

Special Connection for Fire Service

Dear Customer,

Enclosed please find the following:

1. Policy regarding fire service connections.
2. Data Sheet for fire protection service for proposed fire service installation (*Attachment A*).
3. Backflow Prevention Survey (*Attachment B*).
4. Domestic Service Verification Form (*Attachment C*).
(*The purpose of the Domestic Service Verification Form is to inform you that application for domestic service is a separate process and to provide you with contact information for your domestic service application in the event that you have not already applied for domestic service*)
5. Specifications for fire service installation (*Attachment D*). Installation must be performed in accordance with these requirements.

Please read all information carefully. **Complete, and sign as required, the enclosed forms.** Return them along with plan submittal and other required documents to:

Kentucky American Water
ATTN: Fire Service Specialists (Engineering Dept)
2300 Richmond Road
Lexington KY 40502

(PLEASE NOTE: When work is in Fayette County, plans must be pre-approved by the LFUCG Division of Fire, Water Control Office, 101 E Vine St, Suite 514, Lexington, KY 40507; 859.258.3963)

Upon receiving this information, we will perform an engineering survey and evaluate your water requirements. After evaluation, the required paperwork will be prepared and sent to you for execution and you will be advised of the amount of deposit required.

If you have questions, please call 859.335.3822.

Sincerely,

Fire Service Specialists
Kentucky American Water

Enclosures

KENTUCKY AMERICAN WATER

Policy: Connections for Private Fire Service

Kentucky American Water has put into place certain safeguards to prevent unmetered water loss and undetected use of water. Although these requirements for private fire service connections have been in place for over a year, as of 5/1/07, Kentucky American Water is officially stating its policy regarding these safeguards and the connection of fire services to its system.

While each fire service installation may be accompanied by a detector meter at the backflow preventer, either in a vault or at the riser in the building, a private fire service connection is an unmetered connection to KAW's system. While still allowing some flexibility regarding the point where the fire service line enters the building, to prevent water loss on facilities not maintained by KAW and to prevent the undetected use of water, all private fire service connections that have a total distance of more than one hundred fifty (150) feet from the PIV to the point where the private fire service line enters the building will require the installation of a Protectus (master) meter at the point of connection to KAW's system. In certain cases, a main extension may be required to provide fire service to the property. This determination will be made by KAW at the time service is requested. In the event that a Protectus meter is required, please contact the Fire Service Specialists regarding backflow prevention requirements. A separate detector meter on the backflow preventer will not be required. The backflow preventer and any related structures or equipment will be installed by and maintained at the expense of the customer.

In the case of single-owner multiple building developments where each building requires fire service, each building that meets the 150-foot requirement will require a separate PIV. In such cases, a Protectus meter can be installed at the customer's option with all equipment after the meter, including PIVs, installed and maintained at the expense of the customer.

All costs for private fire service connections, including the installation of a Protectus meter, are borne by the customer. The installation of a Protectus meter will be accompanied by a monthly fixed meter charge based on meter size. Any water use registered on a Protectus meter will be billed at the same billing rate as the domestic water service to the property. Fire services with a bypass meter on the backflow preventer will be accompanied by a monthly fixed fire service charge.

KENTUCKY AMERICAN WATER
Data Sheet for Private Fire Protection Service

CUSTOMER INFORMATION

Name of Customer _____ Attn _____

(Legal name for which contracts are being prepared)

Mailing Address _____

Service Address _____

Who is the contact person for the Customer? _____ Phone Number _____

FIRE SERVICE INFORMATION

1. Size of connection _____
2. Proposed start date for installation of customer water facilities _____
3. The building to be served by the private fire protection service will be used as _____.
4. The building will have a roof construction of _____.
5. The building will be constructed of _____.
6. There will be _____ floors in the structure to be protected.
7. There will be _____ square feet requiring fire protection.
8. There will be _____ sprinkler heads in the building.
9. There will be _____ hose closets in the building.
10. The maximum height of sprinkler heads or hose closets above ground level will be _____ feet.
11. Distance from proposed PIV to point that private fire service line enters the building is 150' or less: Yes ____ No ____?
12. There will be _____ hydrants as part of this system surrounding the building. (Note: The various Authorities Having Jurisdiction in Kentucky American Water's service territory may have requirements concerning the spacing of fire hydrants relative to the location of the fire department connection and around the fire service loop. Include any requested fire hydrants on your plans or include the legend, "Additional hydrants not required per the Authority Having Jurisdiction." Make inquiry to the Authority Having Jurisdiction regarding requirements for periodic testing of privately owned hydrants.)
13. Fire Pump: Yes ____ No ____ (If yes, complete information below):
 Data: _____ GPM at _____ total head.
 (Also, include copy of the design pump curve. A certified pump curve is to be submitted after pump is certified by the manufacturer.
Submit written verification that the pump will be equipped with low suction pressure sustaining valve set to maintain 25 psi suction.)
 Pump curve is included: Yes _____ No _____ (check one)
 Pressure sustaining valve letter is included: Yes _____ No _____ (check one)
14. Fire flow requirements: _____ GPM at _____ psi residual pressure at the service connection to the water main at ground elevation of _____ (Note: Calculations for fire flows for the overall system are subject to the approval of the Authority Having Jurisdiction. The overall system includes the sprinkler system, hydrants behind the fire service connection, meters and backflow prevention devices.)
15. Five sets of site utility and sprinkler plans (to scale; 1:200 maximum) are enclosed. Yes _____ No _____ (check one)
16. Contractor for fire service (Name, address, phone #, email) _____
17. Who will pay the deposit? (Name, address, phone #) _____

BACKFLOW PREVENTER INFORMATION

1. Will any chemical or anti-freeze be added to water lines? Yes _____ No _____ (check one)
 (NOTE: If chemicals or anti-freeze are added at any later date, customer **MUST** notify Kentucky American Water).
2. Installation will include (check one): FCCCHR Approved Double Check Detector Assembly (DCDA) _____
 FCCCHR Approved Reduced Pressure Principle Detector Assembly (RPDA) _____
3. Manufacturer _____ Model _____ Size _____
4. Proposed orientation (check one): Horizontal (H) ____; Vertical Up (VU) ____; Vertical Down (VD) ____; Other _____ (List orientation)

THIS DOCUMENT PREPARED BY: _____ DATE: _____

CUSTOMER'S SIGNATURE: _____ DATE: _____



BACKFLOW PREVENTION SURVEY
(For non-residential customers)

Please complete and return this survey with your tap application so that we can determine the appropriate back flow device requirements for your new service. Should you have any questions or need assistance in completing this survey please call (859) 268-6310.

Service Address:

City:

Please answer the following questions if your service request is for **Commercial, Industrial, or Public Authority Account:**

- Check the box or boxes that best describes the use of water with your facility:

- Typical, such as bathrooms, drinking fountains, outside water faucets, household laundry or dishwashing appliances
- Private well(s) supplying any part of your facility
- Piped into a manufacturing process
- Piped into a chemical process
- Piped, underground lawn irrigation system
- Piped into a swimming pool
- Piped into water operated/cooled equipment/appliances

- Check the types of backflow prevention devices installed on your plumbing system.
(Residential Dual Check valves are not acceptable)

- None
- Reduced Pressure Zone device (RPZ)
- Testable Double Check Valve(DCV)
- Pressure Vacuum Breaker (PVB) –for use on underground irrigation systems only
- Other _____

Please answer the following questions if your service request is for **Fire Protection:**

- Check the box or boxes that best describes your fire protection account:

- This account serves private hydrants only (no fire sprinkler system in facility)
- This account serves an installed fire sprinkler system
- Fire sprinkler system has outside fire department connections for pumping into the system
- Fire sprinkler system contains antifreeze or other chemicals
- Fire sprinkler system is also supplied by an auxiliary source of water (i.e., pond, reservoir, or storage tank)

- Check the types of backflow prevention devices installed on your sprinkler system if applicable.

- None
- Reduced Pressure Zone device (RPZ)
- Double Detector Check Assembly (DDCA)
- Testable Double Check Valve (DCV)
- Other _____

IMPORTANT: If backflow prevention devices are installed on your plumbing/fire sprinkler system, they are required to be tested annually and copies of the test reports must be maintained on file with Kentucky American Water. If you do not have current copies of the test reports on file with us, please attach copies of the test(s) to this survey.

_____ Date

_____ Signature of person completing survey

_____ Phone Number

Please mail or fax completed survey to:

Kentucky American Water
2300 Richmond Rd.
Lexington, KY 40502
Attn. Cross Connection Supervisor



**KENTUCKY AMERICAN WATER
DOMESTIC SERVICE VERIFICATION FORM**

Application is being made for a Fire Service installation at _____

_____.

Domestic Service for this address is as follows:

- Previously applied for and pending installation.
- New service is required. Application will be made by calling the Kentucky American Water Tap Hotline (859.268.6379)
- Currently exists and is adequate for current demand.
- Currently exists, but is not adequate for current/future demand. Application to upsize this service will be made by calling the Kentucky American Water Tap Hotline (859.268.6379)

This verification has been reviewed and Domestic Service for this location is as indicated above.

(CUSTOMER/BUILDER)

(AUTHORIZED SIGNATURE)

(DATE)

KENTUCKY AMERICAN WATER

SPECIFICATIONS FOR FIRE SERVICE INSTALLATION (APPLICATION FOR SPECIAL CONNECTION)

Dear Applicant:

The following information has been prepared to help you in the design and installation of your private water facilities. This information is basically a summary of information contained in the Kentucky American Water ("KAW") Pipeline Installation Specifications (a copy will be provided on request) and the Application for Special Connection Agreement, which will be mailed to you for completion at a later date.

All documents/information below must be submitted before an application will be considered:

___ A fully completed Data Sheet for Private Fire Protection Service. Customer should first determine the location and size of the water main from which service is to be taken by calling the Kentucky American Water Fire Service Installation Department at 859.335.3822.

___ Five (5) copies of drawings (to scale; 1:200 maximum), which must include:

- ___ Separate fire service lines from KAW main to the building.
- ___ Separate domestic lines from KAW main to the building.
- ___ Existing and proposed fire hydrants.
- ___ Location and detail of double check detector assembly or reduced pressure principle detector assembly ("RPDA") (with any additive to the system, an approved RPDA, built above ground, is required).
- ___ An accurate vicinity sketch showing the nearest cross streets.
- ___ The street on which the tap is to be made and the nearest cross street are to be clearly labeled on the drawing (If this is not possible due to distance, note on your drawings the distance in feet from the location of the proposed fire service tap on the KAW main to the immediately adjacent curb line of the nearest cross street).
- ___ For work in Fayette County, plans must be pre-approved by the LFUCG Division of Fire Water Control Office. The approval letter from the Water Control Office must be included with your submission.

___ The drawings shall include a schedule of materials to be used. These materials shall be in accordance with those approved for use by Kentucky American Water (Refer to "Material Requirements" included in the package).

___ A copy of the manufacturer's specification sheet for the backflow preventer that is being installed. Note that the backflow preventer must be approved by the Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California (FCCCHR) as to manufacturer/model and orientation of installation.

___ The drawings shall contain a statement that, "All work is to be done in accordance with Kentucky American Water Pipeline Installation Specifications and the Application for Special Connection and is subject to inspection and approval of Kentucky American Water prior to backfilling."

Plans will be reviewed by Kentucky American Water and, if approved, will be stamped "Approved" and dated. One approved copy of the drawings will be returned to the party submitting the request. The remaining copies will be retained for use by Kentucky American Water for work order development, field inspections and fire flow tests, if required. One copy will be forwarded to the Kentucky American Water Cross-connection Supervisor. If corrections are required, they will be so noted on the drawings and returned to the applicant for correction.

The following criteria must be met before construction can begin and during construction:

1. A Kentucky American Water work order will not be processed for approval until the customer has submitted the deposit and required paperwork.
2. Installation of the fire service will be scheduled after materials are received. Materials will be ordered upon receipt of the required deposit and completed paperwork (*Application for Special Connection, New Tap Application and Service Contract*). There is a delivery time of approximately 30 days for materials.
3. All private facilities must be available during installation for inspection by the Kentucky American Water Engineering/Network Department and by the Kentucky American Water Cross-Connection Control Department.
4. All facilities must be installed and approved by Kentucky American Water as well as the other Authorities Having Jurisdiction prior to initiation of service by Kentucky American Water.
5. The contractor installing the private facilities must have a Kentucky American Water approved copy of the plans on hand at all times.

Other:

1. Kentucky American Water will locate and set an indicator post and valve at the property line abutting the water main, usually behind the sidewalk. The customer's sprinkler contractor will make the tie-in.
2. Customer is responsible for any future maintenance of the facilities beyond the indicator post to the private facilities. The indicator post and valves will be maintained by Kentucky American Water at the expense of the customer.
3. The backflow preventer is required to be tested annually. This test is at the expense of the customer.
4. Fire systems that require a pump will have a suitable pressure sustaining valve installed by and at the expense of the customer.

General steps for Fire Service Installation (Internal Process):

1. Fire Service plans and fully completed data sheet along with other required information are submitted to Kentucky American Water by the Customer or their representative.
2. When approved, the plans are sent to the Kentucky American Water Drafting Department for preparation of a drawing to include the proposed facilities.
3. The drawing is forwarded to the Fire Service Specialists for field inspection
4. After field inspection, the project is bid.
5. After the bid is awarded, a deposit request is prepared and sent to the Customer along with an Application for Special Connection, New Tap Application and Service Contract.
6. After the deposit and executed agreements (Item 5) are returned to Kentucky American Water, materials for the project are ordered and installation is scheduled.

MATERIAL REQUIREMENTS

Pipe Material Requirements

DUCTILE IRON PIPE 4" THROUGH 12"

Ductile iron pipe shall be Class 50 with a rated working pressure of 350 psi and conform to the latest standards as adopted by the American National Standards Institute, Inc. (ANSI), and the American Water Work Association (AWWA). Specifically, ductile iron pipe shall conform to ANSI/AWWA C151/A21.51.

The pipe shall be coated outside with a bituminous coating in accordance with ANSI/AWWA C151/A21.51. The pipe interior shall be cement mortar lined and seal coated in compliance with the latest revision of ANSI/AWWA C104/A21.4. The cement mortar lining shall be double thickness.

PVC PIPE 4" THROUGH 12"

PVC pipe shall conform to the latest edition of AWWA Standard C900 with elastomeric-gasket couplings in accordance with this standard. The use of solvent cement connection shall not be allowed.

Pipe shall be furnished with cast iron pipe equivalent outside diameter and the pressure class shall be at least 150 psi.

All pipe sized 3" and less shall be of Class 250 PVC.

FITTINGS

Gray-Iron and Ductile-Iron Fittings 4" through 12"

Fittings shall be gray-iron or ductile-iron conforming to ANSI/AWWA C110/A21.10. (Ductile-iron fittings meeting the requirements of ANSI/AWWA C153/A21.53 T are acceptable where applicable.) All fittings are to be mechanical joint. The use of solvent cement connections shall not be allowed.

Gate Valves 3” through 12”

Gate valves shall be iron body resilient seated, or double disc, parallel seats, bronze mounted, rubber ‘O’ ring packing seals, and conforming to AWWA C509. All valves shall have openings through the body of the same circular area as that of the pipe to which they are attached. A valve box is to be installed over each valve. For details, refer to the Kentucky American Water Pipeline Installation Specifications.

All valves shall be designated for an operating pressure of 200 pounds per square inch (psi) unless otherwise directed by Kentucky American Water.

All valves shall have mechanical joint ends unless otherwise designated on the plans and approved by Kentucky American Water.

Gate Valves 2” and Smaller

Gate valves 2” and smaller that are not in the meter pits must be cast iron body valves with 2” square operating nuts. Such valves shall be installed in valve boxes. Underground valves smaller than 2” are to be of brass, curb stop type, placed in valve boxes. (Note: Brass wheel gate valves are unacceptable in underground installations.) Valve arrangement must be approved by Kentucky American Water.

Please refer to the Kentucky American Water Pipeline Installation Specifications for valve box installation diagram.

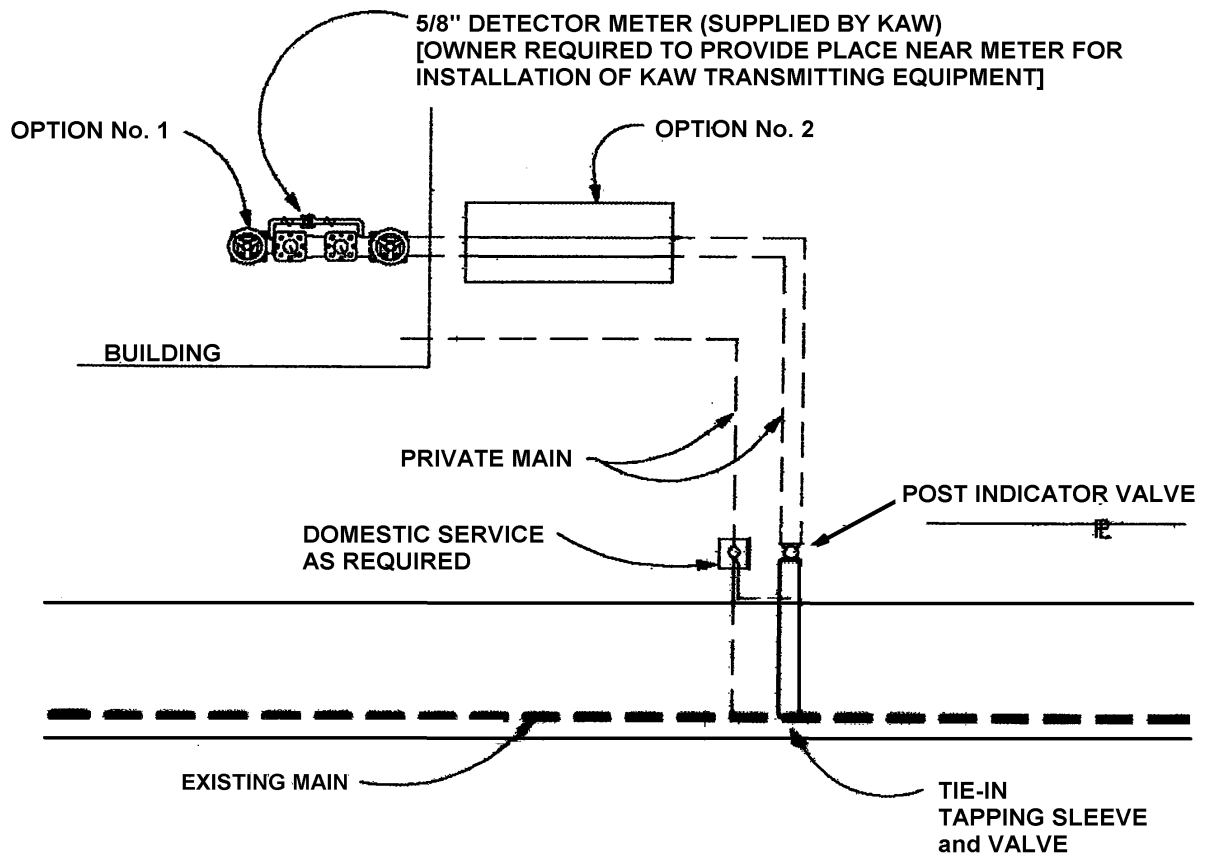
Domestic Services & Settings

Water necessary for use other than fire protection will be supplied through a domestic service and setting. These services will be sized according to the needs of the facility for which application is made.

FIRE SERVICE INSTALLATION DIAGRAM

LEGEND:

- OPTION No. 1 - BACKFLOW DETECTOR ASSEMBLY INSTALLED INSIDE BUILDING
 - OPTION No. 2 - BACKFLOW DETECTOR ASSEMBLY INSTALLED OUTSIDE BUILDING IN VAULT.
[NOTE: ABOVE GROUND INSTALLATION REQUIRED FOR AN R.P. DEVICE]
- BOTH OPTIONS WILL BE INSTALLED PER KAW SPECIFICATIONS (ATTACHED)



NOTES:

1. OWNER WILL TEST AND INSPECT BACKFLOW DETECTOR ASSEMBLY ANNUALLY.

INSTALLATION SPECIFICATIONS FOR BACKFLOW PREVENTER

INSIDE BUILDING INSTALLATION

Horizontal Installation:

- Minimum clearance from lowest point of device to floor – 12”
- Maximum clearance from lowest point of device to floor – 36”
- Adequate clearance from valves to ceiling or other piping for valve operation and maintenance (refer to manufacturer’s specs)
- 12” minimum clearance on one side from widest outside of device to wall or other piping
- 24” minimum clearance on opposite side from widest outside of device to wall or other piping
- Adequate clearance from walls on each end for operation of valves and maintenance; minimum 12”

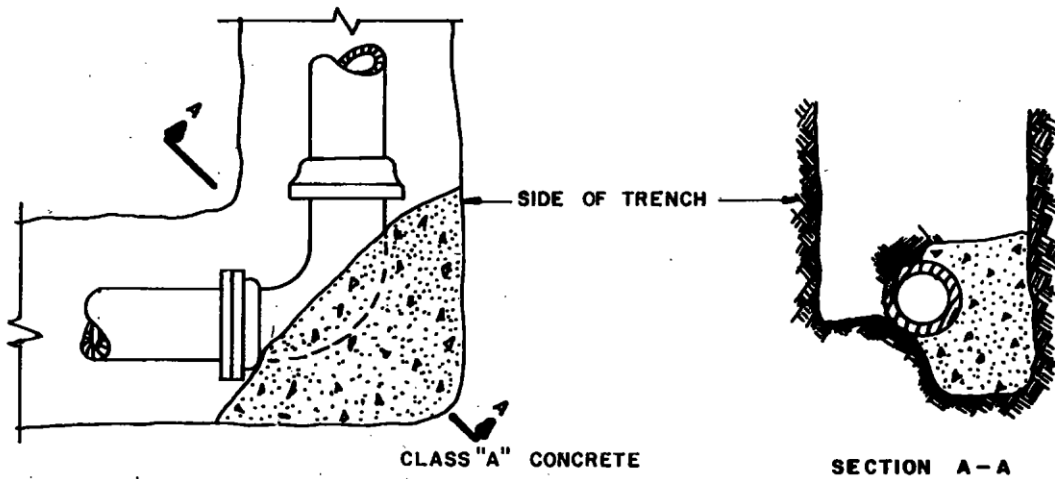
Vertical Installation (Backflow preventer must be approved by the FCCCHR for vertical installation):

- Minimum clearance from horizontal bottom of device to wall – 12”
- Maximum clearance to vertical bottom of device from floor – 36”
- Adequate clearance from valves to walls or other piping for valve operation and maintenance (refer to manufacturer’s specs)
- 12” minimum clearance on one side from widest outside of device to wall or other piping
- 24” minimum clearance on opposite side from widest outside of device to wall or other piping
- Adequate clearance from floor and ceiling for operation of valves and maintenance, minimum 12”

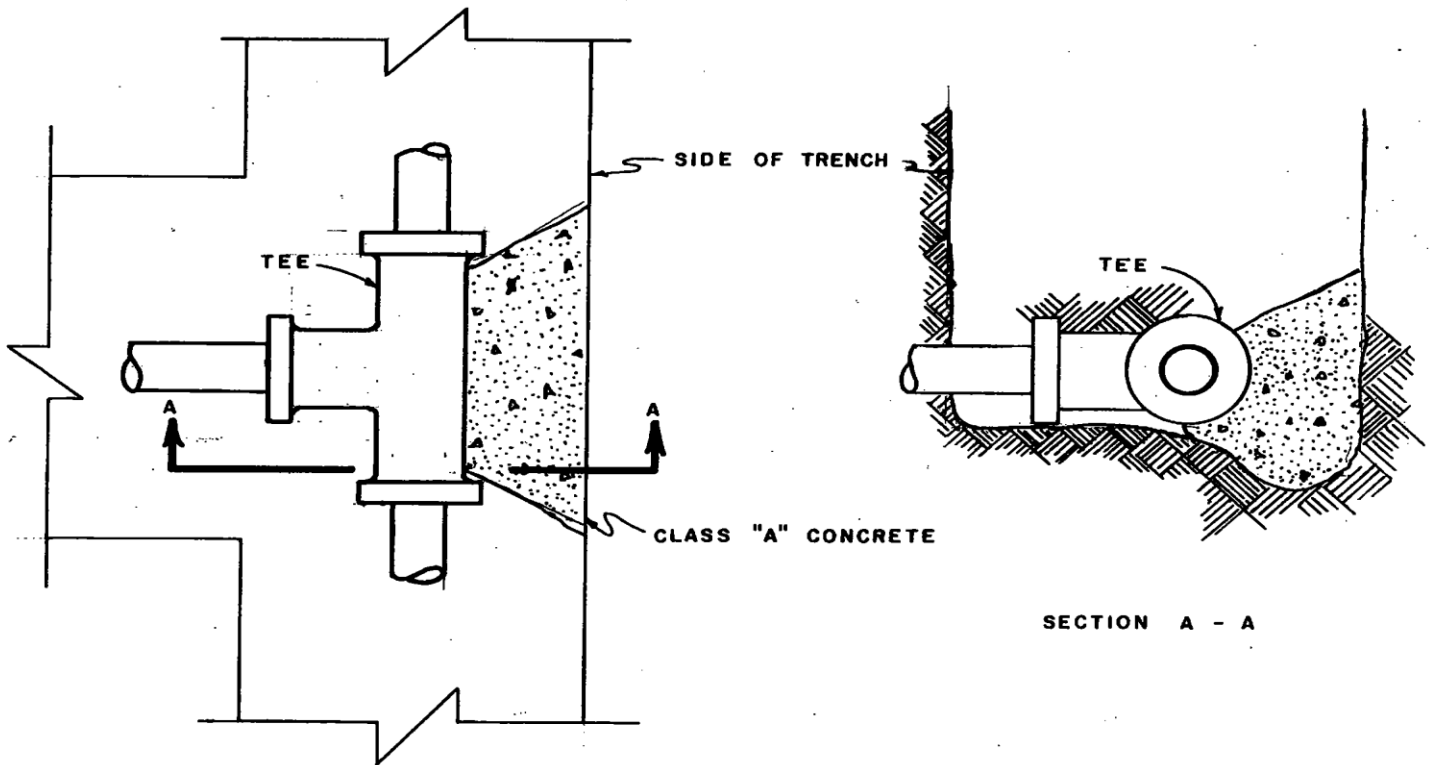
VAULT INSTALLATION (Horizontal installation only)

- Concrete blocks; cores poured solid with concrete; pre-cast is also acceptable
- Reinforced concrete top with a minimum 6” thickness; #5 rebar at 9” each way
- Minimum clearance from lowest bottom of device to vault floor – 12”
- Maximum clearance from lowest bottom of device to vault floor – 36”
- Adequate clearance from valves to ceiling of vault for valve operation and maintenance (refer to manufacturer’s specs)
- 12” minimum clearance on one side from widest outside of device to wall
- 24” minimum clearance on opposite side from widest outside of device to wall
- Length of vault = Complete DCDA or RPDA +valves + all pipe and appurtenances + 12” on each end or more clearance as required for adequate operation of valves and maintenance
- Bilco Door – minimum 30” square
- Any vault 5’ deep and over requires a ladder and a “ladder-up” post
- Maximum depth of vault to be 7’

NOTE: INSTALLATIONS THAT DO NOT MEET THESE SPECIFICATIONS ARE AT RISK OF REJECTION ON POST-INSTALLATION INSPECTION BY THE KENTUCKY AMERICAN WATER CROSS-CONNECTION PREVENTION DEPARTMENT.



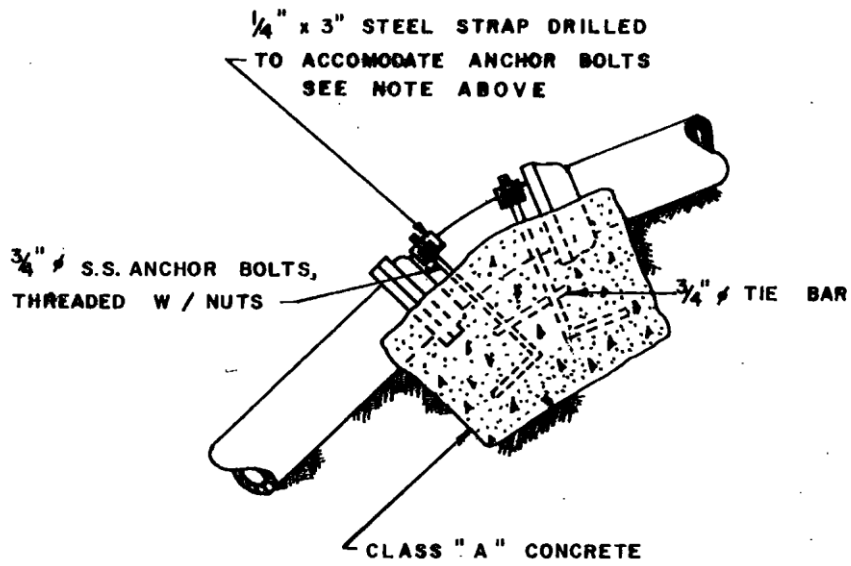
**CONCRETE THRUST BLOCK
FOR
11 $\frac{1}{4}$ °, 22 $\frac{1}{2}$ °, 45°, 90° BENDS**



**CONCRETE THRUST BLOCK
FOR
TEES**

NOTE:

PROTECTIVE COATING FOR BOLTS TO BE AS SPECIFIED IN SECTION 15000-2 OF THESE SPECIFICATIONS.



**ANCHOR BLOCKS
FOR
VERTICAL BENDS**