

41-01254

**CROSS CONNECTION CONTROL
PROGRAM ORDINANCE**

**CLOVERCREST WATER SYSTEM
160 ROBERTSON LANE
GRANTS PASS, OR 97527
503-479-1691
503-474-2408**

JUNE 1, 1995

APPROVED _____

DATE _____

I PURPOSE

A. To protect the public potable water supply served by the Clovercrest Water System from the possibility of contamination or pollution by isolating, within its customers internal distribution system, such contaminants or pollutants which could backflow or backsiphon into the community water system.

B. To promote the elimination of, or control of, existing cross connections, actual or potential, between the potable water system and sources of non-potable water or other hazardous substances.

C. To provide for the maintenance of a continuing program of cross connection control which will effectively prevent the contamination or pollution of all potable water systems by cross connections.

II Authority

A. The Federal Safe Drinking Water Act of 1974, and the statutes of the State of Oregon, Administrative Rules Chapters #333-61-070, #333-61-071, and #333-61-072 state that the water supplier has the primary responsibility for the preventing of water from unapproved sources, or any other substances, from entering the community potable water system.

B. Clovercrest Water System, Rules and Regulations, adopted.

III Responsibility

The property owners (customers) of Clovercrest Water System shall be responsible for the protection of the community water distribution system from contamination or pollution due to the backflow or backsiphonage of contaminants or pollutants through the water service connection. If, in the judgement of the water system owner, an approved backflow device is required at the community water connection to any customer's premise, the water system owner, or his delegated agent, shall give notice in writing to said customer to install an approved backflow prevention device at each service connection to this premises. The customer shall, within ninety (90) days, install such approved device, or devices, at his own expense, and failure or refusal, or inability on the part of the customer to install said device or devices within ninety (90) days, shall constitute a ground for discontinuing water service to the premises until such devices have been properly installed.

IV Definitions

A. Approved - Accepted by the Clovercrest Water System as meeting an applicable specification stated or cited in this

regulation, or as suitable for the proposed use.

B. Auxiliary Water Supply - Any water supply, on or available, to the premises other than the suppliers approved public potable water supply.

C. Backflow - The flow of water or other liquids, mixtures or substances, under positive or reduced pressure in the distribution pipes of a potable water supply from any source other than its intended source.

D. Backflow Preventer - A device or means designed to prevent backflow or backsiphonage. Most commonly categorized as air gap, reduced pressure principle device, double check valve assembly, pressure vacuum breaker, atmospheric vacuum breaker, hose bibb vacuum breaker, and double check with intermediate atmospheric vent. Any device must be classified as an approved backflow device by the Oregon Health Division.

D1. Air Gap - A physical separation sufficient to prevent backflow between the free-flowing discharge end of the potable water system and any other system. Physically defined as a distance equal to twice the diameter of the supply side pipe diameter but never less than one (1) inch.

D2. Atmospheric Vacuum Breaker - A device which prevents backsiphonage by creating an atmospheric vent when there is either a negative pressure or sub-atmospheric pressure on a water system.

D3. Double Check Valve Assembly - An assembly of two (2) independently operating spring loaded check valves with tightly closing shut off valves on each side of the check valves, plus properly located test cocks for the testing of each check valve.

D4. Double Check Valve with Intermediate Atmospheric Vent - A device having two (2) spring loaded check valves separated by an atmospheric vent chamber.

D5. Hose Bibb Vacuum Breaker - A device which is permanently attached to a hose bibb and which acts as an atmospheric vacuum breaker.

D6. Pressure Vacuum Breaker - A device containing one (1) or two (2) independently operating approved check valves and an independently operated spring loaded air inlet valve located on the discharge side of the check or checks. Device includes tightly closing shut-off valves on each side of the check valves and properly located test cocks for the testing of the check valve(s).

D7. Reduced Pressure Principle Backflow Preventer - An assembly consisting of two (2) independently operating approved check valves with an automatically operating differential relief valve located between the two (2) check valves, tightly closing shut-off valves on each side of the check valves plus properly located test cocks for the testing of the check valves and the relief valves.

E. Backpressure - A condition in which the owner's system pressure is greater than the supplier's system pressure.

F. Backsiphonage - The flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water system from any source other than its intended source caused by the sudden reduction of the pressure in the potable water supply system.

G. Containment - A method of backflow prevention which requires a backflow preventer at the water service entrance.

H. Contaminant - Any substance that will impair the quality of the water to a degree that is creates a serious health hazard to the public leading to poisoning or the spread of disease.

I. Cross Connection - Any actual or potential connection between the public water supply and a source of contamination or pollution.

J. Division - The State of Oregon Public Health Division.

K. Fixture Isolation - A method of backflow prevention in which a backflow preventer is located to correct a cross connection at an in-plant location rather than at a water service entrance.

L. Owner - Any person who has legal title to, or license to operate or habitat in, a property upon which a cross connection inspection is to be made or upon which a cross connection is present.

M. Person - Any individual, partnership, company, public, or private corporation, political subdivision or agency of the State Division, agency or instrumentality or the United States or any other legal entity.

→ N. Permit - A document issued by the Utility which allows the use of a backflow preventer.

O. Pollutant - A foreign substance that, if permitted to get into the public water system, will degrade its quality so as to constitute a moderate hazard, or impair the usefulness or quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonable effect such water for domestic use.

P. Public Works Director - The director, or his delegated representative in charge of the Clovercrest Water System, is invested with the authority and responsibility for the implementation of a cross connection control program and for the enforcement of the provisions of the Ordinance.

Q. Utility - Clovercrest Water System.

R. Water Service Entrance - That point in the owner's water system beyond the sanitary control of the system; considered to be the outlet end of the customers shut off valve and always before any unprotected branch.

V Administration

A. The Utility will operate a cross connection control program, to include the keeping of necessary records, which fulfills the requirements of the Division's Cross Connection Regulations and is

approved by the Division.

B. The Owner shall allow his property to be inspected for possible cross connections and shall follow the provisions of the Utility's program and the Division's regulations if a cross connection is identified.

C. If the Utility requires that the public supply be protected by containment, the Owner shall be responsible for water quality beyond the outlet end of the containment device and should utilize a backflow device for that purpose. He may utilize public health officials, or personnel from the Utility, or their delegated representatives, to assist in the survey of the facilities and to assist in the selection of proper fixture outlet devices, and the proper installation of these devices.

VI Requirements

A. Utility

1. On new installations, the Utility will provide on-site evaluation and/or inspection of plans in order to determine the type of backflow preventer, if any, that will be required, will issue permit, and perform inspection. In any case, a minimum of a dual check valve will be required in any new construction.

2. For premises existing prior to the start of this program, the water system will perform evaluations and inspections on premises and inform the owner by letter of any corrective action deemed necessary, the method of achieving the correction, and the time allowed for the correction to be made. Ordinarily, ninety (90) days will be shortened depending upon the degree of hazard involved and the history of the device(s) in question.

3. The Utility will not allow any cross connections to remain unless it is protected by an approved backflow preventer for which a permit has been issued and which will be regularly tested to insure satisfactory operation.

4. The Utility shall inform the Owner by letter of any failure to comply, within ten (10) working days of the first inspection. The Utility will allow an additional fifteen (15) days for the correction. In the event the Owner fails to comply with necessary correction by the time of the second re-inspection, the Utility will inform the Owner by letter that the water service to the Owner's premises will be terminated within a period not to exceed five (5) days. In the event that the Owner informs the Utility of extenuating circumstances as to why the correction has not been made, a time extension may be granted by the Utility but in no case will exceed an additional thirty (30) days.

5. If the Utility determines at any time that a serious threat to the public health exists, the water service will be terminated immediately.

6. The Utility shall have on file a list of Private Contractors who are certified backflow device testers. All charges for these tests will be paid by the Owner of the building or property.

7. The Utility will begin initial premise inspections to determine the nature of existing or potential hazards, following the approval of this program by the Division, during the calendar year 1995. Initial focus will be on high hazard premises.

B. Owner

1. The Owner shall be responsible for the elimination or isolation of all cross connections on his premises.

2. The Owner, after having been informed by a letter from the Utility, shall at his expense, install, maintain, and test, or have tested, any and all backflow preventers on his premise.

3. The Owner shall correct any malfunctions of the backflow preventer which is revealed by periodic testing.

annual

4. The Owner shall inform the Utility of any proposed or modified cross connections and also any existing cross connections of which the Owner is aware but has not been found by the Utility.

5. The Owner shall not install a by-pass around any backflow preventer unless there is a backflow preventer of the same type on the by-pass. Owners shall not tamper with backflow devices.

6. The Owner shall install backflow preventers in a manner approved by the Utility.

7. The Owner shall install only backflow preventers approved by the Division.

8. Any Owner having a private well or other private water source, must have a permit if the well or source is cross connected to the Utility's system. Permission to cross connect may be denied by the Utility. The Owner may be required to install a backflow preventer at the service entrance if a private water source is maintained, even if it is not cross connected to the Utility's system.

9. In the event the Owner installs plumbing to provide a potable water for domestic purposes which is on the Utility's side of the backflow preventer, such plumbing must have its own backflow preventer installed.

VII Degree of Hazard

The Utility recognizes the threat to the community water system arising from cross connections. All threats will be classified by degree of hazard and will require the installation of approved backflow prevention devices.

VIII Existing In-Use Backflow Prevention Devices

Any existing backflow preventer shall be allowed by the Utility to continue in service unless the degree of hazard is such as to supersede the effectiveness of the preventer, or result in an unreasonable risk to the public health. Where the degree of hazard has increased, as in the case of a residential installation converting

to a business establishment, any existing backflow device must be replaced with an approved device suitable for that degree of hazard.

IX Periodic Testing

A. All testable backflow devices shall be tested and inspected at least annually. ✓

B. Periodic testing shall be performed by a certified tester or from a list provided by the Utility. This testing will be done at the Owner's expense.

C. Any backflow preventer which fails during periodic test will be repaired or replaced. When repairs are necessary, upon completion of the repair the device will be retested at owner's expense to insure correct operation. High hazard situations will not be allowed to continue if the backflow preventer fails the test and cannot be repaired immediately. In other situations, a compliance date of not more than thirty (30) days after the test date will be established. The Owner is responsible for spare parts, repair tools, or a replacement device. Parallel installation of two (2) devices is an effective means of the owner insuring uninterrupted water service during testing or repair of devices and is strongly recommended when the Owner desires such continuity.

D. Backflow prevention devices will be tested more frequently than specified in A. above if the Utility feels that there is a history of test failures. Cost of additional testing will be borne by the Owner.

X Records and Reports

A. Records

The Utility will initiate and maintain the following:

1. Master files on customer's cross connection tests and/or inspections.
2. Master files on cross connection permits.
3. Copies of permits and permit applications.
4. Copies of lists and summaries supplied to the Division.
5. Initial listing of low hazard cross connections.
6. Initial listing of high hazard cross connections.

B. Reports

The Utility will submit the following to the Division:

1. Annual summary of cross connection inspections to the Division.

Replace w/OAR 333-61-071

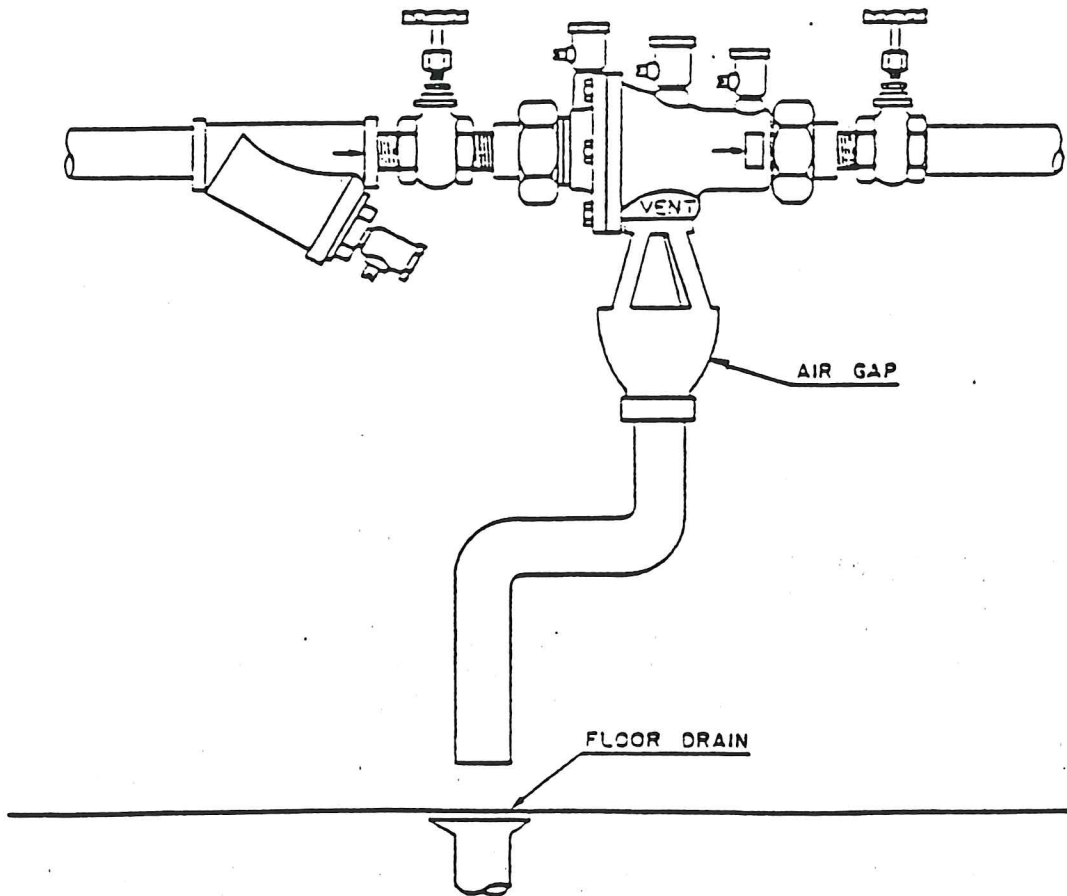
CHAPTER IV

CONSTRUCTION OF STANDARDS

4.1 Types of Backflow Prevention Devices

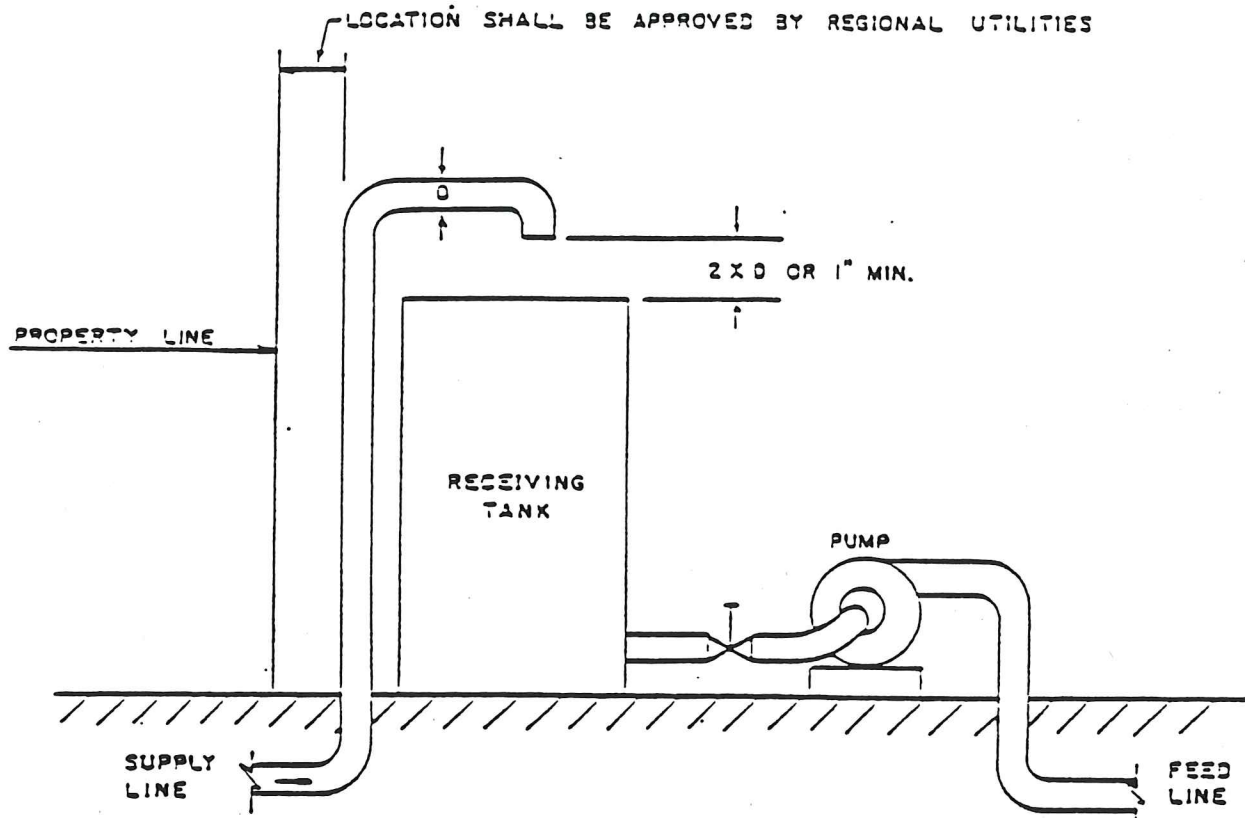
The following pages illustrate the various types of backflow prevention devices and the typical methods of installation. (outdoor).

Backflow prevention devices installed indoors will vary in the method of installation based on location and configuration of the existing or proposed piping system.



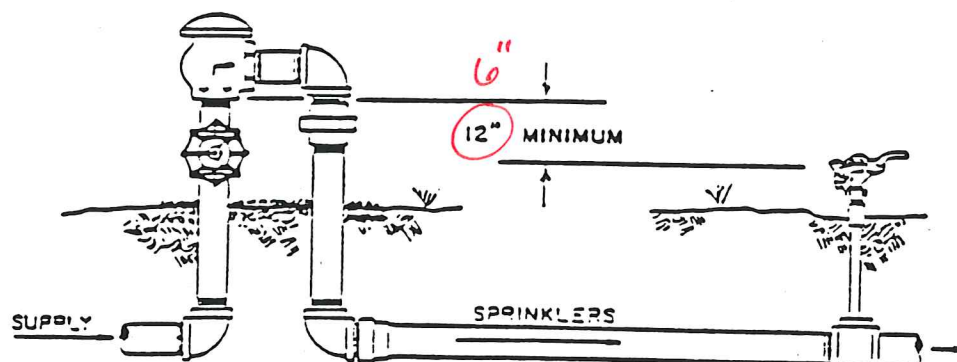
TYPICAL INDOOR REDUCED PRESSURE
BACKFLOW PREVENTER INSTALLATION

AIR GAP SEPARATION



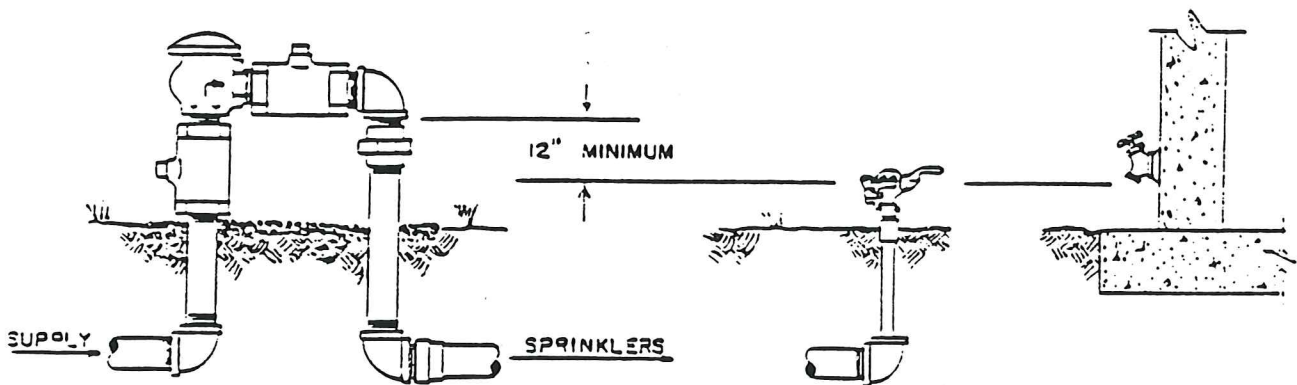
- NOTE:**
1. An air gap separation means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture or other device and the flood level or overflow rim of the receptacle.
 2. The "approved air gap separator" shall be at least double the diameter of the supply pipe measured vertically above the overflow rim of the vessel and in no case shall the gap be less than one (1) inch in diameter.

ATMOSPHERIC
VACUUM BREAKER (A.V.B.)



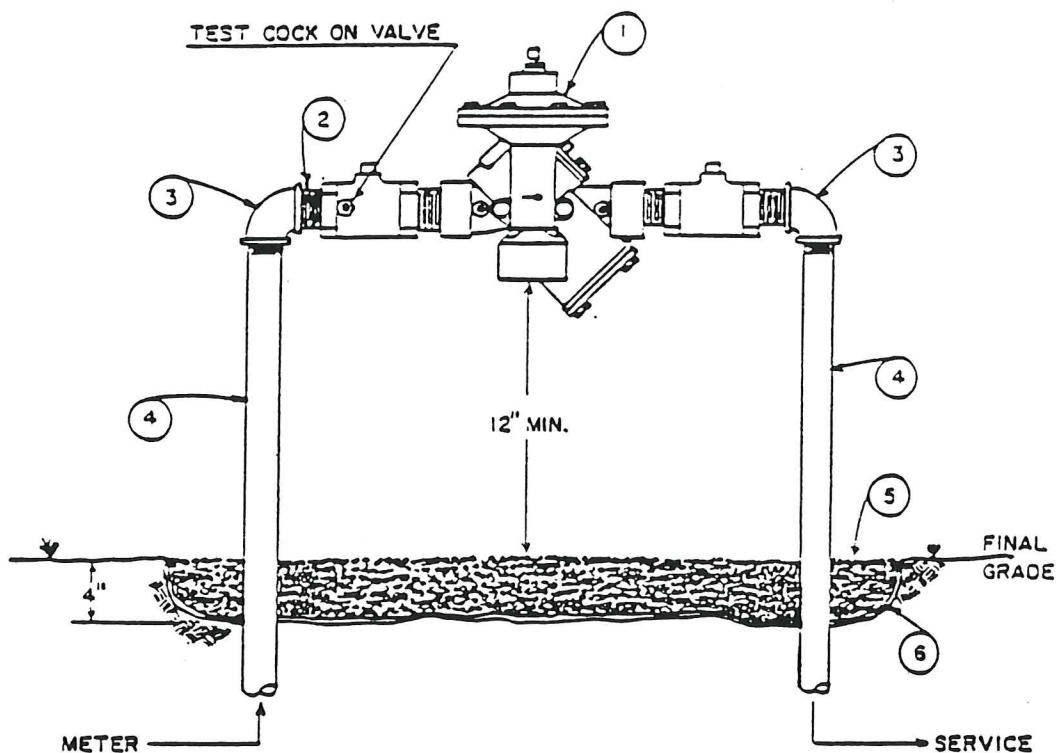
- NOTE:
1. The atmospheric vacuum breaker cannot be installed where it will be subjected to back pressure. It can only provide protection against back-siphonage of non-toxic pollutants.
 2. Each device shall be installed in an accessible location to facilitate inspection and servicing.
 3. Each A.V.B. shall be installed downstream of the last shut-off valve and at least 12 inches above the highest sprinkler head of outlet. (No valves may be located downstream of the device).
 4. Under no circumstances should the A.V.B. be installed where it will be under continuous operating pressure for more than 12 hours in any 24 hour period.

PRESSURE-TYPE
VACUUM BREAKER (P.V.B.)



- NOTE:**
- ① THE PRESSURE VACUUM BREAKER (P.V.B.) CANNOT BE INSTALLED WHERE IT WILL BE SUBJECTED TO BACKPRESSURE. IT PROVIDES PROTECTION AGAINST BACK-SIPHONAGE OF BOTH POLLUTANTS AND CONTAMINANTS.
 - ② EACH P.V.B. SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION TO FACILITATE INSPECTION AND SERVICING.
 - ③ EACH P.V.B. SHALL BE INSTALLED ON THE MAIN LINE TO THE IRRIGATION SYSTEM AND AT LEAST 12 INCHES ABOVE THE HIGHEST SPRINKLER HEAD OR OUTLET. (VALVES MAY BE LOCATED DOWNSTREAM FROM THE DEVICE).

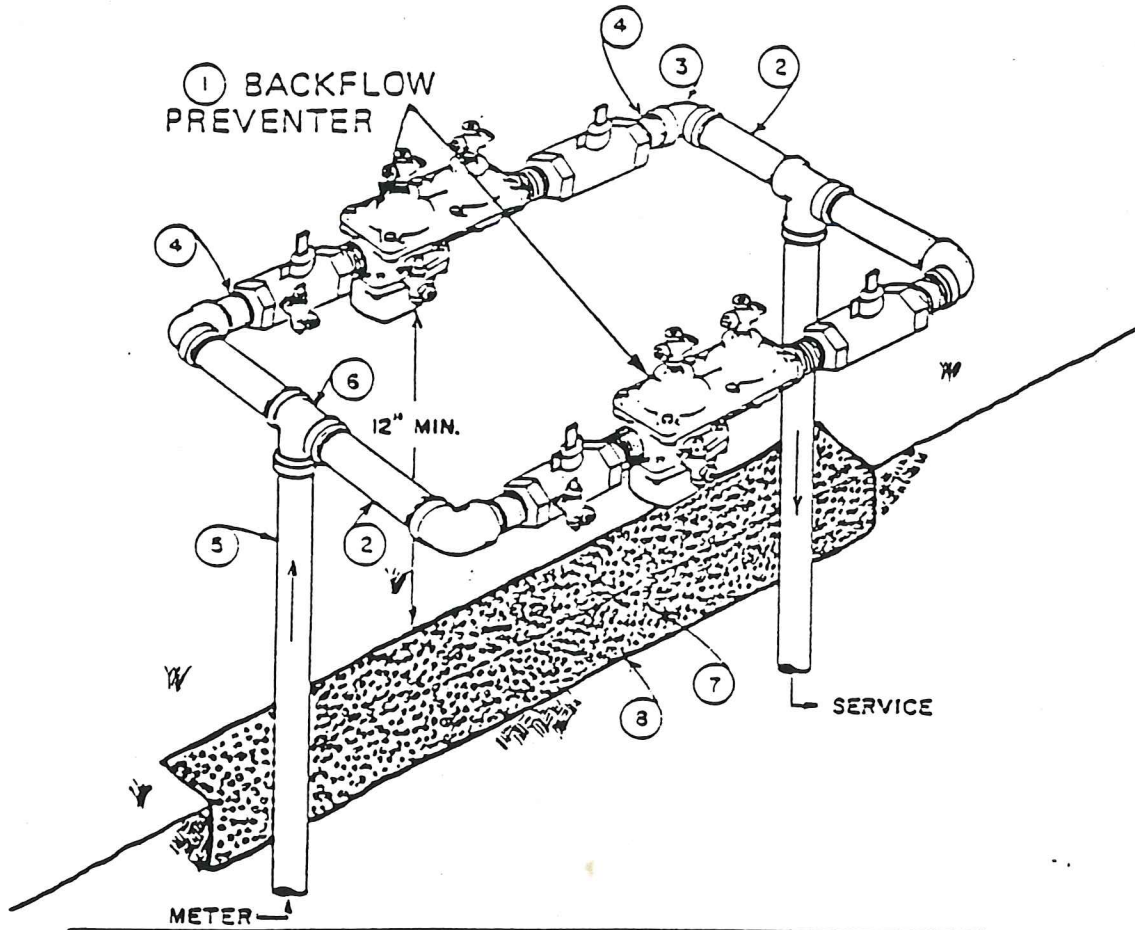
DOUBLE CHECK OR REDUCED PRESSURE
BACKFLOW PREVENTER
SINGLE SERVICE: 3/4", 1", 1-1/2", 2"



M A T E R I A L S		
ITEM	QUANT.	DESCRIPTION
1	1	2" BACKFLOW PREVENTER ASSEMBLY
2	2	2" X NOM. NIPPLES - BRASS or PVC
3	2	2" X 90° ELBOWS - GALVANIZED or PVC
4	2	2" X VARIES RISER - GALVANIZED or PVC
5	*	PEA GRAVEL
6	*	PLASTIC LINER

NOTE: INSTALLATION SHOWN ABOVE IS FOR A 2" SERVICE. CHANGE PIPING MATERIALS ACCORDINGLY FOR SERVICE SIZE.

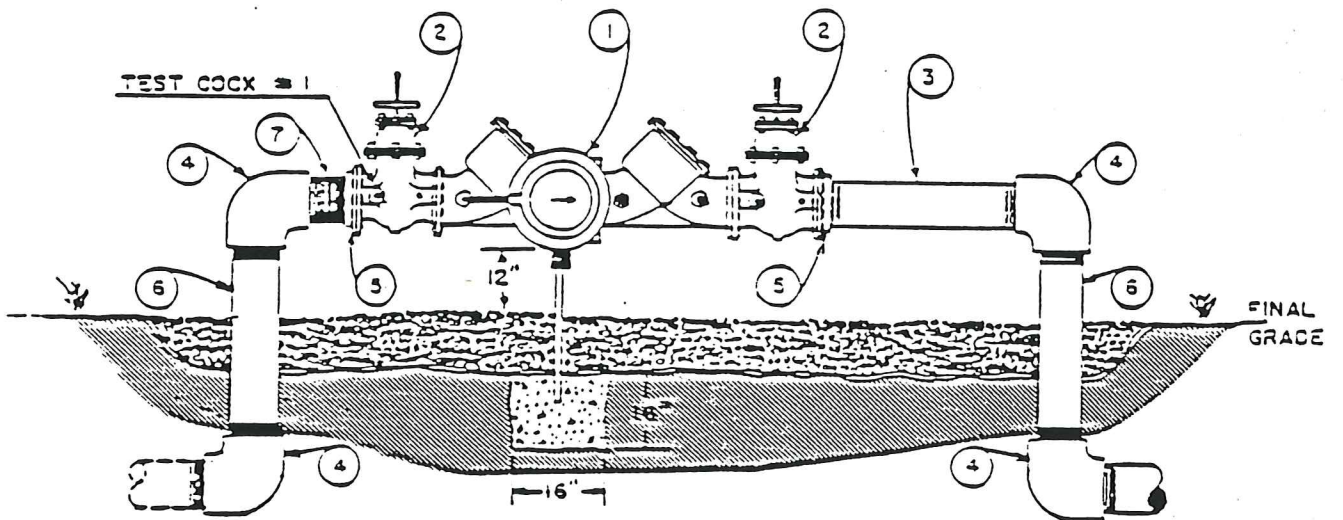
DOUBLE CHECK OR REDUCED PRESSURE
BACKFLOW PREVENTER
DUAL SERVICE: 3/4", 1", 1-1/2", 2"



M A T E R I A L S			
ITEM	QUANT.		DESCRIPTION
1	2	2"	BACKFLOW PREVENTER ASSEMBLY
2	4	2" X 6"	NIPPLES - GALVANIZED or PVC
3	4	2" X 90°	ELBOWS - GALVANIZED or PVC
4	6	2" X 4"	NIPPLES - GALVANIZED or PVC
5	2	2"	RISER - GALVANIZED
6	2	2"	TEES - GALVANIZED
7	*		PEA GRAVEL
8	*		PLASTIC LINER

NOTE INSTALLATION SHOWN ABOVE IS FOR A 2" SERVICE. CHANGE PIPING MATERIALS ACCORDINGLY FOR SERVICE SIZE.

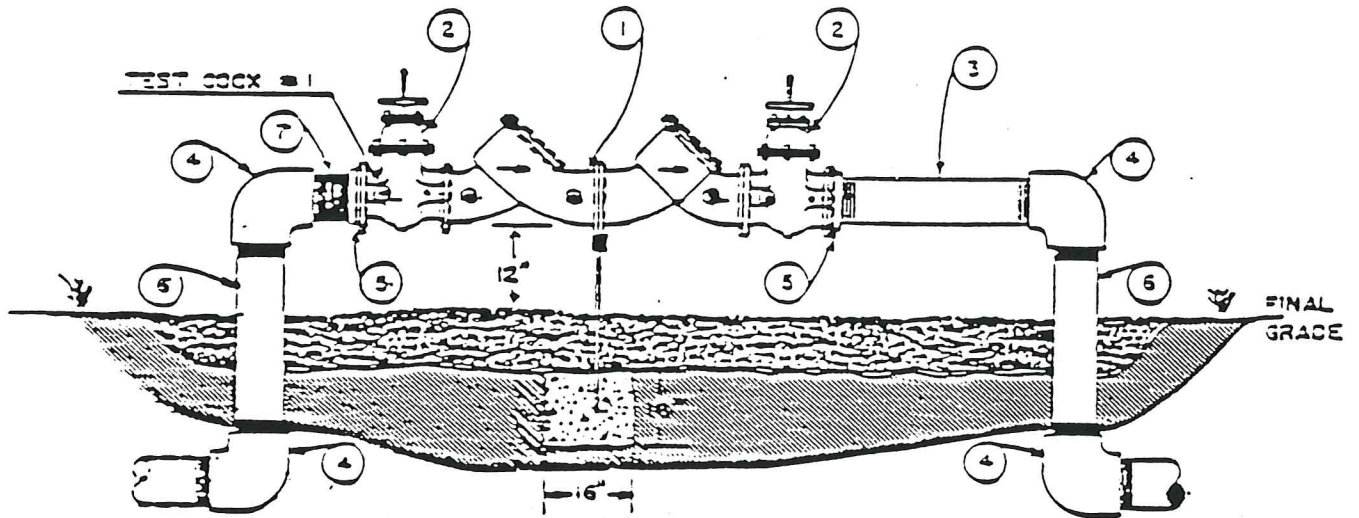
REDUCED PRESSURE
BACKFLOW PREVENTER
SINGLE SERVICE: 3", 4"



M A T E R I A L S			
ITEM	QUANT.		DESCRIPTION
1	1	3", 4"	VALVE, REDUCED PRESSURE
2	2	3", 4"	VALVE, GATE, C.I., F-F
3	1	3", 4"	NIPPLE, GALV. (12" LONG) (OPT.)
4	4	3", 4"	ELBOW, GALV. - 90°
5	2	3", 4"	FLANGE, STEEL PIPE, SCREW-TYPE
6	2	3", 4"	PIPE, GALV. (42" LONG)
7	1	3", 4"	NIPPLE, GALV. (6" LONG)

NOTE: FIELD ADJUST AND CUT ITEM 6 TO THE PROPER LENGTH.

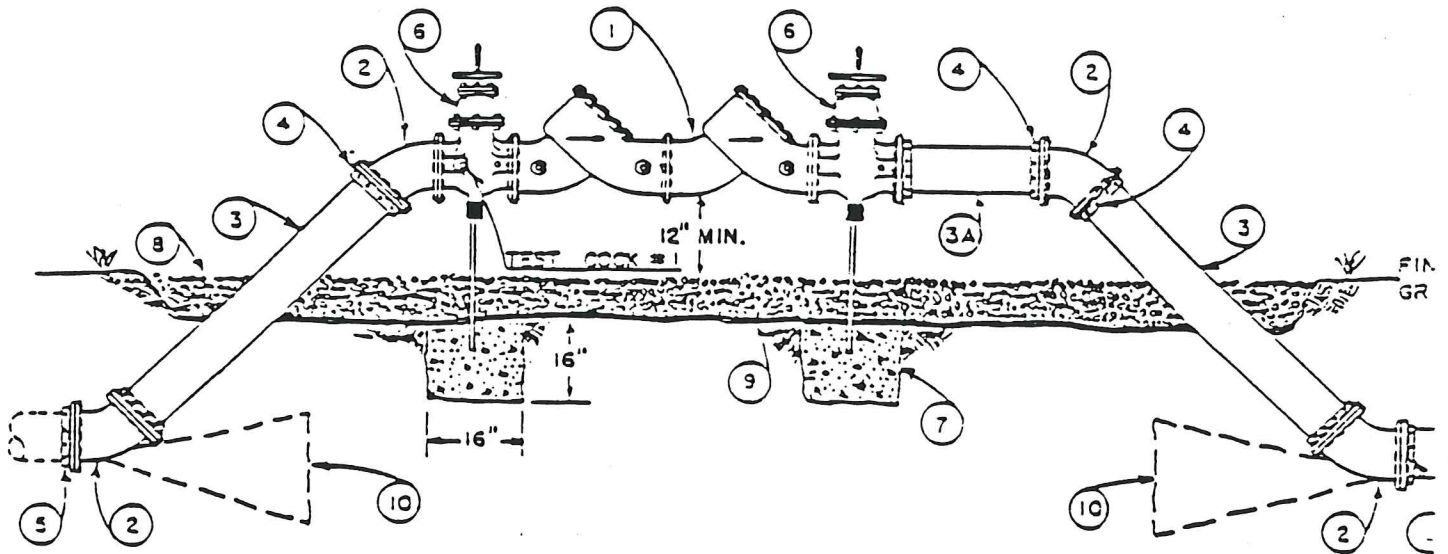
DOUBLE CHECK
BACKFLOW PREVENTER
SINGLE SERVICE: 3", 4"



M A T E R I A L S			
ITEM	QUANT.		DESCRIPTION
1	1	3", 4"	VALVE, DOUBLE CHECK
2	2	3", 4"	VALVE, GATE, CL. F-F
3	1	3", 4"	NIPPLE, GALV. (12" LONG) (OPT.)
4	4	3", 4"	ELBOW, GALV. - 90°
5	2	3", 4"	FLANGE, STEEL PIPE, SCREW-TYPE
6	2	3", 4"	PIPE, GALV. (42" LONG)
7	1	3", 4"	NIPPLE, GALV. (6" LONG)

NOTE: FIELD ADJUST AND CUT ITEM 6 TO THE PROPER LENGTH.

DOUBLE CHECK
BACKFLOW PREVENTER
SINGLE SERVICE: 6", 8"

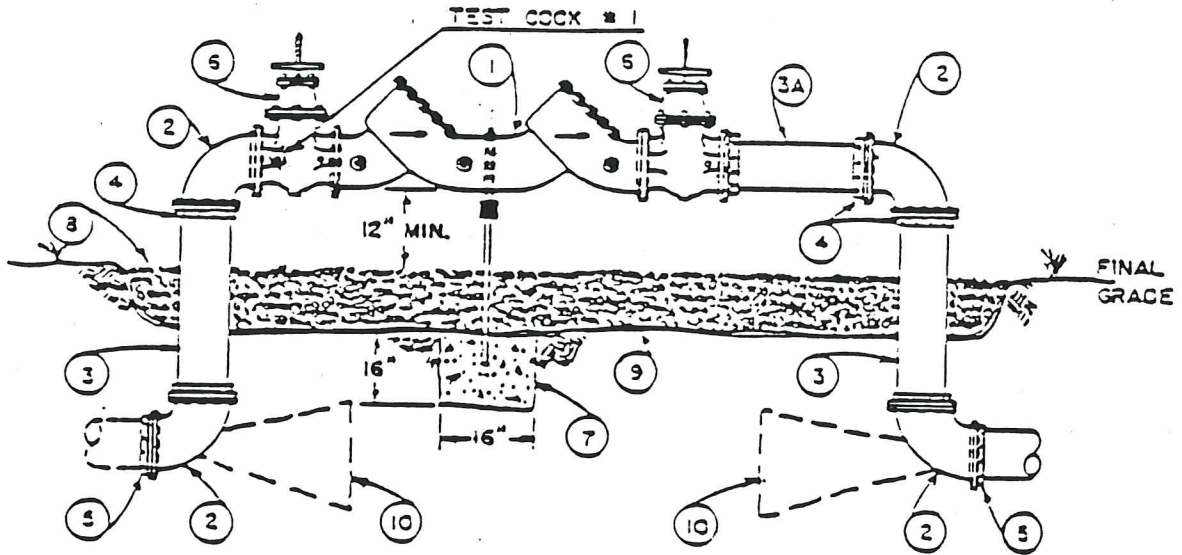


M A T E R I A L S			
ITEM	QUANT.		DESCRIPTION
1	1	6", 8"	VALVE, DOUBLE CHECK
2	4	6", 8"	BEND-45° F-F
3	2	6", 8"	ADAPTER, C.I. (72" LONG) F-PE
3A	1	6", 8"	ADAPTER, C.I. (24" LONG) F-PE (OPT.)
4	3	6", 8"	ADAPTER, FLANGE, D.I.P.
5	2	6", 8"	ADAPTER, FLANGE, P.V.C. (DR-18)
6	2	6", 8"	VALVE, GATE, C.I., F-F
7	1 or 2	2"	IRON PIPE/CONCRETE FOUNDATION
8	*		PEA GRAVEL
9	*		PLASTIC LINER
10	2		REACTION BLOCK

NOTE: • FIELD ADJUST AND CUT ITEM 3 TO THE PROPER LENGTH.

• DO NOT INTERCHANGE ITEMS 4 & 5.

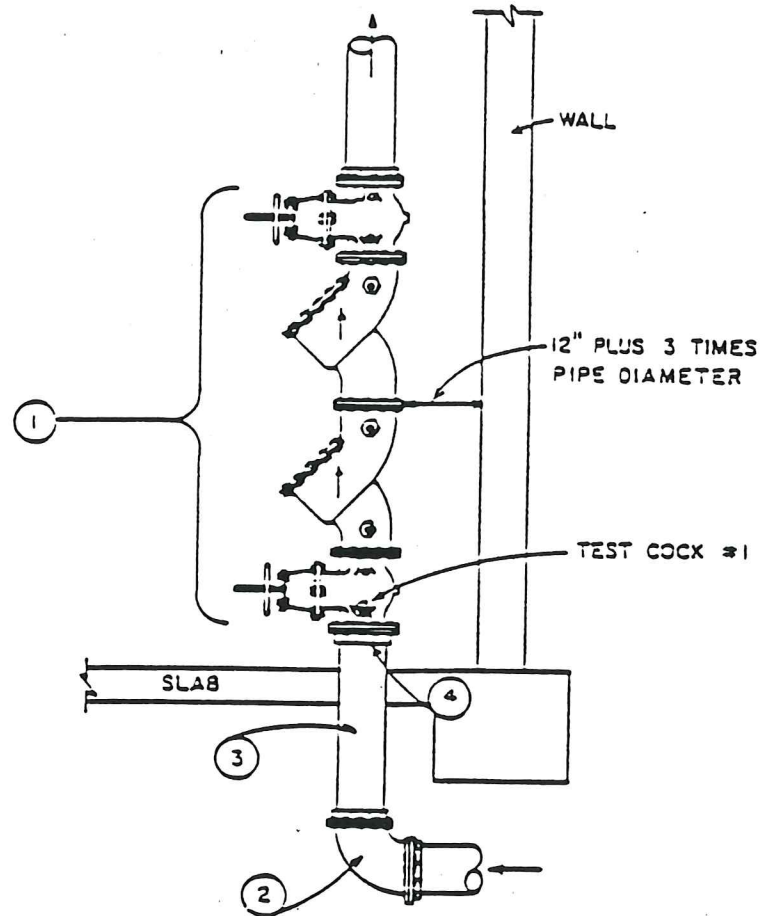
DOUBLE CHECK
BACKFLOW PREVENTER
SINGLE SERVICE: 6", 8"



M A T E R I A L S			
ITEM	QUANT.		DESCRIPTION
1	1	6", 8"	VALVE, DOUBLE CHECK
2	4	6", 8"	BEND-90° F-F
3	2	6", 8"	ADAPTER, C.I. (48" LONG) F-PE
3A	1	6", 8"	ADAPTER, C.I. (24" LONG) F-PE (OPT)
4	3	6", 8"	ADAPTER, FLANGE, O.I.P.
5	2	6", 8"	ADAPTER, FLANGE, P.V.C. (DR-18)
6	2	6", 8"	VALVE, GATE, C.I., F-F
7	1	2"	IRON PIPE/CONCRETE FOUNDATION
8	*		PEA GRAVEL
9	*		PLASTIC LINER
10	2		REACTION BLOCK

- NOTE:
- FIELD ADJUST AND CUT ITEM 3 TO THE PROPER LENGTH.
 - DO NOT INTERCHANGE ITEMS 4 & 5.
 - THIS TYPE OF CONSTRUCTION IS DESIGNED FOR LIMITED WORKING AREA.

DOUBLE CHECK
BACKFLOW PREVENTER
SINGLE SERVICE: 4", 6", 8"
VERTICAL INSTALLATION

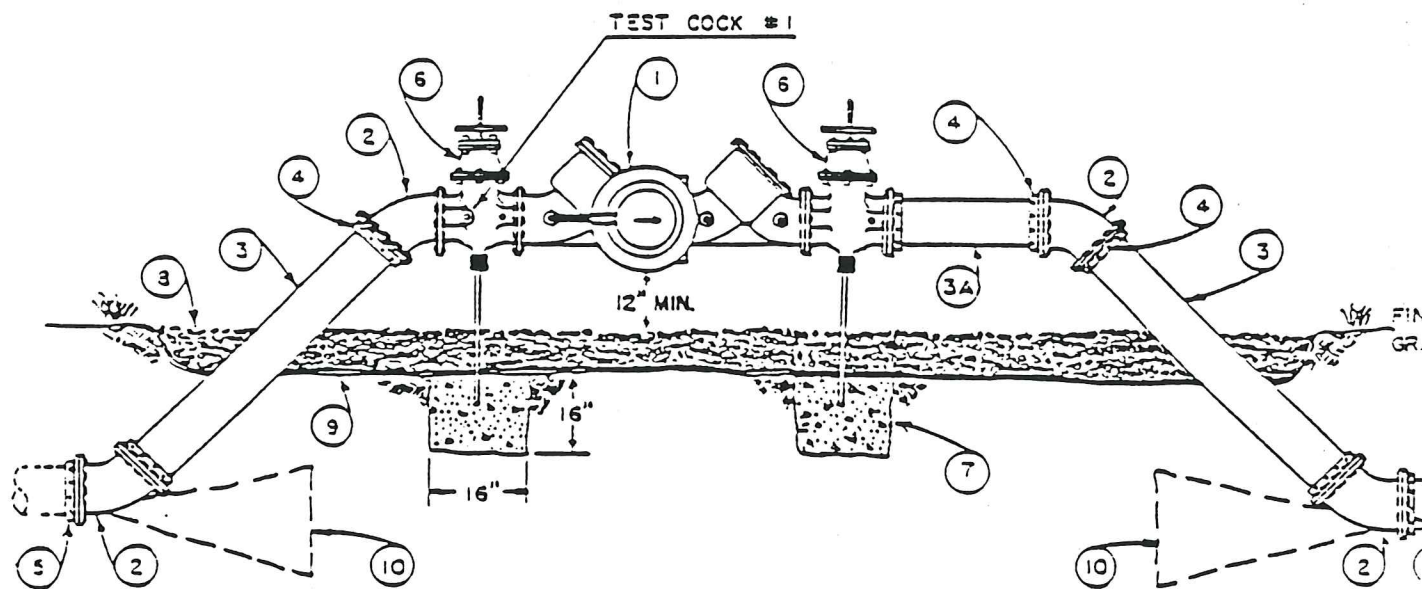


M A T E R I A L S		
ITEM	QUANT.	DESCRIPTION
1	1	4", 6", 8" DOUBLE CHECK VALVE ASSEMBLY
2	1	4", 6", 8" BEND-90° FLANGE-FLANGE
3	*	4", 6", 8" PIPE, DUCTILE IRON
4	1	4", 6", 8" ADAPTER, FLANGE, D.I.P.

NOTE: MIN. CLEARANCE AROUND DEVICE - 12" + 3 TIMES PIPE DIAMETER.

THIS TYPE OF CONSTRUCTION IS DESIGNED FOR LIMITED WORKING AREA.
(FIRE SPRINKLER SYSTEMS)

REDUCED PRESSURE
BACKFLOW PREVENTER
SINGLE SERVICE: 6", 8"

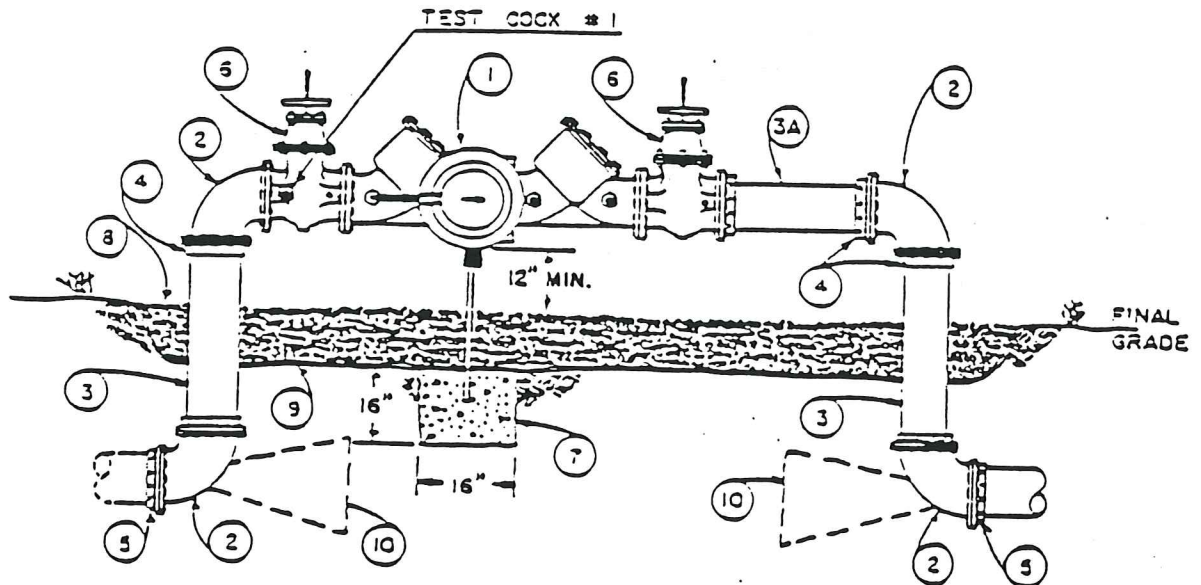


M A T E R I A L S			
ITEM	QUANT.	D E S C R I P T I O N	
1	1	6", 8"	VALVE, REDUCED PRESSURE PRINCIPLE
2	4	6", 8"	BEND-45° F-F
3	2	6", 8"	ADAPTER, C.I. (96" LONG) F-PE
3A	1	6", 8"	ADAPTER, C.I. (24" LONG) F-PE (OPT.)
4	3	6", 8"	ADAPTER, FLANGE, D.L.P.
5	2	6", 8"	ADAPTER, FLANGE, P.V.C. (DR-18)
6	2	6", 8"	VALVE, GATE, C.I., F-F
7	1 or 2	2"	IRON PIPE/CONCRETE FOUNDATION
8	*		PEA GRAVEL
9	*		PLASTIC LINER
10	2		REACTION BLOCK

NOTE: • FIELD ADJUST AND CUT ITEM 3 TO THE PROPER LENGTH.

• DO NOT INTERCHANGE ITEMS 4 & 5.

REDUCED PRESSURE
BACKFLOW PREVENTER
SINGLE SERVICE: 6", 8"



M A T E R I A L S			
ITEM	QUANT.		D E S C R I P T I O N
1	1	6", 8"	VALVE, REDUCED PRESSURE PRINCIPLE
2	4	6", 8"	BEND-90° F-F
3	2	6", 8"	ADAPTER, C.I. (48" LONG) F-PE
3A	1	6", 8"	ADAPTER, C.I. (24" LONG) F-PE (OPT.)
4	3	6", 8"	ADAPTER, FLANGE, D.I.P.
5	2	6", 8"	ADAPTER, FLANGE, P.V.C. (DR-18)
6	2	6", 8"	VALVE, GATE, C.I., F-F
7	1	2"	IRON PIPE/CONCRETE FOUNDATION
8	*		PEA GRAVEL
9	*		PLASTIC LINER
10	?		REACTION LINER

NOTE: • FIELD ADJUST AND CUT ITEM 3 TO THE PROPER LENGTH.

• DO NOT INTERCHANGE ITEMS 4 & 5.

• THIS TYPE OF CONSTRUCTION IS DESIGNED FOR LIMITED WORKING AREA.