

APPENDIX M

CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

TITLE 22 SEPARATIONS
REQUIREMENTS



City of San Bernardino
Municipal Water Department
195 North "D" Street
San Bernardino, CA 92402

NOTE: This publication is meant to be an aid to the staff of the CDPH Drinking Water Program and cannot be relied upon by the regulated community as the State of California's representation of the law. The published codes are the only official representation of the law. Refer to the published codes—in this case, 17 CCR and 22 CCR—whenever specific citations are required. Statutes related to CDPH's drinking water-related activities are in the Health & Safety Code, the Water Code, and other codes.

**Table 64570-B
Installation Standards for Water Mains**

<u>Type of Installation</u>	<u>Applicable Standard</u>
Steel Pipe-Design and Installation	M-11 (2004)
Ductile-Iron Water Mains and Their Appurtenances	C600-05
Underground Installation of PVC Pressure Pipe and Fittings	C605-05
Concrete Pressure Pipe	M9(1995)

- (b) Water mains shall:
- (1) Be installed below the frost line or be otherwise protected to prevent freezing;
- and
- (2) Be protected against crushing under loads that could pass above the installation.

§64572. Water Main Separation.

(a) New water mains and new supply lines shall not be installed in the same trench as, and shall be at least 10 feet horizontally from and one foot vertically above, any parallel pipeline conveying:

- (1) Untreated sewage,
- (2) Primary or secondary treated sewage,
- (3) Disinfected secondary-2.2 recycled water (defined in section 60301.220),
- (4) Disinfected secondary-23 recycled water (defined in section 60301.225), and
- (5) Hazardous fluids such as fuels, industrial wastes, and wastewater sludge.

(b) New water mains and new supply lines shall be installed at least 4 feet horizontally from, and one foot vertically above, any parallel pipeline conveying:

- (1) Disinfected tertiary recycled water (defined in section 60301.230), and
- (2) Storm drainage.

(c) New supply lines conveying raw water to be treated for drinking purposes shall be installed at least 4 feet horizontally from, and one foot vertically below, any water main.

(d) If crossing a pipeline conveying a fluid listed in subsection (a) or (b), a new water main shall be constructed no less than 45-degrees to and at least one foot above that pipeline. No connection joints shall be made in the water main within eight horizontal feet of the fluid pipeline.

(e) The vertical separation specified in subsections (a), (b), and (c) is required only when the horizontal distance between a water main and pipeline is less than ten feet.

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(f) New water mains shall not be installed within 100 horizontal feet of the nearest edge of any sanitary landfill, wastewater disposal pond, or hazardous waste disposal site, or within 25 horizontal feet of the nearest edge of any cesspool, septic tank, sewage leach field, seepage pit, underground hazardous material storage tank, or groundwater recharge project site.

(g) The minimum separation distances set forth in this section shall be measured from the nearest outside edge of each pipe barrel.

(h) With Department approval, newly installed water mains may be exempt from the separation distances in this section, except subsection (f), if the newly installed main is:

- (1) less than 1320 linear feet,
- (2) replacing an existing main, installed in the same location, and has a diameter no greater than six inches more than the diameter of the main it is replacing, and
- (3) installed in a manner that minimizes the potential for contamination, including, but not limited to:
 - (A) sleeving the newly installed main, or
 - (B) utilizing upgraded piping material.

§64573. Minimum Water Main Size for Community Water Systems.

Newly installed water mains in a community water system shall have a nominal diameter of at least four inches.

§64575. Flushing.

(a) A flushing valve or blowoff shall be provided at the end of each newly installed dead-end water main. Fire hydrants meeting the criteria of this section may be considered flushing valves.

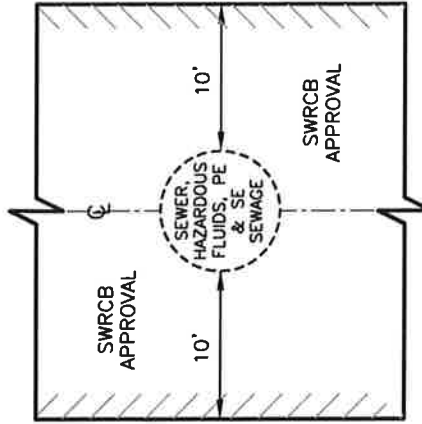
(b) Flushing valves and blowoffs shall not discharge to a sanitary sewer without an air gap separation between the sewer and the valve or blowoff.

(c) The flushing velocity in the main shall not be less than 2.5 ft/s unless it is determined that conditions do not permit the required flow to be discharged to waste.

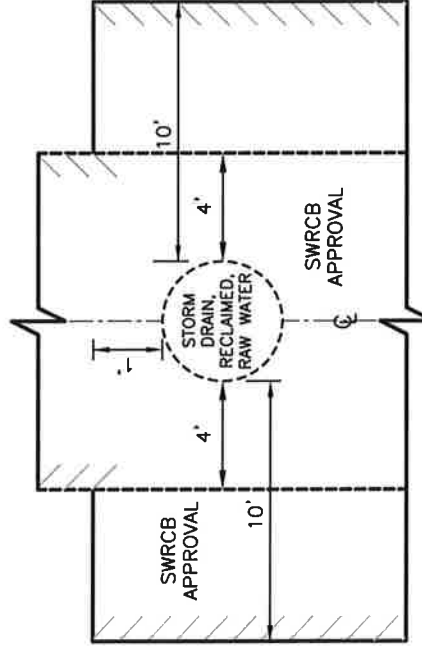
(d) Newly installed flushing valves and blowoffs shall be designed to maintain the minimum continuous flushing flows as indicated below to produce a minimum velocity of 2.5ft/s in commonly used sizes of pipe.

WATER MAIN SEPARATION STANDARDS:

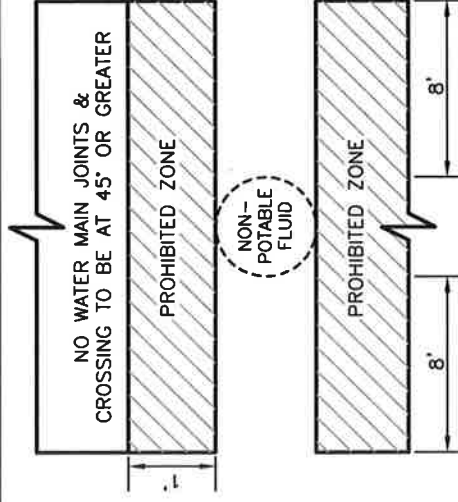
1. PARALLEL CONSTRUCTION: THE HORIZONTAL DISTANCE BETWEEN DOMESTIC WATER AND SEWER, PRIMARY TREATED SEWAGE, SECONDARY TREATED SEWAGE, OR HAZARDOUS FUEL LINES SHALL BE AT LEAST TEN (10) FEET, MEASURED FROM NEAREST OUTSIDE EDGE OF EACH PIPE.
2. PARALLEL CONSTRUCTION: THE HORIZONTAL DISTANCE BETWEEN DOMESTIC WATER AND STORM DRAIN, TERTIARY RECYCLED WATER OR RAW WATER LINES SHALL BE AT LEAST FOUR (4) FEET, MEASURED FROM NEAREST OUTSIDE EDGE OF EACH PIPE.
3. PERPENDICULAR CONSTRUCTION (CROSSING): WATER MAINS SHALL BE CONSTRUCTED NO LESS THAN 45-DEGREES TO AND AT LEAST ONE (1) FOOT VERTICALLY ABOVE SEWER, STORM DRAIN, HAZARDOUS FLUIDS, TREATED SEWAGE OR RECYCLED WATER MAINS WHERE THESE MAINS MUST CROSS. NO CONNECTION JOINTS SHALL BE MADE IN THE WATER MAIN WITHIN EIGHT (8) HORIZONTAL FEET OF THE NON-POTABLE FLUID PIPELINE.
4. SPECIAL PROVISIONS: ALTERNATIVE CONSTRUCTION CRITERIA ARE SHOWN BELOW WHERE THE BASIC SEPARATION REQUIREMENTS CANNOT BE ATTAINED:



PARALLEL CONSTRUCTION



PARALLEL CONSTRUCTION



PERPENDICULAR CROSSING

NOTE:

WITH STATE WATER RESOURCES CONTROL BOARD (SWRCB) APPROVAL, NEWLY INSTALLED WATER MAINS MAY BE EXEMPT FROM THE SEPARATION STANDARDS, IF THE NEWLY INSTALLED MAIN FALLS UNDER THE FOLLOWING SCENARIO:

- A. LESS THAN 1320 LINEAR FEET.
- B. REPLACING AN EXISTING MAIN, INSTALLED IN THE SAME LOCATION, AND HAS A DIAMETER NO GREATER THAN SIX (6) INCHES MORE THAN THE DIAMETER OF THE MAIN IT IS REPLACING.
- C. INSTALLED IN A MANNER THAT MINIMIZES THE POTENTIAL FOR CONTAMINATION, INCLUDING, BUT NOT LIMITED TO:
 - a. SLEEVING THE NEWLY INSTALLED MAIN
 - b. UTILIZING UPGRADED PIPING MATERIAL

REVISION DATE: 01/08/2015

DRAWING NUMBER

SBMWD

W6.14

WATER MAIN SEPARATION STANDARDS

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DATE 1/14/15

F.D.L. JAN. 15

D.D.M. JAN. 12

REVISION DATE

SCALE: NONE