

SECTION 02537 - WATER PIPE AND APPURTENANCES

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK:

- A. Provide all labor and equipment necessary to install all pipe, fittings, thrust blocks, and thrust anchors as shown on the drawings or as required for a complete working system.
- B. Provide all labor, equipment, and chemicals necessary to test as specified herein and disinfect the new water system in accordance with AWWA C651-86.

1.02 RELATED SECTIONS:

- A. Section 02110 - Site Clearing
- B. Section 02200 - Earthwork
- C. Section 02210 - Temporary Erosion Control

1.03 QUALITY ASSURANCE:

- A. Remove damaged pipe, fittings, and valves from the job site.
- B. Testing and installation will be observed by the Owner's Representative and Portland Water District.
- C. Standards: All work will be in accordance with Portland Water District Standards.

1.04 SUBMITTALS:

- A. Manufacturer's Technical Product Data and installation instructions for all pipe and fittings and replacement valves if required.
- B. As work progresses, submit as-built sketches to the Owner's representative accurately showing location, type of pipe, and depth of all buried fittings, valves, and ends of pipe.
- C. Reports of all testing and disinfection procedures. Reports will indicate:
 - 1. Date of test.
 - 2. Number of the test including all failed tests.
 - 3. Name of organization and person(s) performing the test.

4. Type of test; i.e., hydrostatic pressure test or disinfection.
5. Time(s): Start Fill, End Fill, Begin Test, End Test.
6. Size, type, length, and location of pipe.
7. Pressure and/or chemical concentration at start of test, at intervals during test where appropriate, and end of test.
8. Certification by tester that test was performed in accordance with AWWA Standards.
9. Signature of Owner's Representative observing the test and a notation that test was approved or rejected. If rejected, reason for rejection will be stated on the report.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Pipe and Fittings: Ductile Iron Class 52 4" diameter and larger
Copper K 2" and smaller

PART 3 - EXECUTION

3.01 INSTALLATION:

- A. The excavation shall be made to secure a flat bottom trench (undisturbed earth bottom) for the full length of the pipe to give a uniform support to the pipe. Provide a minimum of 5 feet of cover.
- B. As soon as the excavation is completed and the existing trench bottom has been brought to the proper grade, the pipe shall be laid.
- C. All pipe, before being placed into the trench, shall be inspected and both ends shall be cleaned. Care shall be taken to lay the pipe to the lines shown on the drawings and with a continuous slope toward the well.
- D. Bed and cover pipe with 6" of sand.
- E. Plug ends of pipe, except when making connection to another length or a lateral service.
- F. Do not lay pipe in water or when trench conditions or weather are unsuitable for such work.

3.02 TESTING AND DISINFECTION:

A. Piping Tests: Conduct piping tests before joints are covered, and after thrust blocks have sufficiently hardened. Fill pipe line 24 hours prior to testing, and apply test pressure to stabilize system. Use only potable water.

B. Hydrostatic Tests: Test at not less than 1-1/2 times working pressure for 2 hours.

Test fails if leakage exceeds 2 quarts per hour per 100 gaskets or joints, irrespective of pipe diameter. Increase pressure in 50 psi increments and inspect each joint between increments. Hold at test pressure for one hour, decrease to 0 psi. Slowly increase again to test pressure and hold for one more hour.

C. Cleaning:

1. Disinfection of Water Mains: Flush and disinfect in accordance with AWWA C651-86 "Standard for Disinfecting Water Mains."

* END OF SECTION 02537 *