41-00194

CITY OF CLATSKANIE

CROSS-CONNECTION CONTROL PROGRAM

April, 1998

CITY OF CLATSKANIE
CROSS-CONNECTION PROGRAM

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CERTIFIED CROSS-CONNECTION INSPECTOR STAFF

Dave True, Director of Public Works, Cross-Connection Inspector, # 2849

Program Responsibilities: Program administration including, record keeping, inspection notifications, device testing notifications, device installation requirements, plumbing plan review, data base management, and public relations.

Scott Shulda, Chief Operator, Cross-Connection Inspector, # 2848

Program Responsibilities: Inspections (initial and re-inspections), public relations, and on-site cross-connection education.

Robert Shulda, Public Works Foreman, Backflow Device Tester, # 1289

Program Responsibilities: Test and repair City-owned and maintained backflow prevention devices.

CROSS-CONNECTION CONTROL PROGRAM

Purpose: The City of Clatskanie has the responsibility to prevent contamination of the public water system from backflow. The responsibility begins at the source, includes the water supply distribution system, and ends at the water service connection. As a water supplier, it is the City's responsibility to enforce all laws, rules, regulations, and policies that can be reasonably implemented to protect the public from the hazards of cross-connections. The City of Clatskanie will not provide water service to customers where a known, hazardous, cross-connection exists.

The cross-connection program is separated into six areas:

1. New Construction
2. Existing Facilities
3. Installation Support
4. Testing
5. Record Keeping
6. Reporting

New Construction: Before any plumbing permit for new construction or major plumbing modifications to existing systems are issued, the Director of Public Works will review the mechanical plans to identify cross-connection hazards. If a cross-connection is found to exist on the plans, the owner will eliminate it or protect it with a backflow device suitable to the degree of hazard as required by the City. All modifications on the mechanical plans will be noted and highlighted. If a backflow device is required, a backflow permit will be issued. The City will then issue a plumbing permit for the project.

Existing Facilities: The inspection and enforcement of cross-connection control requirements in existing facilities is the primary focus of the program and the most difficult to enforce. All existing commercial and industrial water services will be inspected initially. Follow-up inspections will be performed on a random basis. The initial facility inspection will be performed as per the requirements in Oregon Administrative Rule (OAR) 333-61-070, which requires service connections identified as being of the highest hazard to be inspected first.

Installation Support: If a backflow device is required, the City of Clatskanie will assist the affected customer to identify the most cost effective location to install the device and the type of backflow device that is most economical for the level of hazard that exists.

Testing: OAR 333-61-070 requires that all Reduced Pressure Backflow Devices (RPBD), Double Check Valve Assemblies (DCVA), and Pressure Vacuum Backflow Assemblies (PVBA) be tested on an annual basis. Customers may be required to test devices more frequently if there is an extreme health risk or repeated failure of the device.

Devices are also required to be tested upon installation and when they are relocated. The testing on new or relocated devices will be done before the device is put into service.

The City of Clatskanie will initially notify customers with backflow devices that testing results will be required to be performed every calendar year with the results submitted to the City no later than January 31 of the following year. This will give customers some latitude on when to perform the test each year.

If the City does not receive the results of the backflow device test by January 31 of the following year, the customer will be immediately notified and be required to submit the test results by February 20. If the test results are not received by February 20, the customer will be in violation and service to the property may be discontinued.

Record Keeping: The City will keep accurate, up to date records of all backflow devices in the water service area. Records will consist of installation date (if known), type, model and make of the device, location, and records of device inspections, tests, and correspondence regarding each device.

Reporting: The City will keep in close contact with the Oregon State Health Division in an effort to stay current on all rules regarding cross-connection control. The City will also submit device test forms to the Health Division as required by OAR 333-61-070.

CITY OF CLATSKANIE

ORDINANCE NO. 551

AN ORDINANCE TO PROTECT THE WATER SUPPLY OF THE CITY OF CLATSKANIE FROM CONTAMINATION OR POLLUTION DUE TO ANY EXISTING OR POTENTIAL CROSS CONNECTIONS; DEFINING AND DESCRIBING ASSEMBLY AND INSTALLATION REQUIREMENTS; PROVIDING FOR PREMISES ACCESS; TESTING AND REPAIR OF ASSEMBLIES; AND COMPLIANCE COSTS WITH PENALTIES FOR FAILURE TO COMPLY.

The City of Clatskanie ordains as follows:

Section 1. Definitions:

1. "Approved backflow prevention assembly" means an assembly to counteract backpressure or prevent backsiphonage. This assembly must appear on the list of approved assemblies issued by the Oregon Health Division

2. "Auxiliary supply" means any water source or system other than the public water system, that may be available in the building or on the premises.

3. "Backflow" means the flow in the direction opposite to the normal flow or the introduction of any foreign liquids, gases, or substances into the water system of the City of Clatskanie's water.

4. "City" or "the City" means the City of Clatskanie.

5. "Contamination" means the entry into or presence in a public water supply system of any substance which may be deleterious to health and/or quality of the water.

6. "Cross Connection" means any physical arrangement where a public water system is connected, directly of indirectly, with any other non-drinkable water system or auxiliary system, sewer, drain conduit, swimming pool, storage reservoir, plumbing fixture, swamp cooler, or any other device which contains, or may contain, contaminated water, sewage, or other liquid or unknown or unsafe quality which may be capable of imparting contamination to the public water system as a result of backflow. Bypass arrangements, jumper connections, removable sections, swivel or changeover devices, or other temporary or permanent devices through which, or because of which, backflow may occur are considered to be cross connections.

7. "Degree of hazard" shall be derived from the evaluation of a health, system, plumbing, or pollutional hazard.

8. "Health hazard" means an actual or potential threat of contamination of a physical or toxic nature to the public potable water system or the consumer's potable water system that would be a danger to health.

9. "Plumbing hazard" means an actual or potential threat to the physical properties of the water system or the potability of the public or the consumer's potable water system but which would not constitute a health or system hazard, as defined. The maximum degree of intensity of pollution to which the potable water system could be degraded under this definition would cause a nuisance or be aesthetically objectionable or could cause minor damage to the system or its appurtenances.

10. "Pollutional hazard" means an actual or potential threat to the physical properties of the water system or the potability of the public or the consumer's potable water system but which would not constitute a health or system hazard, as defined. The maximum degree of intensity of pollution to which the potable water system could be degraded under this definition would cause a nuisance or be aesthetically objectionable or could cause minor damage to the system or its appurtenances.

11. "Director" means the Director of Public Works of the City of Clatskanie.

12. "System hazard" means an actual or potential threat of severe danger to the physical properties of the public or consumer's potable water system or of a pollution or contamination which would have a detrimental effect of the potable water in the system.

13. "Potable water supply" means any system of water supply intended or used for human consumption or other domestic use.

14. "Premises" means any piece of land to which water is provided including all improvements, mobile home(s) and structures located on it.

15. "Reduced pressure principle assembly" shall mean an assembly containing two, independently acting, approved check valves together with a hydraulically operated, mechanically independent, pressure differential relief valve located between the check valves. The assembly shall include properly located test cocks and tightly closing shut-off valves at the end of the assembly. A check valve is approved if it appears on the list of approved assemblies issued by the Oregon Health Division.

Section 2. No cross connections shall be created, installed, used or maintained within the boundaries of the City of Clatskanie jurisdiction, except in accordance with this ordinance.

Section 3. Approved backflow prevention assemblies shall be installed at the expense of the user, either at the service connection or within the premises, as determined by a certified cross connection inspector employed by the City of Clatskanie whenever;

1. The nature and extent of any activity of the premises, or the materials used in connection with any activity of the premises, or materials stored on the premises, could contaminate or pollute the drinking water supply.

2. Premises having any one or more cross connections as that term is defined in Section 1, (6) are identified or are present.

3. Internal cross connections that are not correctable, or intricate plumbing arrangements which make it impractical to ascertain whether or not cross connections exist are present.

4. There is a repeated history of cross connections being established or re-established.

5. There is unduly restricted entry so that inspections for cross connections cannot be made with sufficient frequency or with sufficient notice to assure that cross connections do not exist.

6. Materials of a toxic or hazardous nature are being used such that, if backflow should occur, a health hazard could result.

7. Any mobile apparatus which uses City water or water from any premises within the boundaries of the City of Clatskanie jurisdiction.

8. Installation of an approved backflow prevention assembly is deemed to be necessary to accomplish the purpose of these regulations in the judgment of a certified cross connection specialist employed by the City of Clatskanie.

9. An appropriate cross connection report form has not been filed with the City of Clatskanie.

10. A fire sprinkler system using non-potable piping material is connected to the City's water system.

11. All residential properties occupied by persons other than the property owner shall install an approved backflow prevention assembly, or the property owner shall assume all responsibility for any backflow that should occur.

12. All service connections 2 inches and larger will be required to have a minimum of a double check valve assembly or as directed by the Director of Public Works.

Section 4. To ensure proper operation and accessibility of all backflow prevention assemblies, the following requirements shall apply to the installation of these assemblies:

1. No part of the backflow prevention assembly shall be submerged in water or installed in a location subject to flooding. If installed in a vault or basement, adequate drainage shall be provided.

2. Assemblies must be installed at the point of delivery of the water supply, before any branch in the line, on private property located just inside of the property line. Alternate locations must be approved in writing by the City of Clatskanie.

3. The assembly must be protected from freezing and other severe weather conditions.

4. All backflow prevention assemblies shall be of a type and model approved by the Oregon Health Division and the City of Clatskanie.

5. Only assemblies specifically approved by the Oregon Health Division for vertical installation may be installed vertically. No assembly over four inches shall be installed vertically.

6. The assembly shall be readily accessible with adequate room for maintenance and testing. Assemblies two inches and smaller shall have at least eight inch clearance on all sides of the assembly. All assemblies larger than two inches shall have a minimum clearance of 12 inches on the back side, 24 inches on the test cock side, 12 inches below the assembly and 36 inches above the assembly. "Y" pattern double check valve assemblies shall be installed so that the checks are horizontal and the test cocks face upward (see example following).

7. The property owner assumes all responsibility for all maintenance and testing of the assembly, as determined and required by the City of Clatskanie,

8. If written permission is granted to install the backflow assembly inside of the building, the assembly shall be readily accessible during regular working hours of 8:00 a.m. to 5:00 p.m., Monday through Friday.

9. If an assembly, with written permission, is installed inside of the premise and is four inches or larger and is installed four feet above the floor, it must be equipped with a rigidly and permanently installed scaffolding acceptable to the City. This installation must also meet the requirements set out by the U.S. Occupational Safety and Health Administration and the State of Oregon Occupational Safety and Health Codes.

10. Reduced pressure principle assemblies may be installed in a vault only if relief valve discharge can be drained to daylight through a "boresight" type drain located above the 100 year flood plan as specified by the City's current flood plan map. The drain shall be of adequate capacity to carry the full rated flow of the assembly and shall be screened on both ends.

11. An approved air gap shall be located at the relief valve orifice. This air gap shall be at least twice the inside diameter of the incoming supply line as measured vertically above the top rim of the drain and in no case less than one inch.

12. A backflow permit shall be obtained by the property owner prior to any new backflow

assembly installation. With the permit, the owner and/or contractor will be provided with City cross connection ordinance and will be advised as to the minimum type of backflow ssembly required and as to the locations that will be acceptable to the City.

13. Upon completion of installation, the City shall be notified and all assemblies must ›e inspected and tested. All backflow prevention assemblies must be registered with the City. Registration shall consist of date of installation, make model, serial number of the backflow assembly, and initial test report.

14. Any water pressure drop caused by the installation of a backflow assembly is not the responsibility of the City of Clatskanie.

15. It is the responsibility of the property owner to eliminate the possibility of thermal expansion if a closed system has been created by the installation of a backflow assembly.

16. All new plumbing construction shall be evaluated as to the need for a backflow assembly before the issuance of all plumbing permits within the boundaries of the City of Clatskanie jurisdiction.

Section 5. Authorized employees of the City of Clatskanie, with proper identification, shall have access during reasonable hours to all parts of the premises and within the building to which water is supplied. However, if any water user refuses access to the premises or to the interior of a structure at a reasonable times and on reasonable notice for inspection by a cross connection specialist appointed by the City, a reduced pressure principle assembly will be required to be installed at the service connection to the premises.

Section 6. All backflow assemblies installed within the jurisdiction of the City of Clatskanie shall be tested immediately after installation and then annually on or before the anniversary date by a state-certified tester. The City will send out notices of reminder that a test is due. If the test is not completed within 15 days after the anniversary date, a second notice in the form of a registered letter, return receipt requested will be sent. If the backflow assembly is not tested within 15 days of the second and final notice, the water service will be disconnected from the City water system. The City of Clatskanie retains the right to have the assembly tested in special circumstances, rather than terminating the water service. Special circumstances may consist of, but are not limited to, retirement homes, rental homes, hospitals, group homes, homes in which water dependent devices are in use (such as kidney dialysis machines), or any other circumstance where the City deems, it a health risk to terminate water service.

Forty-eight hour notice shall be given prior to all backflow testing to the Director of Public Works. This notice is required as to allow the City cross connection inspector to be on site to observe the test. If the owner, tester, or contractor fails to comply with this 48-hour notice, the City will not accept the device test and a re-test will be required in the presence of a City inspector. All backflow assemblies found not functioning properly shall be promptly repaired or replaced by the water user. If any such assembly is not promptly repaired or replaced, the City of Clatskanie may deny or discontinue water to the premises. All testing and repairs are the financial responsibility of the water user.

Section 7. All cost associated with purchase, installation, inspection, testing, replacement, maintenance, part, and repair of the backflow assembly are the financial responsibility of the property owner.

Section 8. Failure on the part of any customer to discontinue the use of all cross connections and to physically separate cross connections is sufficient cause for the immediate discontinuance of public water service to the premises (OAR Chapter 333-061-070, Section 1).

ADOPTED by the Common Council and approved by the Mayor this 15th day of November, 1995.

Addison E. Harrison

Addison E. Harrison, Mayor

ATTEST: David G. Crow

David G. Crow
City Administrator

ROLL CALL ON ADOPTION		AYE	NAY	ABSENT
Mayor:	Addison Harrison	X		
Councilors:	Rick Allen	X		
	Irene Hannula	X		
	Ron Puzey	X		
	Larry Garlock	X		
	Jim Morgan	X		
	Linda Cooper			X

CITY OF CLATSKANIE
PROVISIONS AND SCHEDULE FOR INITIAL INSPECTIONS, RE-INSPECTIONS, ANNUAL TESTING, AND PERIODIC RE-INSPECTIONS

All Water Services in the City of Clatskanie are Subject to Cross-Connection Control Inspections

Although all customers are subject to cross-control inspections, limited resources and staff time force the City to concentrate on high and medium hazard industrial and commercial water service connections first. The following pages are a listing of all commercial and industrial water service connections in the City of Clatskanie and the estimated hazard level for each. The actual hazard will be determined following an initial inspection of the premises.

Initial inspection of industrial and commercial water service connections will take place in the next thirty-six (36) months, with the first inspections being made on estimated high hazard services. Inspections will progress from estimated high hazard to moderate hazard to low hazard for each of the commercial and industrial customers. Re-inspections will be made on a random basis as time permits or as information dictates.

If on an initial inspection a backflow device is deemed necessary by a city inspector, the customer will be given ninety (90) days to install a device or the water service to the property will be terminated. If an immediate hazard is identified, the service will be terminated until the hazard is removed.

All backflow devices requiring testing will be tested annually as previously outlined. More frequent testing may be required if continuous problems are encountered with a particular device.

COMMERCIAL AND INDUSTRIAL CUSTOMERS

CUSTOMER - SERVICE ADDRESS - ESTIMATED BACKFLOW HAZARD

Clatskanie Middle School Gym - 630 SW Bryant Street - Low
Beaver Boat Ramp (Columbia County) - U.S. 30 - Low
McFarland Trucking - NE 5th and NE Van Street - Moderate
Columbia County Road Department - 17666 Beaver Falls Road - Moderate
VFW Hall - 17670 Beaver Falls Road - Low
Joel Olson Trucking - 17901 Beaver Falls Road - Moderate
Clatskanie High School - 471 SW Belair Drive - Moderate
El Ranchero Restaurant - 955 East Columbia River Highway - Moderate
R & K Farms - 78384 Collins dike Road - Moderate
Beaver Boat Club - Clatskanie Drainage District Access Road - Low
Mike Arthur Machine Service - 220 East Columbia River Highway - Moderate
Johnson Oil - 280 East Columbia River Highway - Low
James E. Frye (Fruit Stand) - 300 East Columbia River Highway - Low
Clifford Real Estate - 315 East Columbia River Highway - Low
Clatskanie Insurance - 315 East Columbia River Highway - Low
Flowers and Fluff - 45 East Columbia river Highway - Low
Valley Mobile Home Park (Lift Station) - 495 East Columbia River Highway - High
Quality Auto Parts - 680 East Columbia River Highway - Low
Northwoods Motel - 945 East Columbia River Highway - Moderate
Jack Johnson (Car Wash) - 945 East Columbia River Highway - Moderate
Fultano's Family Pizza - 770 East Columbia River Highway - Moderate
Fort James/Don Rice - 78542 Erickson Dike Road - Low
Jan's Beauty Salon - 111 North Nehalem - Moderate
Big Guy's Restaurant/Clatskanie Market - 178 N. Nehalem Street - Moderate
Colvin's Bar and Grill - 135 North Nehalem Street - Moderate
Hazen Hardware - 136 North Nehalem Street - Low
M & N Stores - 147 N. Nehalem Street - Low
State Farm Insurance - 148 North Nehalem Street - Low
Nancy Williamson/Frame Shop - 160 North Nehalem Street - Low
Western Bank - 199 North Nehalem Street - Low
Waggin Masters - 289 North Nehalem Street - Moderate
Dick Weigant - 302 North Nehalem Street - Low
Ye Old Country Mall - 302 North Nehalem Street - Low
Joan E. McDowell - 350 North Nehalem Street - Low
Clatskanie PUD - 423 North Nehalem Street - Low
Clatskanie PUD - 469 North Nehalem Street - Moderate
Evenson Logging Company (Office) - 489 North Nehalem Street - Low
Conestoga Restaurant - 85 North Nehalem Street - Moderate
Faith Lutheran Church - 1010 NE 5th Street - Low
Community Access Service - 412 NE 5th Street - Low
Evenson Logging Company (Shop) - 80 NE 5th Street - Moderate

American Legion Hall - 930 NE 5th Street - Low
Wilcox & Flegel Oil Co. - 985 NE 5th Street - Moderate
John Lillich (Old Chief Office) - 80 NE Art Steele Street - Low
Hydraulic Marine - 85 NE Art Steele Street - Moderate
Jack Jordan (Reitman Motors) - 85 NE Conyers Street - Moderate
Clatskanie Library - 111 NE Lillich Street - Low
Chinook Sales & Rental - 905 NE Van Street - Moderate
Hausler Lumber Company - 70 NW 5th Street - Low
Clatskanie Mini-Storage - 80 NW 4th Street - Low
Clatskanie Motel - 481 NW 5th Street - Low
Clatskanie Motel - 482 NW 5th Street - Low
First Assembly of God Church - 610 NW 5th Street - Low
Clatskanie Parks and Recreation District - 300 NE Park Street - Moderate
Bryant House - 265 South Nehalem Street - Low
Salisbury & Olsen - 28 South Nehalem Street - Low
Judy's Fashions - 29 South Nehalem Street - Low
Jepson & Sons Logging - 32 South Nehalem Street - Low
Dennis Conners - 345 South Nehalem Street - Low
Baptist Church - 415 South Nehalem Street - Low
Richmond Construction - 58 South Nehalem Street - Low
Cave Carson (Odd Fellows Hall) - 75 South Nehalem Street - Low
Clatskanie City Hall - 95 South Nehalem Street - Low
Clatskanie Police Station - 95 SE 2nd Street - Low
Clatskanie Elementary School - 815 South Nehalem Street - Moderate
Columbia ESD - 815 South Nehalem Street - Low
Clatskanie Masonic Lodge - 80 SE 2nd Street - Low
General Telephone - 92 SE 2nd Street - Low
Haakinson/Groulx Mortuary - 225 SE 3rd Street - High
Donna Lopardi - 80 SE Conyers Street - Low
District 5J Bus Garage - 825 SE Conyers Street - Moderate
Bundy's Drive-in - 100 SE Truehaak - Moderate
Wauna Federal Credit Union - 101 SE Truehaak - Low
Clatskanie Rural Fire Department - 250 SE Truehaak - Moderate
Stimson Lumber Co. - 765 Stimson Mill Road - High
Clatskanie Dental - 301 SW Belair Drive - High
Dr. James H. Tyack - 400 SW Belair Drive - High
Clatskanie Care Center - 401 SW Belair Drive - Low
Clatskanie Senior Center - 635 SW Bryant - Low
Clatskanie City Shop - 520 SW Bryant - Moderate
Clatskanie Water Treatment Plant - 520 SW Bryant - High
St. Johns Catholic Church - 125 SW High Street - Low
City of Clatskanie Old State Shop - US 30 and SW Norman Street - Low
Community Access Service - 236 SW Orchard Street - Low
Clatskanie Middle School - 520 SW Tichenor Street - Moderate
St. Helens Real Estate - 155 West Columbia River Highway - Low

Dr. John Briggs - 195 West Columbia River Highway - High
Blue Ribbon Cleaners - 255 West Columbia River Highway - Moderate
Clatskanie Chevron - 25 West Columbia River Highway - Moderate
Tri-City Insurance - 235 West Columbia River Highway - Low
Clatskanie Mini-Mart - 260 West Columbia River Highway - Moderate
U.S. Post Office - 301 West Columbia River Highway - Low
U.S. National Bank - 303 West Columbia River Highway - Low
Kid Corner/Subway - 305 West Columbia River Highway - Moderate
Redman Graphics - 350 West Columbia River Highway - Low
Jim's Headquarters - 350 West Columbia River Highway - Moderate
Clatskanie.Com, Inc. - 350 West Columbia River Highway - Low
Safeway - 401 West Columbia River Highway - High
Hump's Restaurant - 50 West Columbia River Highway - Moderate
Main Sewer Lift Station - 350 West Columbia River Highway - High
Conestoga Sewer Lift Station - 85 North Nehalem - High
Chinook Sewer Lift Station - 905 NE Van Street - High
Hidden Valley Sewer Lift Station - 75708 Conyers Creek Road - High
1A Sewer Lift Station - 50 NW 4th Street - High
Clatskanie Sewer Treatment Plant - Termination of NW 4th Street - High

NOTE: All other water service connections are residential type, which includes mobile homes in parks and apartments and duplexes. The estimated hazard rating is low.

CITY OF CLATSKANIE
CROSS-CONNECTION INSPECTION

Date Of Inspection: _____ Meter Reading: _____

Inspector: _____ Service Address: _____

Customer Name: _____ Mailing Address: _____

Account Number: _____ Contact Person: _____

Meter Size: _____ Telephone Number: _____

Location: _____

Serial Number: _____

Existing Backflow Device(s) Model: _____

Existing Backflow Device(s) Serial Number(s): _____

ITEM	***COMMENTS***	***CROSS-CONNECTION EXISTS?***	
		(YES)	***(NO)***
Kitchen		( )	( )
Utility Sinks		( )	( )
Rest Rooms		( )	( )
Water Cooled Equipment		( )	( )
Refrigerator System		( )	( )
Sewer Lines		( )	( )
Swimming Pool		( )	( )
Lab Equipment		( )	( )
Boiler		( )	( )
Steam Lines		( )	( )
Hose bibs		( )	( )
Wells On Property		( )	( )
Shampoo Basin		( )	( )
Water Booster Pumps		( )	( )
Sewer Lift Pump		( )	( )
Plating Tanks		( )	( )
Compressed Air		( )	( )
Air Washers		( )	( )
Aspirators		( )	( )
Chemical Feed Tanks		( )	( )
Chlorinator		( )	( )
Dishwasher		( )	( )
Drinking Fountain		( )	( )
Post Mix Pop Dispenser		( )	( )
Photo Developing		( )	( )
Detergent Dispenser		( )	( )
Floor Drains		( )	( )
Ice Maker		( )	( )
Steam Cleaner		( )	( )

Steam Table	( )	( )
Wash Tanks	( )	( )
Air Gap	( )	( )
Other:	( )	( )
Other:	( )	( )
Other:	( )	( )

REQUIRED BACKFLOW PREVENTION

REQUIRED BACKFLOW ASSEMBLY		***LOCATION***
Reduced Pressure Backflow Preventer	( )	
Double Check Valve Assembly	( )	
Pressure Vacuum Breaker	( )	
Atmospheric Vacuum Breaker	( )	

INSTALLATION REQUIREMENTS

Immediately ( ) 30 Days ( ) 60 Days ( ) 90 Days ( )

Oregon State Health Division rules require water service to premises be discontinued where existing or potential cross-connections are located until an approved backflow prevention device is installed.

REMARKS

INITIAL INSPECTION NOTIFICATION LETTER

[Customer Name] [Date]
[Address]

Dear [Customer Name]:

The protection of the drinking water supply in the City of Clatskanie is a matter of mutual concern and benefit. City Ordinance Number 551 regulates the City's Cross-Connection Control Program. Scott Shulda or myself will be conducting an inspection of the water system within your building and/or grounds in the near future.

Enclosed is some literature regarding the need for cross-connection control and backflow protection. The City will call you and make arrangements to inspect the water system on your property. The date and time for the inspection will be mutually agreed upon at that time.

If you need further information before the drinking water system inspection, please call me at 728-2622.

Sincerely,

Dave True
Public Works Director

FIRST NOTIFICATION TO CORRECT DEFICIENCIES LETTER

[Customer Name] [Date]
[Mailing Address]

Dear [Customer Name]:

During the inspection of [Date], to identify cross-connection hazards on your potable water supply, the City noted certain deficiencies regarding protection of the public water supply. The deficiencies are noted on the attached list with the location and a possible solution to each item.

Also enclosed is a copy of Oregon Administrative Rule 333-61-070 and a copy of City of Clatskanie Ordinance Number 551 regarding cross-connection protection of the public water supply.

If a backflow assembly is required to correct any of the noted deficiencies, please select a device from the list approved by the Oregon Health Division. The list of approved backflow assemblies is enclosed with this letter.

If installation of backflow assembly is required, the property owner or a licensed plumber must perform the work. A licensed backflow assembly tester must test the device immediately after installation and annually thereafter. A list of licensed testers in the Columbia County area is enclosed.

A plumbing permit must be obtained before performing the installation of a backflow assembly device. Please send the results of the initial test of the backflow device to my attention as well as the results of the annual test.

The installation of the device should be installed by the date noted on the deficiency list. If you have any questions, please call me.

Sincerely,

Dave True
Public Works Director

FINAL NOTIFICATION TO CORRECT DEFICIENCIES LETTER

[Customer Name] [Date]
[Address]

Dear [Customer Name]:

The City's letter regarding a cross-connection hazard[s] on your potable water supply, dated [date of letter], indicated measures required to correct the noted deficiency[ies]. The time frame to correct the deficiency[ies], as stated in the letter, has elapsed.

Please correct the deficiency[ies] noted in the letter of [date of letter] within fifteen (15) calendar days of the date of this letter. Failure to do so will result in termination of your water service as per City of Clatskanie Ordinance Number 551. A copy of the ordinance is enclosed with this letter.

If you have any questions, please call me at 728-2622.

Sincerely,

Dave True
Public Works Director

INITIAL NOTIFICATION TO TEST BACKFLOW ASSEMBLY

[Customer Name] [Date]
[Address]

A backflow prevention assembly device has recently been installed on your property, located at [service address]. City of Clatskanie Ordinance Number 551 requires the device be tested at the time of installation, prior to activating water service, and annually thereafter.

The test must be performed by a tester licensed in the State of Oregon. Enclosed is a list of licensed testers in the local area. Also enclosed is a copy of Ordinance 551.

Please submit the results of the backflow prevention assembly device within 30 days of the date of this letter.

If you have any questions, please call me.

Sincerely,

Dave True
Public Works Director

ANNUAL BACKFLOW ASSEMBLY DEVICE TESTING NOTIFICATION

[Customer Name]
[Address]

January 1[], [Year]

Dear [Customer Name]:

The results of the annual test[s] on the backflow prevention assembly[ies] on the potable water system at your property at [service address] is due to be received by the City of Clatskanie by January 31, [Year]. For each device, please indicate the manufacturer, model, and location of the installation and submit the test report from the licensed tester performing the work.

If you have any questions, please call me.

Sincerely,

Dave True
Public Works Director

SECOND AND FINAL NOTIFICATION FOR THE ANNUAL TESTING OF BACKFLOW PREVENTION ASSEMBLIES

[Customer Name] [Date]
[Address]

Dear [Customer Name]:

The results of the annual test[s] on the backflow prevention assembly[ies] located on your property at [service address] have not been received by the City of Clatskanie. Please have the device[s] tested by a licensed backflow prevention assembly tester and submit the test results along with the manufacturer, model, and location of the device[s] to the City by February 20, [Year].

Failure to complete the annual test of the backflow prevention device[s] by this date will result in termination of water service to the property.
If you have any questions, please call me.

Sincerely,

Dave True
Public Works Director

FINAL RULE
1/7/94

333-61-070 CROSS CONNECTION CONTROL REQUIREMENTS

(1) Water suppliers shall undertake programs for controlling and eliminating cross connections:

(a) In community water systems, water suppliers shall carry out a local cross connection program consisting of the following elements:

(A) Local ordinance or enabling authority which authorizes discontinuing water service to premises for failure to install an approved backflow device or conduct a required annual test on a backflow device.

(B) A written program plan which includes the following:

(i) A master list of facilities and premises which are subject to inspection, and the hazard level for each.

(ii) A current list of certified inspector staff and work responsibilities.

(iii) Provision and schedule for an initial inspection, the installation and annual testing of each required backflow device, and a periodic re-inspection of each required backflow device.

(C) The water supplier shall maintain current records of backflow devices installed, inspections completed, and backflow device test results.

(D) The water supplier shall prepare and submit an annual written report to the Division using a format to be provided by the Division.

(b) In community water systems where the water supplier has reasonable cause to believe that an existing or potential cross connection is located on the user's premises, the water supplier shall deny or discontinue service to those premises until an appropriate backflow prevention device assembly is installed or until the cause of the hazard is eliminated;

which could backflow is hazardous to health, such as but not limited to; sewage treatment plants, sewage pumping stations, chemical manufacturing plants, plating plants, hospitals, mortuaries, car washes, medical clinics;

(b) An approved double check valve assembly (DCVA) shall be installed where the substance which could backflow is objectionable but does not pose an unreasonable risk to health. An approved double check valve assembly shall be the minimum protection for fire sprinkler systems using piping material that is not approved for potable water use and/or which does not provide for periodic flow through during each 24 hour period.

(c) An approved pressure vacuum breaker or an atmospheric vacuum breaker shall be installed where the substance which could backflow is objectionable but does not pose an unreasonable risk to health and where there is no possibility of backpressure in the downstream piping. A shutoff valve may be installed on the line downstream of a pressure vacuum breaker but shall not be installed downstream of an atmospheric vacuum breaker.

(7) All backflow prevention device assemblies required under this section shall be of a type and model approved by the Division and the Division shall maintain a list of backflow prevention device assemblies approved for use in Oregon.

(8) All device assemblies installed after the effective date of these rules shall meet the specifications of construction, evaluation and approval of backflow prevention assemblies as specified in Section 10, Manual of Cross-Connection Control, 8th Edition, June, 1988. Published by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California and AWWA Standards C510-92 and C511-92.

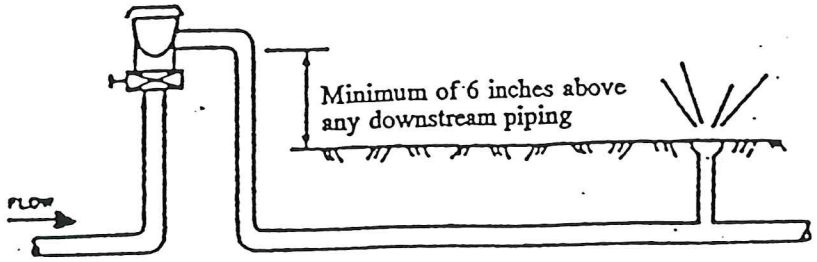
(9) All backflow prevention device assemblies shall be installed in accordance with Sections (1) through (4) of OAR 333-61-071. Pressure Vacuum Breaker, Double Check Valve and Reduced Pressure Device Assemblies shall have resilient seated gate valves or fully ported ball valves provided by the device manufacturer for both shut-off valves and for the test cocks.

(10) The water user or the owner of the premises where one or more reduced pressure device assembly, double check valve assembly, or pressure vacuum breaker have been installed shall have the device tested by a certified tester at least once per year. Devices installed at facilities which pose an extreme health risk and devices which repeatedly fail shall be tested on a more frequent basis as determined by the local water purveyor. Backflow prevention devices found not to be functioning properly shall be promptly

FINAL RULE
1/7/94

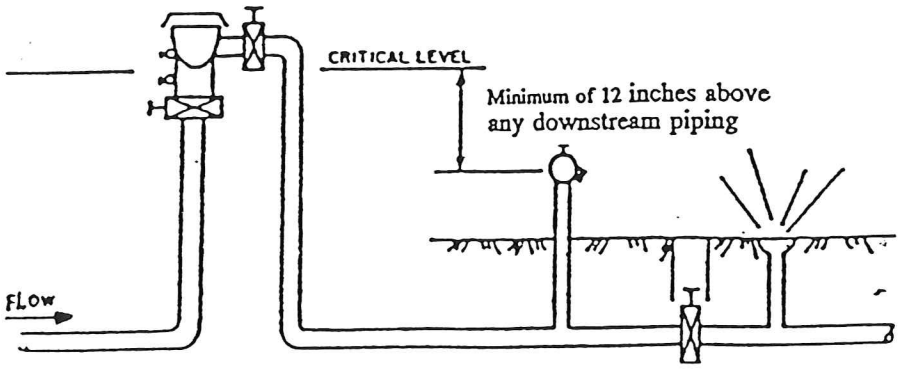
333-61-071 BACKFLOW DEVICE INSTALLATION STANDARDS

(1) TYPICAL INSTALLATION OF AN AVB



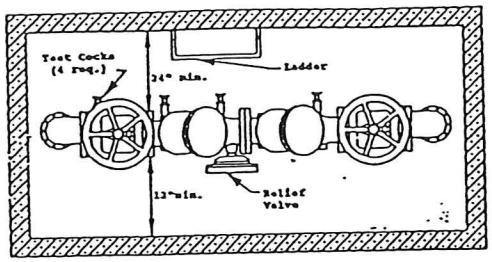
NOTE:
1. Absolutely no means of shut-off on the downstream or discharge side of the vacuum breaker.
2. For intermittent use only. Must not be pressurized for more than 12 hours in any 24 hour period.
3. Shall not be subject to any backpressure.
4. Shall not be installed in dusty or corrosive atmospheres.
5. Shall not be installed where subject to flooding.
6. Shall be installed a minimum of six inches above the highest downstream piping and/or outlets.

(2) TYPICAL INSTALLATION OF A PVB

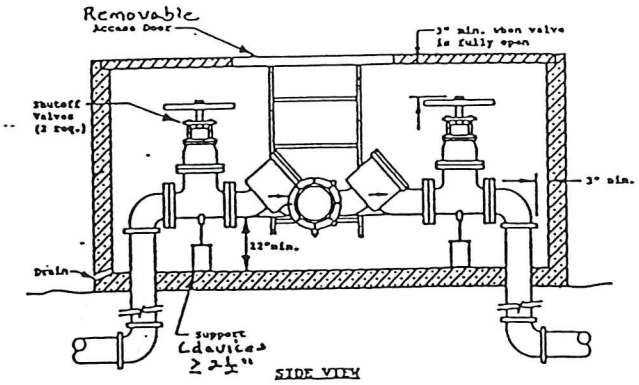


NOTE:
1. Downstream side of vacuum breaker may be maintained under pressure by a valve. But, there may be absolutely no means of

(4) MINIMUM CLEARANCE FOR RPBD INSTALLATION



TOP VIEW



SIDE VIEW

NOTE:

1. Bottom and side clearances apply when devices are installed inside building. Access doors may be provided on side of above-ground vault.
2. RPBDs shall always be installed horizontally, never vertically.
3. RPBDs shall always be installed above the 100 year (1%) flood level unless approved by the local authority.
4. Relief valves shall never be extended or plugged.
5. Protection from freezing should be provided.
6. A provision for an air gapped drain shall be provided.
7. RPBDs shall not be installed in an enclosed vault or box unless a bore-sighted drain to daylight is provided.
8. Minimum clearances for device assemblies 2 inches or smaller may be reduced provided that they are accessible for testing and repairing and approved by the water purveyor.

FINAL RULE
1/7/94

333-61-072 CROSS CONNECTION TESTER AND INSPECTOR CERTIFICATION

(1) Qualifications for Examination

(a) Evidence of successful completion of a cross connection inspector training course approved by the Division is required to qualify for the cross connection inspector certification examination.

(b) Evidence of successful completion of a cross connection tester training course approved by the Division is required to qualify for the cross connection tester examination.

(2) Examinations

(a) Examinations shall be given at locations and at times designated and/or approved by the Division.

(b) The qualifications of each applicant will be reviewed by the Division for the purpose of determining that minimum requirements for special training as listed in these rules have been satisfied.

(A) An examination fee shall be charged for all applications submitted to the Division.

(B) The Division may require or allow oral examination of any applicant seeking certification as evidence of proficiency.

(c) Examinations shall be reviewed by the Division and graded by the Division or its designee. Upon successfully passing the examination and meeting all other requirements, the Division shall issue a Certificate of Competency to the applicant.

(A) A minimum score of 85% is required to pass the cross connection inspector examination.

(B) A minimum score of 75% is required to pass the cross connection tester written examination.

(C) A minimum score of 90% is required to pass the cross connection tester hands-on proficiency examination.

initial certification under these rules shall begin January 1, 1994 and expire on June 30, 1995. A certificate shall be renewable every two years upon payment of a renewal fee and satisfactory evidence submitted to the Division at the time of renewal that the applicant has completed the following:

(A) The certified cross connection inspector must attend a cross connection inspector training course, update course, or obtained 0.5 CEUs pertaining to cross connection activities in the past two years in order to renew the certification.

(B) The certified cross connection tester must submit evidence to the Division at the time of renewal that:

(i) The certified tester has attended the tester training course or tester update course within the past two years prior to this renewal, and;

(ii) Has had his/her test gauges tested for accuracy and calibrated if necessary within the past year by a calibrator approved by the Division.

(f) An applicant who has failed to renew the certificate pursuant to the provisions of this section by July 30 following the date of expiration must apply for reinstatement of certification by submitting an application accompanied by a reinstatement fee in addition to the certificate renewal fee. An applicant who has failed to renew certification pursuant to the provisions of this section for a year following the date of expiration must meet the requirements established for new applicants.

(g) The Division may refuse or revoke a certification if it finds, after opportunity for hearing under ORS 183, that:

(A) The inspector is incompetent in identifying potential or existing cross connections or in selecting appropriate backflow prevention devices commensurate with the degree of hazard.

(B) The device tester:

(i) is incompetent in performing device testing; or

(ii) has falsified a test report.

(C) The inspector or device tester has allowed any other person

tester training course.

(C) The training program must be able to provide uniform training at all course locations. The training schedule must be set in advance and the schedule must be submitted to the Division quarterly for review and publication.

(D) The training program shall provide the training materials necessary to complete the course. The training materials must be updated annually and submitted to the Division for approval.

(E) The training program must have the following minimum training equipment available for each course:

(i) Each test station for tester training courses and update sessions shall include an operating pressure vacuum breaker, double check valve assembly, and a reduced pressure backflow device assembly with appropriate test gauges for each assembly. A device failure simulator that is capable of simulating leaking check valves, shut off valves, and relief valve failures shall also be provided.

(ii) The training aids for the tester and inspector training courses shall include the pressure vacuum breaker, atmospheric vacuum breaker, double check valve assembly, the reduced pressure backflow device assembly, and test gauges.

(F) The training program must maintain a uniform course curriculum according to subsection (b) of this section, and maintain a uniform instructor criteria according to subsection (c) of this section, subject to approval by the Division.

(b) In order to qualify as a cross connection training course or update course, the following requirements must be met:

(A) Requirements for the cross connection inspector training course:

(i) The course duration must be a minimum of 30 hours of training.

(ii) The course content shall contain but is not limited to the following topics:

(III) Backflow assembly approval requirements, specifications and installation criteria for approved backflow assemblies, and backflow assembly repair techniques.

(IV) Complete disassembly and reassembly of a reduced pressure backflow device assembly, and/or a double check valve assembly, and/or a pressure vacuum breaker assembly.

(V) Hands-on demonstration of the correct test procedure and troubleshooting for the pressure vacuum breaker, double check valve assembly, and the reduced pressure device assembly, and diagnosis of two failure and/or abnormal conditions during the hands-on backflow assembly test of the reduced pressure backflow device assembly and the double check valve assembly.

(VI) Test gauge calibration methods and tester safety.

(C) Requirements for the cross connection inspector update course:

(i) The course duration must be a minimum of 5 hours of training.

(ii) The course content shall contain but is not limited to the following topics:

(I) Review of cross connection regulations.

(II) Review and discussion of recent backflow incidents and identification of cross connections.

(III) Review and discussion of inspector safety issues.

(D) Requirements for the cross connection tester update course:

(i) The course duration must be a minimum of 6 hours of training.

(v) Must attend at least one instructor update meeting provided by the Division each year.

(B) To be eligible as an instructor for the cross connection tester training course or tester update course, the following experience in the backflow field is required:

(i) Must be currently certified as a backflow device tester.

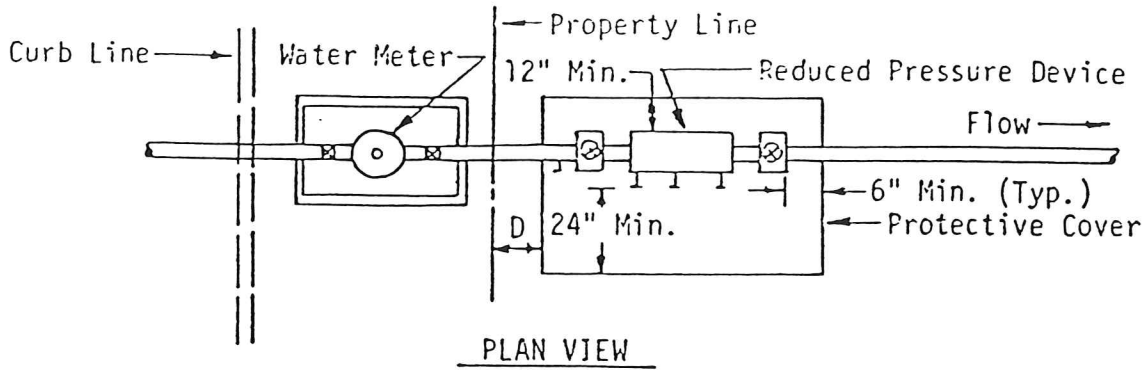
(ii) Must have two years experience as a certified tester and experience installing, testing devices, or as a vocational instructor, or related field or experience subject to approval by the Division.

(iii) Must participate in two complete cross connection tester training courses as a student instructor assigned to teach a portion of the text curriculum and the hands-on proficiency portion of the curriculum.

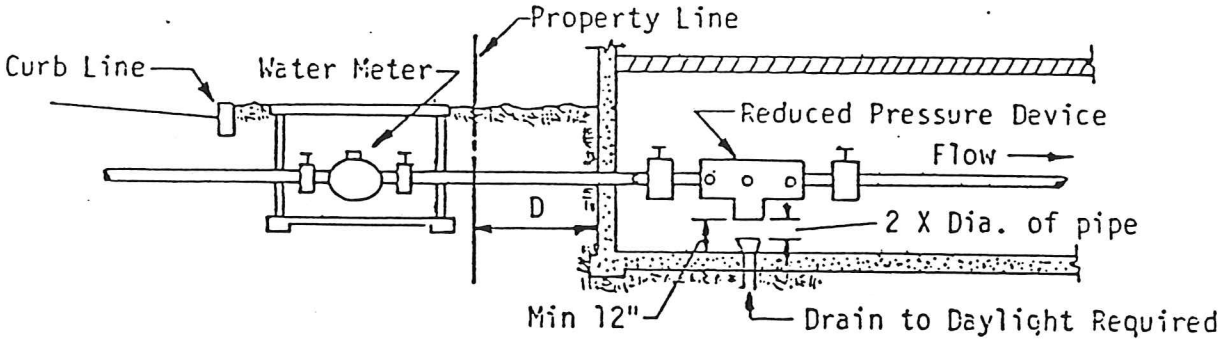
(iv) Must receive a recommendation from the instructor of record for approval as an instructor. An unfavorable recommendation must be documented by supporting information and may be challenged by the trainee or by the Division.

(v) Must attend at least one instructor update meeting provided by the Division each year.

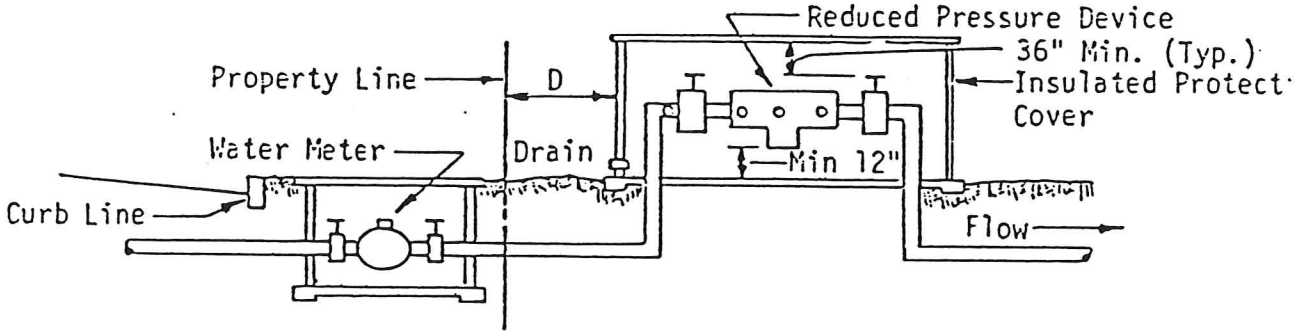
(C) The Division shall maintain a list of qualified instructors.



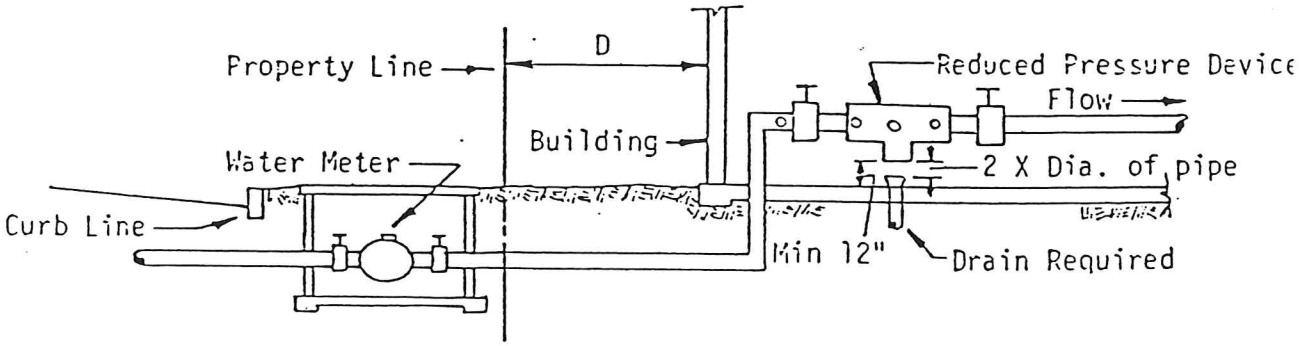
PLAN VIEW



IN BASEMENT



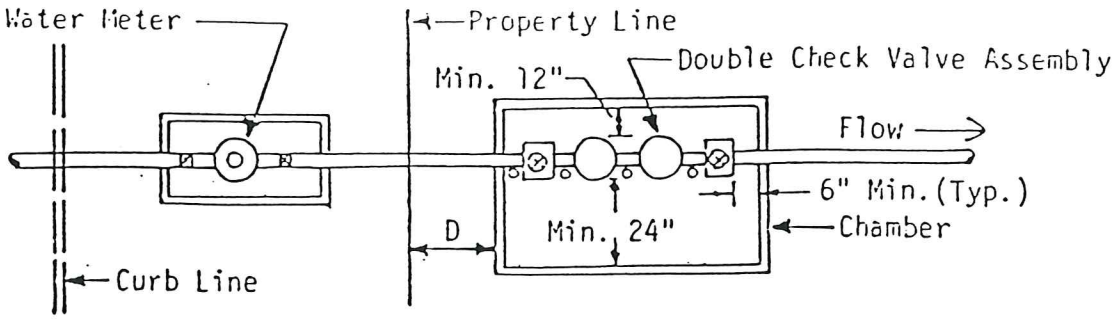
ABOVE GROUND



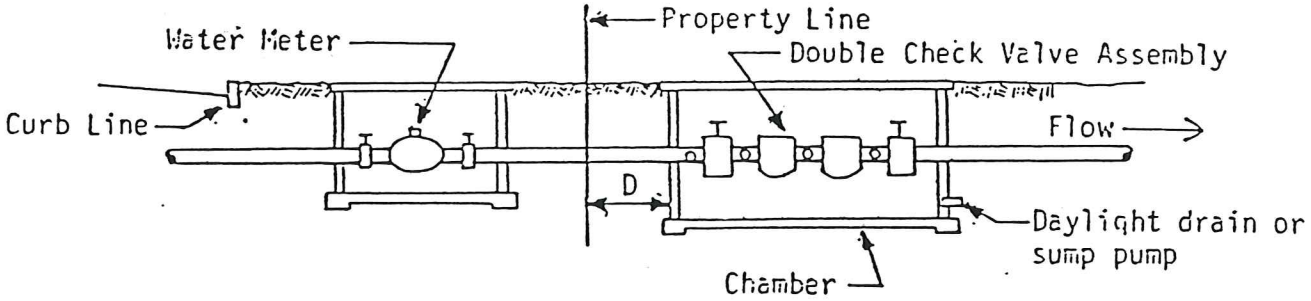
IN BUILDING

TYPICAL INSTALLATION REDUCED PRESSURE PRINCIPAL BACKFLOW DEVICE

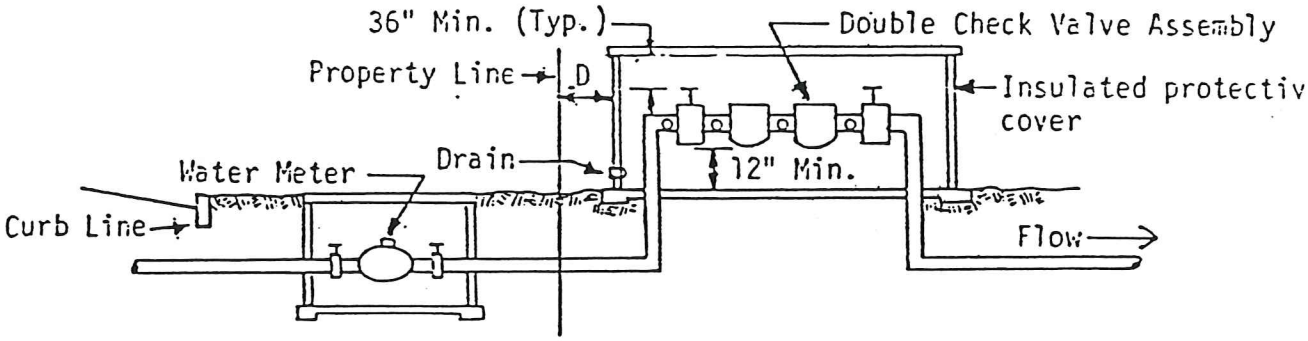
October 12, 1995



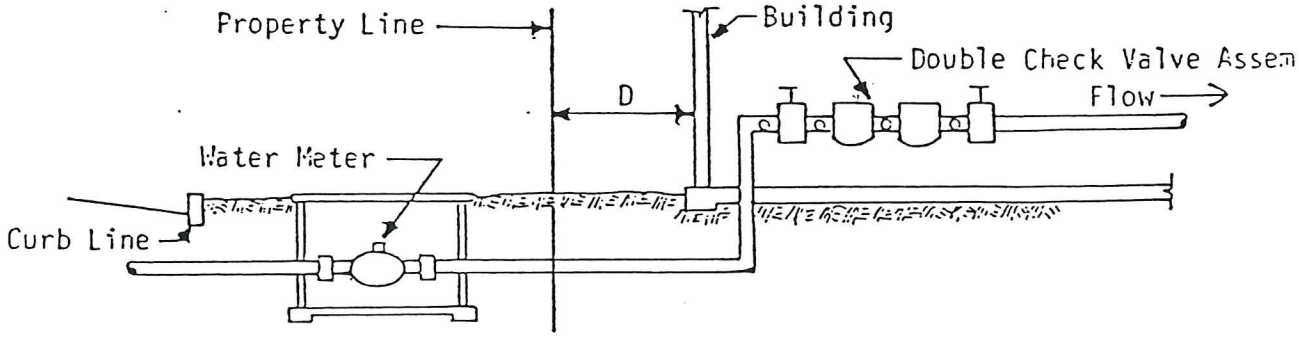
PLAN VIEW



IN CHAMBER



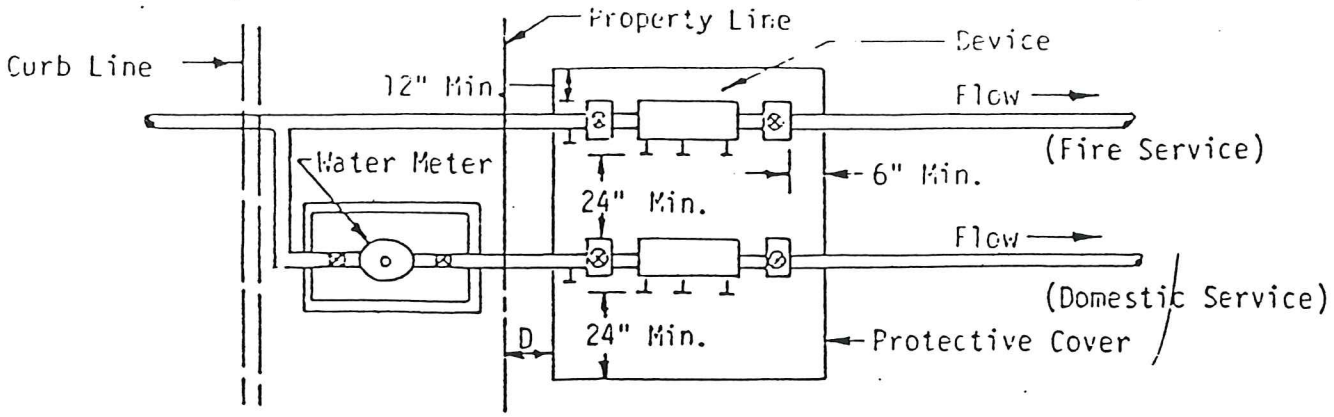
ABOVE GROUND



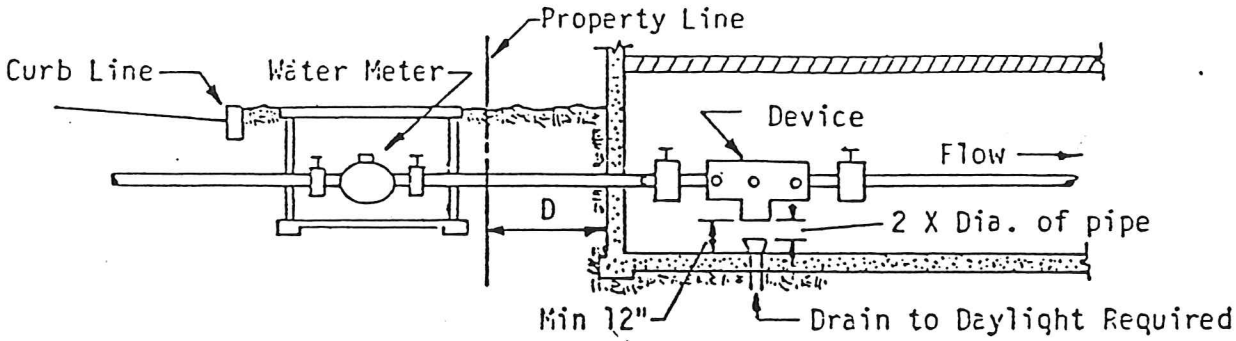
IN BUILDING

TYPICAL INSTALLATION
DOUBLE CHECK VALVE
BACKFLOW DEVICE

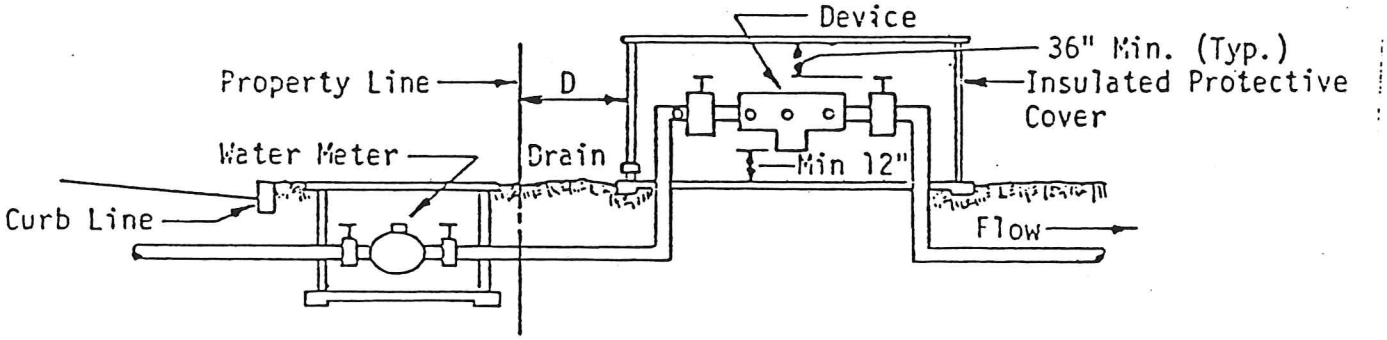
October 12, 1995



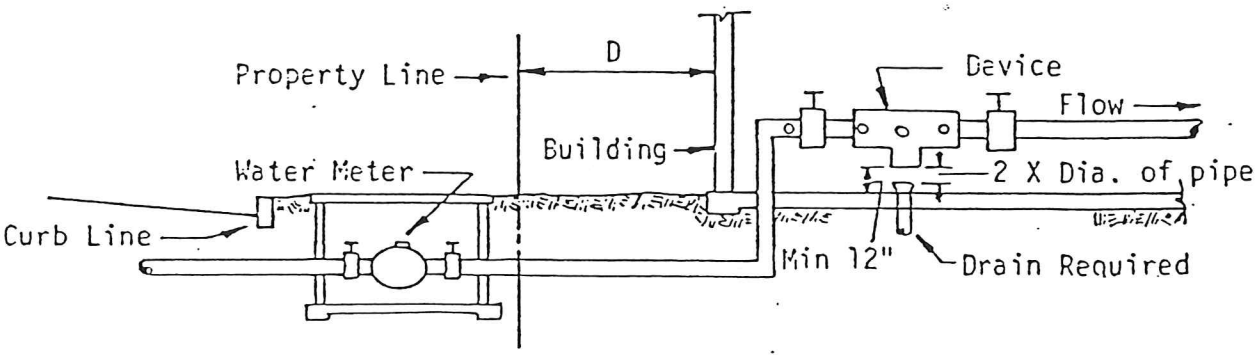
PLAN VIEW



IN VAULT / BASEMENT



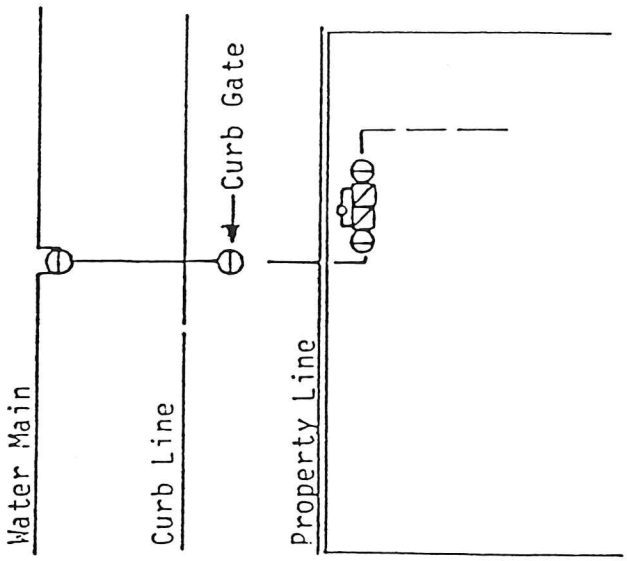
ABOVE GROUND



IN BUILDING

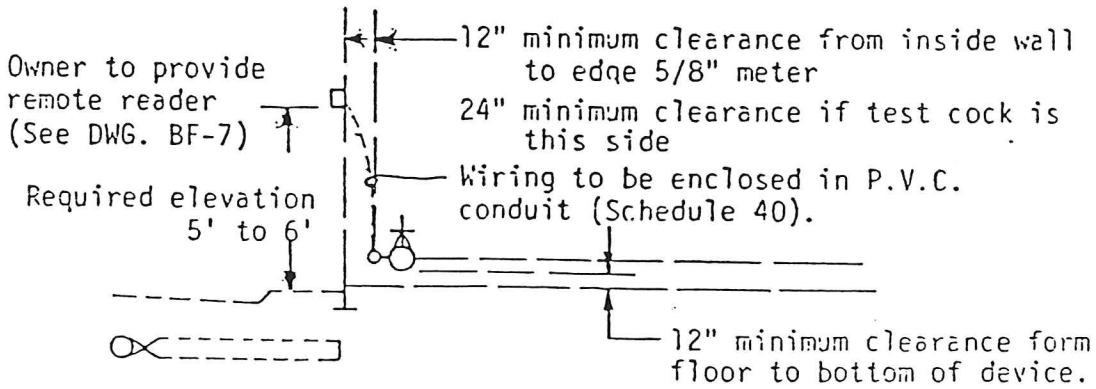
TYPICAL INSTALLATION
BACKFLOW DEVICE
IN PARALLEL

October 12, 1995



PLAN VIEW

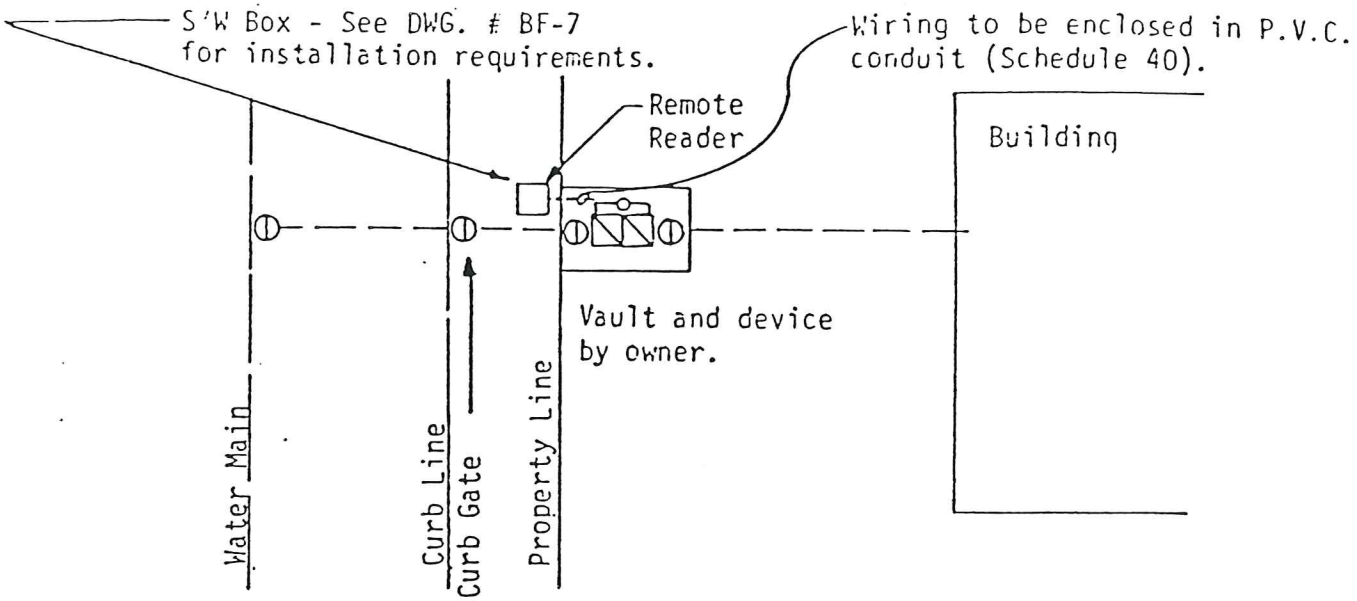
BUILDING AT PROPERTY LINE



SIDE VIEW ELEVATION

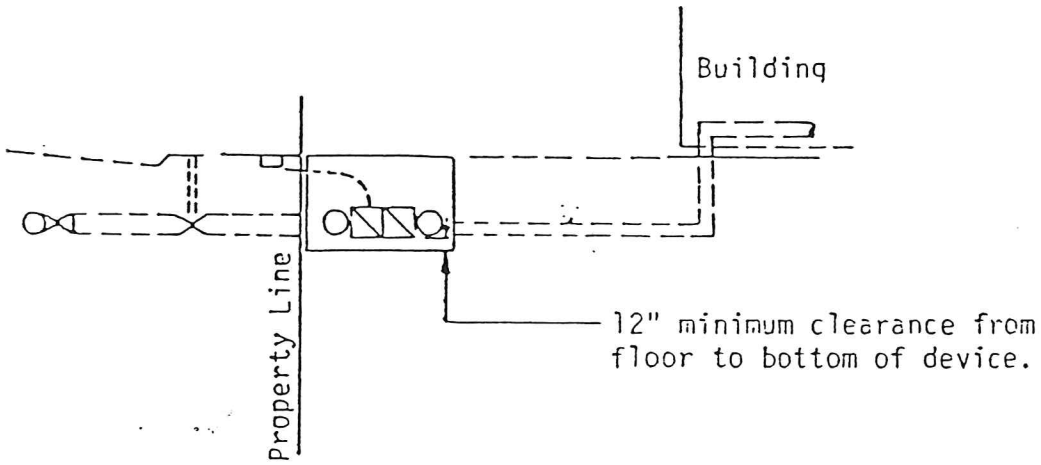
NOTE: See Backflow Prevention Device Installation Requirements for complete installation details.

TYPICAL INSTALLATION APPROVED DETECTOR DOUBLE CHECK VALVE BACKFLOW DEVICE
October 12, 1995



PLAN VIEW

BUILDING SET BACK GREATER THAN LENGTH OF DEVICE



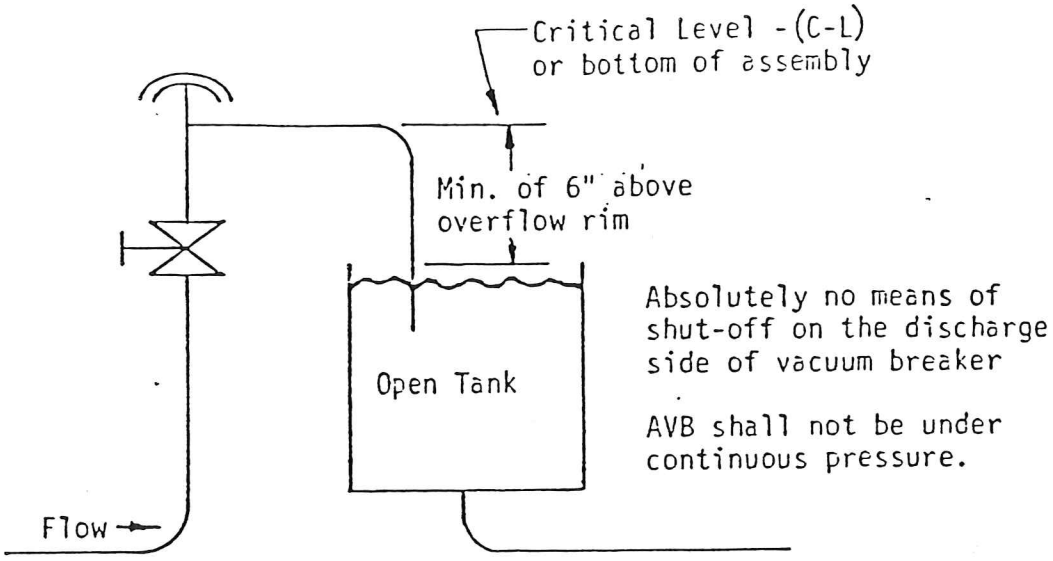
SIDE VIEW
ELEVATION

NOTE: See Backflow Prevention Device Installation Requirements for complete installation details.

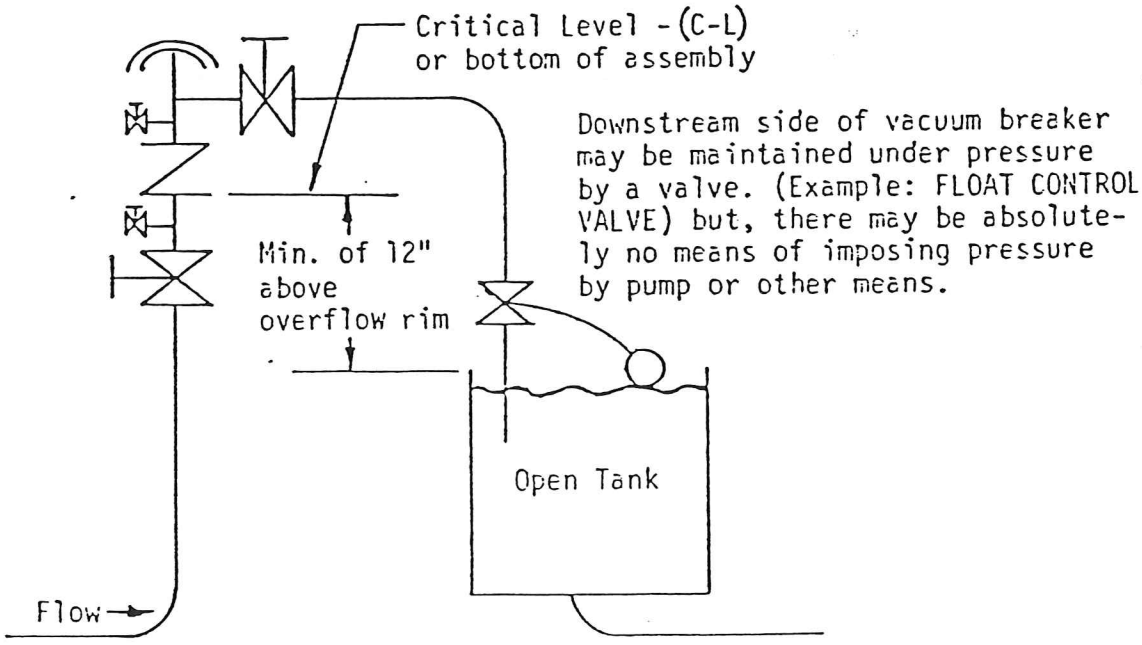
Detector Double Check Assembly installed in lieu of MFM/MCT meter in street R/W.

TYPICAL INSTALLATION
APPROVED DETECTOR
DOUBLE CHECK VALVE
BACKFLOW DEVICE

October 12, 1995



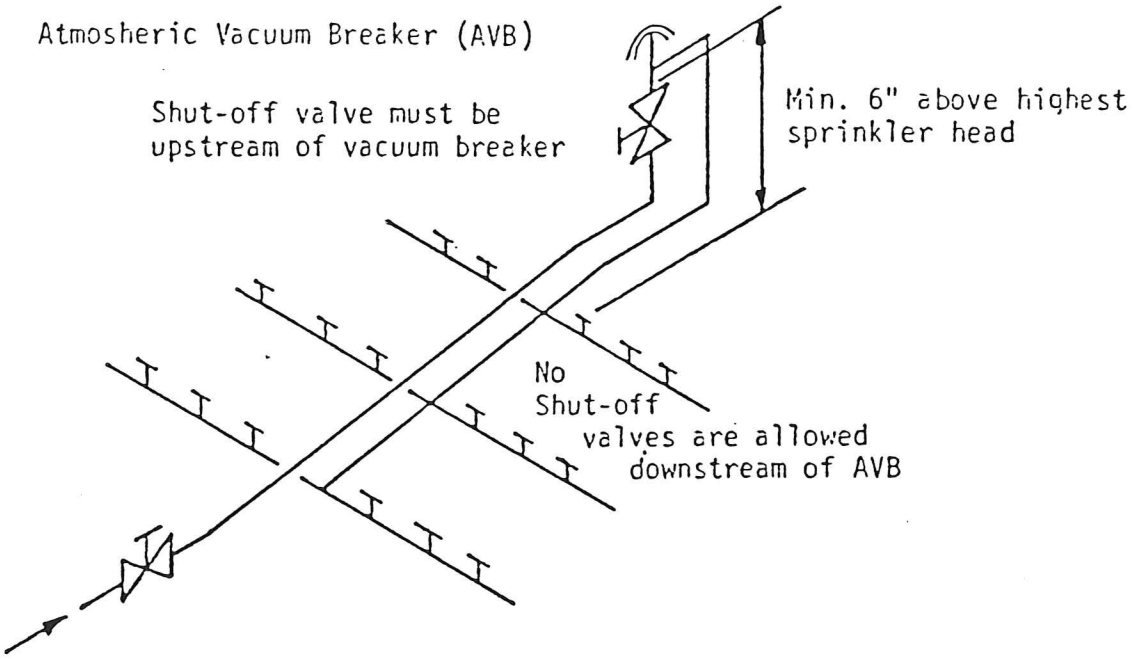
TYPICAL INSTALLATION
ATMOSPHERIC VACUUM BREAKER

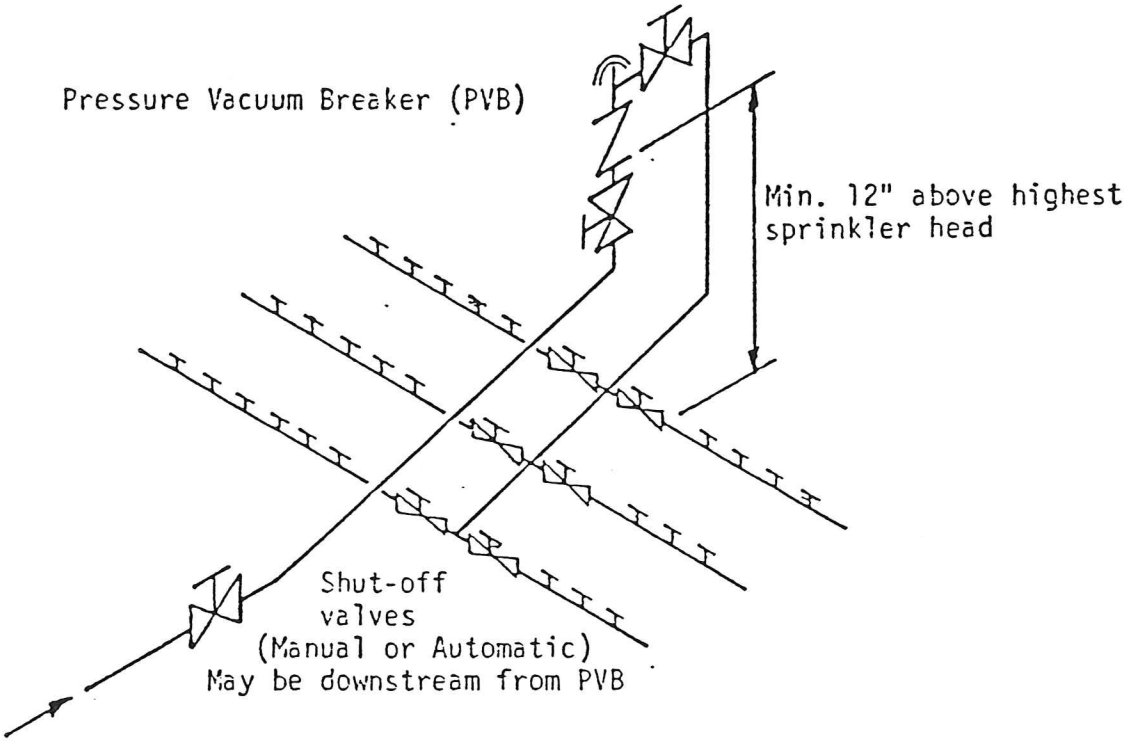


TYPICAL INSTALLATION
PRESSURE VACUUM BREAKER

TYPICAL INSTALLATIONS
VACUUM BREAKERS
BACKFLOW DEVICE

October 12, 1995

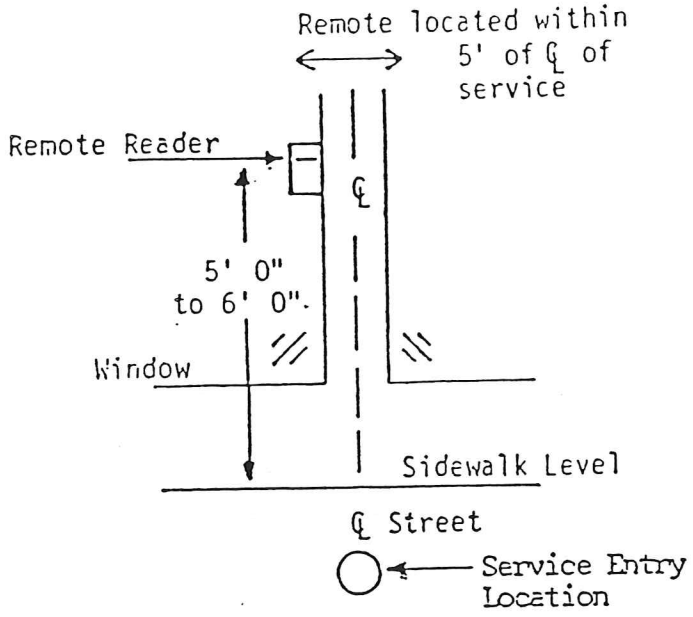




TYPICAL INSTALLATION
IRRIGATION SYSTEMS
FEEDING UPHILL

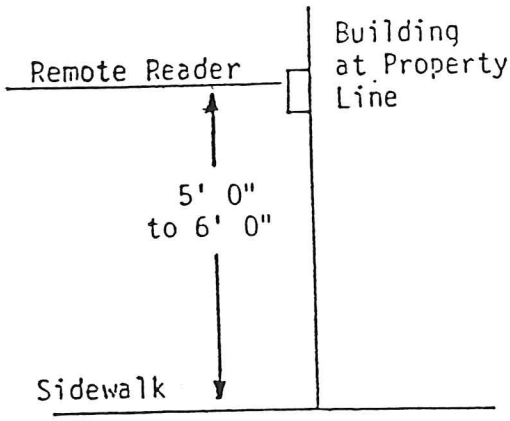
October 12, 1995

1. IN WINDOW



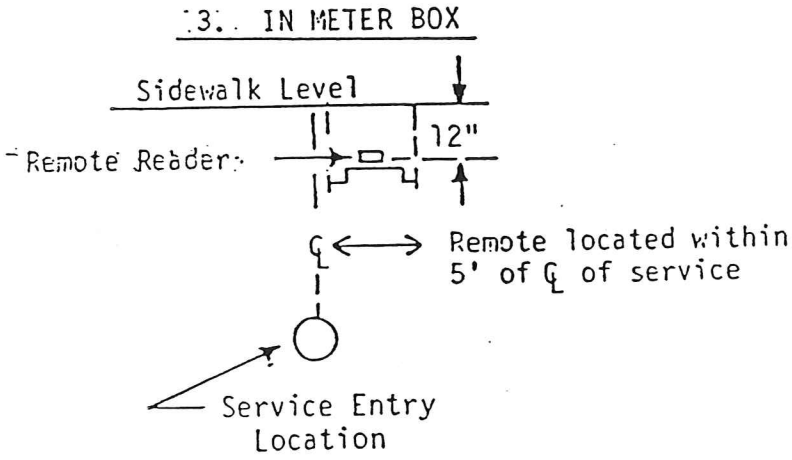
FRONT VIEW
ELEVATION

2. ON WALL



SIDE VIEW
ELEVATION

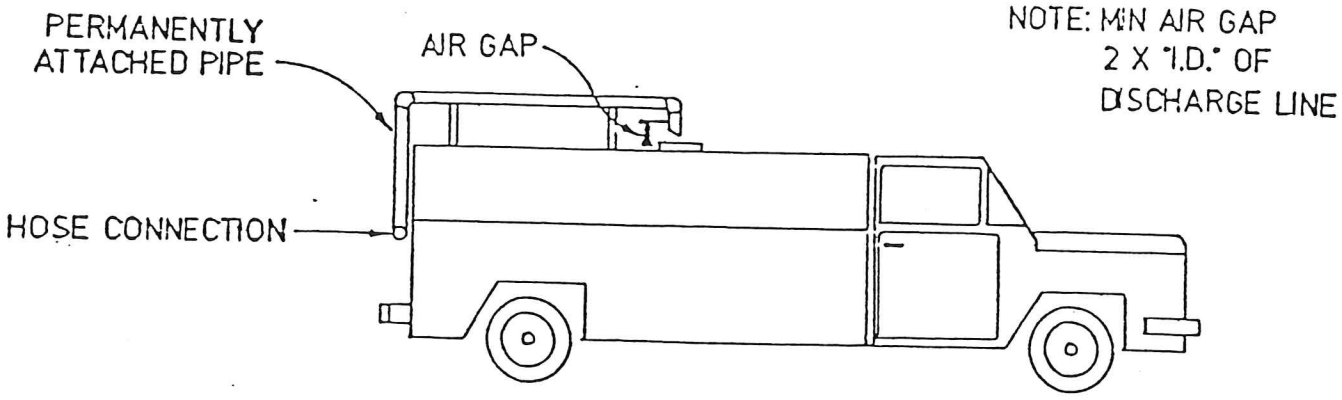
3. IN METER BOX

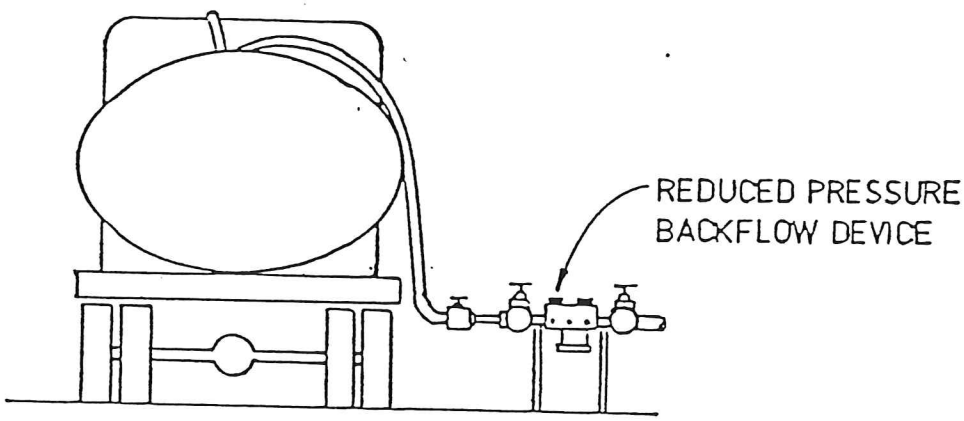


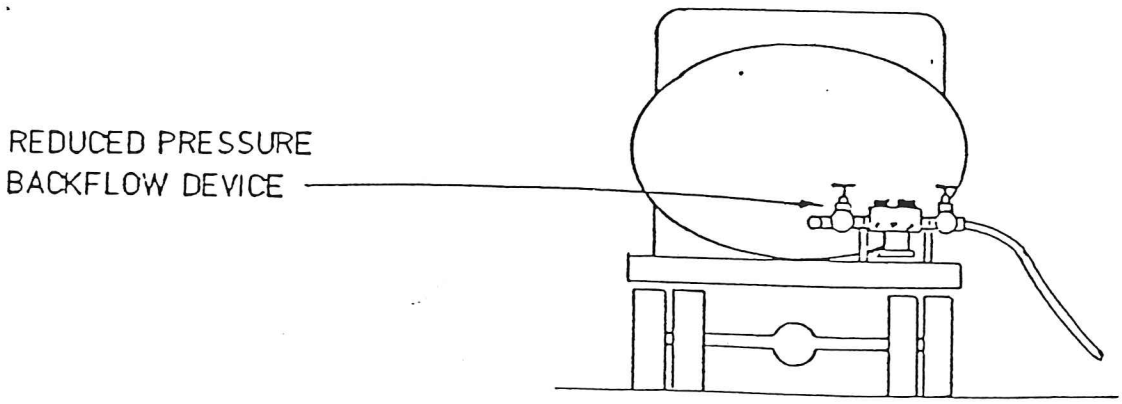
FRONT VIEW
ELEVATION

NOTE: See Backflow Prevention Device Installation Requirements for complete installation details.

TYPICAL INSTALLATION APPROVED REMOTE REGISTER

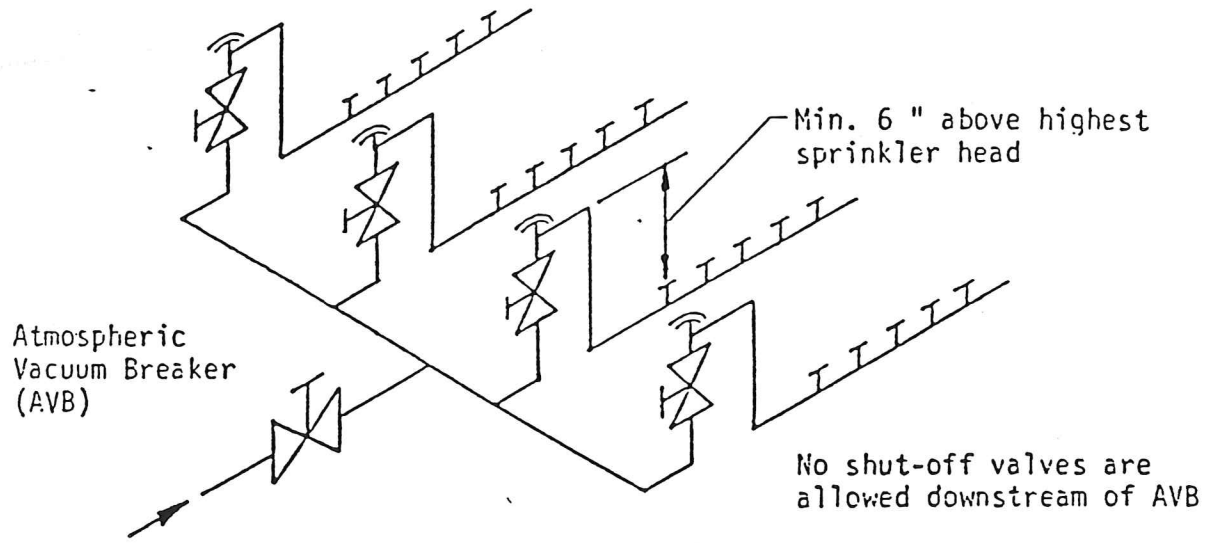


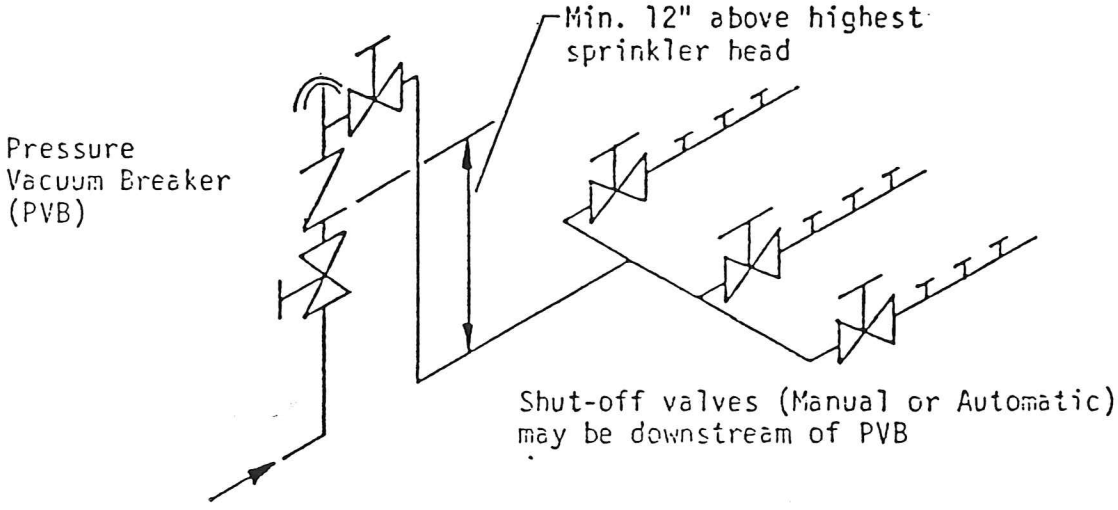




REQUIREMENTS FOR
MOBILE APPARATUS

October 13, 1995





TYPICAL INSTALLATION
MULTI-ZONE
IRRIGATION SYSTEMS

REQUIREMENTS FOR BACKFLOW PREVENTION DEVICE INSTALLATIONS

To insure the proper operation and accessibility of all backflow prevention devices, the following requirements shall apply to installations of these assemblies.

Installation Requirements Applicable To All Devices

1. No part of the backflow prevention assembly shall be submerged in water or installed in a location subject to flooding. If installed in a vault or basement, adequate drainage shall be provided.

2. Assemblies must be installed at the point of delivery of the water supply, before any branch in the line, and on private property. Alternate locations must be approved by the City of Clatskanie prior to the installation.

3. The assembly must be protected from freezing and other severe weather conditions.

4. All backflow prevention assemblies shall be of a type and model approved by the Oregon Health Division and the City of Clatskanie.

5. Only assemblies specifically approved by the Oregon Health Division for vertical installation may be installed vertically. No assembly over four inches (4") in diameter shall be installed vertically.

6. The assembly shall be readily accessible with adequate room for maintenance and testing. Assemblies two inches (2") in diameter and smaller shall have at least six inches (6") of clearance on all sides of the assembly. All assemblies larger than two inches (2") in diameter shall have a minimum clearance of twelve inches (12") on the back side, 24 inches on the test cock, twelve inches (12") below the assembly and 36 inches above the assembly. "Y" pattern double check valve assemblies shall be installed so that the checks are horizontal and the test cocks face upward (see example following this section).

7. The property owner assumes all responsibility for the maintenance and testing of the assembly, as determined and required by the City of Clatskanie.

8. If permission is granted to install the backflow assembly inside of the building, the assembly shall be readily accessible during regular working hours of 8:00 a.m. to 5:00 p.m., Monday through Friday.

9. If an assembly, with written permission, is installed inside of premises and is four inches (4") in diameter or larger and is installed four feet (4') or more above the floor, it must be equipped with a rigidly and permanently installed scaffolding to meet the requirements set forth by the Occupational Safety and Health Administration (OSHA) regulations.

10. Reduced pressure principle assemblies may be installed in a vault only if relief valve discharge can be drained to daylight through a "boresight" type drain located above the 100 year flood plain as specified by the current City of Clatskanie flood maps. The drain shall be of adequate capacity to carry the full rated flow of the assembly and shall be screened on both ends.

11. An approved air gap shall be located at the relief valve orifice. The air gap shall be at least twice the inside diameter of the incoming supply line as measured vertically above the top rim of the drain and in no case less than one inch (1").

12. A backflow prevention assembly permit shall be obtained by the property owner or licensed installer prior to any new installation. With the permit, the owner and/or contractor will be provided with a the City of Clatskanie Cross-Connection Ordinance (No. 551) and will be advised as to the minimum type of backflow assembly required and acceptable installation locations.

13. Upon completion of the installation, the City of Clatskanie shall be notified and the device inspected and tested. The backflow assembly must be registered with the City. Registration shall consist of the manufacturer and model of the device, date of installation, location, and the initial test report.

14. Any water pressure drop caused by the installation of a backflow assembly is not the responsibility of the City of Clatskanie.

15. It is the responsibility of the property owner to eliminate the possibility of thermal expansion if a closed system has been created by the installation of a backflow assembly.

16. All new plumbing construction shall be evaluated as to the need for a backflow assembly before the issuance of all plumbing permits within the city limits of the City of Clatskanie.

17. Only approved open stem and yoke (O.S. & Y.) resilient seated gate valves will be allowed as a part of the installation of the device.

18. The property owner assumes all responsibility for foundation or basement wall penetration, maintenance, leaks, and other damage as a result of the backflow assembly installation.

19. The installation of the backflow assembly device shall conform to all requirements of the **Oregon Uniform Plumbing Code (U.P.C.)**, latest edition.

Additional Installation Requirements For Double Check Valve Devices and Detector Double Check Valve Devices

In addition to the installation requirements given above, if a double check valve or a detector is installed in a vault or chamber, the chamber or vault shall:

1. Have two coats of bitumastic and be sealed by non-shrink grout from the outside. Backfilling will be as per the manufacturer's recommendations.

2. Have access through a standard "Bilco" (or equal) door.

3. Be equipped with an approved ladder if the vault or chamber depth is 5'- 0" to 7' - 11" and entry is through the vault or chamber roof. An approved extension ladder is required if the vault or chamber depth is 8' - 0" or greater and the entry is through the roof.

4. Be equipped with a moisture proof light fixture if adequate lighting is not available.

5. Have no other use, except for fire alarm conditions.

6. All metering devices must have a remote reading totalizer attached to the register, unless the meter can be easily read through a small door, cover, or opening without leaving the public right-of-way. It shall be possible to read this remote reader from the public right-of-way and the remote reader shall have the same number of dials to read as the metering device itself. All wires to the remote reader shall be enclosed in heavy plastic or metal conduit and all wiring shall be in conformance with appropriate sections of the latest edition of the **National Electrical Code.**

(503) 731-4899
FAX (503) 731-4077
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Oregon

DEPARTMENT OF
HUMAN
RESOURCES

HEALTH DIVISION

Approved Backflow Prevention Assembly List

August 1996

OREGON HEALTH DIVISION
Drinking Water Section

The attached sheets list all testable backflow prevention assemblies approved for use in the State of Oregon.

Effective April 1, 1996, atmospheric vacuum breakers meeting the ANSI/ASSE 1001-1990 or ANSI/ASSE 1011-1982 standards are approved for use in the State of Oregon.

(rev 9/96)

John A. Kitzhaber
Governor

800 NE Oregon Street #
Portland, OR 97232-21
(503) 731-4030 Emergen
(503) 252-7978 TDD
Emergency

24-26 (Rev. 12-94)

Double Check Valve Assemblies

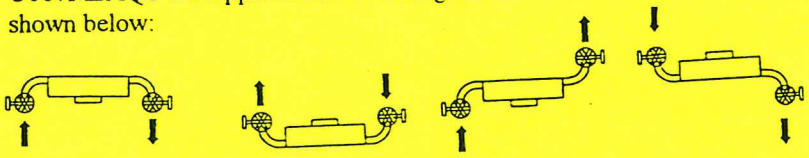
Company	Model-Size
Conbraco	40-105-A2T - 1"
	d
	40-105-99T - 1"
	d
	40-106-02 - 1 1/4"
	d
	40-106-A2 - 1 1/4"
	d
	40-106-A2T - 1 1/4"
	d
	40-107-02 - 1 1/2"
	d
	40-107-A2 - 1 1/2"
	d
	40-107-A2T - 1 1/2"
	d
	40-108-02 - 2"
	d
	40-108-A2 - 2"
	d
	40-108-A2T - 2"
	d
	40-109-02 - 2 1/2"
	t,b,e,l
	40-109-03 - 2 1/2"
	u,c,m
	40-100-02 - 3"
	t,b,e,l
	40-100-03 - 3"
	u,c,m
	40-10A-02 - 4"
	t,b,e,l
	40-10A-03 - 4"
	u,c,m
	40-10C-02 - 6"
	t,b,e,l
	40-10C-03 - 6"
	u,c,m
	40-10E-02 - 8"
	t,b,e,l
	40-10E-03 - 8"
	u,c,m
	40-10G-02 - 10"
	t,b,e,l
	40-10G-03 - 10"
	u,c,m
Febco	*805 - 3/4",1",1 1/2",2",3",4"
	805Y - 3/4",1"
	i

Company	Model-Size
Febco	805YR - 3/4",1"
	i
	805YB - 3/4"
	i
	805YB - 3/4" (vertical up)
	i
	805Y - 1 1/2",2"
	i
	*805Y - 2 1/2,3",4",6",8",10"
	(Formerly 805)
	805YD - 2 1/2",3",4",6",8",10"
	e,f,l,m,t,u
	(Formerly 805 Type YD)
	850 - 4",6",8
	e,l,t,f,m,u
	850 - 4",6" (vertical up)
	e,l,t,f,m,u
	870 - 2 1/2",3",4"6",8"
	e,l,t,f,m,u
	870V-2 1/2",3",4",6"
	e,l,t,f,m,u
	(N & Z Configurations)
Flomatic	DCV - 3/4",1",1 1/2",2"
	i
Grinnell Model B2-see Kennedy 1373	
Hersey/Grinnell	
	#2 - 3",4",6",8",10"
	t,b,q
	*E - 1 - 4",6"
	FDC - 3/4",1",1 1/2",2"
	i
	HDC - 3/4",1",1 1/2",2"
	i
Kennedy	*1373 - 4",6",8",10"
	m,j,k,l
Mueller	*H-9505 - 4",6",8",10"
Neptune-see Wilkins	

Double Check Valve Assemblies

Company	Model-Size	Company	Model-Size

NOTE: Models U007M1AQT, U007M1APCQT & U007M2AQT are Approved in the configurations shown below:



Watts

U007SSQT - 3/4",1", 1 1/2",2"
v,x
U007SSPCQT - 3/4",1",1 1/2",2"
v,x
770 - 4",8"
o,g,t,p,h,u
770 QT-FDA - 4",8"
w
772 - 4",10"
o,g,t,p,h,u

Wilkins

*550 - 3/4",1"
550A - 3/4",1"
i
550 - 1 1/4",1 1/2",2"
i
550 - 2 1/2",3",4",6"
g,e,t,y
550 - M8"
(4"x4"x8" Manifold)
g,e,t,y
550 - M10"
(6"x6"x10" Manifold)
(Formerly MBD)
g,e,t,y
950 - 3/4",1",1 1/4",1 1/2",2"
i
950XL - 3/4",1",1 1/4",1 1/2",2"
i
950XLU - 3/4",1",1 1/2",2"
i
950 - 2 1/2",3",4",6",8",10"
g,e,t,y,h,f,u,z
950 - 4",6",8" (vertical up)
g,e,t,y,h,f,u,z
950A - 3/4",1",1 1/4",1 1/2",2"
i

Double Check Detector Assemblies

Company	Model-Size
Cla-Val	DD8NY - 2 1/2",3",4",6",8" M,B,C,D,E,F,G,H,I,J,K,L,N,O, P,Q f,m,u Clav-Val DC6LB-3/4" DD8VY - 2 1/2",3",4",6" (N & Z Configurations) M,B,C,D,E,F,G,H,I,J,K,L,N,O P,Q f,m,u Cla-Val DC6LB - 3/4"
Conbraco	40-600-C3-3" M,A,B,C,D,E,F,G,H,I, J,K,L,M,N,O,P,Q (Formerly 40-600-03) u,c,m Conbraco Model 40-104- 02-3/4" 40-60A-C3-4" M,A,B,C,D,E,F,G,H,I,J,K,L, M,N,O,P,Q, (Formerly 40-60A-03) u,c,m Conbraco Model 40-104-02-3/4" 40-60C-C3-6" M,A,B,C,D,E,F,G,H,I,J,K,L, N,O,P,Q (Formerly 40-60C-03) t,b,e,l Conbraco Model 40-104-02-3/4" 40-60E-C3-8" M,A,B,C,D,E,F,G,H,I,J,K,L, M,N,O,P,Q (Formerly 40-60E-03) u,c,m, Conbraco Model 40-104-02-3/4" 40-60G-C3- 10" M,A,B,C,D,E,F,G,H,I,J,K,L, M,N,O,P,Q (Formerly 40-60G-03) u,c,m Conbraco Model 40-104-02-3/4"
Febco	* 806-4",6",8",10" F,A,B,C,D,E,G,H,I,J,K,L,M,N, O,P,Q Febco Model 805Y-3/4" 806YD- 3" M,B,C,D,E,F,G,H,I,J,K, L,N,O,P,Q f,m,u (Formerly 806 Type YD) Febco Model 805Y- 3/4" 806YD- 4",6",8",10" F,A,B,C,D,E,G,H,I, J,K,L,M,N,O,P,Q f,m,u (Formerly 806 Type YD) Febco Model 805Y-3/4" 856 - 4",6",8" M,B,C,D,E,F,G,H,I,J,K, L,N,O,P,Q f,m,u Febco Model 805YB-3/4" 856 - 4",6" (Vertical Up) M,B,C,D,E,F,G,H,I,J,K, L,N,O,P,Q f,m,u Febco Model 805YB-3/4" 876-2 1/2",3",4",6",8" M,B,C,D,E,F,G,H,I,J, K,L,N,O,P,Q f,m,u Febco Model 805YB-3/4" 876V - 2 1/2",3",4",6" (N & Z Configurations) M,B,C,D,E,F,G,H,I,J,K,L,N,O, P,Q, f,e,l,m,t,u Febco Model 805YB - 3/4"
Hersey/Grinnell	DDC-II-3" O,A,B,C,D,E,F,G,H,I,J,K, L,M,N,P,Q u,c,r Hersey Model FDC-3/4" DDC-II-4", 6" I,J,K,LM,N,O,P,Q u,c,r Hersey Model FDC- 3/4"

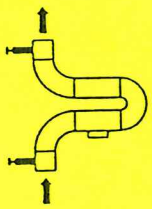
Reduced Pressure Principle Detector Assemblies

Company	Model-Size
Ames	5000 - 4",10" M,A,B,C,D,E,F,G,H,I, J,K,L,N,O,P,Q (u),l,m,t Conbraco Model 40- 204-02-3/4" 5000 - 6",8" K,A,B,C,D,E,F,G,H,I, J,L,M,N,O,P,Q (u),l,m,t Conbraco Model 40-204-02-3/4"
Cla-Val	18 - 10" H,A,B,C,D,E,F,G,I,J, K,L,M,N,O,P,Q h Cla-Val Model RP2- 3/4" RD7LY - 2 1/2",3",4", 6",8",10" M,B,C,D,E,F,G,H,I, J,K,L,N,O,P,Q f,m,u Cla-Val RP6LW-3/4"
Conbraco	40-700-C3 - 3" M,A,B,C,D,E,F,G,H,I,J, K,L,M,N,O,P,Q (Formerly 40-700-03) u,c,m Conbraco Model 40- 204-02-3/4" 40-70A-C3 - 4" M,A,B C,D,E,F,G,H,I,J, K,L,M,N,O,P,Q (Formerly 40-70A-03) (u),c,m Conbraco Model 40- 204-02-3/4" 40-70C-C3 - 6" M,D,E,F,G,H,I,J, K,L,M,N,O,P,Q (Formerly 40-70C-03) u,c,m Conbraco Model 40- 204-02- 3/4"
Conbraco	40-70E-C3 - 8", M,A,B,C,D,E,F,G,H,I, J,K,L,M,N,O,P,Q (Formerly 40-70E-03) u,c,m Conbraco Model 40-204-02- 3/4" 40-70G-C3 - 10", M,A,B,C,D,E,F,G,H,I, J,K,L,M,N,O,P,Q (Formerly 40-70G-03) u,c,m Conbraco Model 40-204-02- 3/4"
Febco	826YD - 2 1/2",3",4", 6",8",10" M,B,C,D,E,F,G,H,I,J, K,L,N,O,P,Q f,m,u (Formerly 826 Type YD) Febco Model 825Y- 3/4"
Hersey/Grinnell	6CMDA - 4",6",8",10" M,B,C,D,E,F,G,H,I, J,K,L,N,O,P,Q u,c,r Hersey Model FRP-II- 11/2"
Watts	009NRS RPDA - 4",6" H,D,E,F,G,I,J,K,L, M,N,O,P,Q o,g,t Watts Model 009M2QT-3/4" 009OSY RPDA - 4",6" (H),D,E,F,G,I,J,K, L,M,N,O (p),h,u Watts Model 009M2QT-3/4" 909 RPDA - 3" ,4",6",8",10" N,B,C,D,E,F,G,H,I,J, K,L,M,O,P,Q (Formerly Model 909 DDC-M2) p,h,u Watts Model 909QT- 3/4"

Reduced Pressure Principle Assemblies

Company	Model-Size
Ames	4000SS - 2 1/2",3",4",6" t,l,m,u 4000-RP - 4",6"8",10" (formerly Model RP) t,l,m,u
Beeco - See Hersey/Grinnell	
Buckner	*24000 - 3/4" i *24001 - 1" i *24002 - 1 1/4" i *24003 - 1 1/2" i *24004 - 2" i *24000/25 - 3/4" i *24001/25 - 1" i *24002/25 - 1 1/4" i *24003/25 - 1 1/2" i *24004/25 - 2" i
Cla-Val	RP-2 - 3/4",1",1 1/4",1 1/2" n,d RP-4 - 2" n RP-4 - 2 1/2",3",4",6",8",10" g RP4V - 4" g

Note: Model RP4V is Approved for vertical installation with the flow of water vertically upward as show in the figure below:

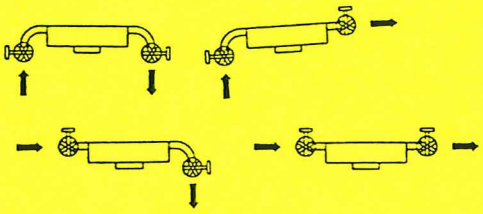


Company	Model-Size
Cla-Val	RP6LW - 3/4",1",1 1/4",1 1/2",2" i RP6VW - 3/4",1",1 1/2",2" i RP7LW - 2 1/2",3",4",6",8",10" e,l,t RP7LY - 2 1/2",3",4",6",8",10" f,m,u RP8LW - 2 1/2",3",4",6",8" e,l,t RP8LY - 2 1/2",3",4",6",8" f,m,u RP8NW - 2 1/2",3",4",6",8" e,l,t RP8NY - 2 1/2",3",4",6",8" e,l,t RP8VW - 2 1/2",3",4",6" (N & Z-Configurations) e,l,t RP8VY - 2 1/2",3",4",6" (N & Z-Configurations) e,l,t
Conbraco	40-201-02 - 1/4" d 40-201-A2 - 1/4" d 40-201-A2S - 1/4" d 40-202-02 - 3/8" d 40-202-A2 - 3/8" d 40-202-A2S - 3/8" d 40-203-02 - 1/2" d 40-203-A2 - 1/2" d 40-203-A2S - 1/2" d 40-204-02 - 3/4" d 40-204-A2U - 3/4" d

Reduced Pressure Principle Assemblies

Company	Model-Size

Note: Models 825YA and 825YAR are approved in the configurations shown below:



Febco	825YD - 2 1/2",3",4",6", 8",10" e,f,l,m,t,u, (Formerly 825 Type YD) 825YR - 3/4",1",1 1/2",2" i 845 - 3/4",1" i 860 - 2 1/2",3",4",6",8" e,l,t,f,m,u 880 - 2 1/2",3",4",6",8" (e),l,t,f,m,u 880V - 2 1/2",3",4",6" (N,Z Configurations) (e),l,t,f,m,u
Flomatic	RPZ - 3/4",1",1 1/2",2" (i)
Hersey/Grinnell	6CM - 2 1/2",3",4",6",8"10" (t),b,q FRP-II - 3/4",1",1 1/4",2" (i) FRP-II - 1 1/2" (a),b,c,d,e, 6CM-Bronze - 2 1/2",3",4",6" (t),b,q
Mueller	*H-9506 -4",6",8",10"

Company	Model-Size
Neptune-See Wilkins	
Orion	80-0069 - 1 1/2" (s) BRP - 3/4",1" (s) 9-2929 - 2" (s) BRP - 3",4" (h),c

Note: All Orion assemblies utilize inlet piping running vertically upward and outlet piping running vertically downward.

Rain Bird	*RPA-075-R - 3/4" *RPA-100-R - 1" *RPA-125-R - 1 1/4" *RPA-150-R - 1 1/2" *RPA-200-R - 2" *RPA-250-R - 2 1/2" *RPA-300-R - 3" *RPA-400-R - 4" *RPA-600-R - 6" *RPA-800-R - 8" *RPA-1000-R - 10" *RP-QT-075 - 3/4" *RP-QT-100 - 1" *RP-QT-150 - 1 1/2" *RP-QT-200 - 2"
Richwell - see Wilkins	
Toro - see Orion	
Watts	009PCQT - 1/2",3/4',1", 1 1/4",1 1/2",2" (v),x 009QT - 1/4",3/8",1/2",3/4",1" (v),x 009QT - 1 1/4", 1 1/2", 2" (v),x 009M1QT - 1 1/4",1 1/2",2" (v),x

Reduced Pressure Principle Assemblies

Company	Model-Size	Company	Model-Size
Watts	U009SSPCQT - 3/4",1",1 1/4", 1 1/2",2" (v),x U009SSQT - 3/4",1",1 1/4", 1 1/2",2" (v),x U909QT - 3/4",1" (v),x U909HWQT - 3/4",1" (v),x		
Wilkins	*575 - 3/4",1" 575A - 3/4",1" (i) 575 - 1 1/4",1 1/2",2" (MOD-III) (i) 575 - 2 1/2",3",4",6" (g),e,t,y 575 - M8" (4"x4"x8"Manifold) (Formerly MBC-8") (g),e,t,y 575 - M10" (6"x6"x10" Manifold) (Formerly MBC-10") (g),e,t,y 975 - 3/4",1",1 1/4",1 1/2",2" (i) 975 - 2 1/2",3",4",6",8",10" (g),e,t,y,h,f,u,z 975A - 3/4",1",1 1/4",1 1/2",2" (i) 975MS - 2 1/2",3",4",6" (g),e,t,y,h,f,u,z 975XL - 1/4",3/8",1/2",3/4",1", 1 1/4",1 1/2",2" (i) 975XLMS - 3/4",1",1 1/4",1 1/2",2" (i) 975XLU - 3/4",1",1 1/2",2" (i)		

Pressure Type Vacuum Breakers

Company	Model-Size
Buckner	*24199 - 1/2" (i)
	*24200 - 3/4" (i)
	*24201 - 1" (i)
	*24202 - 1 1/4" (i)
	*24203 - 1 1/2" (i)
	*24204 - 2" (i)
	*24199/25 - 1/2" (i)
	*24200/25 - 3/4" (i)
	*24201/25 - 1" (i)
	*24202/25 - 1 1/4" (i)
	*24203/25 - 1 1/2" (i)
	*24204/25 - 2" (i)
Conbraco	40-503-02 - 1/2" (d)
	40-504-02 - 3/4" (d)
	40-505-02 - 1" (d)
	40-506-02 - 1 1/4" (d)
	40-507-02 - 1 1/2" (d)
	40-508-02 - 2" (d)
Febco	765 - 1/2",3/4",1",1 1/4", 1 1/2",2" (i)
	745 - 3/4",1" (i)
Neptune-See Wilkins	
Rain Bird	*PVB-075-R - 3/4"
	*PVB-100-R - 1"
	*PVB-125-R - 1 1/4"
	*PVB-150-R - 1 1/2"
	*PVB-200-R - 2"
SMR-see Wilkins	
Watts	800QT - 3/4",1",1 1/4", 1 1/2",2" (v),x
	800M QT - 1/2",3/4" (v),x
	800CM QT - 1/2",3/4" (v),x
	800M2QT - 1/2",3/4",1", 1 1/4",1 1/2",2" (v)x
	800M3QT - 1/2",3/4" (v),x
	800M4FR - 3/4",1" (v),x
	800M4QT - 1/2",3/4",1", 1 1/4",1 1/2",2" (v),x
Wilkins	720A - 1/2",3/4",1" (i)
	720A - 1 1/4",1 1/2",2" (i)

NOTES FOR DOUBLE CHECK DETECTOR ASSEMBLIES (DCDA) AND REDUCED PRESSURE PRINCIPLE DETECTOR ASSEMBLIES (RPDA)

The DCDA and RPDA in this list have been approved with specific meters as the detector element of the assembly. Those specific meters are coded by a capital letter shown on the line below the size designation. The use of any other meter or modified bypass piping invalidates the Approval.

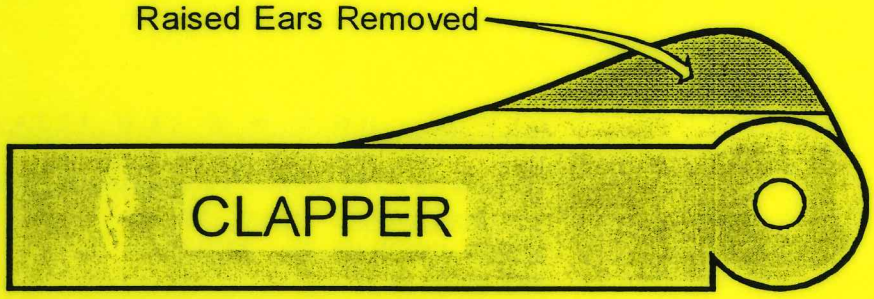
The bypass backflow preventer Approved with the detector assembly is listed after the meter designation in parentheses. Should replacement parts or a complete by-pass be needed the model number of the complete detector assembly should be used in ordering these components.

Identification of meters:

(A) Hersey Model F-F 5/8" x 3/4"
(B) Carlon 5/8" x 3/4"
(C) Dande' Model D-3 5/8" x 3/4"
(D) Gamon-Calmet 5/8"
(E) Hays Acumeter 5/8" x 3/4"
(F) Arad 5/8" x 3/4" (Master Meter)
(G) Schlumberger 5/8" x 3/4" Model MBRF
(H) Rockwell (Sensus) SR-II 5/8" x 3/4"
(I) Hersey Model 430 - 5/8"
(J) Kent Model C700 5/8" x 3/4"
(K) Precision 5/8"
(L) Neptune Trident 8 5/8"
(M) Neptune T-10 5/8"
(N) Badger Model 25 3/4"
(O) Hersey Model MVR-30 3/4"
(P) Neptune T-10 1"
(Q) Neptune T-10 1 1/2"

* - Only Spare Parts Available

- The raised ears on the backside of the clapper have been removed to eliminate the possibility of interference with the body.



- Concentricity of clapper roller has been improved. Some of the previous production rollers were found to be non-concentric (i.e., the hole in the middle was not perfectly centered in the roller). The surface of the cam arm which rides against the roller has a buffed or polished finish.

- The molded seats of the check valves may not have been flat, so process control has been instituted during manufacture to insure a flat seating surface.

Should you have an assembly which is affected by this situation, please contact Ames Company at (916) 666-2493 for replacement components.