the Contractor.
- (3) Obstructions. If unanticipated obstructions not shown on the subsurface probe data shown in the Plans are encountered which prevent completion of the placement in accordance with the design location and specifications, the Contractor shall notify the Engineer in writing and recommend a course of action to advance the pipe installation in an expedient manner.
- (4) Work Area. Work site as indicated on the Plans within right-of-way, shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made. The Contractor shall confine all activities to designated work areas. Prior to commencing work, the Contractor shall confirm locations of all underground utilities in the area affected by the installation.
- (5) Safety. The Contractor shall adhere to all applicable state, federal, and local safety regulations and all operations shall be conducted in a safe manner. The Contractor shall protect pedestrians from the work and may close the alley from pedestrian access as needed to complete the pipe installation.

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Furnish and Install Storm Drain Pipe) to be measured for payment will be on a lump sum basis in the complete and accepted work. Measurement will be made for the installation of the entire length of drainage pipe between the connecting drainage structures as shown on the plans.

xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Furnish and Install Storm Drain Pipe) will be paid for at the Contract lump sum price. Payment will be full compensation for excavating, sheeting and bracing, dewatering, and backfilling; furnishing and installing the pipe utilizing an approved method of installation; restoring physical features including the walkway through the tunnel; preparing and furnishing required submittals, reports, and as-built drawings; and for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Partial payments will be made as follows:

- (a) A payment of 50 percent of the Contract lump sum price will be made upon approval of the proposed installation plan.

(b) The remaining 50 percent of the Contract lump sum price will be paid upon the accepted completion of the installation of the pipe assembly, all end connections, and any necessary repairs to the walkway if impacted or altered for construction purposes.

Payment will be made under:

| <u>Pay Item</u> | <u>Pay Unit</u> |
|--|-----------------|
| 900.645 Special Provision (Furnish and Install Storm Drain Pipe) | Lump Sum |