



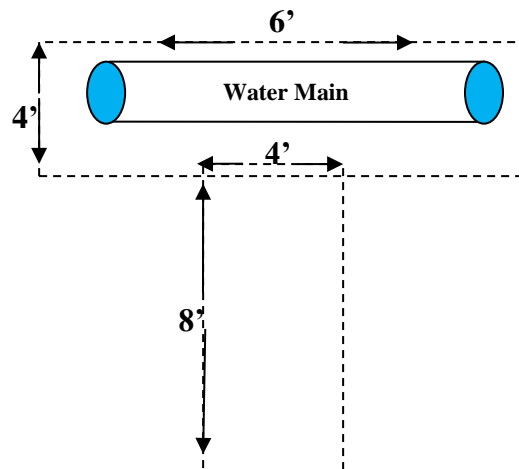
CITY OF SANTA BARBARA

WATER DIVISION FIRE LINE & NEW PRIVATE MAIN TAPPING PROCEDURES

The contractor will need to apply for a Public Works Water Service Connection Work Order at the Public Works counter at 630 Garden St or online Citizen Access at <https://landuse.santabarbaraca.gov/> to schedule a fire line tap installation, obtain construction approval, and propose temporary traffic control.

The Water Distribution Supervisor will schedule a fire line tap installation with the contractor and 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 with a focus on the means and methods of providing the specified fireline service.

- A. The following City staff will be included in the preconstruction meeting: Lead Operator or Water Distribution Coordinator, 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 via an issued Work Order.
- 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. The contractor is responsible for locating the correct location of the excavation based upon the approved plans, DigAlert markings, and field conditions. Any changes to be inspected by Lead Operator or Public Works Inspector.***
- 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.



After traffic control and excavation are ready, the contractor will notify the Water Division Lead Operator and Public Works Inspector, who are assigned to 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 by City crews, the valve will be left closed and can only be opened by the City's Cross-Connection Specialist. If the tap is for a fire line a DCDA backflow must be installed prior to Bac-T. If the tap is for a private main it will require an inline meter. City standards require Sensus Omni T2 meters sized to match the private main for this application and as specified in the Work Order.

Public Works Inspection

1. Contractor is to obtain Public Works Water Service Connection Work Order. Contractor to provide the Public Works Inspector with contact information including a working phone number and e-mail address.
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 of any work in the public right of way. Schedule an Public Works 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, new fire lines larger than 2 inches are required to be pressure tested by 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. All disinfections are to **start on a Monday**, followed with flushing on Tuesday and Sampling on Wednesday. The backflow certification can occur on Thursday depending on the Bac-T results. If Bac-T fails this process would start again on the following Monday.
2. a). All private mains 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 clean water source other than the City main to capacity and held for 24 hours. (AWWA Water Operator Field Guide 2015, referenced at the end of this document)

OR

- b). All fire lines 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.

3. 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. **No samples taken on Fridays.**
4. The Contractor shall provide a safe accessible site for the Public Works Inspector and Lab to access the Sampling point. The Contractor will also set-up a ½ inch or ¾ inch fitting for the Public Works Inspector to hook-up their laboratory sampling spigot.
5. **Flush** – City Cross-Connection staff will assist contractor to flush all foreign material and the chlorinated pipe-run with de-chlorinated water, to be approved by the Public Works Inspector on site, for approximately 30 minutes, depending upon the length of service, through a standard 2 ½ inch fire hose. Contractor is to provide dechlorinating tablets in the path of flow to dechlorinate the water entering the public storm drains. The Public Works Inspector can notify the Fire Inspectors of this flush so they could observe the flow from the fire line connection.
6. **Bac-T** – City Cross-Connection staff will assist contractor to pressurize the fire line. The Lab will take an initial sample and flush the line for 15 minutes through the sampling spigot then take a 2nd sample.
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 a report submitted to the cross-connection office to backflow@santabarbaraca.gov, the fire line will be turned on.

The backflow prevention assemblies shall be tested annually thereafter.

Contact Names and Phone Numbers:

Cory Olesen	Water Supervisor	805-564-5409
Raymond Lopez	Water Lead	805-564-1997
Public Works	Inspector	805-564-5396
Jeff Becker	Cross-Connection	805-564-5575
Water Distribution	Day-time Dispatch	805-564-5413

Refer to City Standard Details*:

Underground Utility:

The complete section is required from Trench Bedding & Backfill: U-01.1 through U-01.3 and Utility Separation: U-03.0 through U-04.0.

Water:

Double Detector Check Assembly: W-13.0-13.2

Reduced Pressure 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 or shown on approved plans on in the work order description.

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 Contractor shall apply a pressure of at least 50 psi above normal operating pressure but not to exceed the manufacture’s rating for the valve 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 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 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 for water lines that are 100 ft or greater (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	0.38
6	0.29	0.41	0.50	0.57
8	0.38	0.54	0.66	0.76
10	0.48	0.68	0.83	0.96
12	0.57	0.81	0.99	1.15

AWWA Water Operator Field Guide 2005 Flushing and Disinfection:

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

CAUTION: Do not use calcium hypochlorite intended for swimming pool disinfection, as this material has been sequestered and is extremely difficult to eliminate from the pipe after the desired contact time has been achieved.

Nominal Pipe Diameter		Amount of Hypochlorite per 100ft (30.5 m) of Pipe	
<u>inches</u>	<u>(millimeters)</u>	<u>lb</u>	<u>kg</u>
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.