



CITY OF SANTA BARBARA

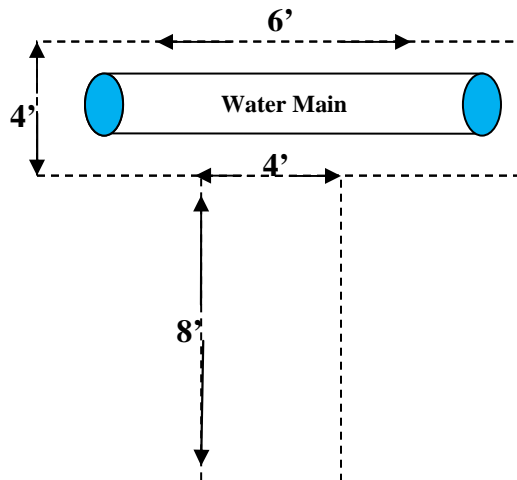
WATER DIVISION FIRE LINE TAPPING STANDARDS

Greater Than 2 inches

The contractor will obtain a Public Works construction permit and Temporary Traffic Control permit at the Public Works counter, which generates a work order for the Water Division to schedule fire line installation.

Next, the contractor will contact the Water Distribution Supervisor who will coordinate a preconstruction meeting which will be held on the project site. The purpose of the meeting is to discuss concerns, questions and the scope of work.

- A. The following City staff will be included in the preconstruction meeting: Water Distribution Supervisor or Lead Operator, the Cross Connection Specialist, Public Works Inspector and the contractor performing the work. After the date, time, and location have been determined, the contractor will be directed to proceed.
- B. The contractor shall notify DigAlert (811) and make sure all utilities are clearly marked before excavation. The contractor must provide and set up traffic control before excavation.
- C. Please see detail in regard to trench size below. **NOTE:** *The Water Division shall determine the final size of the trench based on the unique circumstances of each location. Shoring shall be required when the trench is 5' and deeper.*
- D. In preparation for tapping the water main, the exterior of the pipe should also be cleaned of all soil and debris, unless directed otherwise by Water Division staff. This will allow city staff to install the tapping sleeve.



Contractor is to perform all excavation of the trench line, for pipe 2 ½" or larger and place backflow assembly.

After excavation please notify the Water Division Lead Operator and Public Works Inspector who are in charge of the project. Call for inspection at least 24 hours before tap is scheduled, so that the trench can be inspected and given approval.
(See **Public Works Inspection** Step 2 below)

Once the tap is done and the valve is hung, the valve will be left closed and can only be opened on by the City's Cross-Connection Specialist.

Public Works Inspection

1. Contractor is to obtain Public Works construction permit, Temporary Traffic Control permit and a Water Department work order.
2. Prior to beginning any work, the contractor shall meet with the Public Works Inspector to discuss inspection requirements. This meeting shall be arranged at least twenty-four (24) hours in advance. Schedule an inspection by calling (805) 564-5396.
3. All work shall conform to the Standard Specifications of the Public Works construction – “Green book” – SBMC 22.60.90
4. Obtain City Standard details listed below from the City website at http://www.santabarbaraca.gov/Government/Departments/PW/Standard_Details_Cover_Page.htm or the Public Works counter.
5. Once the Bac-T tests have passed, the new fire line is required to be pressure tested the City Modified Green Book 306-1.4.5 (*referenced at the end of this document*). This must be coordinated with the Public Works Inspector. The pressure test must be 50 psi above the static line pressure.

Bac-T and Backflow Assembly Tests:

1. a. All pipes larger than 2 inches shall be disinfected by placing the calculated dose of chlorine for the diameter and length of pipe. The new water line is then back filled from a source other than the City main to capacity and held for 24 hours. (*AWWA Water Operator Field Guide 2004, referenced at the end of this document*)

OR

- b. All pipes larger than 2 inches shall be disinfected by swabbing the full length of pipe and all the fittings. Disinfection is to be completed from the connection point at the City main to the number one gate valve at the double-check assembly.
2. For Fire line valve/taps larger than 2 inches, the contractor shall schedule Bac-T lab testing with the Public Works Inspector, (805) 564-5396. Two Bac-T tests are required within 24 hours **(no samples taken on Fridays)**.
3. The Contractor shall set-up a ½ inch or ¾ inch fitting hook-up for laboratory sampling spigot and make sure it is accessible for Public Works Inspector and Laboratory.

4. 1st Bac-T – City Cross-Connection staff will assist contractor to flush all foreign material and the chlorinated pipe-run with de-chlorinated water system, to be approved by the Public Works Inspector on site, for approximately 30 minutes before lab takes samples.
5. If sample passes the 1st Bac-T test then:
2nd Bac-T – City Cross-Connection staff will assist contractor to pressurize the fire line.
6. The Contractor shall set-up a ½ inch or ¾ inch fitting hook-up for laboratory sampling spigot to make sure it is accessible for Public Works Inspector and Laboratory.
7. The Public Works Inspector will notify the Contractor and Cross-Connection Staff of the results of the Bac-T tests. Following the successful completion of the pressure and Bac-T tests the fire line will remain turned off.
8. The contractor is to coordinate with the City Cross-Connection staff to meet the certified backflow assembly tester on-site and turn on the fire line for the test. Once a successful test of the assembly is completed and submitted to the cross-connection office, the fire line is left on.

The backflow assemblies shall be tested annually thereafter.

Contact Names and Phone Numbers:

Pepe Marquez	Water Supervisor	805-564-5409
Raymond Lopez	Water Lead	805-564-1997
Public Works	Inspector	805-564-5396
Peggy Avila	Cross-Connection	805-564-5575
Maggi Walker	Cross-Connection	805-564-5406

Refer to City Standard Details*:

Underground Utility:

The complete section is required from Trench Bedding & Backfill U-01.0-1, through U01.3 and Utility Separation U-03.0 through U04.0.

Water:

Double Detector Check Assembly: W-13.0-13.2

Reduced Pressure Assembly Detector Assembly W-12.0-12.1

Concrete Thrust blocks: W-11.0

Concrete:

Concrete Repairs: H-01.0-06.1 or as required per Public Works Inspector.

Public Works Construction “Greenbook”: 1.8 Pressure Testing Pipeline:

Modify Section 306-1.4 of the Greenbook as follows:

Pressure Testing Pipeline shall take place after water main disinfection and bacteriological testing, and shall be conducted per these specifications.

Water Pressure Test

The water pressure test, or leakage test, shall establish that the section of line to be tested, including all joints, fittings and other appurtenances, will not leak within the limits of the applicable leakage allowance.

The Contractor shall apply a pressure of 50 psi above normal operating pressure for all tests. This pressure shall be maintained as constant as possible throughout the period of test. All additional water pumped in during the testing period shall be measured and recorded. The Contractor shall provide and use an air relief valve so air trapped in the line during test will not affect test results.

The test duration shall be two-hours, and the allowable leakage shall be determined by the formula:

$$L = NDP/7400$$

Where:

L = allowable leakage (gallons per hour)

N = number of joints in the length of pipeline tested

D = nominal diameter of the pipe (inches)

P = average test pressure during the test (pounds per square inch gauge)

Leakage values determined by the above formula are shown in the table below:

Leakage Allowable (Gallons per 1,000 feet per hour)

(1,000 feet = 50 joints) Pipe Size		Test Pressure (psi)			
(Inches)		50	100	150	200
4	0.19	0.37	0.33	0.33	0.38
6	0.29	0.41	0.50	0.50	0.57
8	0.38	0.54	0.66	0.66	0.76
10	0.48	0.68	0.83	0.83	0.96
12	0.57	0.81	0.99	0.99	1.15

AWWA Water Operator Field Guide 2004 Flushing and Disinfection:

Quantity of HTH Required to Produce 50 mg/L Chlorine Residual

Nominal Pipe Diameter		Amount of Hypochlorite per 100ft (30.5 m) of Pipe	
inches	(millimeters)	lb	kg
4	(100)	0.04	0.018
6	(150)	0.09	0.04
8	(200)	0.17	0.08
10	(250)	0.26	0.12
12	(300)	0.38	0.17
14	(350)	0.51	0.23
16	(400)	0.67	0.30
18	(450)	0.85	0.39
20	(500)	1.05	0.47

**Contact the Public Works Counter Staff for the most current City Standard Details.*