

## **BACKFLOW PREVENTION DEVICES**

The purpose of this information is to aid you in compiling the necessary information required for approval of the installation of your **Reduced Pressure Zone / Double Check Valve Assembly**.

**THE FOLLOWING PAPERWORK IS REQUIRED FOR SERVICE TO ALL NEW BUILDINGS (REGARDLESS OF THE SERVICE SIZE), EXISTING BUILDINGS WITH SERVICES OVER 2", AND ALL FIRELINES.**

**SUBMIT FOUR (4) COPIES OF THE FOLLOWING (unless otherwise noted):**

1. APPLICATION FORM 236 or NYS DOH 347
2. SITE PLAN - **STAMPED BY PROFESSIONAL ENGINEER or REGISTERED ARCHITECT** (see sample)
3. INSTALLATION DRAWING\* - **STAMPED BY PROFESSIONAL ENGINEER or REGISTERED ARCHITECT**
4. ENGINEERS REPORT\* (see sample)
5. LETTER OF COMPLIANCE (1 Copy)

A plan review fee of \$170.00 (payable to Suffolk County Water Authority) must accompany first time submittals (and resubmittals for plans previously approved).

NYS DOH 1013 must be completed by the design PE / RA upon completion of backflow preventer installation and submitted to the Cross-Connection Control Department.

\*The samples in this booklet are designed to supply you with as much information as possible. **THEY ARE GENERIC PRINTS ONLY and cannot be submitted for review.**

**Forward 4 complete sets to:**

**SCWA / Cross Connection Control Department  
4060 Sunrise Hwy  
PO Box 38  
Oakdale NY 11769**

**Contact us at Cross Connection Control Department: 631-563-0266**

REV. 10/16/2020

**SUFFOLK COUNTY WATER AUTHORITY  
CROSS CONNECTION CONTROL**

**Policy of Suffolk County Water Authority as a condition of service:**

1. Cross Connection Control will be one of complete containment by requiring the customer to install a backflow prevention device (RPZ/DCV) as determined by degree of hazard under the guidelines of the NYS Sanitary Code Section 5-1.31.
2. All **New** commercial buildings are required to install a Reduced Pressure Zone backflow prevention device (RPZ).
3. New fire line services and existing fire line services being modified will require a backflow prevention device based upon M-14 guidelines. Contact us for determination prior to submittal.
4. Retrofit commercial accounts will require the installation of either a Reduced Pressure Zone device (RPZ) or Double Check Valve (DCV), determined by SCWA Cross Connection Control Dept. based upon degree of hazard under NYS Department of Health guidelines.
5. Retrofit commercial accounts determined as non-hazardous by a Cross Connection survey will be required to have a dual check valve installed at the meter.
6. Residential accounts with high degree of hazard will be required to install a RPZ device. These include, but are not limited to, fire systems, chemicals in irrigation systems, existing properties with open-loop geothermal systems connected to SCWA.
7. Residential accounts with low and no degree of hazard will be required to have a dual check valve installed at the meter.
8. All new non-residential dock services will require the installation of an RPZ.
9. SCWA may permit domestic RPZ devices to be installed in a building provided the length of the service line does not exceed 125'. Where it is not feasible to install the device inside the building, it will be required to be installed behind the water meter in a heated enclosure or above ground vault.
10. Only devices approved by USC Foundation for Cross Connection Control will be acceptable. Plans and installations must conform to NYS Department of Health guidelines, as well as Suffolk County Water Authority's Cross Connection Control Rules / Regulations. Failed installation inspections necessitate a \$25 fee billed to the customer's account.
11. Devices are required to be tested annually at the customer's expense and results submitted thru the SCWA online test portal. All tests must be performed by a NYS Certified backflow prevention device tester who holds all appropriate licensing under Suffolk County Consumer Affairs Law regarding Backflow Testing. Should the test not be performed within the allotted 60 day time period, the account will be slated for shut off.

**New and Existing Master Metered Residential Communities  
Including, but not limited to apartments, townhouses, condos/co-ops**

Board Approved in June 1996: We will not require the installation of large Primary RPZ devices behind each master meter **if**:

The customer allows the Cross Connection Control Department of the Suffolk County Water Authority to survey their **existing** facility. This would enable us to detect areas that would require the installation of an RPZ/DCV device. The purpose behind installing these smaller devices is two-fold, protecting the residents internally from these concerns, as well as not compromising on site fire protection. Often, this will be a substantial cost savings. Typically, smaller devices will be required to be installed for sewage treatment/lift stations, pool/clubhouses, commercial boiler feeds, cooling towers, maintenance buildings, slop sinks, as well as extensive irrigation systems. For **existing** master meter communities, a fee of \$190 will be charged for this survey.

If there are private hydrants on site, the customer must sign a "Hydrant Maintenance Agreement" under which all hydrants are turned over to SCWA. Suffolk County Law requires private hydrants to be tested annually. This agreement enables SCWA to flow test and maintain your hydrants. Only SCWA and the local Fire Districts will have use of these hydrants. There is an upfront fee to be paid for each hydrant. Call our New Construction Department at (631) 218-1148 for current fees.

If the owner does not want to comply with this version of our program, a Primary RPZ installation will be required directly behind each master meter.

In June 1998, the Board of the Suffolk County Water Authority approved another option for the installation of RPZ devices for the above master metered Residential Communities:

By mutual agreement we would install the required Reduced Pressure Zone Devices for you. You would reimburse the Authority for the cost of the installation. There would be a warranty period for the installation, and it would become your property. The installation would be strictly for master RPZ devices behind the meter. It would not include internal devices throughout your distribution system. The agreement could be financed over five years at a rate of 6%. This surcharge would be added to your water bill.

Through the Authority's bidding process, a licensed plumber would be hired to provide for the installation of the RPZ devices and for the design work required by an engineer/architect. SCWA would supervise the installation as required by code. This option is offered to ensure the quality of the work and to keep costs reasonable for our customers.

Please call the Cross Connection Control Department at 631-563-0266 for further information.

**SUFFOLK COUNTY WATER AUTHORITY**  
**CROSS CONNECTION CONTROL-FIRE PROTECTION SYSTEMS**

**M-14**

<b>CLASS</b>	<b>ARRANGEMENT</b>	<b>PROTECTION REQUIRED</b>
1	Direct connections from public water mains only; no pumps, tanks, or reservoirs; no physical connection from other water supplies; no antifreeze or other additives of any kind; all sprinkler drains discharging to atmosphere, dry wells, or other safe outlets.	Approved Double Check Valve (DCV)
2	Same as Class 1, except that booster pumps may be installed in the connections from the street mains. (Booster Pumps do not affect the potability of the system, it is necessary however, to avoid drafting so much water that pressure in the water main is reduced below 20 PSI).	Approved Double Check Valve (DCV) Flow regulator to control over drafting.
3	Direct connection from public water supply main plus one or more of the following: elevated storage tanks; fire pumps taking suction from above-ground covered reservoirs or tanks; and pressure tanks (all storage facilities are filled or connected to public water only, the water in the tanks to be maintained in a potable condition. Otherwise, Class 3 systems are the same as Class 1.	Approved Double Check Valve (DCV)
4	Directly supplied from public water mains similar to Classes 1 and 2, and with an auxiliary water supply on or available to the premises; or an auxiliary supply may be located within 1700' of the pumper connection.	Approved Reduced Pressure Zone Device (RPZ)
5	Directly supplied from public mains, and interconnected with auxiliary supplies, such as pumps taking suction from reservoirs exposed to contamination, or rivers or ponds; driven wells; mills or other industrial water systems; or where antifreeze or other additives are used.	Approved Reduced Pressure Zone Device (RPZ)
6	Combined industrial and fire protection systems supplied from the public water mains only, with or without gravity storage or pump suction tanks.	Minimum protection Approved Double Check Valve (DCV). Protection would depend on the requirements of both industry and fire protection and could only be determined by a survey of the premises.

**PRIVATE HYDRANTS:** In order to be granted a waiver on installing an RPZ for a Private Hydrant, a Maintenance Agreement must be signed with SCWA. If there is no agreement, an RPZ device will be required. Fire lines without hydrants are determined by M-14 guidelines.

## **DRY RECHARGE BASIN REQUIREMENTS**

Suffolk County Water Authority has always considered a recharge basin (sump) as an “auxiliary water supply”; this is referred to in **M-14 Class 4 Fire Protection Systems**. This interpretation held true whether there was water in the recharge basin or whether it was dry. This interpretation has been reviewed and the determination has been made that a dry recharge basin is not to be considered an auxiliary water supply. In order to be considered a dry recharge basin, all of the following criteria **must** be met:

- A. Site inspection by a representative of Suffolk County Water Authority.
  
- B. Certified results of a test boring confirming the ground water elevation to be lower than the floor of the recharge basin. This information can be obtained by the Town’s Engineering Department.
  
- C. A report in writing from a Professional Engineer certifying to the dry condition of the recharge basin.

## **NEW and MODIFIED EXISTING FIRELINE SYSTEMS**

At the October 30, 2001 meeting of the Board of the Suffolk County Water Authority, a new resolution was passed concerning new and modified existing fire lines.

Effective November 1, 2001, all fire line services are mandated to have a **minimum** of a Double Check Valve (DCV) installed on the line. A Double Check Valve filing is required by a licensed Engineer or Architect.

Reduced Pressure Zone Devices will be required where a Double Check Valve is not acceptable as per M-14 Code requirements.

Regardless of the length of service, fire line devices will be acceptable installed within the building so long as the fire department connection or other connections are installed downstream of the said device.

In order to obtain a decision as to which type of backflow device is required, please submit a detailed site plan showing the fire line service, size, the street the service is being taken from, the tie-in distance to the nearest cross street, and the location of the fire department connection (if any). A field survey will be performed to determine if an RPZ or DCV is required.



## **SAMPLE ENGINEER'S REPORT**

Suffolk County Water Authority  
4060 Sunrise Hwy/PO Box 38  
Oakdale NY 11769

We have been retained by Emerson Development Corporation to prepare the design for the reduced pressure backflow prevention device (RPZ) for the Inn at Montauk, located at 1 Main St. Montauk, New York. The proposed project will consist of two 2-bedroom and six 1-bedroom units. A 1" water service is requested. The average daily demand is estimated at 150GPD with a peak demand of 10 GPM.

In compliance with the requirements of the New York State Health Department, Suffolk County Department of Health Services, and the Suffolk County Water Authority, an RPZ is proposed for the service. The RPZ will be located on the first floor in the utility room. The RPZ proposed is Febco model LF825Y-1". At the peak demand of 10 GPM, the head loss through the RPZ is 9 psi.

Very truly yours,

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Consulting Engineer/Registered Architect



**COMPLIANCE LETTER**

Date \_\_\_\_\_

SUFFOLK COUNTY WATER AUTHORITY  
CROSS CONNECTION CONTROL DEPT.  
4060 Sunrise Hwy  
PO Box 38  
Oakdale, NY 11769

**RE:**

I request that water service be provided to the above- referenced facility. This request is being made with the understanding and agreement that we will at our expense comply with any, and all changes requested by the New York State Department of Health Services.

The Public Health code prohibits any connections before a backflow prevention device. Should any connections be made, I understand that I am in violation and I must take appropriate action to remove said violations.

Should we fail to comply with these requests, it is understood that the service will be terminated within 30 days.

Very truly yours,

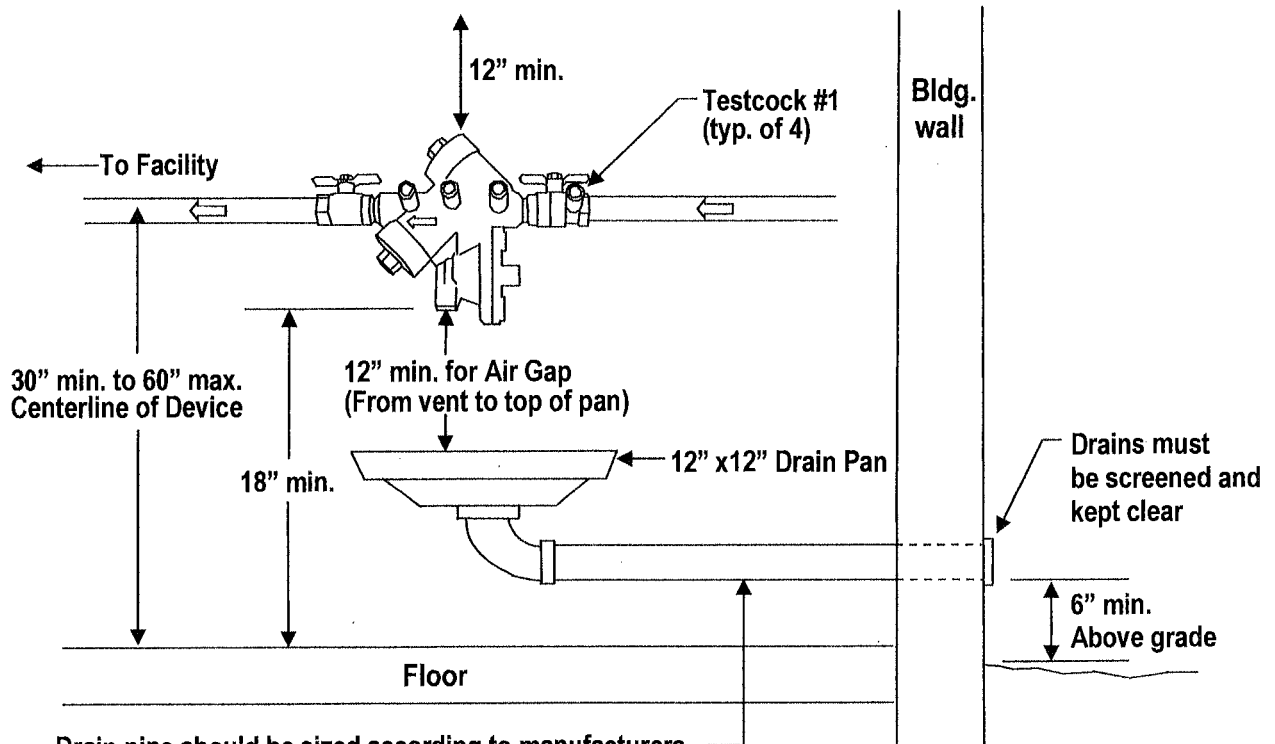
\_\_\_\_\_  
(Owner's signature)

Name: \_\_\_\_\_  
(please print)

Mailing Address:

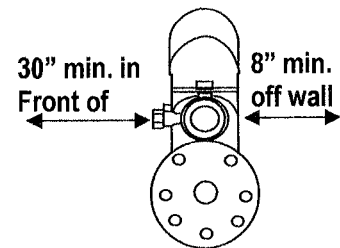


# FIRST FLOOR INSTALLATIONS OF REDUCED PRESSURE ZONE (RPZ) DEVICES



Drain pipe should be sized according to manufacturers flow curves to determine maximum discharge rates. See sample flow chart

**FRONT VIEW**



**SIDE VIEW**

## NOTES:

1. RPZ must be a Lead Free model.
2. RPZ must have USC Foundation for Cross Connection Control approval.
3. RPZ must be protected against freezing.
4. Adequate lighting must be provided.
5. A separate shut off valve is required upstream of the RPZ.
6. Test cocks must be positioned to facilitate testing (30" minimum clearance).
7. All connections, T's, hose bibs, irrigation, etc. must be installed after (downstream) of RPZ.
8. Drains must be screened and cannot be subject to flooding.
9. RPZ must be adequately supported to either the wall behind or the floor (to prevent lateral movement). Sizes of 2" or more must be supported to the floor.
10. Supports must be placed where they will not obstruct the function of the relief valve.
11. RPZ may not be installed higher than 5' above the floor or an OSHA approved platform is required.
12. Where the distance between the water meter and RPZ is greater than 10' all exposed piping must be labeled every 5' displaying the words " feed line to Backflow Preventer DO NOT TAP ".
13. Perform proper maintenance as per manufacturer's requirements.
14. RPZ must be tested annually.

Design by: L. Wynhurst

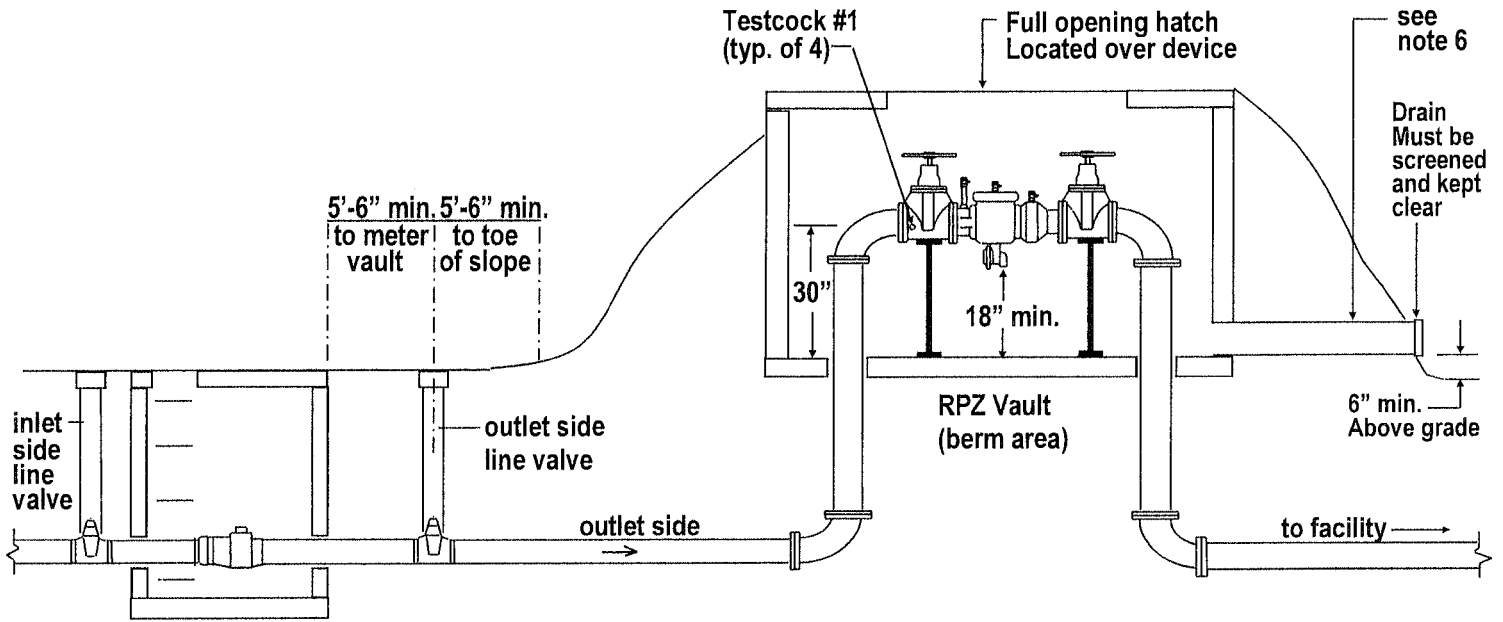
Drawn by: B. Wehnke

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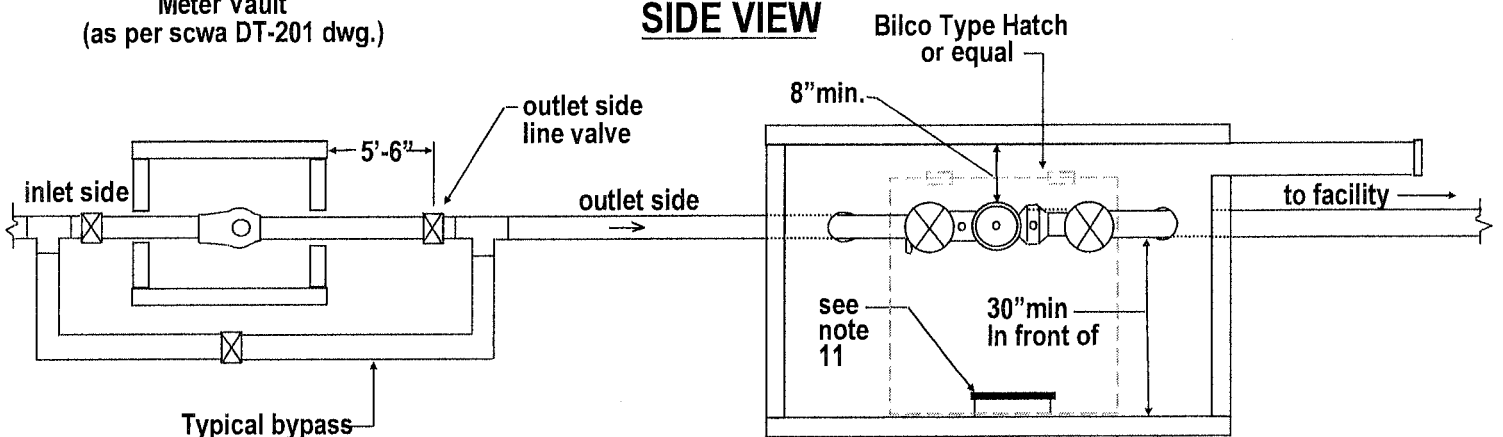


# RPZ VAULT WITH LARGE METER VAULT



Meter Vault  
(as per scwa DT-201 dwg.)

## SIDE VIEW



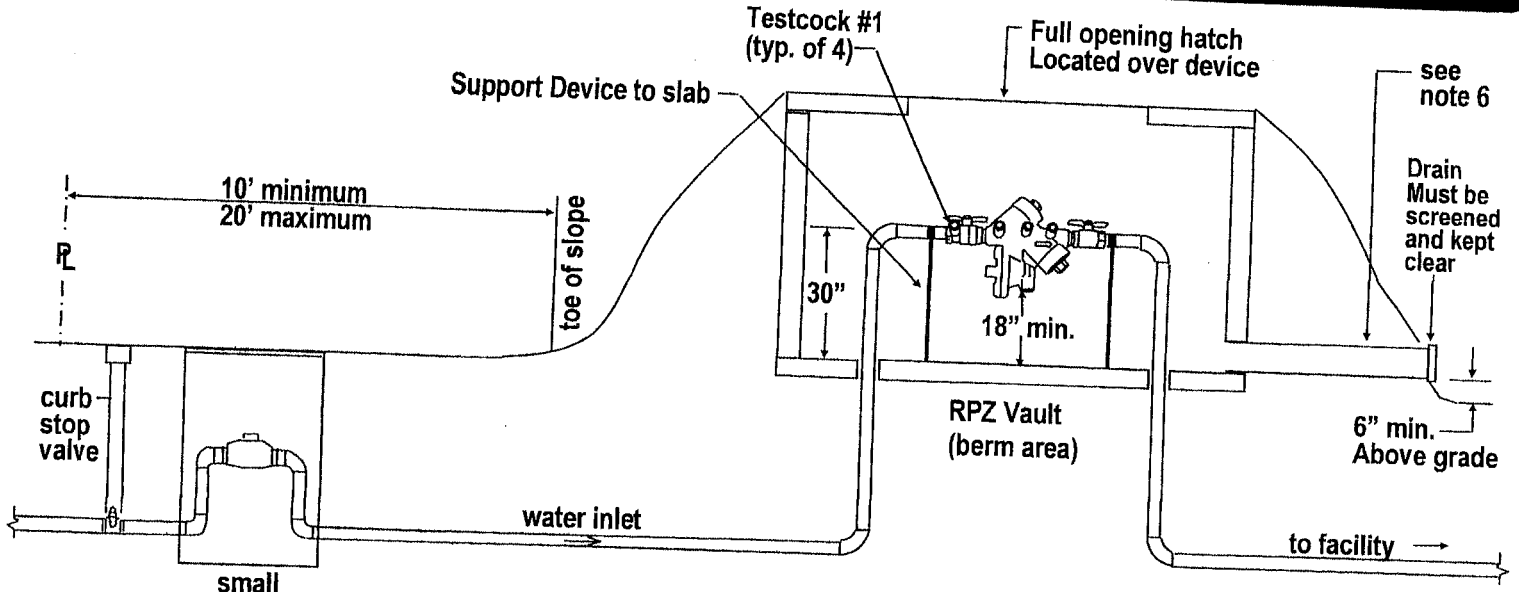
## PLAN VIEW

### NOTES:

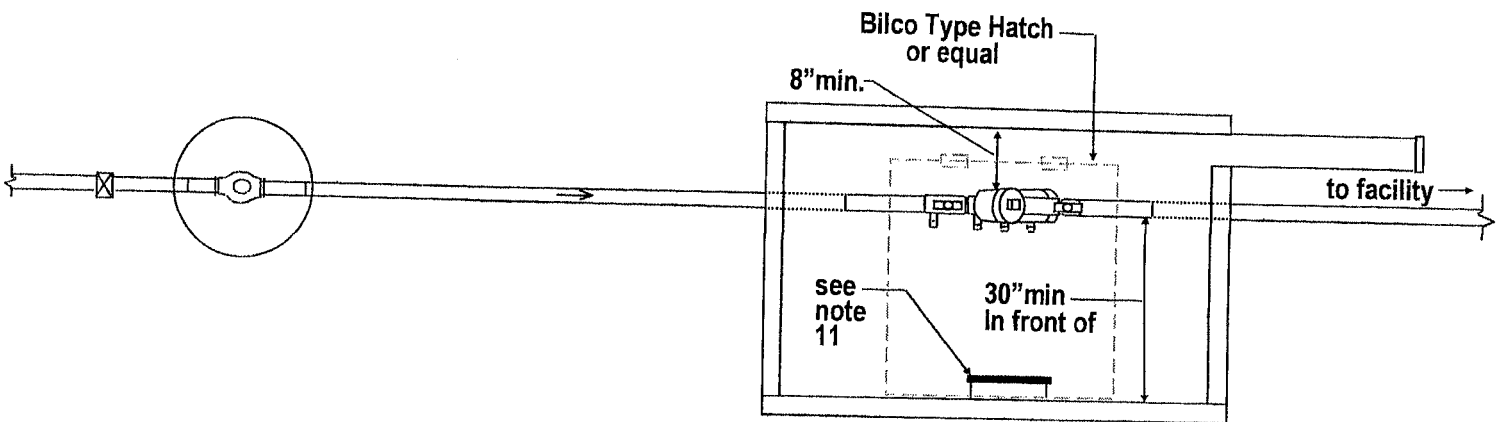
1. RPZ must be a Lead Free model.
2. RPZ must have USC Foundation for Cross Connection Control approval.
3. Must be protected against freezing.
4. Test cocks must be positioned to facilitate testing (30" minimum clearance).
5. All connections, T's, hose bibs, irrigation, etc. must be installed after (downstream) of RPZ.
6. Destination of drainage must be shown.
7. Drain pipe should be sized for maximum flow according to the manufacturer's discharge rates.
8. Drains must be screened and cannot be subject to flooding.
9. RPZ must be adequately supported to the floor (to prevent lateral movement). Supports must be placed where they will not obstruct the function of the relief valve.
10. Full opening hatch to encompass the centerline of RPZ.
11. Access ladder must be provided and cannot be on the hinged side of the hatch.
12. Diaphragm on Febco models must be on 30" clear side.
13. Perform proper maintenance as per manufacturer's requirements.
14. RPZ must be tested annually.



# RPZ (1"-2") INSTALLED IN LOW PROFILE BERM VAULT WITH SMALL METER VAULT



**SIDE VIEW**



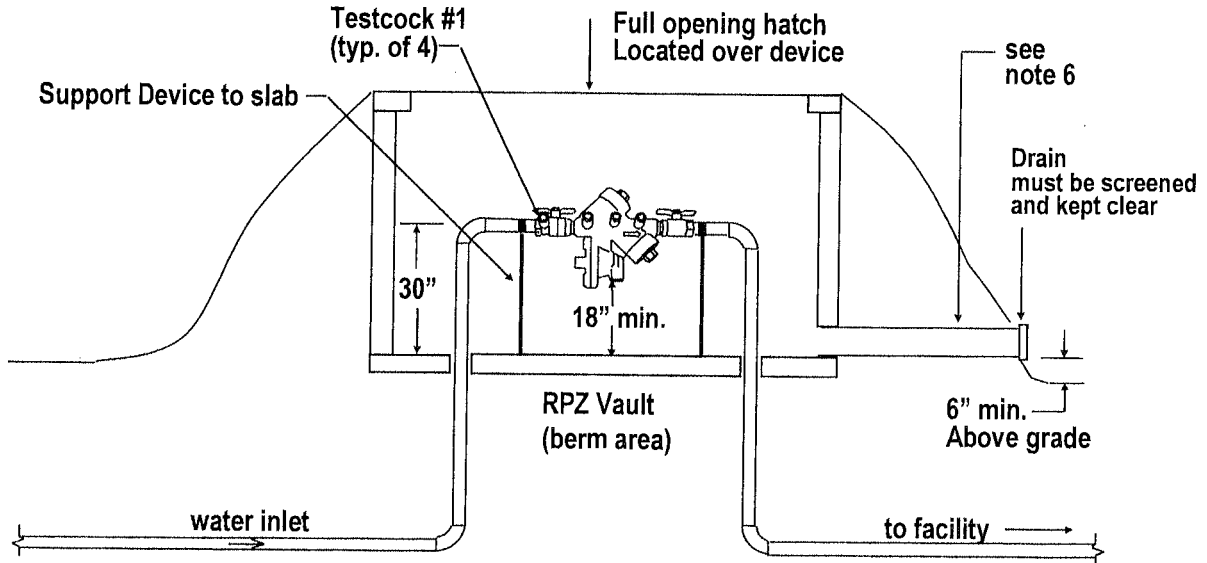
**PLAN VIEW**

**NOTES:**

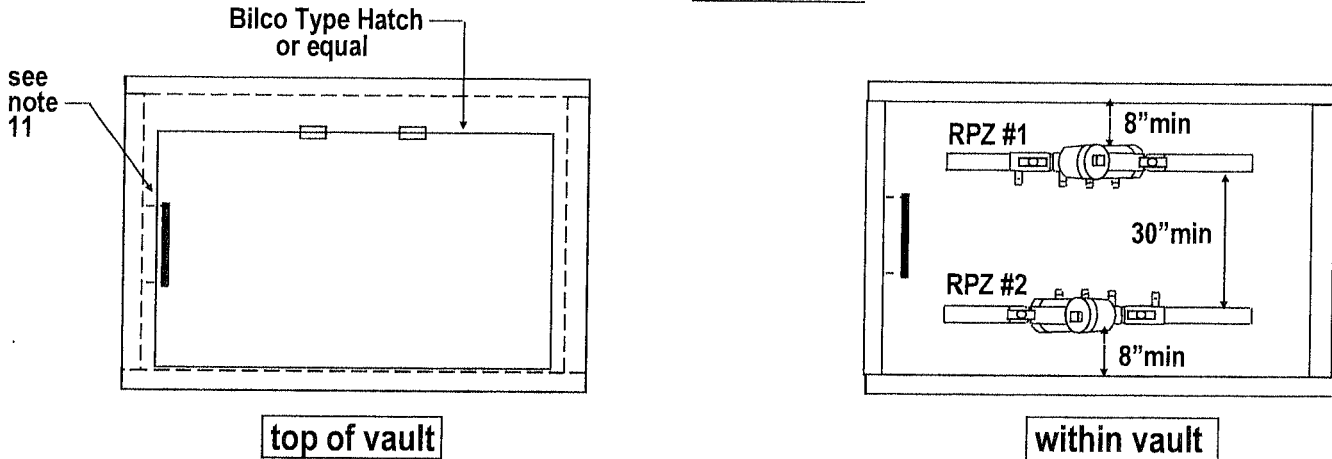
1. RPZ must be a Lead Free model.
2. RPZ must have USC Foundation for Cross Connection Control approval.
3. Must be protected against freezing.
4. Test cocks must be positioned to facilitate testing (30" minimum clearance).
5. All connections, T's, hose bibs, irrigation, etc. must be installed after (downstream) of RPZ.
6. Destination of drainage must be shown.
7. Drain pipe should be sized for maximum flow according to the manufacturer's discharge rates.
8. Drains must be screened and cannot be subject to flooding.
9. RPZ must be adequately supported to the floor (to prevent lateral movement). Supports must be placed where they will not obstruct the function of the relief valve.
10. Full opening hatch to encompass the centerline of RPZ.
11. Access ladder must be provided and cannot be on the hinged side of the hatch..
12. Diaphragm on Febco models must be on 30" clear side.
13. Perform proper maintenance as per manufacturer's requirements.
14. RPZ must be tested annually.



# DUAL DEVICES WITHIN THE SAME VAULT



**SIDE VIEW**



**PLAN VIEW**

## NOTES:

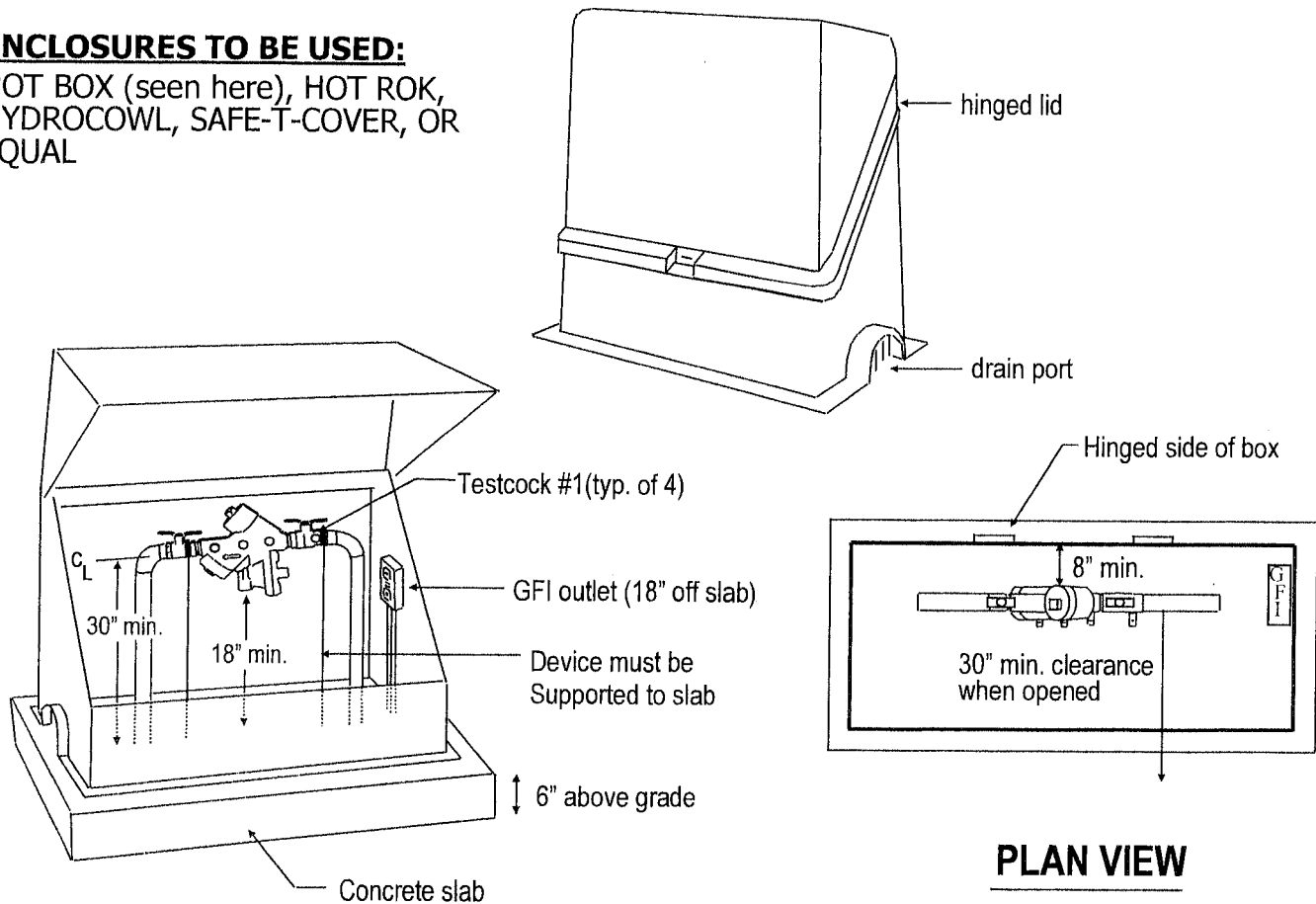
1. RPZ must be a Lead Free model.
2. RPZ must have USC Foundation for Cross Connection Control approval.
3. RPZ must be protected against freezing.
4. Test cocks must be positioned to facilitate testing (30" minimum clearance).
5. All connections, T's, hose bibs, irrigation, etc. must be installed after (downstream) of RPZ.
6. Destination of drainage must be shown.
7. Drain pipe should be sized for maximum flow according to the manufacturer's discharge rates.
8. Drains must be screened and cannot be subject to flooding.
9. RPZ must be adequately supported to the floor (to prevent lateral movement). Supports must be placed where they will not obstruct the function of the relief valve.
10. Full opening hatch to encompass the centerline of both devices. Length of hatch must be long enough to lift larger device thru opening (check to check).
11. Access ladder must be provided and cannot be on the hinged side of the hatch..
12. Diaphragm on Febco models must be on 30" clear side.
13. Perform proper maintenance as per manufacturer's requirements.
14. RPZ must be tested annually.



# INSTALLATION OF REDUCED PRESSURE ZONE (RPZ) DEVICE IN HEATED INSULATED ENCLOSURE

## ENCLOSURES TO BE USED:

HOT BOX (seen here), HOT ROK,  
HYDROCOWL, SAFE-T-COVER, OR  
EQUAL



**FRONT VIEW**

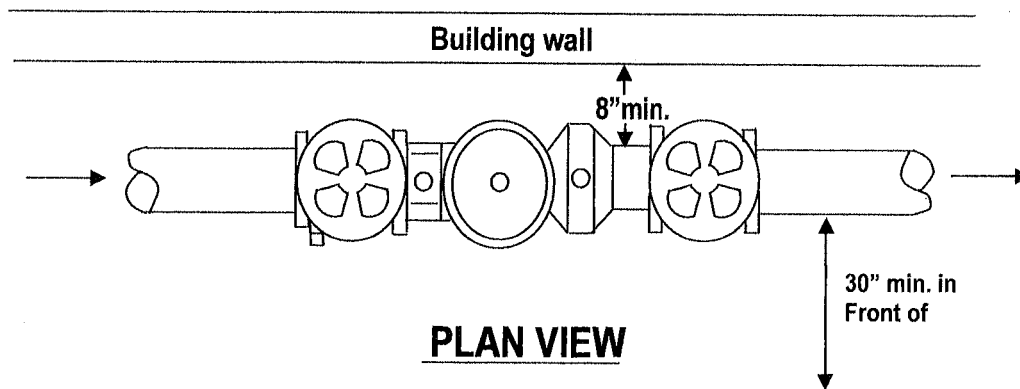
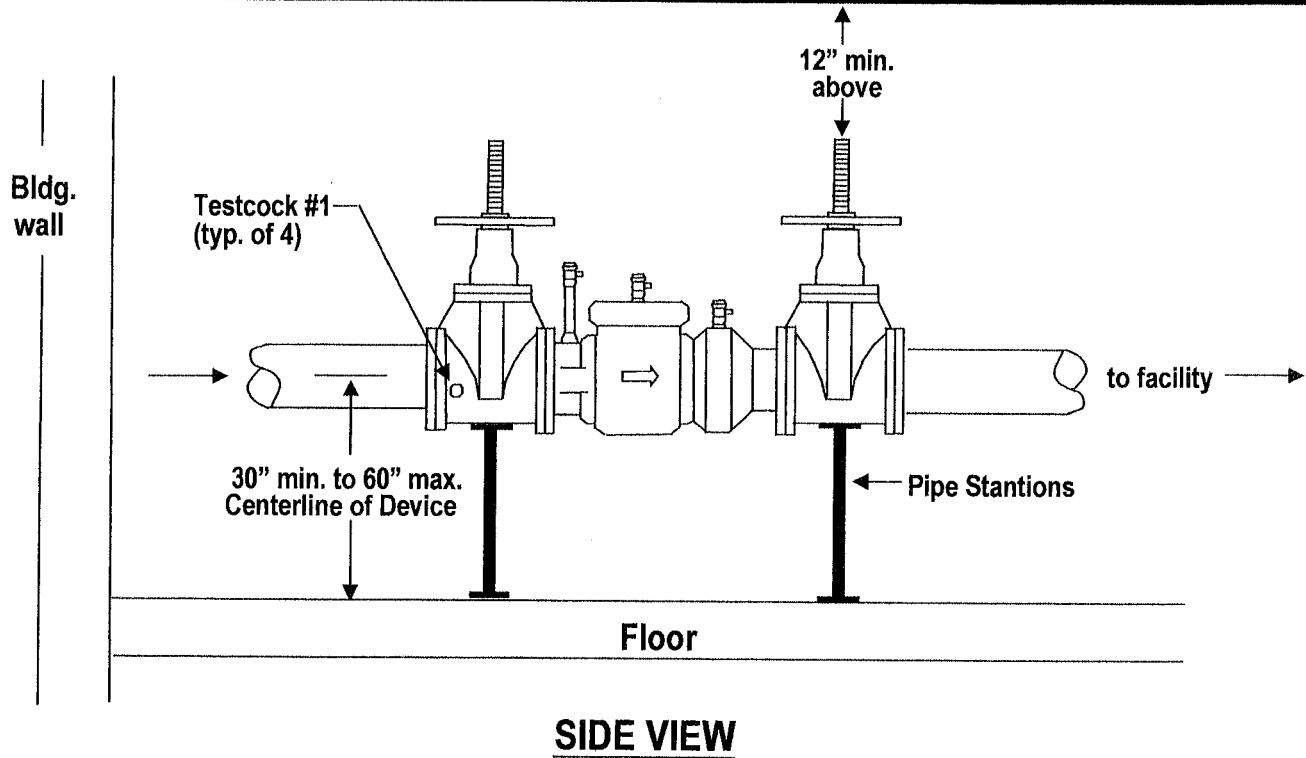
**PLAN VIEW**

## NOTES:

1. RPZ must be a Lead Free model.
2. RPZ must have USC Foundation for Cross Connection Control approval.
3. RPZ must be protected against freezing.
4. Adequate electric power required for heat trace tape and / or enclosure approved heater.
5. GFI outlet required within the enclosure (18" minimum above slab).
6. Test cocks must be positioned to facilitate testing (30" minimum clearance).
7. All connections, T's, hose bibs, irrigation, etc. must be installed after (downstream) of RPZ.
8. Enclosure must have screened weep holes for drainage and cannot be subject to flooding.
9. RPZ must be adequately supported to the concrete slab (to prevent lateral movement). Supports must be placed where they will not obstruct the function of the relief valve..
10. Enclosure must be N.Y. designation.
11. Concrete slab must be sized according to manufacturer's recommendations.
12. Diaphragm of Febco models must be on open side of enclosure.
13. Perform proper maintenance as per manufacturer's requirements.
14. RPZ must be tested annually.



# TYPICAL FIRELINE DOUBLE CHECK VALVE INSTALLATION



## NOTES:

1. DCV must be a Lead Free model.
2. DCV must have USC Foundation for Cross Connection Control approval.
3. DCV must be protected against freezing.
4. Adequate lighting must be provided.
5. Fire Dept Connection must be shown downstream of DCV.
6. Resilient seated valves required to be OS&Y on devices 2 1/2" or larger.
7. Test cocks must be positioned to facilitate testing (30" minimum clearance).
8. DCV must be adequately supported to either the wall behind or the floor (to prevent lateral movement). Sizes of 2" or more must be supported to the floor.
9. DCV may not be installed higher than 5' above the floor or an OSHA approved permanent platform is required.
10. SCWA only approves ductile iron pipe upstream of fire line backflow device.
11. Perform proper maintenance as per manufacturer's requirements.
12. RPZ must be tested annually.

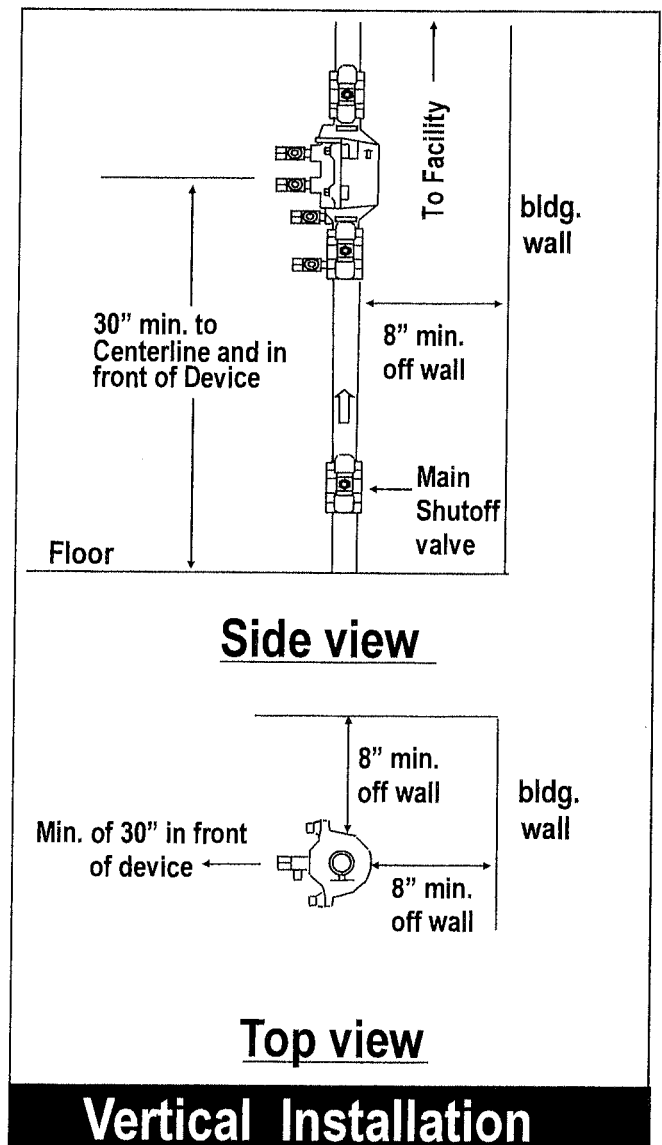
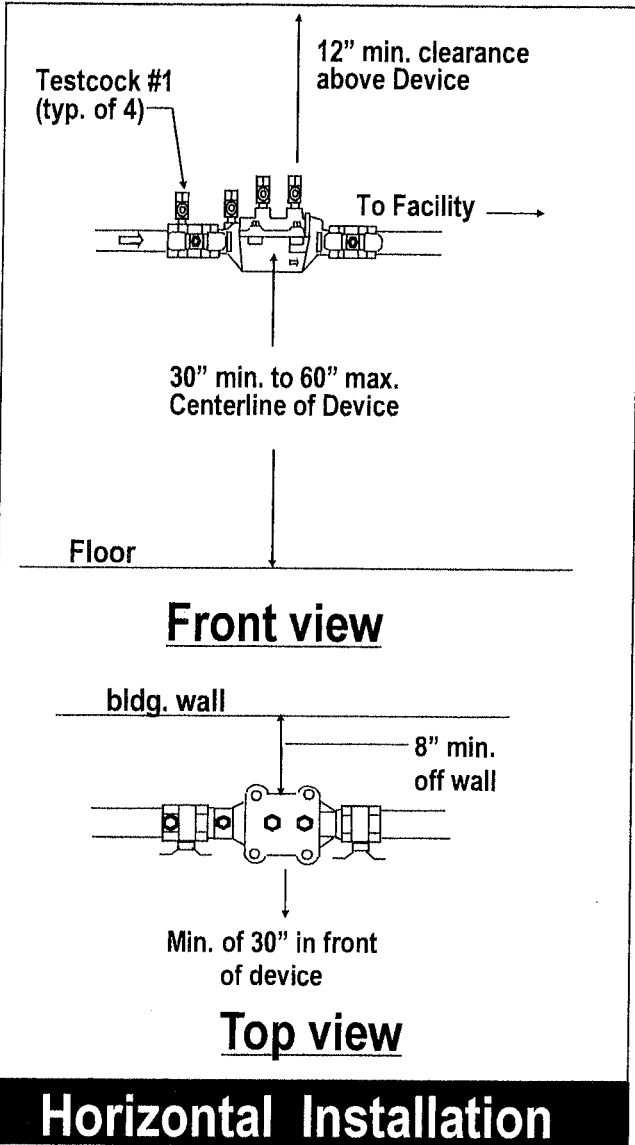
Design by: L. Wynhurst.

Drawn by: B. Wehnke

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# DOUBLE CHECK VALVE(DCV) INSTALLATION



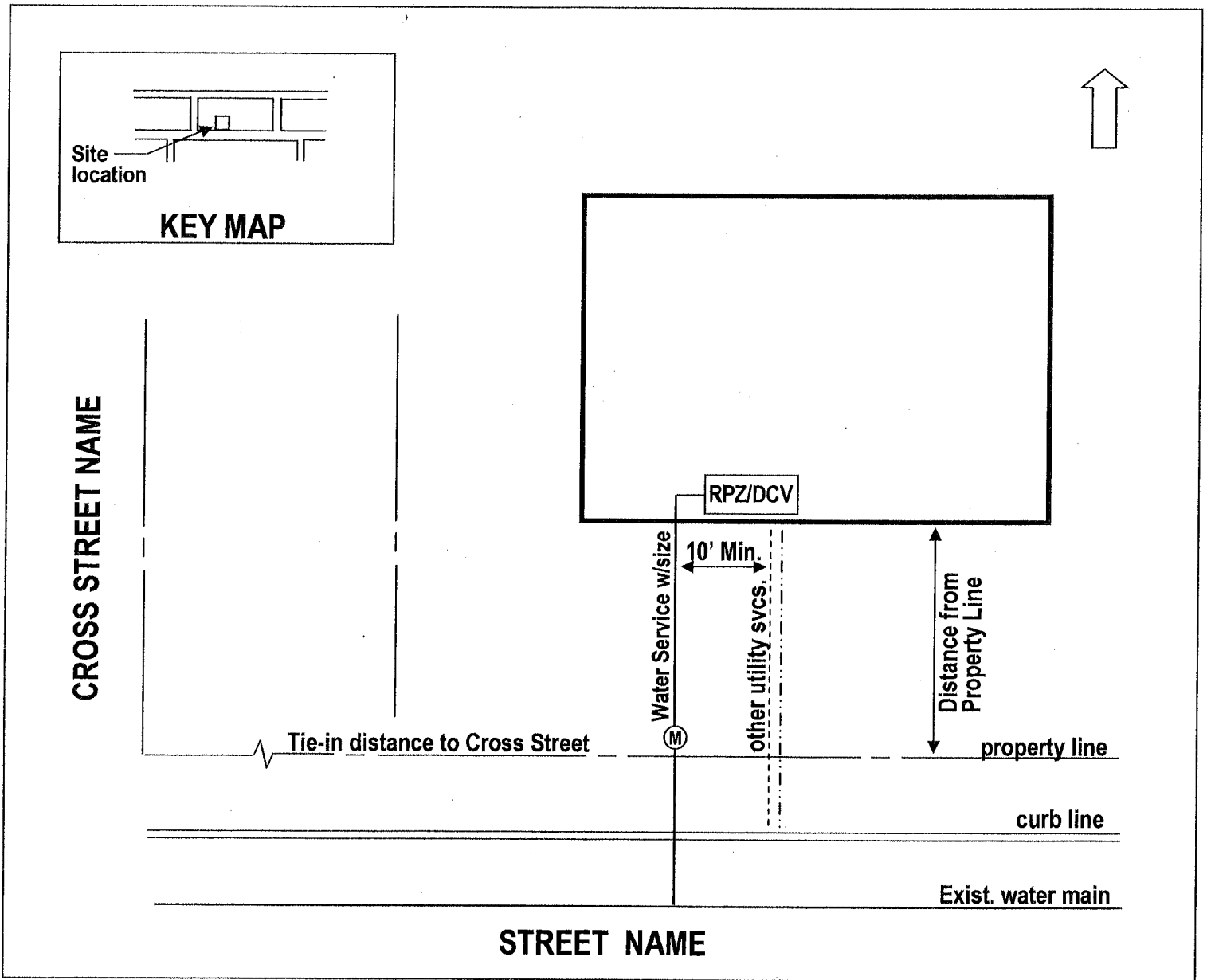
## NOTES:

1. DCV must be a Lead Free model.
2. DCV must have USC Foundation for Cross Connection Control approval.
3. DCV must be protected against freezing.
4. Adequate lighting must be provided.
5. A separate shut off valve is required upstream of the DCV.
6. Test cocks must be positioned to facilitate testing (30" minimum clearance).
7. All connections, T's, hose bibs, irrigation, etc. must be installed after (downstream) of DCV.
8. DCV must be adequately supported to either the wall behind or the floor (to prevent lateral movement).
9. DCV can be installed vertically if approved by USC Foundation for Cross Connection Control in vertical configuration.
10. DCV may not be installed higher than 5' above the floor or an OSHA approved platform is required.
11. Where the distance between the water meter and DCV is greater than 10' all exposed piping must be labeled every 5' displaying the words " feed line to Backflow Preventer DO NOT TAP ".
12. Perform proper maintenance as per manufacturer's requirements.
13. DCV must be tested annually.





# SITE PLAN IS REQUIRED



## **INDICATE THE FOLLOWING ON SITE PLAN:**

- 1) Location of existing water main.
- 2) Location of curb line
- 3) Location of property line
- 4) Location of water meter
- 5) Location and size of water service
- 6) Location of proposed RPZ/DCV device

- 7) Distance from property line to building.
- 8) Street Name
- 9) Cross Street name(s)
- 10) Distance from closest Cross Street
- 11) North Arrow
- 12) Key Map
- 13) Tax Map Number
- 14) A minimum of 10' is required from all existing and new utility service lines, drainage, driveways, catch basins, utility poles, trees, obstructions etc. to proposed water services

## **NOTE:**

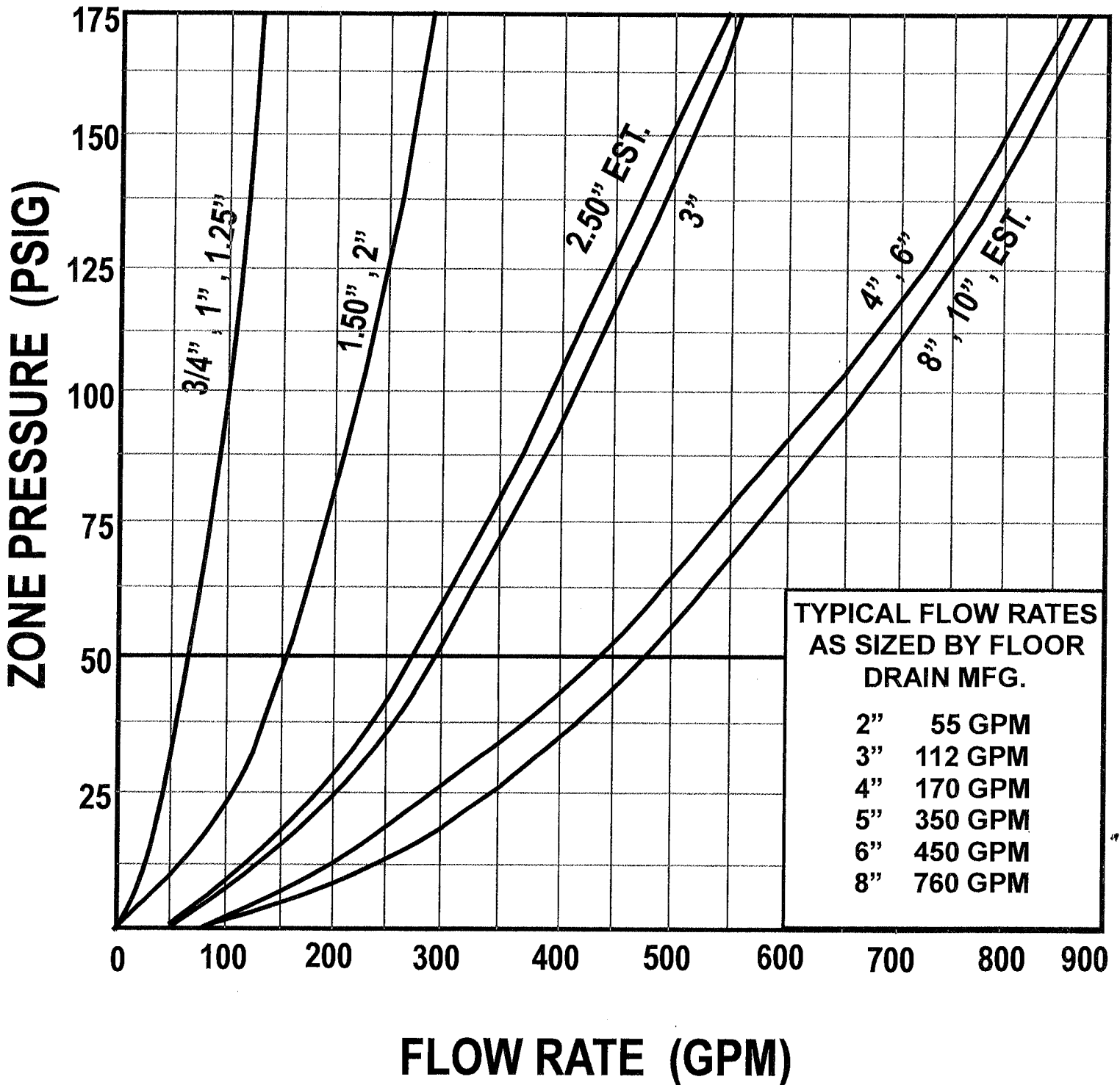
Maximum distance of 125' for RPZ / DCV to be acceptable inside a building. If service is greater than 125' than RPZ / DCV is required to be installed in an outside enclosure.

Design by: L. Wynhurst  
 Drawn by: B. Wehnke

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# SAMPLE RELIEF VALVE DISCHARGE RATES

(PLEASE REFER TO THE ACTUAL MANUFACTURER'S DISCHARGE RATE CHART)



Design by: L. Wynhurst.

Drawn by: B. Wehnke

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10