

BACKFLOW PREVENTION

Dear Consumer:

In order to comply with State Law the City of Manteca is required to have an effective backflow prevention program to protect the public water supply from outside contamination. City Ordinance No. 926 was adopted in February 1992 to provide guidelines for such a program.

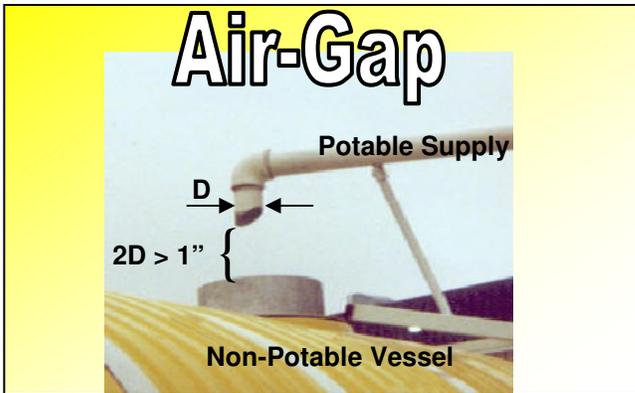
To provide the necessary protection to the public water system, certain water users are required to install backflow prevention devices at their water service entrance. The consumer is responsible for certification of the device upon installation and then at least once each year thereafter. For a current list of persons approved to test backflow devices within the City of Manteca, please call the Public Works Department at (209) 456-8400.

Attached is some background information on backflow prevention, device descriptions and the City's installation standard.

If you have any questions regarding backflow prevention please call the Public Works Department at (209) 456-8400.

If you have questions about backflow prevention devices for fire sprinkler systems, please call the Fire Department at (209) 456-8300.

Types of Backflow Preventers



An Air-Gap is a physical separation of the supply pipe by at least two pipe diameters (never less than one inch) vertically above the overflow rim of the receiving vessel. With this installation line pressure is lost, so a booster pump is usually needed downstream, unless the flow of the water by gravity is sufficient for the water use. With an air-gap there is no direct connection between the supply main and the equipment. An air-gap may be used to protect against a contaminant or a pollutant, and will protect against both backsiphonage and backpressure. An air-gap is the only acceptable means of protecting against lethal hazards.

The AVB is always placed downstream from all shut-off valves. Its air inlet valve closes when the water flows in the normal direction. But, as water ceases to flow the air inlet valve opens, thus interrupting the possible backsiphonage effect. If piping or a hose is attached to this assembly and run to a point of higher elevation, the backpressure will keep the air inlet valve closed because of the pressure created by the elevation of water and it would not provide the intended protection. Therefore, this type of assembly must always be installed at least six (6) inches above all downstream piping and outlets. Additionally, this assembly may not have shut-off valves or obstructions downstream. A shut-off valve would keep the assembly under pressure and allow the air inlet valve (or float check) to seal against the air inlet port, thus causing the assembly to act as an elbow, not a backflow preventer. The AVB may not be under continuous pressure for this same reason. An AVB must not be used for more than twelve (12) out of any twenty-four (24) hour period. It may be used to protect against either a pollutant or a contaminant, but may only be used to protect against a backsiphonage condition.

Atmospheric Vacuum Breaker (AVB)

Hose Connection Vacuum Breaker

Atmospheric Type Vacuum Breaker



Pressure Vacuum Breaker (PVB)

Pressure Type Vacuum Breaker

Backflow Preventer with Intermediate Atmospheric Vent



The PVB includes a check valve which is designed to close with the aid of a spring when flow stops. It also has an air inlet valve which is designed to open when the internal pressure is one psi above atmospheric pressure so that no non-potable liquid may be siphoned back into the potable water system. Being spring loaded it does not rely upon gravity as does the atmospheric vacuum breaker. This assembly includes resilient seated shut-off valves and testcocks. The PVB must be installed at least twelve (12) inches above all downstream piping and outlets. The PVB may be used to protect against a pollutant or contaminant, however, it may only be used to protect against backsiphonage. It is not acceptable protection against backpressure.

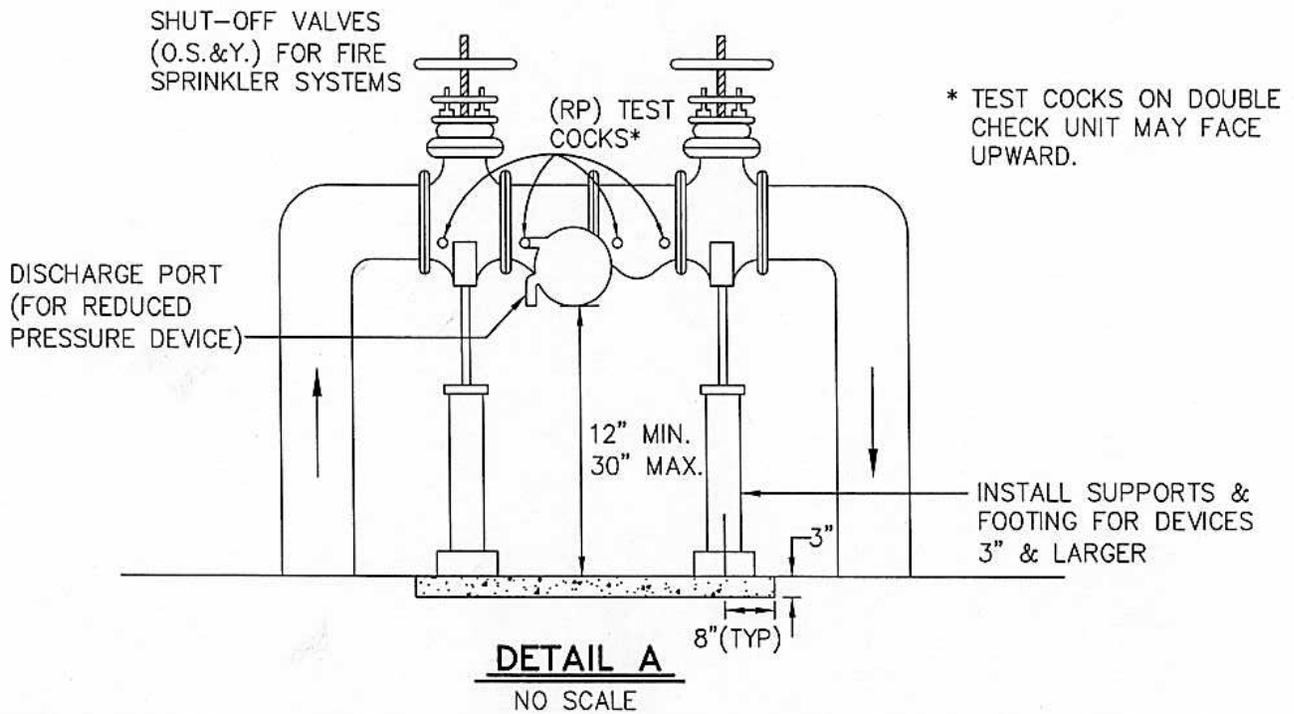
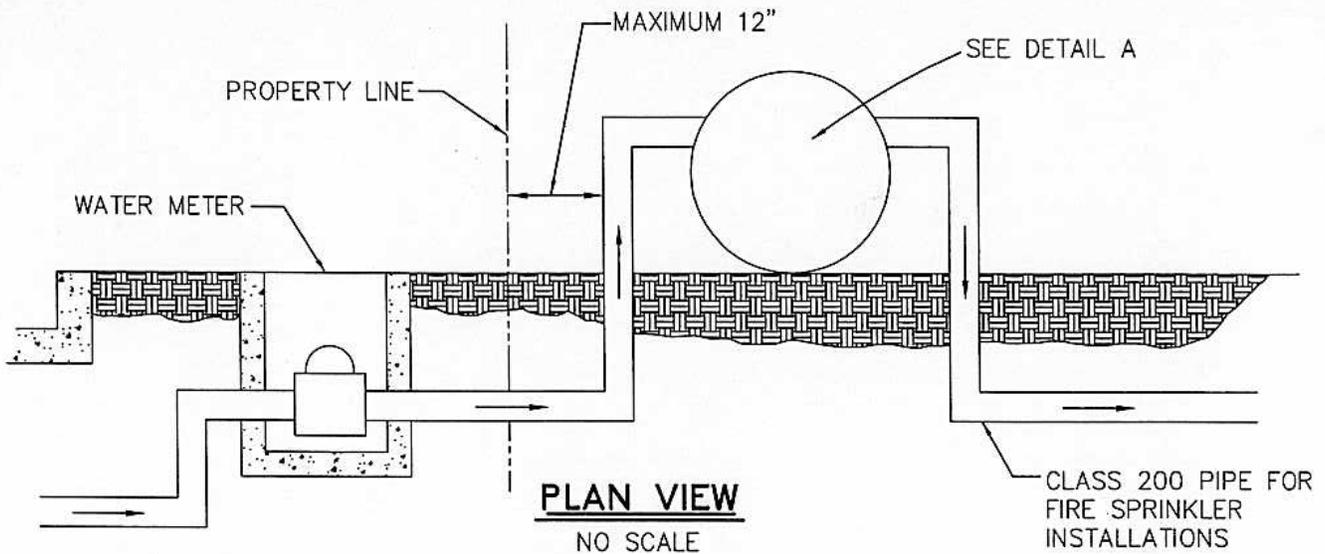
This assembly consists of two internally loaded independently operating check valves and a mechanically independent, hydraulically dependent relief valve located between the check valves. This relief valve is designed to maintain a zone of reduced pressure between the two check valves at all times. The RP also contains tightly closing, resilient seated shut-off valves upstream and downstream of the check valves along with resilient seated testcocks. This assembly is used for the protection of the potable water supply from either pollutants or contaminants and may be used to protect against either backsiphonage or backpressure.

Reduced Pressure Principle Assembly (RP)

3/4" to 2" RP Device

2 1/2" to 10" RP Device





NOTES:

1. ALL BACKFLOW DEVICES INSTALLED IN THE CITY OF MANTECA SHALL BE REDUCED PRESSURE ASSEMBLIES WITH THE EXCEPTION OF THOSE INSTALLED ON FIRE SYSTEMS (WITHOUT AUXILIARY SUPPLY) WHICH SHALL BE DOUBLE CHECK VALVE ASSEMBLIES. ALL DEVICES INSTALLED SHALL BE ON THE CITY'S APPROVED BACKFLOW PREVENTION ASSEMBLIES LIST.
2. DEVICES MUST BE TESTED AND APPROVED BY A CITY APPROVED CERTIFIED TESTER PRIOR TO CITY ACCEPTANCE.
3. TEST COCKS AND SHUT OFF VALVES MUST BE SUPPLIED AS SHOWN.
4. THE DISCHARGE PORT MUST BE KEPT CLEAR OF OBSTRUCTION AT ALL TIMES.
5. BACKFLOW DEVICE SHALL BE VISIBLE FROM THE STREET.
6. DEVIATION FROM THE INSTALLATION SHOWN ABOVE MUST RECEIVE PRIOR CITY APPROVAL.
7. FIRE SPRINKLER SYSTEM BACKFLOW DEVICES SHALL HAVE A WORKING PRESSURE OF 175 PSI.
8. THE CONCRETE FOOTING SHALL BE FINISHED. CONCRETE MUST BE MIXED IN TRANSIT - NO TRAILER HAULED MIX.
9. ONE UNION IS REQUIRED ON ALL NON-FLANGED PLUMBING INSTALLATIONS.

NO.	REVISED	BY	REDUCED PRESSURE/DOUBLE CHECK VALVE BACKFLOW PREVENTION DEVICE INSTALLATION	APPROVED BY:
8	APRIL, 2004	JH		<i>Mick F. Brinton</i> DIRECTOR OF PUBLIC WORKS
DRAWN BY: J. KOESTER				DRAWING NO. W-15
CHECKED BY: J. PODESTA			CITY OF MANTECA	DATE: MAY, 1985
SCALE: NONE			DEPARTMENT OF PUBLIC WORKS	