

Section 02594

Pressure and Leakage Testing of Water Mains

PART 1 - GENERAL

1.01 SCOPE

- A. Furnish all labor, materials, equipment, gages and related items necessary to complete all pressure and leakage tests of all ductile iron water mains.

1.02 SUBMITTALS

- A. Submittals shall be provided by the Contractor to the Owner as outlined in Section 01300 for the following items related to the pressure and leakage testing of water mains as required by the specific project:
 - 1. Plan for pressure testing installed water main. Plan shall include details related to where testing shall be performed (i.e., location of corporation tap(s)), what mains shall be tested, where temporary fixtures will be installed to facilitate testing (e.g., temporary blowoff), and what mains are proposed to be omitted from testing.
 - 2. The plan shall outline how the Contractor will demonstrate that each individual main segment meets the leakage requirement outlined below.

PART 2 – PRODUCTS

(NOT USED)

PART 3 - EXECUTION

3.01 PRESSURE AND LEAKAGE TESTS

- A. After the pipe has been laid and backfilled, it shall be pressure tested and tested for leakage in the presence of the Engineer and/or the Owner.
- B. All tests shall be conducted at a time and in a manner to minimize as much as possible any interference with the operation of the existing water system. The Owner will supply all water necessary for testing and placing the lines in service. The Contractor shall supply all labor, materials and equipment necessary to make any necessary connections to the water system and to carry out the tests.
- C. The Contractor shall excavate and provide a corporation tap for pressure and leak testing as directed by the Engineer. The Contractor is responsible for all work associated with the excavation, including proper trench protection, barricades, traffic control and proper backfilling and compaction upon successful completion of the test.
- D. The pipe shall be slowly filled with water and all air expelled from the pipe. If permanent air vents are not located at all high points, Contractor shall install corporation stops at such high points to bleed off air as the line is filled with water.

- E. A pressure test pump will be connected to the new main at the testing point. The pressure will be slowly increased to 150 psi and allowed to stabilize (+/-2.5 psi) for a minimum of 15 minutes.
- F. A reservoir of potable water shall be connected to the test pump and the initial level of water recorded.
- G. The pump pressure shall be maintained at 150 psi for one hour with all make up water withdrawn from the reservoir.
- H. After one hour, the water level in the reservoir will be measured and the volume of water drawn from the reservoir calculated and compared with the following allowable leakage:

$$\begin{array}{lcl} \text{Allowable Leakage} & & \\ \text{(gallons per hour)} & = & \frac{[\text{Pipe Length (feet)}] \times [\text{Nominal Diameter (inches)}]}{12,084*} \end{array}$$

**Correct only for 150 psi test pressure*

- I. If any test discloses leakage greater than that specified above, the Contractor shall, at his own expense, locate and make repairs as necessary until the leakage is within the specified allowance.
- J. Final acceptance of the lines will not occur until satisfactory tests have been passed.

-- END OF SECTION --