

SECTION 15040 - TESTING AND FLUSHING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The CONTRACTOR shall furnish all labor, materials including test water, tools, and equipment necessary to provide and complete field testing and flushing of pipelines as specified. All pipelines shall be tested for water-tightness by subjecting each section to Hydrostatic Pressure and Leakage Tests in accordance with Standard Specifications for Public Works Construction Subsection (SSPWC) 306-1.4, and the requirements of these standard specifications.

It shall be the CONTRACTOR'S sole responsibility to plan his construction activities to allow and facilitate testing and flushing of all sections of pipelines. It shall be the CONTRACTOR'S sole responsibility to obtain any and all permits required to carry out the work specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01300 – Record Drawings and Submittals.

1.3 SUBMITTALS

- A. The CONTRACTOR shall furnish submittals in accordance with the requirements of the standard specifications, Shop Drawing Submittals. The following submittals are required:
1. The CONTRACTOR shall submit a detailed plan showing how testing and flushing is to be conducted for the work.

PART 2 – MATERIALS (NOT USED)

PART 3 - EXECUTION

3.1 PRESSURE TESTING

- A. Procedure: After the pipe and all appurtenances have been laid and sufficiently backfilled for required restraint, they shall be subjected to hydrostatic testing in accordance with SSPWC Subsection 306-1.4 and the Water Utilities Manual. Pressure tests or a retest shall be conducted subsequent to any trench backfill compaction effort with heavy duty compacting equipment having an overall weight in excess of 100 pounds. The test shall be made prior to connecting the new line with existing pipelines and mains.
- B. Maximum Length of Pipe: Maximum length of pipe to be included in any one test shall be in accordance with the Water Utilities Manual. The CONTRACTOR shall provide suitable test bulkheads, blocking, and fittings to permit such sectionalizing.

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- C. Preparation: Preparation is to be done in accordance with the Water Utilities Manual. The CONTRACTOR shall provide and later securely plug such fittings. The line shall be thoroughly flushed with metered potable water. All flushing water will be legally disposed of in accordance with the requirements of the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) Permit, the City of Oceanside, and this standard specification. After flushing, the line shall be filled slowly and maintained at operating pressure for a period of at least 24 hours prior to testing to satisfy any system water absorption. While filling and immediately prior to testing all air shall be expelled from the pipeline. Where air valves or other suitable outlets are not available, approved taps and fittings shall be provided at all high points and later securely plugged.
- D. Pressure Testing: After the 24-hour soak period, the pressure in the pipeline shall be pumped up to the specified test pressure. Pressure testing is to be done in accordance with the Water Utilities Manual.
- E. Leakage: Leakage shall not exceed the rate as specified under for the type of pipe material being tested. If the leakage exceeds the rate, as specified in the Water Utilities Manual, the CONTRACTOR shall locate and make all repairs as necessary until the leakage is within the specified allowance. All costs shall be borne by the CONTRACTOR.

The test shall be repeated until the leakage does not exceed the specified leakage rate. All visible leaks shall be repaired regardless of the amount of leakage.

3.2 FLUSHING

- A. After completion of construction, all pipelines shall be flushed with potable water in accordance with the Water Utilities Manual. The CONTRACTOR shall provide a sufficient number of suitable outlets at the end(s) of the line(s) being flushed in addition to those required by the approved plans to permit the main to be flushed with water at a velocity of at least 2.5-feet per second over its entire length. The outlets provided shall meet the requirements for fittings as specified for the type of main constructed. The velocity through outlets and fittings shall not exceed 16 fps during the flushing operation. Drainage facilities shall be constructed such that the water lines cannot be contaminated through the flushing outlet.

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The CONTRACTOR shall be solely responsible for providing a source of water for flushing and the methods for discharge of the water, including all associated costs and permits. All flushing water shall be metered and protected in accordance with the Water Utilities Manual.

**** END OF SECTION ****