

Testing. Upon completion of the backfill operation and after satisfactory compaction results have been obtained, all sewer lines shall be tested. The Contractor must assume the risk of correcting defects in workmanship or materials revealed by the tests. Air and mandrel tests shall not be performed until joint trench street crossings are installed, backfilled and compacted.

Air Pressure Test. Each section of sewer shall be tested between manholes by plugging and bracing all openings in the sewer main line and the upper ends of all house connection sewers. The leakage test shall be conducted in the following manner:

Air shall be introduced into the pipeline until 3.0 psi gauge pressure has been reached, at which time the flow of air shall be reduced and the internal air pressure shall be maintained between 2.5 and 3.5 psi for at least 2 minutes. Pressure in the pipeline shall be consistently monitored by a gauge and shall not be allowed to exceed 5 psi.

After the temperature has stabilized and no air leaks at the plugs have been found, the air pressure shall be permitted to drop to 2.5 psi, then a stopwatch or sweep-second-hand watch shall be used to determine the time lapse required for the air pressure to drop to 1.5 psi.

If the time lapse is less than that shown in the table on Sheet No. S-10, the necessary repairs must be made prior to acceptance by the Engineer.

Infiltration Test. In areas of high ground water, an infiltration test shall be conducted. The amount of water obtained during test period from the section under test shall be measured and it shall not exceed a rate of 100 gal/dia/in/mi/day for the sewer being tested.

Television (TV) Camera Inspection. In addition to the above, the Engineer may inspect the inside of the lines by means of a television camera. At the Engineer's request, the Contractor shall expose all manholes and cleanouts to facilitate this operation. This test shall be performed before streets are paved.

The Contractor shall provide suitable access for the TV Inspection vehicle to the satisfaction of the City Engineer. In general, the TV Inspection shall be performed after trench compaction is successfully completed. The City Engineer may require TV Inspection after trench and roadway base material compaction and after any other construction that may damage the sewer line (water, storm drain, gas, etc.).

Mandrel Test. PVC pipe must also be tested with a mandrel having a cross section of at least 95 percent of the specified average inside diameter. This test will be conducted as outlined in Standard Specifications for Public Works Construction Section 306-1.4.6.

Repair and Retesting. Sections failing any required test shall be repaired by means acceptable to the Engineer. Retesting is required of repaired areas before final acceptance of the sewers by the Engineer.

Color of PVC Sewer Pipe. All PVC sewer pipe, including mains and laterals, shall be green (PVC water main shall be blue; PVC storm drain shall be white).

Force Mains. All force mains shall be ductile iron pipe Class 50, cement-coated and epoxy lined, with a minimum cover of 30-inches, and subject to hydrostatic and leak testing as defined on Sheet W-19 for water lines. The high point of all changes in slope shall have pressure air release valves. Blow-offs shall be similar to City Standard W-5, except that the valve shall be stainless steel.

ENGINEERING DEPARTMENT

CITY OF MERCED, CA.

SEWER SYSTEM TESTING

S-9

DRAWN: KGE

APPROVED BY:

DATE

DATE: 1/02

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4/4/06

REVISED: 12/05

CITY ENGINEER

SHEET

OF