

# **Stennis International Airport Aircraft Hangar Facility Water Leak Repair**

## **Scope of Work**

The existing 2-inch PVC water service has experienced numerous water leaks since it has been installed. The existing 2-inch PVC water service will be abandoned and replaced with a new 2-inch poly tubing water service. The work includes the following:

1. Provide a new 2-inch poly tubing water service as shown on the plans and specifications. Provide all materials, locator wire, fittings, labor and equipment to install the poly water service.
2. Bore poly water service under existing driveway and side walk.
3. Abandon existing PVC water service in-place. Cap both ends.
4. Contractor shall flush service tubing and ensure there are no leaks.

Any technical questions regarding the work contact John Stein, P.E., Digital Engineering at (228)463-0130 or [jstein@deii.net](mailto:jstein@deii.net).

To arrange a site visit, please contact Roland from Selex Galieo at (228)493-0403.

## SECTION 02999

### MISCELLANEOUS WORK AND CLEANUP

#### PART 1 – GENERAL

##### 1.01 SCOPE OF WORK

- A. This section includes operations which cannot be specified in detail as separate items but can be sufficiently described as to the kind and extent of work involved. The Contractor shall furnish all labor, materials, equipment and incidentals to complete the work under this section.
- B. The work of the section includes, but is not limited to, the following:
  - 1. Demolition or abandonment of existing water lines
  - 2. Restoring of fences and guard rails
  - 3. Crossing utilities
  - 4. Restoring easements (servitudes) and rights-of-way
  - 5. Cleaning up
  - 6. Incidental work

##### 1.02 WORK SPECIFIED UNDER OTHER SECTIONS

All work shall be completed in a workmanlike manner by competent workmen in full compliance with all applicable sections of these specifications.

#### PART 2 – PRODUCTS

##### 2.01 MATERIALS

Materials required for this section shall be of at least the same type and quality as materials which are to be restored. Where possible, the Contractor shall reuse existing materials which are removed and then replaced, with the exception of paving.

#### PART 3 – EXECUTION

##### 3.01 ABANDONMENT OF EXISTING WATER LINES AND SEWER FORCEMAINS

- A. The existing water lines and sewer forcemains show on the plans to be abandoned shall be abandoned in place; each opening shall be capped and covered with filter fabric prior to backfilling.
- B. Any existing pressure lines to be abandoned which cause an obstruction to new water or sewer piping shall be removed and disposed of properly off site by Contractor.
- C. Unless indicated on the drawings, all valve boxes are to be salvaged and delivered to a site designated by the City of Waveland. Valves to be abandoned in place shall be closed.
- D. All labor, materials, and incidentals required to cap and abandon or, when required, to remove the existing sewer system components shall be included in the lump sum price bid for “Removal of Structures and Obstructions” or “Abandonment of Gravity Sewers and Forcemains, Demolition of Manholes and Wetwells”.

##### 3.02 ABANDONMENT OF EXISTING GRAVITY SEWER SYSTEM

- A. Abandon all existing gravity sewer lines by completely filling the sewer line with cement-stabilized flowable fill. Filling some lines from both ends may be required. Plug one or both ends of the lines as necessary until lines are completely filled. Disconnect and plug sanitary sewer services. Prior to the installation of any plugs, ensure the lines are not in use.
- B. Abandon all existing sewer manholes by removing to a minimum of three (3) feet below grade and

backfill with granular material. Compact to 90% by flooding.

- C. All labor, materials, and incidentals required to plug and abandon or, when required, removed the existing sewer system shall be included in the lump sum bid price for “Abandonment of gravity sewer and forcemains, demolition of manholes and wetwells”.

### 3.03 RESTORING OF FENCES AND GUARD RAILS

- A. At several locations it may be necessary for the Contractor to remove, store and replace existing fences and guard rails during construction. Only the sections approved by the Engineer shall be removed. If any section of fence is damaged due to the Contractor's negligence, it shall be replaced with fencing equal to or better than that damage, and the work shall be satisfactory to the Engineer.
- B. Guard rails in the vicinity of the work shall be protected from damage. If damaged, guard rails shall be replaced in a condition equal to that existing before construction began.

### 3.04 CROSSING UTILITIES

This item shall include any extra work required in crossing culverts, water courses, storm drains, water mains, sanitary sewer lines and other utilities, including all sheeting and bracing, extra excavation and backfill, or any other work required for the crossing, whether or not shown on the drawings.

### 3.05 RELOCATIONS OF EXISTING UTILITIES

The Contractor shall notify the proper authority of the utility involved when relocation of existing gas lines, telephone lines, electrical lines, and cable TV lines is required. The Contractor shall coordinate all work by the utility so that the progress of construction will not be hampered.

### 3.06 RESTORING THE EASEMENTS AND RIGHTS-OF-WAY

- A. Portions of the construction work may occur in easements (servitudes) through private property. In these cases, the Contractor shall be responsible for all damage to private property due to his operations. He shall protect from injury all walls, fences, cultivated shrubbery, pavement, underground facilities, such as water pipe, or other utilities which may be encountered along the easement. If removal and replacement are required, it shall be done in a workmanlike manner so that the replacement is equivalent to that which existed prior to construction.
- B. Existing lawn surfaces damaged by construction shall be regraded and resodded. These areas shall be maintained until all work under this contract has been completed and accepted.

### 3.07 CLEANING UP

The Contractor shall remove all construction material, excess excavation, buildings, equipment and other debris remaining on the job as a result of construction operations and shall render the site of the work in a neat and orderly condition.

### 3.08 INCIDENTAL WORK

The Contractor shall perform all incidental work not otherwise specified, but obviously necessary, for the proper completion of the contract as specified and as shown on the drawings.

(End of Section)

## SECTION 15028

### POLYETHYLENE PRESSURE PIPE FOR WATER SERVICE

#### PART 1 – GENERAL

##### 1.01 SCOPE OF WORK

The Contractor shall furnish all labor materials, equipment and incidentals required, to install high density polyethylene (PE) water service tubing, fittings, and appurtenances as shown on the drawings and as specified herein.

##### 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 02221: Earth Excavation and Backfill in Trenches
- B. Section 02999: Miscellaneous Work and Cleanup

##### 1.03 SUBMITTALS

Shop drawings, catalog data and manufacturer's technical data showing complete information on material composition, physical properties and dimensions of pipe and fittings shall be submitted to the Engineer for approval before installation. The Contractor shall include the manufacturer's recommendation for handling, storage and repair of pipe and fittings if damaged.

#### PART 2 – PRODUCTS

##### 2.01 POLYETHYLENE TUBING

The high density polyethylene (PE) plastic water service tubing shall meet the requirements of AWWA C901, for PE Pressure Pipe and Tubing, in Sizes 1" - 3". Water service tubing shall be made of type PE 3408 plastic material as listed in PPI TR4, and shall be certified to conform to the requirements of NSF International Standard 61. Service tubing shall be marked "NSF-PW" in accord with NSF 14 standards. Service tubing shall conform to ASTM D2774, D2737 and D3035, SDR 9 and shall be pressure rated for 250 psi. PE plastic water service tubing shall be furnished in standard CTS (copper tubing size) outside diameters of 1" through 2" as required or as shown on the plans, unless otherwise specified.

- A. The physical appearance of the PE tubing having deformities such as concentrated ridges, discoloration, excessive spot roughness, pitting, varying wall thickness, etc., shall constitute sufficient basis for rejection. The PE tubing shall be homogeneous throughout, free from visible cracks, foreign inclusions, and other defects. Service tubing with gashes, nicks, abrasions, or any such physical damage which may have occurred during storage and/or handling, which are larger or deeper than 10% of the wall thickness shall not be used and must be removed from the construction site.
- B. Tests for compliance with this specification shall be made as specific herein and in accordance with the applicable AWWA, ASTM, or NSF Specification. A certificate of compliance with this specification shall be furnished, upon request, by the manufacturer for all material furnished under this specification. PE plastic tubing, pipe and fittings may be rejected for failure to meet any of the requirements of this specification.

##### 2.02 SERVICE FITTINGS

Fittings for polyethylene service tubing shall be compression type complying with AWWA C800. Service fittings shall be cast brass alloy conforming to ASTM B62, and shall be sized for CTS O.D. PE plastic service tubing. Tubing inserts (stiffeners) shall be installed as required by the tubing or fitting manufacturer's recommendations. Service tubing fittings shall normally be furnished as part

of the corporation valve (corp stop) at the service tap and the meter valve (meter stop) at the meter location. Service fittings shall be of the compression connection type, such as Mueller 110<sup>®</sup> Compression Connection, Mueller Pack Joint, A.Y. McDonald Mac-Pak Compression Joint or equal as approved by the Utility.

- A. Straight unions and reducers shall be equal to Mueller H-15403 for 110<sup>®</sup> Compression Connection, Mueller P-15403 for Pack Joint, or A.Y. McDonald 4758-22 for Mac-Pak Compression Joints.
- B. Quarter bends shall be equal to Mueller H-15526, Mueller P-15526, or A.Y. McDonald 4761-22. Eighth bends shall be equal to Mueller H-15528 or Mueller P-15528.
- C. Dual service connections shall be made using wye ("Y" branch) connectors 1" x 1½" CTS. Wyes shall be equal to Mueller H-15343, Mueller P-15343, or A.Y. McDonald 08YS22.

### 2.03 MISCELLANEOUS ITEMS

- A. Marker Tape: Shall comply with Section 02221, Paragraph 2.06, unless otherwise specified.
- B. Locator Wire: Pipeline locator wire for installation along water mains and service lines shall be AWG No. 14 gauge or larger insulated solid copper wire, type THW or THHN. Insulation color shall be blue.

## PART 3 – EXECUTION

### 3.01 INSTALLATION

- A. Water service lines shall be installed at a depth as shown on the plans, or a depth of 24" if not otherwise specified. The minimum depth under ditches and over obstructions shall not be less than 18", except the depth shall be brought up to 12" at meter settings.
- B. Water service lines shall be laid no closer than 5 feet horizontally and 18" vertically from any sanitary sewer manhole, gravity sanitary sewer line or sanitary sewer forcemain. The bottom of the water line shall be at least 18" above the top of the sewer line. Any exception to this procedure shall be allowed only if shown as a special provision on the plans and clearly indicated for a specific location.
- C. Water service lines shall be installed in general compliance with Section 02221, and according to the procedures of AWWA C605, ASTM D2774, and the manufacturer's recommendations.
- D. Any section of service tubing with a gash, abrasion, nick or scar greater in depth than 10% of the wall thickness shall not be used and must be removed from the site. Any service tubing having defects such as concentrated ridges, discoloration, excessive spot roughness, pitting, variable wall thickness, or any other defect of manufacturing or handling as determined by the Engineer or his/her representative shall be discarded and not used.
- F. Locator Wire: Locator wire as specified in Article 2.03B above shall be installed with all water mains and water service lines. The locator wire shall be placed directly on the center of the pipe for its entire length. The wire shall be tied to an appurtenance at the start and end of the pipeline run, and shall be a continuous wire run for its entire length. The locator wire shall be looped through and shall be accessible in each valve box, and on service lines it shall terminate at the meter valve. The Contractor shall supply and employ approved splice kits as required to ensure electrical continuity. The cost of locator wire shall be included in the pipe cost, and no separate pay for this item will be allowed.
- G. Marker Tape: Marker tape as specified in Section 02221, Paragraph 2.06, shall be installed in the trench above all pipelines and shall be placed over the center of the pipe for its entire length. The marker tape shall be buried at least 12 inches, and no more than 18 inches deep. For multiple pipelines buried in a single trench, marker tape shall be installed over each pipeline. Marker tape shall be connected to all appurtenances and exposed facilities connected to the pipeline. The cost of marker tape shall be included in the pipe cost, and no separate pay for this item will be allowed.

### 3.02 SERVICE CONNECTIONS

- A. The service connections and water main taps shall be installed in conformance with the requirements of AWWA C800, and all equipment and procedures shall be in strict compliance with the manufacturer's recommendations. All water main taps shall be made using tapping saddles. Direct tapping of PVC pipe will not be allowed.
- B. Installation of service tubing and service fittings shall comply with the requirements and standards of the Utility, and in a manner satisfactory to the Engineer and the Utility.

3.03 FINAL TESTING

Upon complete installation of the service lines shown on the plans, the water mains and service lines shall be pressured tested simultaneously in accordance with Section 15016, Part 3.02 of these Specifications.

3.04 DISINFECTION

Upon completion of the testing required in Paragraph 3.03 above, the water mains and service lines shall be disinfected simultaneously in accordance with Section 15030 of these Specifications.

(End of Section)