



CITY OF AKRON
DEPARTMENT OF PUBLIC SERVICE
PUBLIC UTILITIES BUREAU

AKRON WATER WORKS

STANDARD CONSTRUCTION DRAWINGS AND SPECIFICATIONS

DONALD L. PLUSQUELLIC, MAYOR
RICHARD A. MEROLLA, DIRECTOR OF PUBLIC SERVICE
MICHAEL L. MCGLINCHY, PUBLIC UTILITIES BUREAU MANAGER

Revised Date: 3/07

TABLE OF CONTENTS

<u>Page No.</u>		<u>Drawing No.</u>
1	Minimum Plan Submittal Requirements	Acc. F-15002
2	Water Line Notes	Acc. F-14907
3	Approved Pipe, Fittings, Bolts, Etc. for Akron System Water Main Installations	Acc. F-14908
4	Recommended Pipe Sizes	Acc. F-7146
5	Standard Meter Settings, 5/8", 3/4", and 1" Disc Meters	Acc. F-12933
6	Standard for Curb Meter Setting	Acc. F-7162
7	Standard Manifold Meter Setting, 5/8", 3/4", and 1" Disc Meters	Acc. F-13423
8	Standard Meter Setting, 1 1/2 " and 2" MVR Meters	Acc. F-7118
9	Standard for 1 1/2" and 2" Meter Pit Setting	Acc. F-17935
10	Standard Large Meter Installation	Acc. F-13380
11	Standard Fire and Domestic Manifold Setting (conventional installation)	Acc. F-19661
12	Standard Fire and Domestic Manifold Setting (stacked installation)	Acc. F-19662
13	Double Check Detector Assembly	Acc. F-14964
14	Precast Meter Vault Standards	Acc. F-14963
15	Reduced Pressure Principle Backflow Prevention Assembly Installation Requirements	Acc. F-13859
16	Double Check Valve Backflow Prevention Assembly Installation Requirements	Acc. F-13860
17	Reduced Pressure Detector Assembly Installation Requirements	Acc. F-15101
18	Double Check Detector Assembly Installation Requirements	Acc. F-14909
19	Approved Installations of Backflow Prevention Assemblies	Acc. F-14281
20	Typical Concrete Thrust Blocking	Acc. F-14295
21	Mechanical Joint Ductile Iron Follower Glands	Acc. F-14278
22	T-Bolt and Nut	Acc. F-14279
23	Restrained Joint Pipe	Acc. F-16771
24	Hydrant Run and Hydrant Installation	Acc. F-13218
25	Standard Valve Box	Acc. F-15038
26	Lawn Irrigation	Acc. F-14280
27	Murdock Yard Hydrant Installation	Acc. F-14282



PUBLIC UTILITIES BUREAU
AKRON WATER WORKS
UTILITIES ENGINEERING

**MINIMUM PLAN SUBMITTAL REQUIREMENTS
PROJECT REVIEW**
(TWO PRINTS EACH)

NOTICE:

Akron Water Works (AWW) Rules and Regulations shall apply for all project review including AWW Standard Construction Drawings and Specifications, subject to change or as revised without prior notice.

Building permit will not be released until all drawings have been received with all corrections made and the complete set of plans is approved, including fire protection drawings (see Exception Note No. 5).

The following requirements and notes are not intended as a complete list of AWW Rules and Regulations but to be used as a guide to clarify some of the minimum information necessary for plan review.

1. Parking Lots/Landscaping/Signage/Miscellaneous Projects
 - A. Site Plan
 - B. Landscape Plan
 - C. Lawn Irrigation - with meter and backflow preventer shown
 - D. Underground Utilities Plan - includes private fire hydrants
2. Building Remodeling and/or Alterations (interior construction only)
 - A. Site Plan⁽¹⁾
 - B. Floor Plan
 - C. Plumbing/Mechanical Plans
 1. Plan and Isometric View - existing and proposed fixtures⁽²⁾
 2. Plan and Section View - existing and proposed meter setting and backflow preventer⁽³⁾
 - D. Fire Protection Plan
3. New Building Construction, Expansion and/or Additions
 - A. Site Plan
 - B. Utilities Plan
 - C. Lawn Irrigation
 - D. Plumbing/Mechanical Plans⁽⁴⁾
 1. Plan and Isometric View - existing and proposed fixtures⁽²⁾
 2. Plan and Section View - existing and proposed meter settings and backflow preventers
 - E. Fire Protection Plans⁽⁵⁾

NOTES:

- (1) This requirement may be waived in most cases as determined by AWW. A complete address with the property owner's name may be substituted.
- (2) The existing fixtures plan may be waived as determined by the AWW, where it is impractical for large commercial/industrial type buildings with extensive piping systems.
- (3) The existing meter setting and backflow preventer drawings may not be required, as determined by the AWW if there is an existing backflow preventer and it has been tested within the last year and the report is on file. For projects with existing backflow preventers that have not been tested within the last year, retest and send in test report to the Backflow Program. Projects that require new backflow preventers shall be shown on the plans with existing and/or proposed meter settings. Label all pipe, fittings, make/model, size and type of all assemblies.
- (4) Shall include existing and/or proposed meter settings and backflow preventers detailing the following items:
 - A. Meter vault or interior water entry detail with meter setting.
 - B. Label size/type of meter, backflow preventer, piping, including valves and fittings.
 - C. Show distances and dimensions to walls, floor, drains, etc.
 - D. Width, length, ceiling height of interior mechanical room or meter vault.
- (5) Interior fire sprinkler drawings may be submitted at a later date for only those projects that require a new water service installation. The building permit will be conditionally released subject to receipt of the sprinkler drawings. Plans must be received for review and approval prior to the service installation.



PUBLIC UTILITIES BUREAU
AKRON WATER WORKS
UTILITIES ENGINEERING

WATER LINE NOTES

No water service will be installed until all requirements of the Akron Water Works are met, including but not limited to the following:

1. Review and approval of all building plans.
2. Receipt of the applicable fees.
3. Approval of the houseline installation and appurtenances.
4. Approval of the fire system
 - A. Review and approval of sprinkler plans
 - B. Receipt of a signed contractor's pressure test report.
 - C. Proof of State certified contractor to install underground fire line and registration with City of Akron Building Inspection Division or applicable political subdivision.
 - D. Obtain sprinkler/suppression permit for underground fire line installation with City of Akron Building Inspection Division or applicable political subdivision.

All on-site water line piping and appurtenances shall be installed according to Water Department specifications and must be inspected and approved by the Water Distribution Division (375-2420) prior to backfilling.

All underground pipe 2 inches and smaller shall be Type "K" soft copper with flared fittings. Compression fittings may be used on 12 inch and 2 inch pipe. Pipe shall be installed with 4 feet 6 inches of cover.

All underground straight lengths of pipe larger than 2 inches shall be Class 53 cement lined ductile iron with push-on joints including two brass wedges per joint. Pipe shall be installed with 4 feet 6 inches of cover. See detailed specifications for approved pipe, fittings, bolts, etc., for water line installation (Acc. #14908).

Maintain a 10 foot horizontal clearance from edge of water line to edge of sanitary and storm sewer pipes.

Maintain an 18 inch minimum vertical clearance from edge of water line to edge of sanitary and storm sewer pipes where they cross.

Maintain a 12 inch vertical clearance from edge of water line to edge of gas, electric, etc.

Maintain a 5 foot minimum horizontal clearance from edge of water line to edge of gas line(s), electric line(s), communication line(s), etc.

Requirements for an Inside Meter Setting:

1. Easily accessible
2. Adequate headroom
3. Properly heated
4. Floor drain within five feet of meter
5. Houseline not longer than 200 feet
6. Meter must be set within one foot of where line enters building.
7. In buildings with interior meter setting without basements, houseline must be installed in an AWW approved conduit from one foot outside footer to above floor slab (houselines 2 inch and smaller).
8. Buildings with interior meter settings not on outside wall, the houseline must be installed in a continuous AWW approved conduit from outside building footer up through floor slab (houseline 2 inch and smaller).
9. Houseline installed under paved areas for inside meter setting must be in an AWW approved conduit from street right-of-way to inside building.

If the interior meter setting does not meet all the above requirements, then the meter must be installed at the street in a curb meter pit or an approved meter vault.



APPROVED PIPE, FITTINGS, BOLTS, ETC. FOR AKRON SYSTEM WATER MAIN INSTALLATIONS

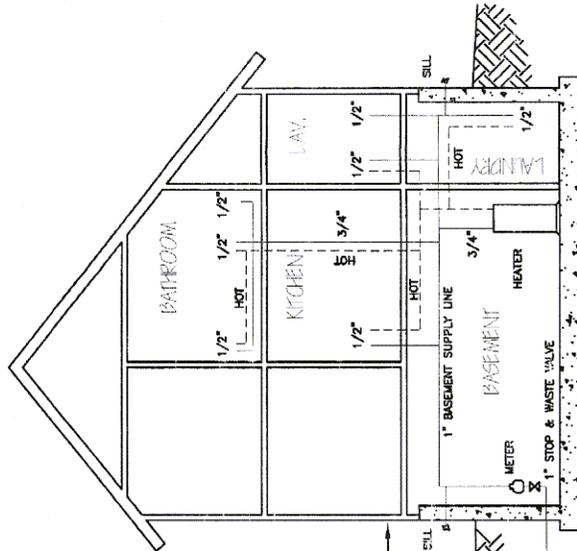
Pipe:	Class 53 ductile iron per AWWA C151 specifications, with cement-lining per AWWA C104. Labeled polyethylene encasement per AWWA C105 is required.
Pipe Joints:	Push-on joints (Tyton, Bell-Tite, etc.), per AWWA C151 specifications with plain or restraining rubber gaskets per AWWA C111 specifications.
Fittings:	Class 350 ductile iron compact fittings per AWWA C153 or full thickness castings per AWWA C110 are acceptable, with mechanical joint ends and ductile iron follower glands. Anchor pipe is required on all hydrant runs between the tee and hydrant run valve.
Restrained pipe systems:	Push-on joint with Field Lock (4 through 12 inch only) or Fast Grip gaskets (4 through 12 inch only), or mechanical joint with restrained follower glands, and 6 ounce zinc anode caps on every other bolt thread. Super Lock, TR Flex or Flex-Ring required on all 16 inch or larger pipe diameters.
Restrained fitting devices:	All valves, bends, offsets, hydrant inlets, caps, plugs, and branches of tees and wyes must be restrained using mechanical joint with restrained follower glands or restraining gaskets. Hardwood blocking is required for all diameters 4 through 8 inch, concrete blocking and strapping for all diameters 12 inch and larger. Concrete blocking is required on all fire lines and on all diameters in areas over 100 psi. Restrained joints for diameters 12 inch and under shall be installed for a length of 30 feet on each side of a valve, bend or offset using Field-Lock or Fast-Grip restraining gaskets or mechanical joint with restrained follower glands. Restrained joints for diameters 16 inch and larger, shall be installed for a length of 30 feet on each side of a valve, bend or offset using mechanical joint with restrained follower glands.
Mechanical Joint T-head Bolts:	All mechanical joints shall be made with Cor-Ten or construction-grade alloyed ductile iron bolts. T-head bolts shall be ½ inch longer than standard length and must include a 6 oz. zinc anode cap on every other bolt thread.
Hydrants:	Akron-style Mueller "Centurian" Model A423, Kennedy "Guardian" Model K-81A, American Flow Control Model B62B with 6 inch inlet, American Flow Control Model B84B with 8 inch inlet. Threads shall be Akron style as shown on Akron Water Works Standard Construction Drawings F-3258 and F-3440.
Gate Valves:	Resilient-seat wedge (RSW) valves with restrained mechanical joints. Valves shall have non-rising stems and shall open to the right (clockwise).
Butterfly Valves, 16 Inch and up:	Restrained mechanical joint or shouldered (not grooved) Victaulic ends with Style 44N couplings and stainless steel 316 bolts. Rubber seals in the valve must be replaceable. Flanged end or wafer-style valves are not acceptable.
Valve Boxes:	Only Bibby, Tyler, East Jordan, or Bingham and Taylor brands acceptable for compatibility.
Curb Boxes:	Riser pipe must be of yoloy corrosion resistant material. Plug must be cast iron and thread into a brass ring.

WE RECOMMEND FOR A HOME OF AVERAGE SIZE THESE PIPE SIZES TO SUPPLY WATER FIXTURES

WATER FIXTURES

SILL FAUCET (HOSE)	3/4"
SINK	1/2"
LAVATORY	1/2"
LAUNDRY TRAY	1/2"
HOT WATER TANK	3/4"
BATH TUB	1/2"
SHOWER BATH	1/2"
SHOWER BATH - NEEDLE TYPE	3/4"
WATER CLOSET - TANK TYPE	1/2"
WATER CLOSET - FLUSHOMETER	1"
URINAL - TANK TYPE	1/2"
URINAL - FLUSHOMETER TYPE	3/4"

RISER OR RUNS SERVING 2 FIXTURES	3/4"
RISERS OR RUNS SERVING 3 OR MORE FIXTURES	1"
RISER OR RUNS SERVING FLUSHOMETER VALVE	1"
BASEMENT SUPPLY LINE	1"
TYPE "K" HOUSE LINE	1"



PROPERTY LINE
HOUSELINE - NEW CONSTRUCTION
BY OWNER/CONTRACTOR*
AT OWNER'S EXPENSE

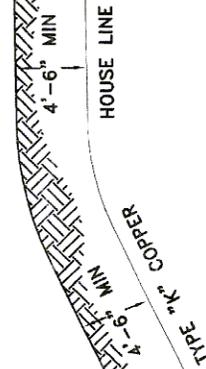
COPPER SERVICE PIPE
BY WATER DEPARTMENT
AT OWNER'S EXPENSE

SETTING FOR
CURB METER
WHERE REQUIRED

1" COPPER SERVICE

CURB STOP AND
OPERATING ROD

CORP. COCK
WATER MAIN



* THE OWNER/CONTRACTOR PORTION OF WORK
MUST BE INSTALLED AND INSPECTED FOR
APPROVAL BY WATER DEPARTMENT PERSONNEL
PRIOR TO BACK FILLING AND THE
SERVICE INSTALLATION

PAGE #4

Acc. F - 7146



The City of Akron, Ohio
Department of Public Service Public Utilities Bureau
Micheal L. McGlinchy - Manager

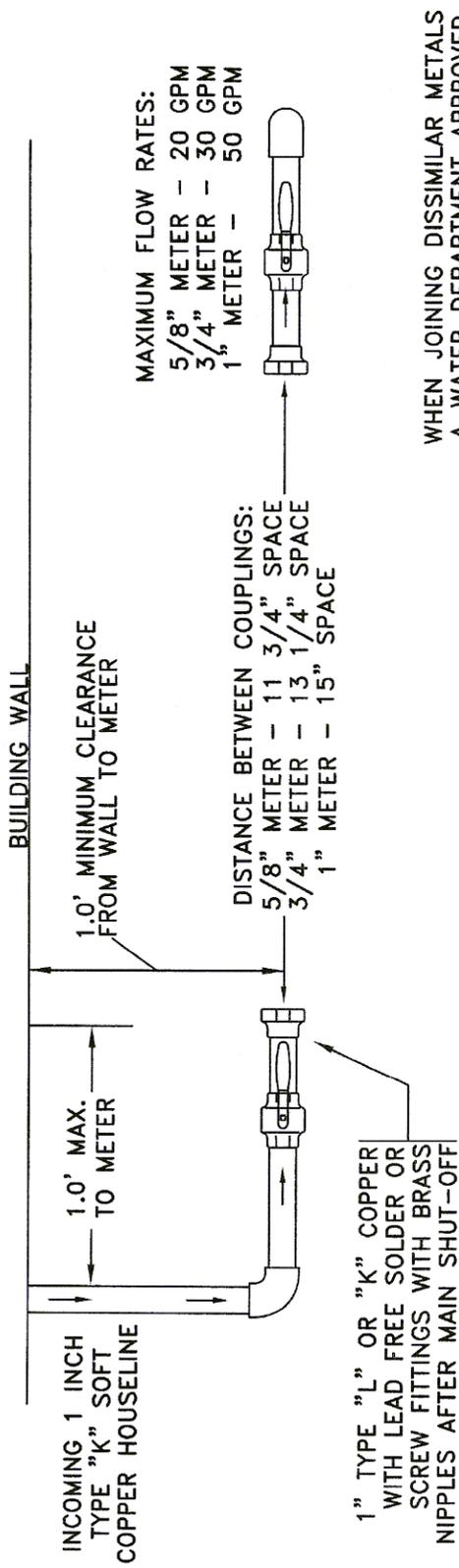
RECOMMENDED PIPE SIZES

REVISED BY AK 3/07

REDRAWN AND REVISED FROM ORIG. ACC.B-12967

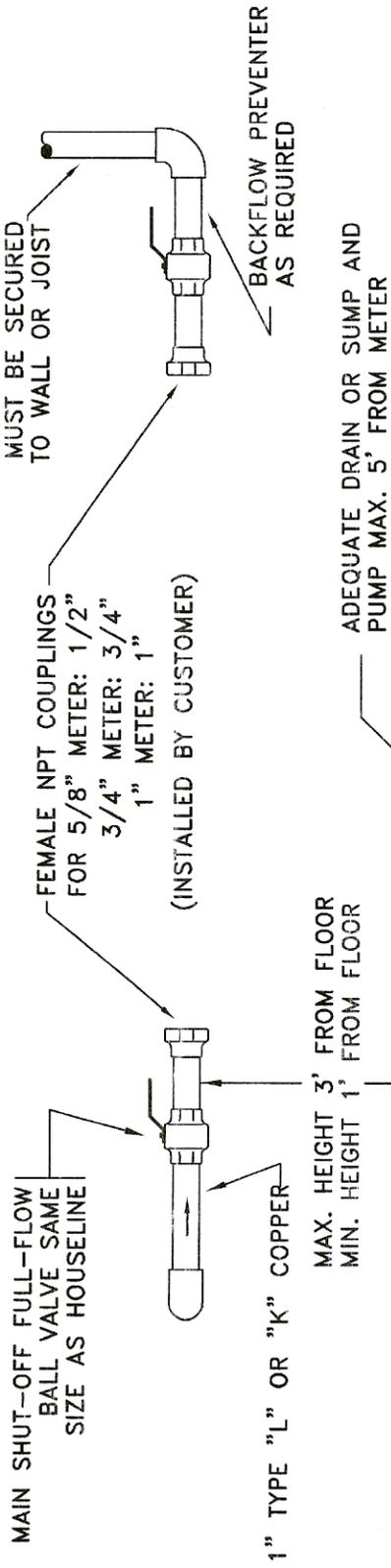
NOT TO SCALE

APPROVED *Terry J. Kelly, P.E.* 4-9-07
UTILITIES ENGINEER DATE



PLAN VIEW

WHEN JOINING DISSIMILAR METALS A WATER DEPARTMENT APPROVED BRASS TRANSITION FITTING IS REQUIRED.



ELEVATION VIEW

APPROVED *Terry J. Kelly*, P.E. 4-9-07
 UTILITIES ENGINEER DATE

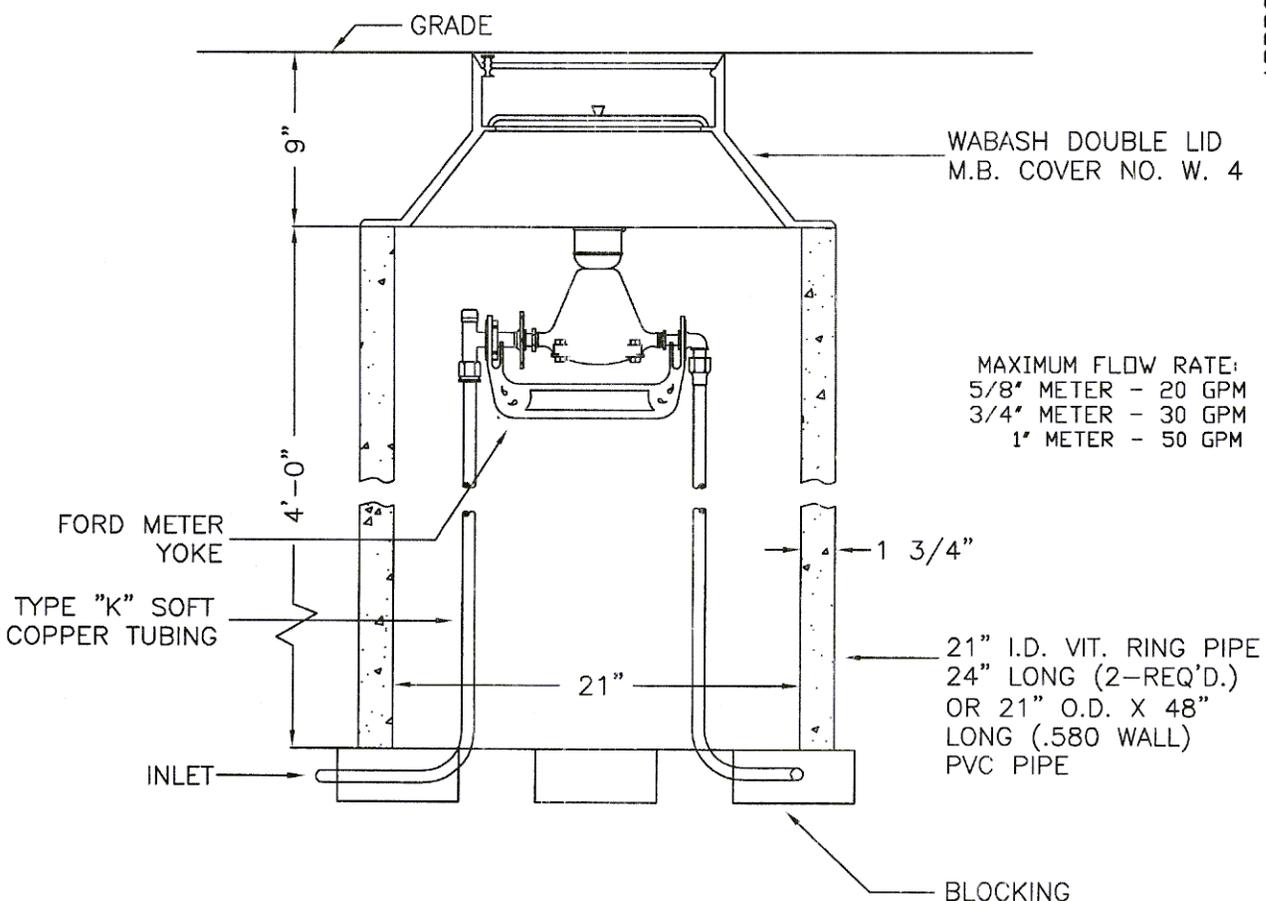
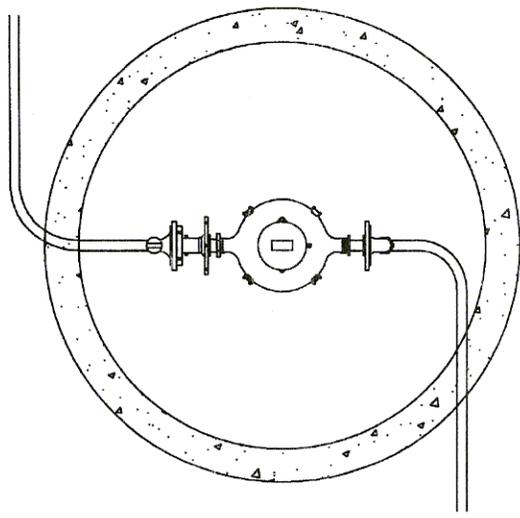
The City of Akron, Ohio
 Department of Public Service Public Utilities Bureau
 Michael L. McGlinchy - Manager

**STANDARD METER SETTINGS-NEW
 5/8", 3/4", AND 1" P.D. METERS**

REVISED BY AK 3/07

NOT TO SCALE





MAXIMUM FLOW RATE:
 5/8" METER - 20 GPM
 3/4" METER - 30 GPM
 1" METER - 50 GPM

APPROVED *James J. P. E.* 4-9-07
 UTILITIES ENGINEER DATE

PAGE #6

Acc. F - 7162

The City of Akron, Ohio
 Department of Public Service Public Utilities Bureau
 Micheal L. McGlinchy - Manager

STANDARD FOR CURB METER SETTING

REVISED BY AK 3/07

NOT TO SCALE



NOTE: Manifold Meter Settings permitted on minimum 1" copper service and houseline.

1" minimum "L" or "K" copper with solder or screw fittings with brass nipples for for meter setting.

Hose connection vacuum breakers required on all outside hose bibbs for water only hose connection meters; Interior hose bibbs prohibited.

Piping downstream of meter shall be secured to wall or joist.

Pipe size reduction permitted after meter.

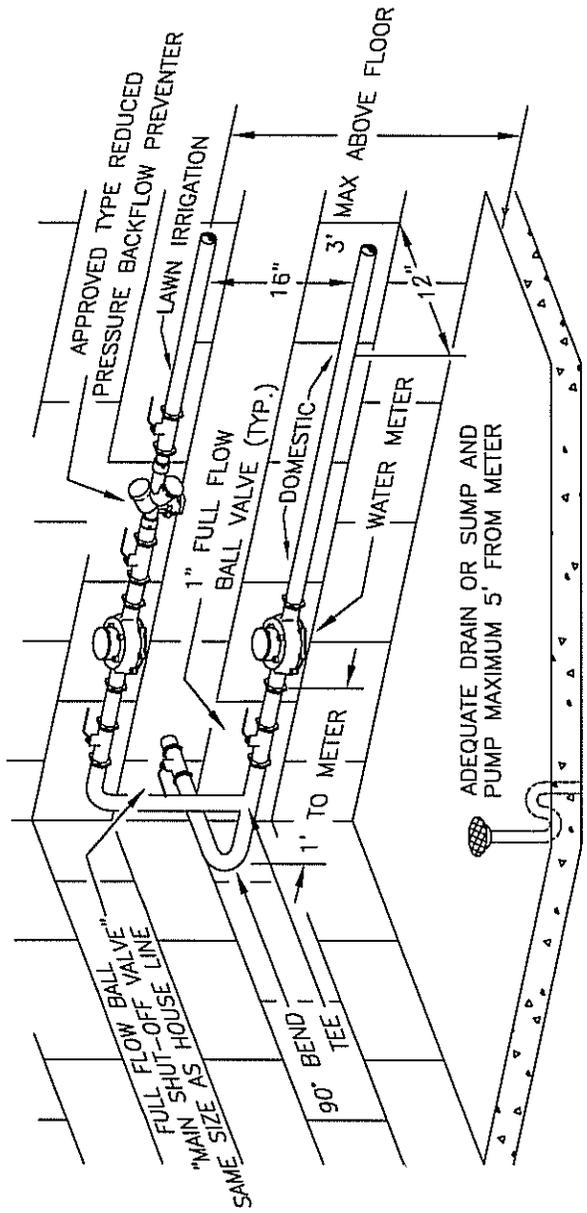
DISTANCE BETWEEN FEMALE NPT COUPLING
 5/8" METER - 11 3/4" SPACE
 3/4" METER - 13 1/4" SPACE
 1" METER - 15" SPACE

FEMALE NPT COUPLING DIAMETERS
 5/8" METER: 1/2"
 3/4" METER: 3/4"
 1" METER: 1"

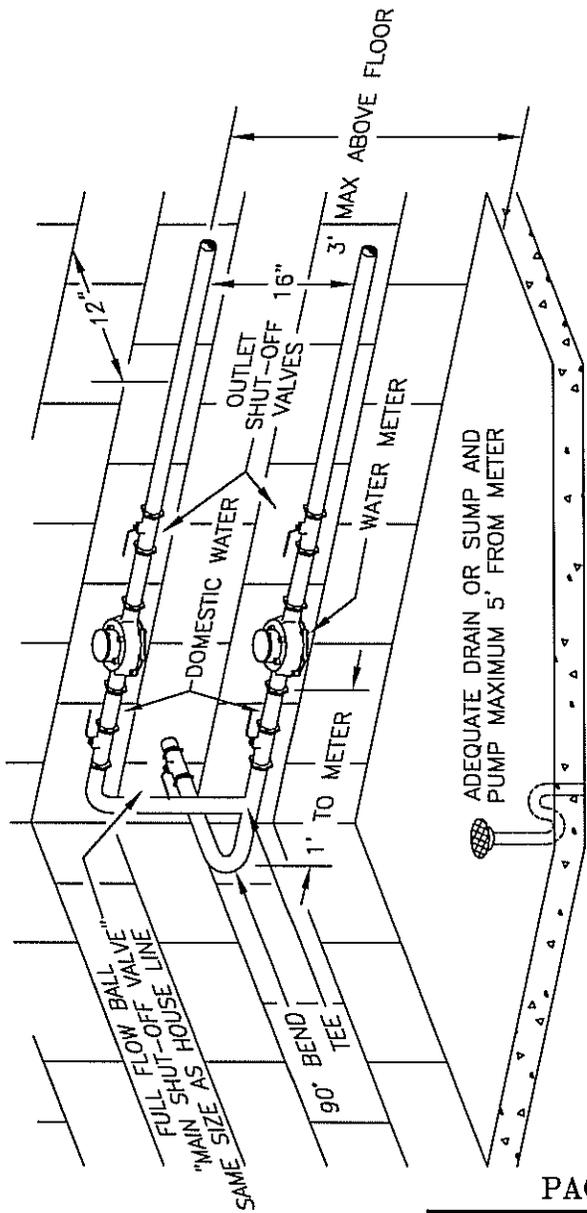
Minimum area required for meter setting:
 4' W X 6' L X 6' H

MAXIMUM FLOW RATE:
 5/8" METER - 20 GPM
 3/4" METER - 30 GPM
 1" METER - 50 GPM

[Signature]
 UTILITIES ENGINEER
 DATE 2-12-10



MANIFOLD METER SETTING
 LAWN IRRIGATION



MANIFOLD METER SETTING
 DOMESTIC MULTI-UNIT

APPROVED

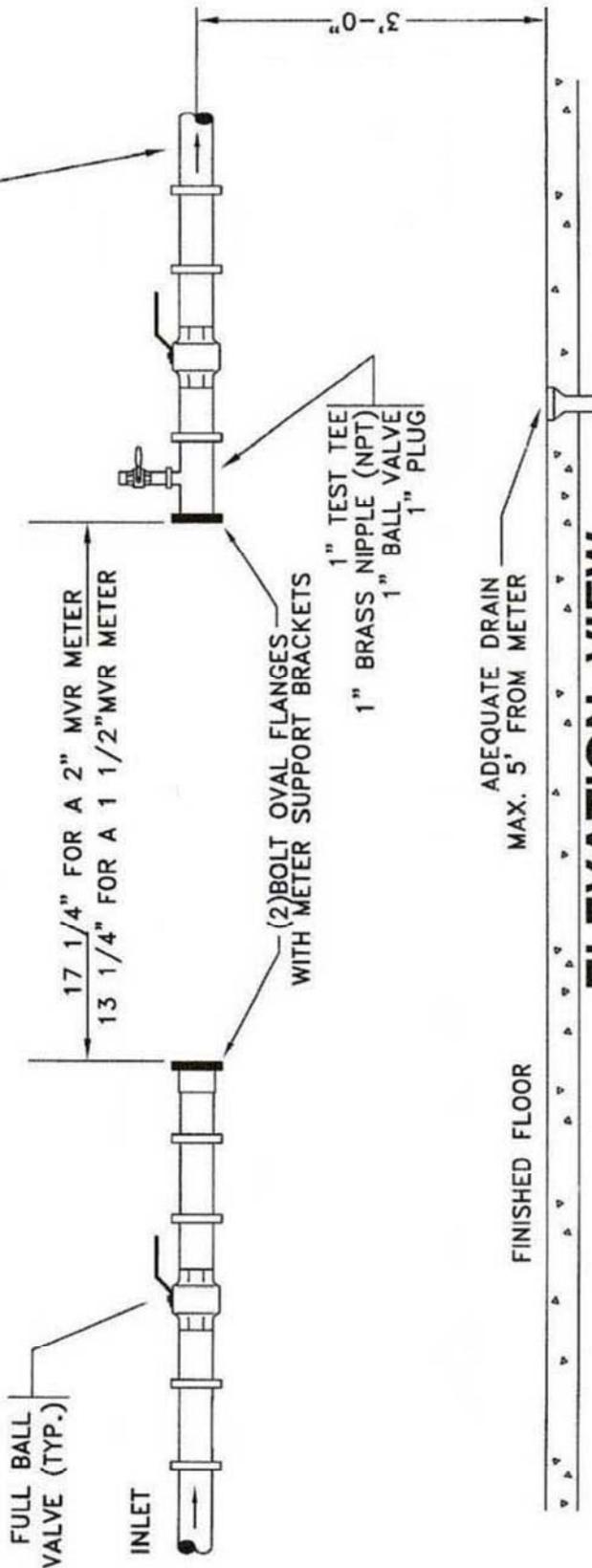
The City of Akron, Ohio
 Department of Public Service Public Utilities Bureau
 Michael L. McGlinchy - Manager

STANDARD MANIFOLD METER SETTING

5/8", 3/4", AND 1" P.D. METERS



BACKFLOW PREVENTER AS REQUIRED



ELEVATION VIEW

WHEN JOINING DISSIMILAR METALS A WATER DEPARTMENT APPROVED BRASS TRANSITION FITTING IS REQUIRED.

BY-PASS LINE:

NO LONGER PERMITTED

MINIMUM AREA REQUIRED FOR METER SETTING - 4'W x 6'L x 6'H

MAXIMUM FLOW RATE:
1 1/2" METER - 100 GPM
2" METER - 160 GPM

NOTES:
TYPE "L" OR "K" COPPER PIPE WITH SOLDER OR SCREW FITTINGS WITH A BRASS NIPPLE AND 2 BOLT OVAL COMPANION FLANGE.

REF: FOR DETAIL OF METER VAULT SEE Acc. F - 14963
FOR METER SETTINGS LARGER THAN 2" SEE Acc. F - 13380
OVAL COMPANION FLANGES SHALL ADHERE TO AWWA STANDARD C701-02 4.3.4

PAGE #8

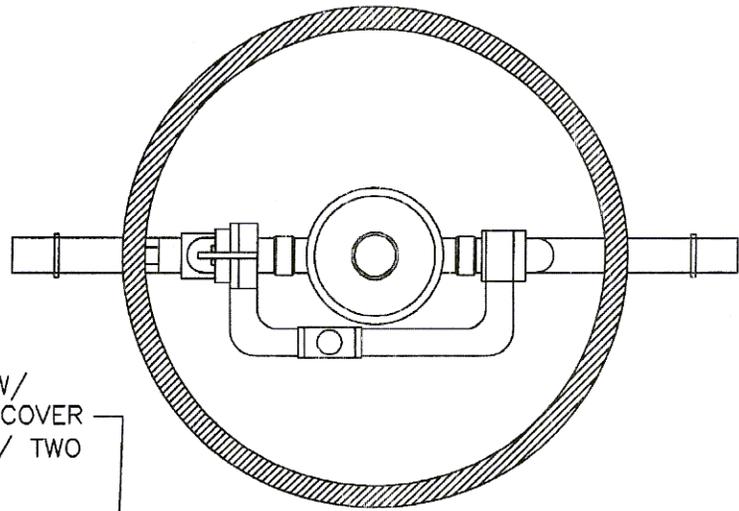
Acc. F - 7118

The City of Akron, Ohio
Department of Public Service Public Utilities Bureau
Michael L. McGlinchy - Manager

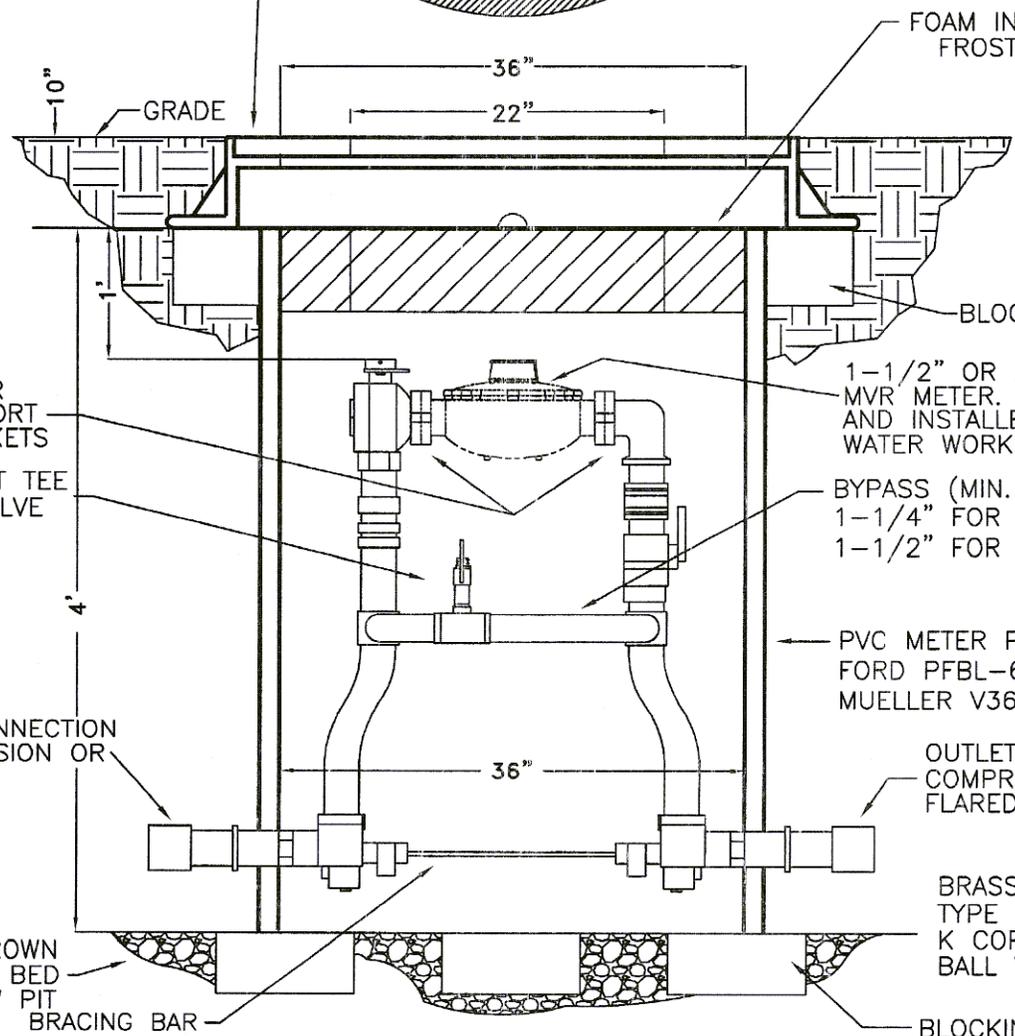
STANDARD METER SETTING 1-1/2" AND 2" MVR METERS



DATE 4-9-07
 P.E. [Signature]
 UTILITIES ENGINEER
 APPROVED



NEENAH 1740-D2 W/
 HEAVY DUTY SOLID COVER
 MARKED "METER" W/ TWO
 PICK HOLES



FOAM INNER
 FROST LID

BLOCKING

1-1/2" OR 2" FLANGED
 MVR METER. PROVIDED
 AND INSTALLED BY AKRON
 WATER WORKS.

BYPASS (MIN. DIA.)
 1-1/4" FOR 1-1/2" METER
 1-1/2" FOR 2" METER

PVC METER PIT
 FORD PFBL-688-C2738
 MUELLER V3648FAB

OUTLET CONNECTION
 COMPRESSION OR
 FLARED

BRASS FITTINGS,
 TYPE L OR
 K COPPER PIPE AND
 BALL VALVES ONLY

BLOCKING

METER PIT MUST BE INSTALLED BY CONTRACTOR ON OWNER'S PROPERTY, PAGE #9
 NOT WITHIN RIGHT-OF-WAY

Acc. F - 17935

The City of Akron, Ohio
 Department of Public Service Public Utilities Bureau
 Michael L. McGlinchy - Manager

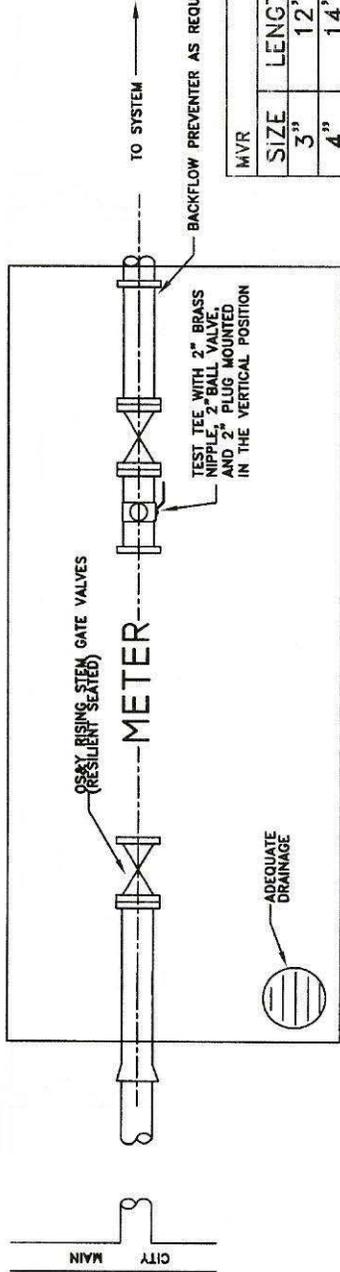


STANDARD FOR 1-1/2" AND 2" METER PIT SETTINGS

REVISED BY AK 3/07

NOT TO SCALE

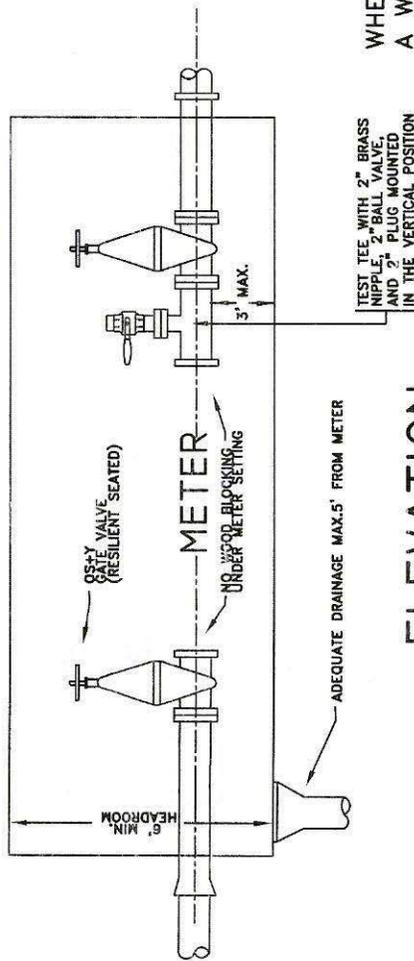
NOTE: METER SETTINGS SHALL BE CAST OR DUCTILE IRON WITH FLANGE FITTINGS.



PLAN

MVR		MFM II/MVR METER	
SIZE	LENGTH	SIZE	LENGTH
3"	12"	4"	33"
4"	14"	6"	45"
6"	18"	8"	53"

HbMAG		METER	
SIZE	LENGTH	SIZE	LENGTH
3"	7.9"	8"	13.8"
4"	9.8"	10"	17.7"
6"	11.8"	12"	19.7"



ELEVATION

MAX. FLOW RATE FOR MVR

- 3" = 350 GPM
- 4" = 650 GPM
- 6" = 1300 GPM

MAX. FLOW RATE FOR HbMAG

- 3" = 550 GPM
- 4" = 880 GPM
- 6" = 2200 GPM
- 8" = 3465 GPM
- 10" = 5500 GPM
- 12" = 8800 GPM

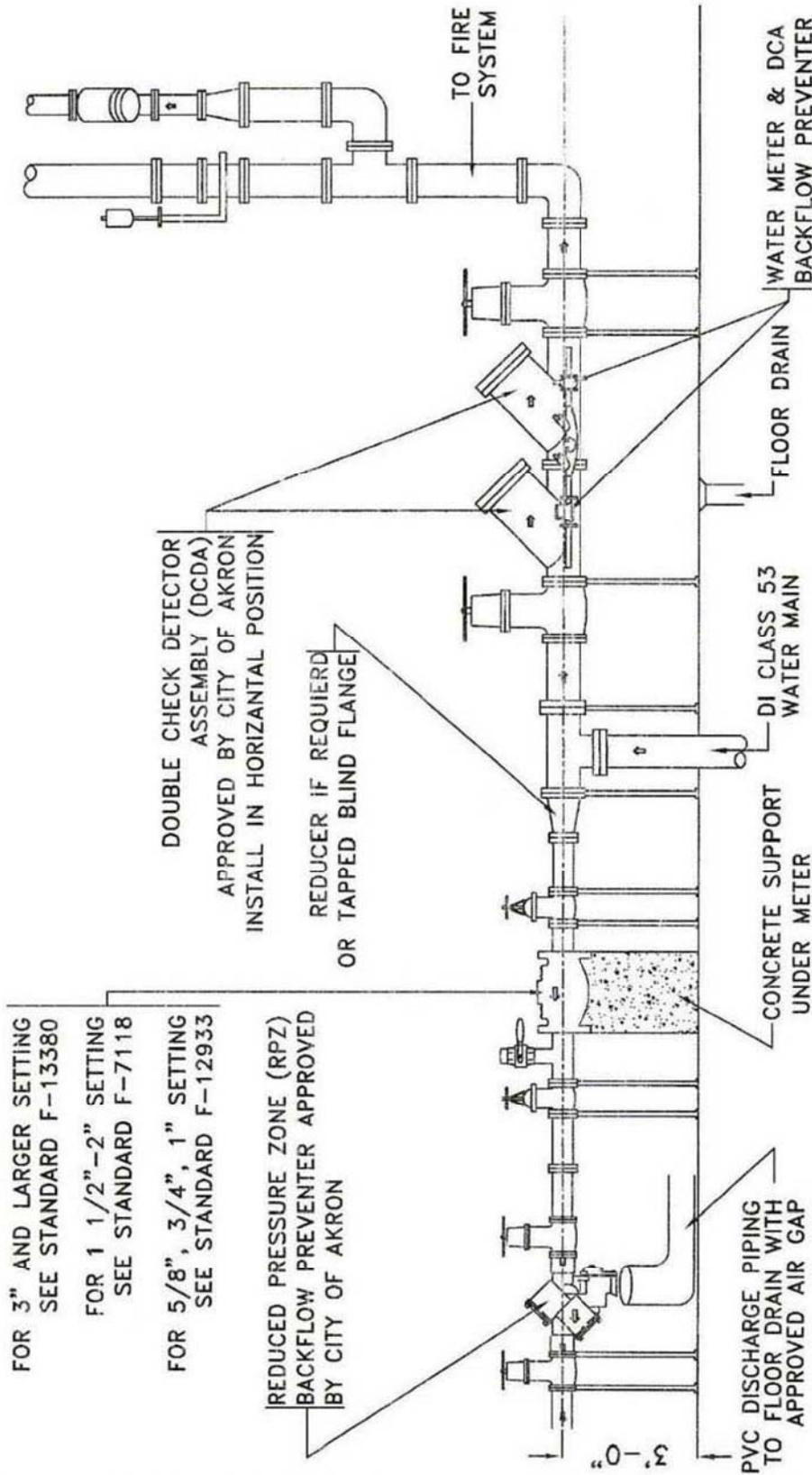
WHEN JOINING DISSIMILAR METALS A WATER DEPARTMENT APPROVED BRASS TRANSITION FITTING IS REQUIRED.

NOTE: METER SETTINGS FOR 1 1/2" & 2" METERS SEE DWG. ACC.F-7718

The City of Akron, Ohio
 Department of Public Service Public Utilities Bureau
 Michael L. McGlinchy - Manager

STANDARD LARGE METER INSTALLATION





FOR 3" AND LARGER SETTING
SEE STANDARD F-13380

FOR 1 1/2"-2" SETTING
SEE STANDARD F-7118

FOR 5/8", 3/4", 1" SETTING
SEE STANDARD F-12933

REDUCED PRESSURE ZONE (RPZ)
BACKFLOW PREVENTER APPROVED
BY CITY OF AKRON

DOUBLE CHECK DETECTOR
ASSEMBLY (DCDA)
APPROVED BY CITY OF AKRON
INSTALL IN HORIZONTAL POSITION

REDUCER IF REQUIRED
OR TAPPED BLIND FLANGE

DI CLASS 53
WATER MAIN

CONCRETE SUPPORT
UNDER METER

PVC DISCHARGE PIPING
TO FLOOR DRAIN WITH
APPROVED AIR GAP

WATER METER & DCA
BACKFLOW PREVENTER

FLOOR DRAIN

TO FIRE
SYSTEM

- * 4" AND LARGER PIPE SHALL BE DI WITH FLANGED FITTINGS
- * FIRE SUPPRESSION SYSTEM ALL WATER—NO ADDITIVES
- * 1-FOOT WALL CLEARANCE FROM ALL PIPING, FITTING, & ASSEMBLIES
- * DISTANCE A.F.F. OF METER & BACKFLOW ASSEMBLIES NOT TO EXCEED 3'-0"

WATER ENTRY DETAIL

NOT TO SCALE

PAGE #11

ACC. F-19661

The City of Akron, Ohio
Department of Public Service
Michael L. McGlinchy - Manager

STANDARD FIRE & DOMESTIC MANIFOLD SETTING CONVENTIONAL INSTALLATION

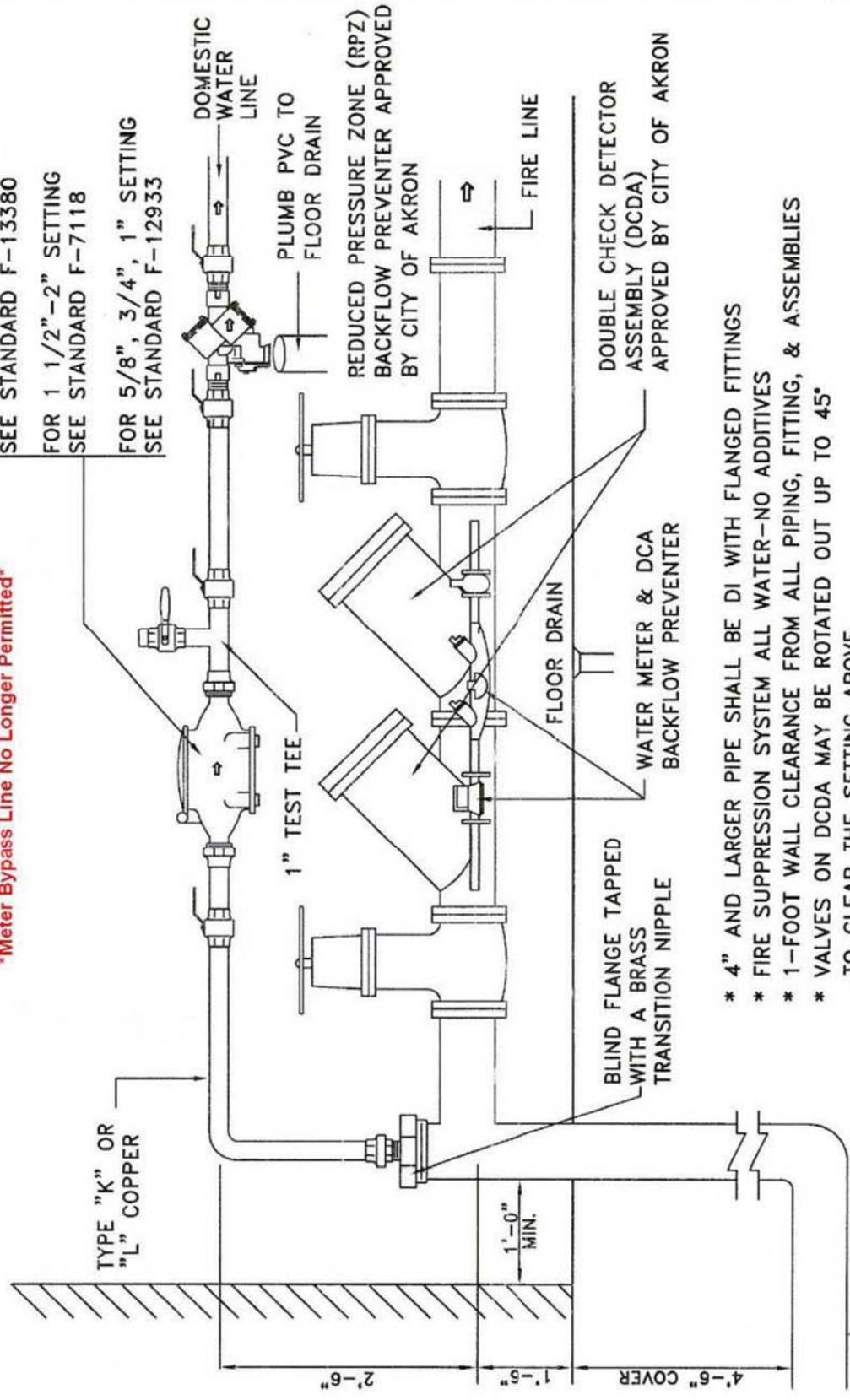


FOR 3" AND LARGER SETTING
SEE STANDARD F-13380

FOR 1 1/2"-2" SETTING
SEE STANDARD F-7118

FOR 5/8", 3/4", 1" SETTING
SEE STANDARD F-12933

Meter Bypass Line No Longer Permitted



- * 4" AND LARGER PIPE SHALL BE DI WITH FLANGED FITTINGS
- * FIRE SUPPRESSION SYSTEM ALL WATER-NO ADDITIVES
- * 1-FOOT WALL CLEARANCE FROM ALL PIPING, FITTING, & ASSEMBLIES
- * VALVES ON DCDA MAY BE ROTATED OUT UP TO 45° TO CLEAR THE SETTING ABOVE

WATER ENTRY DETAIL

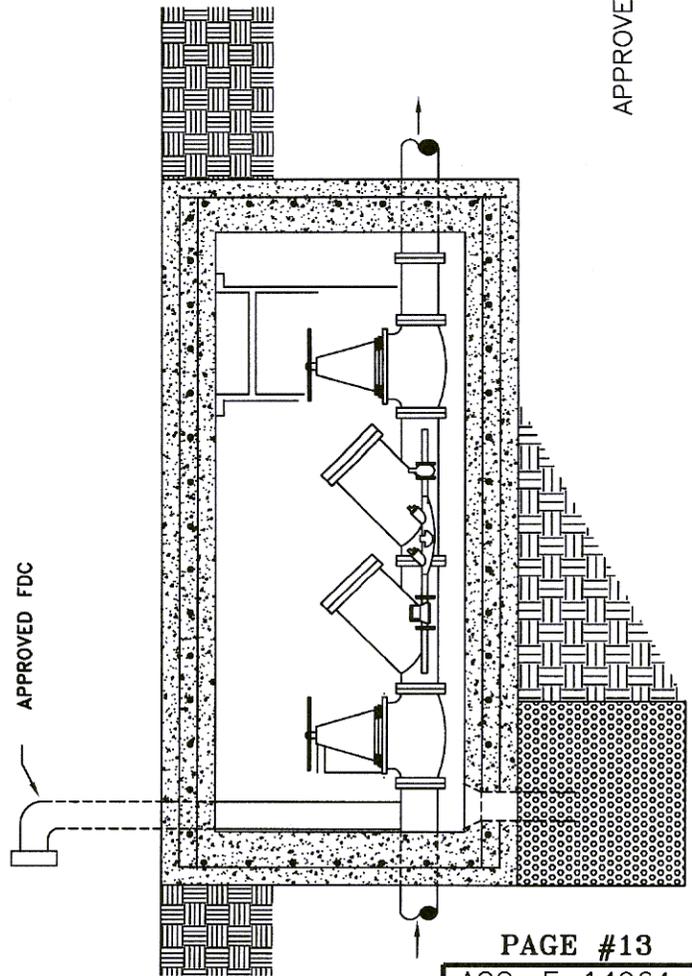
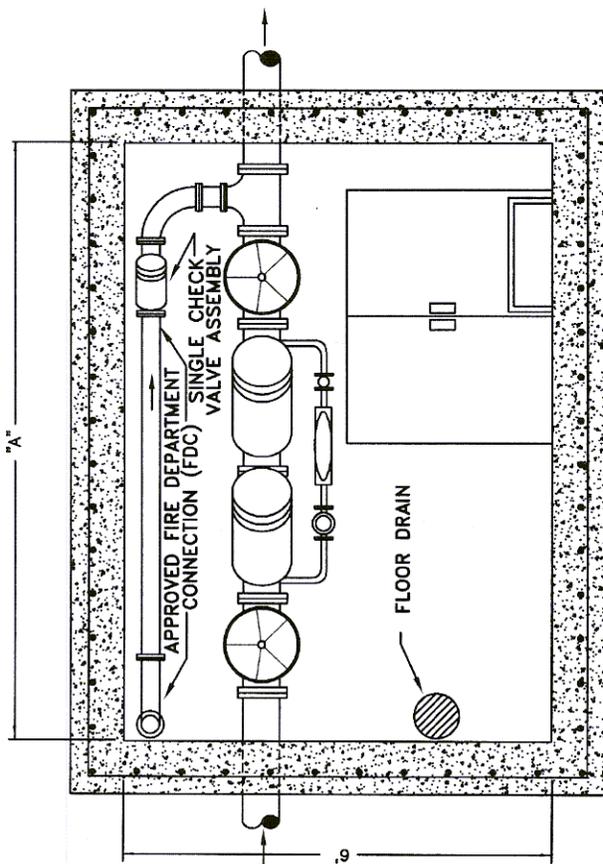
NOT TO SCALE

The City of Akron, Ohio
 Department of Public Service Public Utilities Bureau
 Michael L. McGlinchy - Manager

STANDARD FIRE & DOMESTIC MANIFOLD SETTING STACKED INSTALLATION

REVISED BY - MEE 1/13





NOTES: FOR STANDARD PRECAST METER VAULT
 SPECS REFER TO DRAWING NO. 14963
 THE BYPASS METER SHALL BE APPROVED
 BY THE CITY OF AKRON WATER DEPT.
 FURNISHED AND INSTALLED BY THE
 OWNER AND MUST READ IN CUBIC FEET
 WITH A (1) CUBIC FOOT SWEEP HAND.
 ALL PIPING SHALL BE DUCTILE IRON
 WITH DUCTILE OR CAST IRON FITTINGS.

D.C.D.A. SIZE	"A"
4"	10'
6"	10'
8"	10'
10"	12'

WHEN JOINING DISSIMILAR METALS A WATER
 DEPARTMENT APPROVED BRASS TRANSITION
 FITTING IS REQUIRED.

APPROVED *Tom J. ...* P.E. 4-9-07
 UTILITIES ENGINEER
 DATE

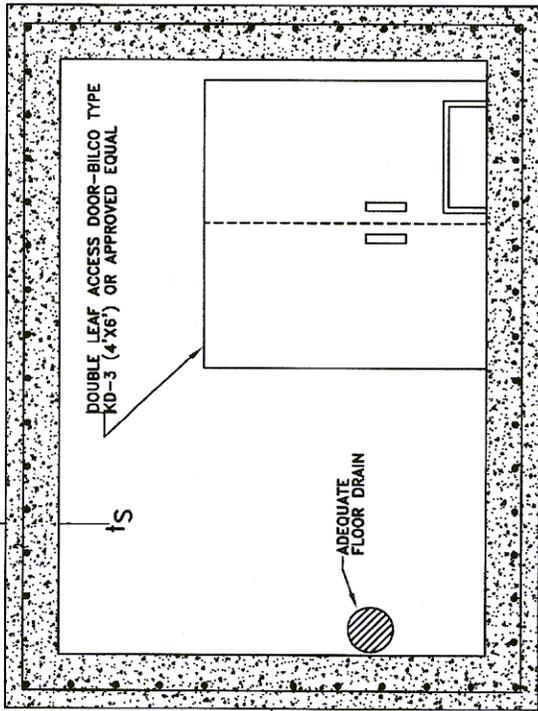


STD. SEWER VAULT SIZE	TOP SLAB		SIDEWALL		FLOOR	
	T STEEL	L1 L2 S	S STEEL	STEEL	f STEEL	STEEL
11/2' x 2' x 4' x 6'	8"	12" 16"	6"	#508"E.W.	6"	#508"E.W.-T
4"	8"	16" 26"	6"	#508"E.W.	6"	#508"E.W.-T
6' x 10'	8"	19" 31"	6"	#508"E.W.	6"	#508"E.W.-T
8"	8"	24" 38"	6"	#508"E.W.	6"	#508"E.W.-T
SPECIAL 8' x 4' - 15'	8"	26" 43"	6"	#508"E.W.	6"	#508"E.W.-T
10' x 17'	8"		6"	#508"E.W.	6"	#508"E.W.-T

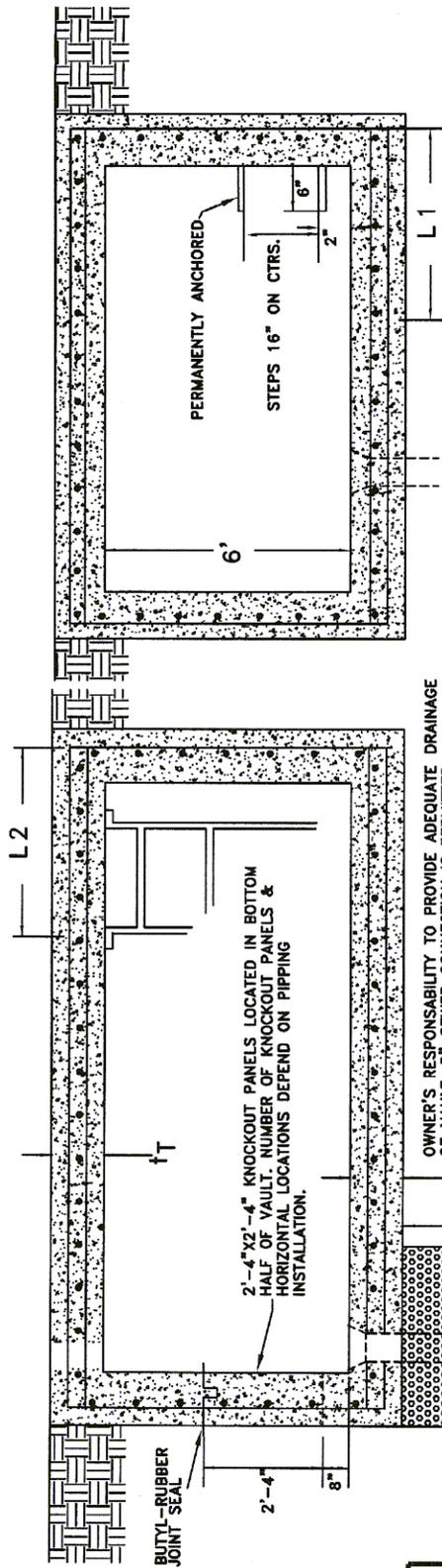
CONCRETE THICKNESS & MIN. STEEL REQUIREMENTS

* INSIDE DIMENSION
 ** B-BOTTOM SLAB T-TOP SLAB
 † STEEL IS EXTENDED FROM WALLS & L2 FOR FLOOR SAME AS FOR TOP SLAB COVER ON ALL REBAR SHALL BE 1 1/4"

CONCRETE STRENGTHS
 -4500 PSI
 STEEL YIELD STRENGTH-60,000 PSI
 VAULT DESIGNED FOR AASHTO HS20 LIVE LOAD.



PLAN VIEW



SECTION B

SECTION A

OWNERS RESPONSIBILITY TO PROVIDE ADEQUATE DRAINAGE OF VAULT, 8" SEWER CONNECTION IS PERMITTED WITH AN APPROVED SINGLE CHECK VALVE. SUMP PUMP INSTALLATION OR DRY WELL MAY BE ACCEPTABLE IF APPROVED BY THE CITY.

***VAULT SHALL BE LOCATED IN A NON TRAFFIC BEARING AREA. SHOULD INSTALLATION CONDITIONS CHANGE FROM NON-TRAFFIC BEARING TO TRAFFIC BEARING, OWNER SHALL BE RESPONSIBLE FOR CHANGING FRAME & COVER TO TRAFFIC BEARING TYPE AND SHALL ASSUME ALL LIABILITY FOR FAILURE TO DO SO.

APPROVED *Tony J. G. P. E.* 4-9-07
 UTILITIES ENGINEER DATE

The City of Akron, Ohio
 Department of Public Service Public Utilities Bureau
 Michael L. McGlinchy - Manager
**STANDARD FOR
 PRECAST METER VAULTS**





**CITY OF AKRON
PUBLIC UTILITIES BUREAU**

**BACKFLOW PREVENTION PROGRAM
(330) 375-2690**

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY

Installation Requirements

1. All piping to conform to Akron Water Works Standard Construction Drawings and Specifications.
2. Bypassing of this assembly is specifically prohibited.
3. Installation of this assembly in vaults is specifically prohibited.
4. Unions prior to backflow prevention assemblies are prohibited.
5. Installed directly after the meter setting ahead of any outlets.
6. Installed so as to be readily accessible for inspection, testing, and maintenance.
7. Provided with adequate space for inspection, testing, maintenance, and disassembly.
8. Protected from freezing by installation within a heated building.
9. Mounted in a horizontal position with abutting shut-off valves, as supplied with the assembly, three feet above finished floor.
10. Provided with adequate drainage.
11. Installed so that there is a visible free discharge from the relief port with no extension piping.
12. Installed as per manufacturer's specifications. Where manufacturer's specifications conflict with these guidelines, these guidelines shall govern.
13. Because of their design, backflow prevention assemblies create a closed system and a detectable pressure loss. Because of these facts, the installation may alter the hydraulics of the internal plumbing system. The owner should contact a mechanical designer prior to installation.
14. Upon installation, assemblies must be tested by a backflow prevention assembly tester, certified by the Ohio Department of Commerce. The assembly must be dismantled, inspected internally, cleaned, and repaired, if necessary.



**CITY OF AKRON
PUBLIC UTILITIES BUREAU**

**BACKFLOW PREVENTION PROGRAM
(330) 375-2690**

DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY

Installation Requirements

1. All piping to conform to Akron Water Works Standard Construction Drawings and Specifications.
2. Bypassing of this assembly is specifically prohibited.
3. Installed directly after the meter setting ahead of any outlets.
4. Unions prior to backflow prevention assemblies are prohibited.
5. Installed so as to be readily accessible for inspection, testing, and maintenance.
6. Provided with adequate space for inspection, testing, maintenance, and disassembly.
7. Protected from freezing by installation within a heated building.
8. Mounted in a horizontal position with abutting shut-off valves, as supplied with the assembly, three feet above finished floor.
9. Installations above ground level are preferred. Where above ground installations are not reasonably practical, a vault may be used with the approval of the Public Utilities Bureau.
10. Installed as per manufacturer's specifications. Where manufacturer's specifications conflict with these guidelines, these guidelines shall govern.
11. Because of their design, backflow prevention assemblies create a closed system and a detectable pressure loss. Because of these facts, the installation may alter the hydraulics of the internal plumbing system. The owner should contact a mechanical designer prior to installation.
12. Upon installation, assemblies must be tested by a backflow prevention assembly tester, certified by the Ohio Department of Commerce. The assembly must be dismantled, inspected internally, cleaned, and repaired, if necessary.



**CITY OF AKRON
PUBLIC UTILITIES BUREAU**

**BACKFLOW PREVENTION PROGRAM
(330) 375-2690**

REDUCED PRESSURE DETECTOR ASSEMBLY

Installation Requirements

1. All piping to conform to Akron Water Works Standard Construction Drawings and Specifications.
2. Bypassing of this assembly is specifically prohibited.
3. The bypass meter and the small reduced pressure assembly on the bypass line shall be approved by the City of Akron Water Department, furnished and installed by the owner.
4. Unions prior to backflow prevention assemblies are prohibited.
5. Installation of this assembly in vaults is specifically prohibited.
6. Installed so as to be readily accessible for inspection, testing, and maintenance.
7. Provided with adequate space for inspection, testing, maintenance, and disassembly.
8. Protected from freezing by installation within a heated building.
9. Mounted in a horizontal position with abutting shut-off valves, as supplied with the assembly, three feet above finished floor.
10. Provided with adequate drainage.
11. Installed so that there is a visible free discharge from the relief port with no extension piping.
12. Installed as per manufacturer's specifications. Where manufacturer's specifications conflict with these guidelines, these guidelines shall govern.
13. Because of their design, backflow prevention assemblies create a closed system and a detectable pressure loss. Because of these facts, the installation may alter the hydraulics of the internal plumbing system. The owner should contact a mechanical designer prior to installation.
14. Upon installation, assemblies must be tested by a backflow prevention assembly tester, certified by the Ohio Department of Commerce. The assembly must be dismantled, inspected internally, cleaned, and repaired, if necessary.



**CITY OF AKRON
PUBLIC UTILITIES BUREAU**

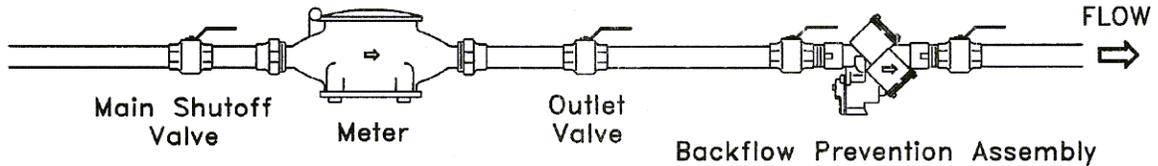
**BACKFLOW PREVENTION PROGRAM
(330) 375-2690**

DOUBLE CHECK DETECTOR ASSEMBLY

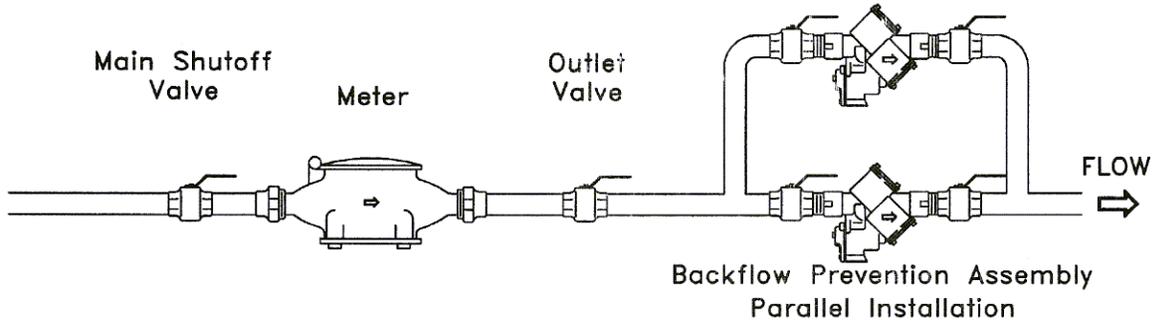
Installation Requirements

1. All piping to conform to Akron Water Works Standard Construction Drawings and Specifications.
2. Bypassing of this assembly is specifically prohibited.
3. The bypass meter and the small double check valve assembly on the bypass line shall be approved by the City of Akron Water Department, furnished and installed by the owner.
4. Unions prior to backflow prevention assemblies are prohibited.
5. Installed so as to be readily accessible for inspection, testing, and maintenance.
6. Provided with adequate space for inspection, testing, maintenance, and disassembly.
7. Protected from freezing by installation within a heated building or an approved precast meter vault.
8. Mounted in a horizontal position with abutting shut-off valves, as supplied with the assembly, three feet above finished floor.
9. Installations above ground level are preferred. Where above ground installations are not reasonably practical, a vault may be used with the approval of the Public Utilities Bureau.
10. Installed as per manufacturer's specifications. Where manufacturer's specifications conflict with these guidelines, these guidelines shall govern.
11. Because of their design, backflow prevention assemblies create a closed system and a detectable pressure loss. Because of these facts, the installation may alter the hydraulics of the internal plumbing system. The owner should contact a mechanical designer prior to installation.
12. Upon installation, assemblies must be tested by a backflow prevention assembly tester, certified by the Ohio Department of Commerce. The assembly must be dismantled, inspected internally, cleaned, and repaired, if necessary.

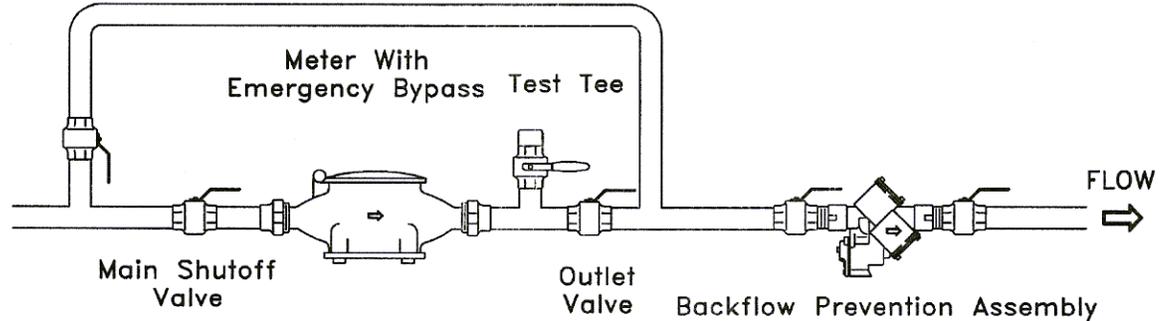
1



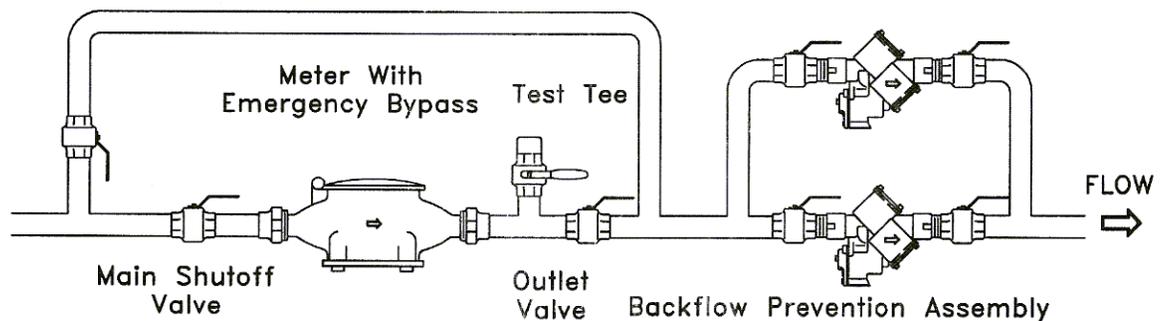
2



3



4



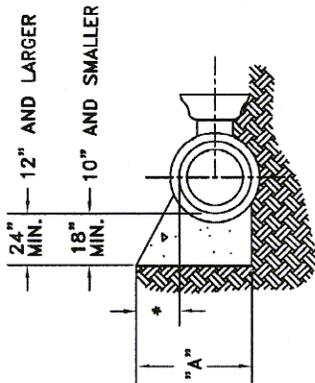
APPROVED *Samuel J. P. E.* 4-9-07
 UTILITIES ENGINEER DATE

The City of Akron, Ohio
 Department of Public Service Public Utilities Bureau
 Michael L. McGlinchy - Manager

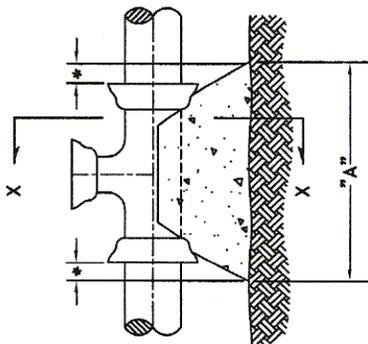
Approved Installations of Backflow Prevention Assemblies

REVISED BY AK 3/07

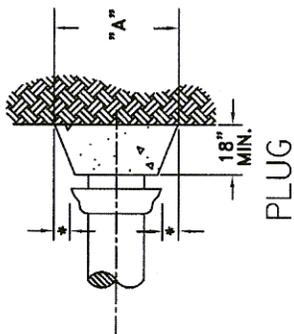




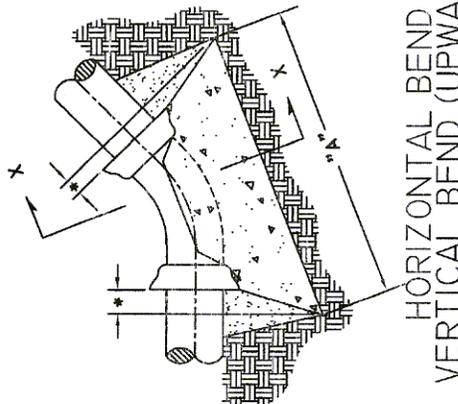
SECTION VIEW X-X



PLAN VIEW OF TEE



PLUG

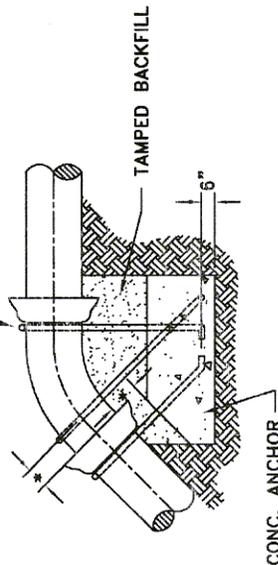


HORIZONTAL BEND (UPWARD)

DIA. TO BE DETERMINED FOR EACH JOB. BARS TO BE FORMED IN SHOP TO CONTOUR OF FITTING.

MINIMUM VOLUME OF CONCRETE FOR TOP VERTICAL BENDS

6"	4 C.F.
8"	11 C.F.
10"	22 C.F.
12"	37 C.F.
16"	71 C.F.



VERTICAL BEND (DOWNWARD)

"A"

HORIZONTAL BENDS		VERTICAL BENDS (UPWARD)		VERTICAL BENDS (DOWNWARD)	
90°	45°	22 1/2°	TEE	PLUG	PLUG
6"	17"	13"	9"	13"	14"
8"	23"	17"	12"	17"	19"
10"	28"	21"	15"	21"	24"
12"	34"	25"	18"	25"	29"
16"	45"	33"	24"	28"	38"

NOTE: IN AREAS OVER 100PSI PLEASE CALL 375-2690 FOR THRUST BLOCK SIZING

APPROVED *Raymond P. F.* UTILITIES ENGINEER DATE 4-9-07

* 6" MINIMUM COPIED FROM Acc. C - 9015 AND REVISED

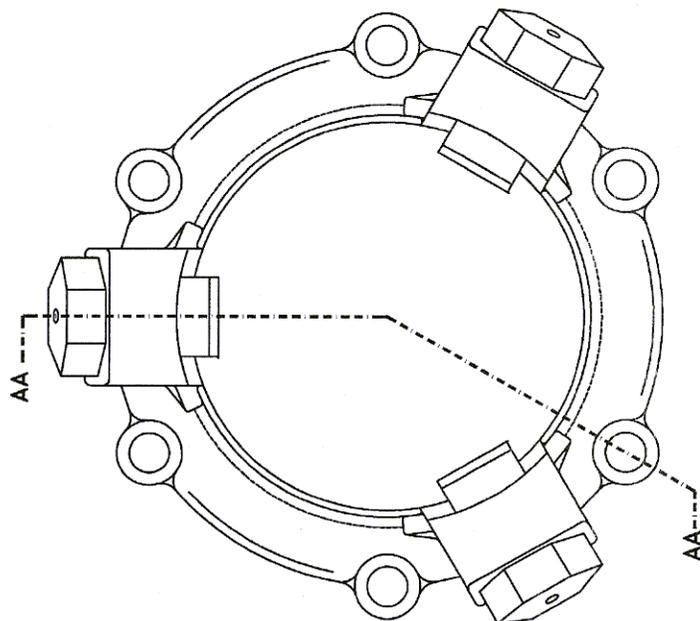


TYPICAL CONCRETE THRUST BLOCKING

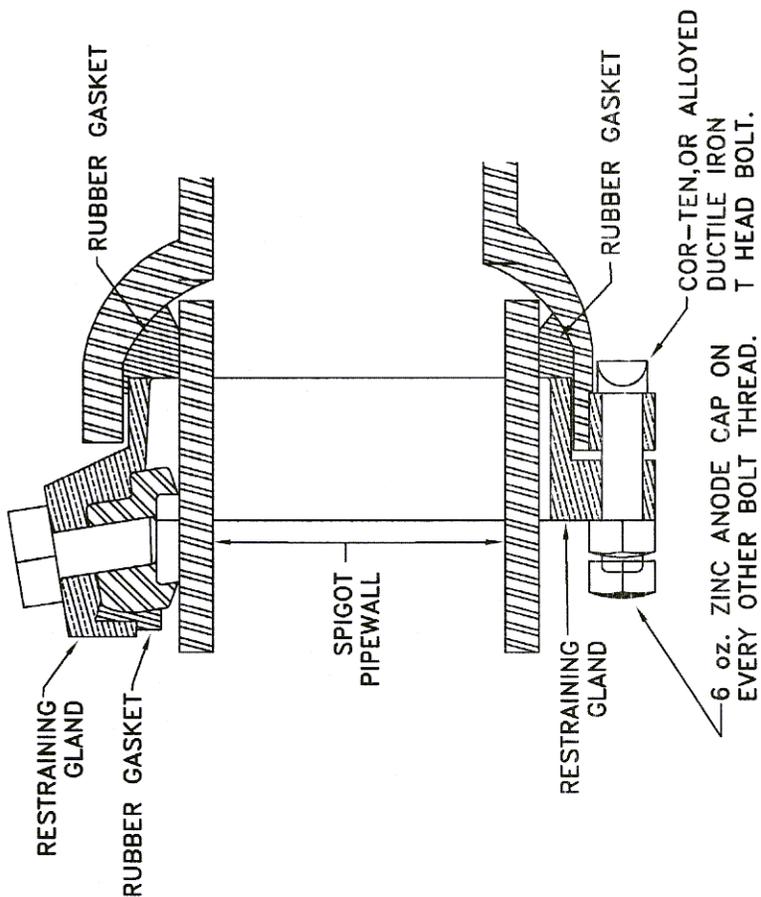
REVISED BY AK 3/07

NOT TO SCALE

The City of Akron, Ohio
 Department of Public Services Public Utilities Bureau
 Michael L. McGlinchy - Manager



**MECHANICAL JOINT DUCTILE IRON
RESTRAINING GLAND**



**MECHANICAL JOINT
SECTION AA**

NOTE: D.I.P. RESTRAINED GLAND TO BE USED ON ALL FITTINGS.

PIPE SIZE	WEIGHT (lbs.)
4"	7
6"	12
8"	16
10"	24
12"	33
16"	58

PAGE #21

Acc. F - 14278

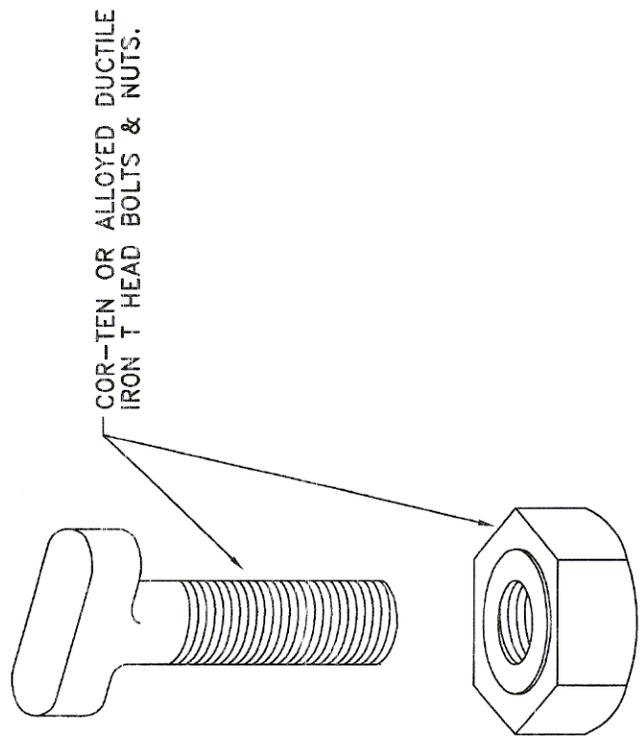
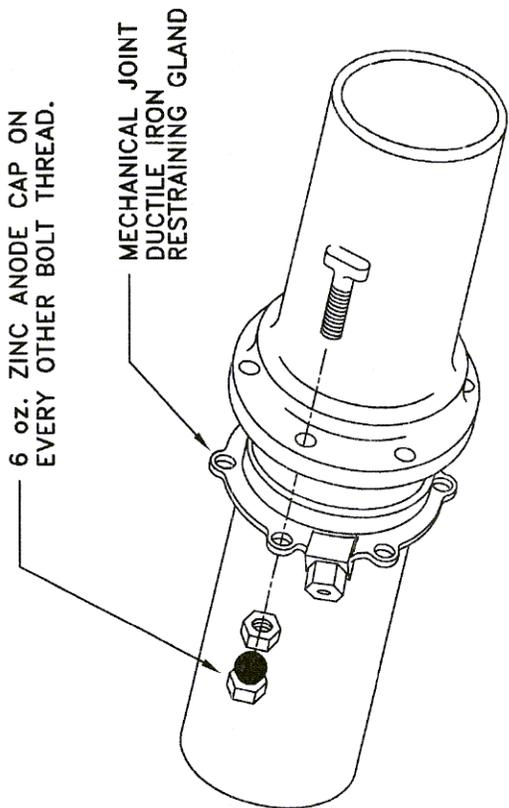
The City of Akron, Ohio
 Department of Public Service Public Utilities Bureau
 Michael L. McGlinchy - Manager
**MECHANICAL JOINT DUCTILE
 IRON RESTRAINING GLANDS**



REVISED BY AK 3/07

NOT TO SCALE

APPROVED *Anthony J. Kelly* P.E. 4-9-07
 UTILITIES ENGINEER DATE



BOLT LENGTH

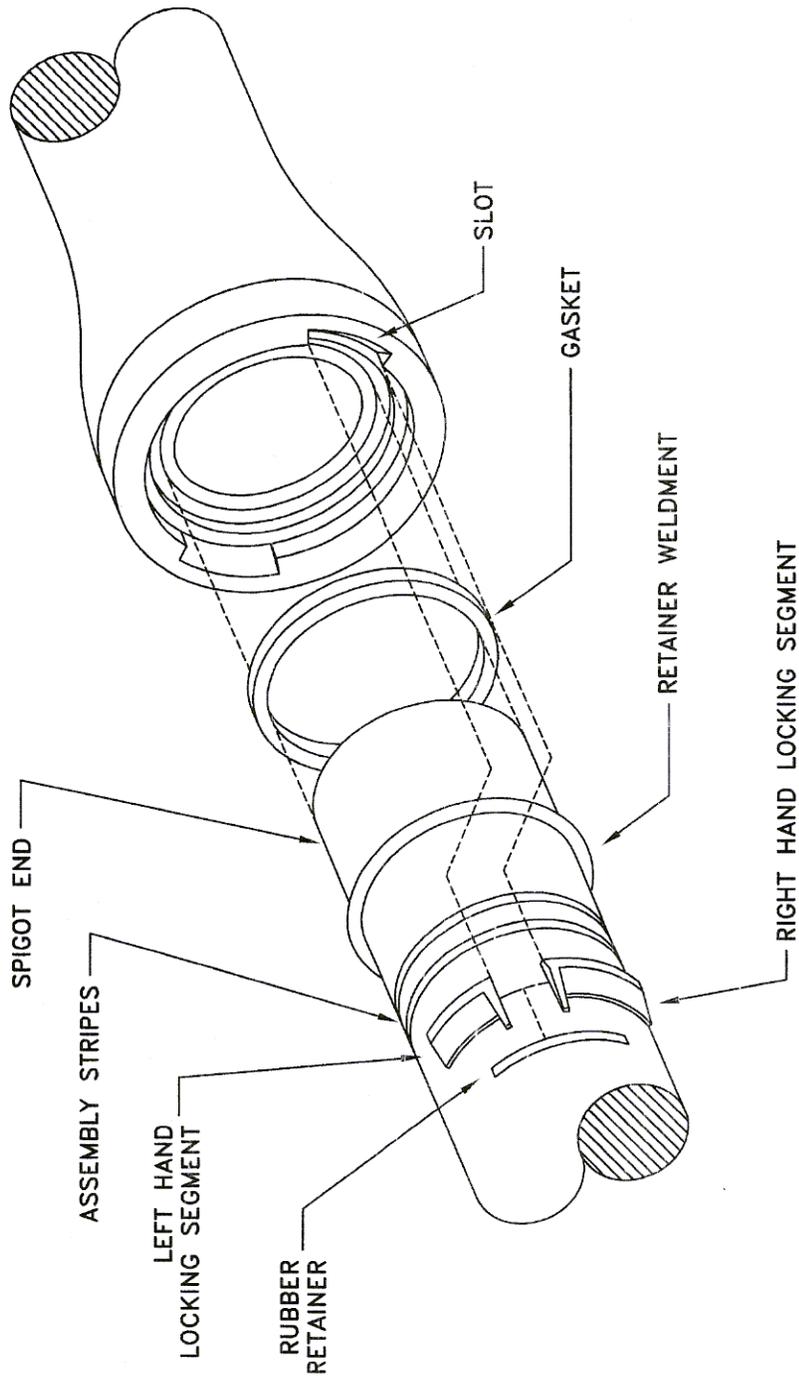
PIPE	BOLT
4"	4"
6"	4"
8"	4 1/2"
12"	4 1/2"
16"	5"
20"	5"
24"	5 1/2"

APPROVED *Tony J. Kelly* P.E. 4-9-07 DATE
 UTILITIES ENGINEER

The City of Akron, Ohio
 Department of Public Service Public Utilities Bureau
 Michael L. McGlinchy - Manager

T-BOLT AND NUT





APPROVED *Terry Sebi* P. E. 4-9-07
 UTILITIES ENGINEER DATE

PAGE #23

Acc. F - 16771

The City of Akron, Ohio
 Department of Public Service Public Utilities Bureau
 Michael L. McGlinchy - Manager

RESTRAINED JOINT PIPE



REVISED BY AK 3/07

NOT TO SCALE

JOINTS MAY BE MECHANICAL JOINTS WITH RESTRAINED FOLLOWER GLAND OR PUSH-ON WITH FIELD LOCK OR FAST GRIP GASKET.

AMERICAN FLOW CONTROL B62B WITH 6" INLET,
 AMERICAN FLOW CONTROL B84B WITH 8" INLET,
 KENNEDY GUARDIAN, MODEL K-81,
 MUELLER "CENTURIAN" MODEL A423.
 HYDRANTS SHALL HAVE AKRON THREADS AND 5' BURY.

AS REQUIRED

OPERATING NUT
 OPEN TO LEFT

(2) 2-1/2" HOSE NOZZLES

(1) 4" STEAMER NOZZLE

3'-0" MIN.

TRAFFIC FLANGE
 3" ABOVE GRADE

CURB

#57 WASHED GRAVEL
 6" ABOVE WEEP HOLES

VALVE BOX COMPLETE

4'-6" MIN. COVER

LARGE BONNET RESTRAINED INLET

RESTRAINED BRANCH

CONCRETE THRUST BLOCKING

2'-6" MIN.

D.I. PIPE NIPPLE

ANCHOR PIPE REQUIRED

TEE WITH UNRESTRAINED RUN ENDS

GATE VALVE WITH RESTRAINED ENDS OPENS TO RIGHT

SUITABLE STONE OR PRECAST CONCRETE BLOCKING NOT LESS THAN 1" SQ., 4" THICK AS REQUIRED

HARDWOOD BLOCKING BEARING ON UNDISTURBED SOIL

APPROVED *[Signature]* 7.E. 4-9-07
 UTILITIES ENGINEER DATE

PAGE #24

ACC. F-13218

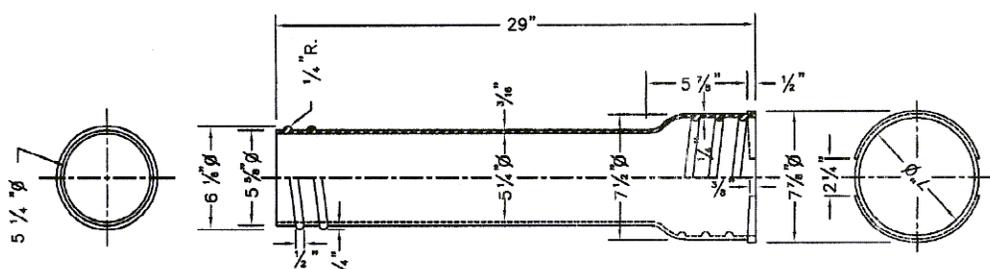
The City of Akron, Ohio
 Department of Public Service Public Utilities Bureau
 Michael L. McGlinchy - Manager

HYDRANT RUN & INSTALLATION



REVISED BY AK 3/07

NOT TO SCALE

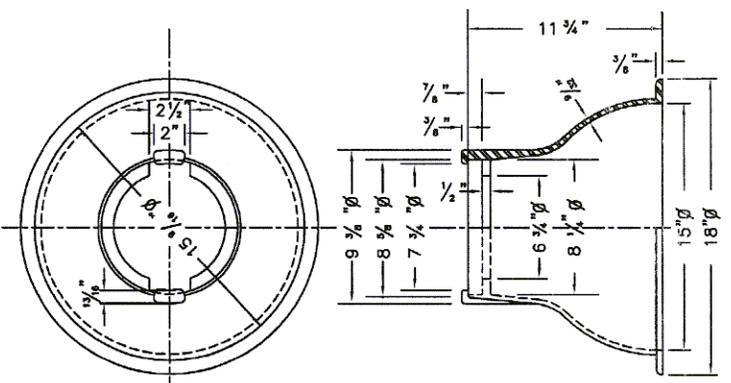


29" CENTER SECTION

APPROXIMATE WEIGHT - 35 lbs.
NOTE: CENTER SECTIONS ALSO MADE IN 36" LENGTHS

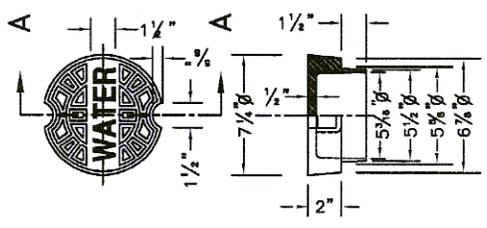
VALVE BOXES AND PARTS SHALL BE MADE FROM CAST IRON MEETING LATEST REVISION ASTM A-126. EACH CASTING SHALL BE COATED INSIDE AND OUT WITH COAL-TAR PITCH VARNISH, SIMILAR TO THAT USED FOR COATING CAST IRON PIPE. APPROXIMATE WEIGHT OF BOX COMPLETE, (BASE, CENTER SECTION, TOP SECTION AND COVER) - 110 lbs. A CLEARANCE OF 3/16" SHALL BE MAINTAINED BETWEEN SECTIONS AT ALL POINTS.

APPROVED *[Signature]* P. E. 4-9-07
UTILITIES ENGINEER DATE



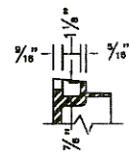
BASE

APPROXIMATE WEIGHT - 33 lbs.



COVER

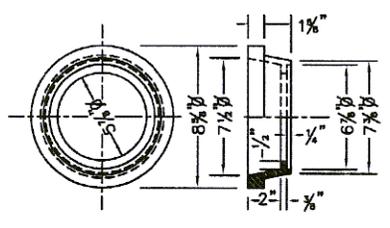
APPROXIMATE WEIGHT - 15 lbs.



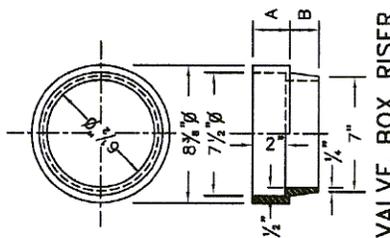
SECTION A-A

VALVE BOX RISER DIMENSIONS

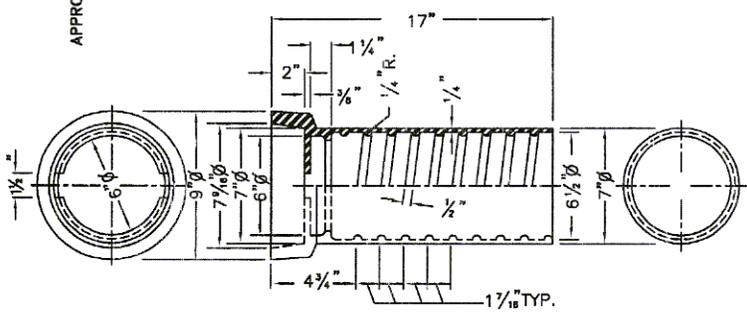
SIZE	A	B
1"	1 1/4"	1 5/8"
1 1/2"	1 3/4"	1 5/8"
2"	2 1/4"	1 3/4"
3"	3 1/4"	2 3/4"
4"	4 1/4"	3 3/4"



VALVE BOX RISER
1" & 1 1/2" SIZE

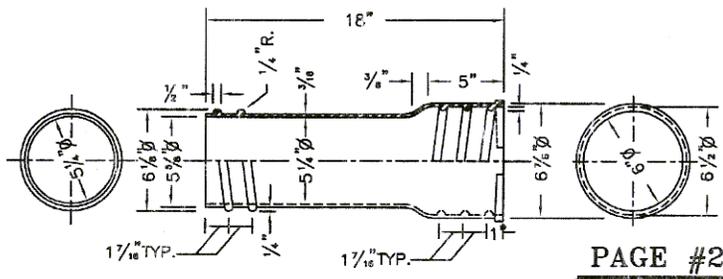


VALVE BOX RISER
2" SIZE & LARGER



TOP SECTION

APPROXIMATE WEIGHT - 28 lbs.
NOTE: TOP SECTION ALSO MADE IN 24" LENGTHS.



14" EXTENSION

APPROXIMATE WEIGHT - 20 lbs.
NOTE: 10" EXTENSION ALSO MADE TO 14" OVERALL LENGTH.

The City of Akron, Ohio
Department of Public Service Public Utilities Bureau
Michael L. McGlinchy - Manager

STANDARD VALVE BOX

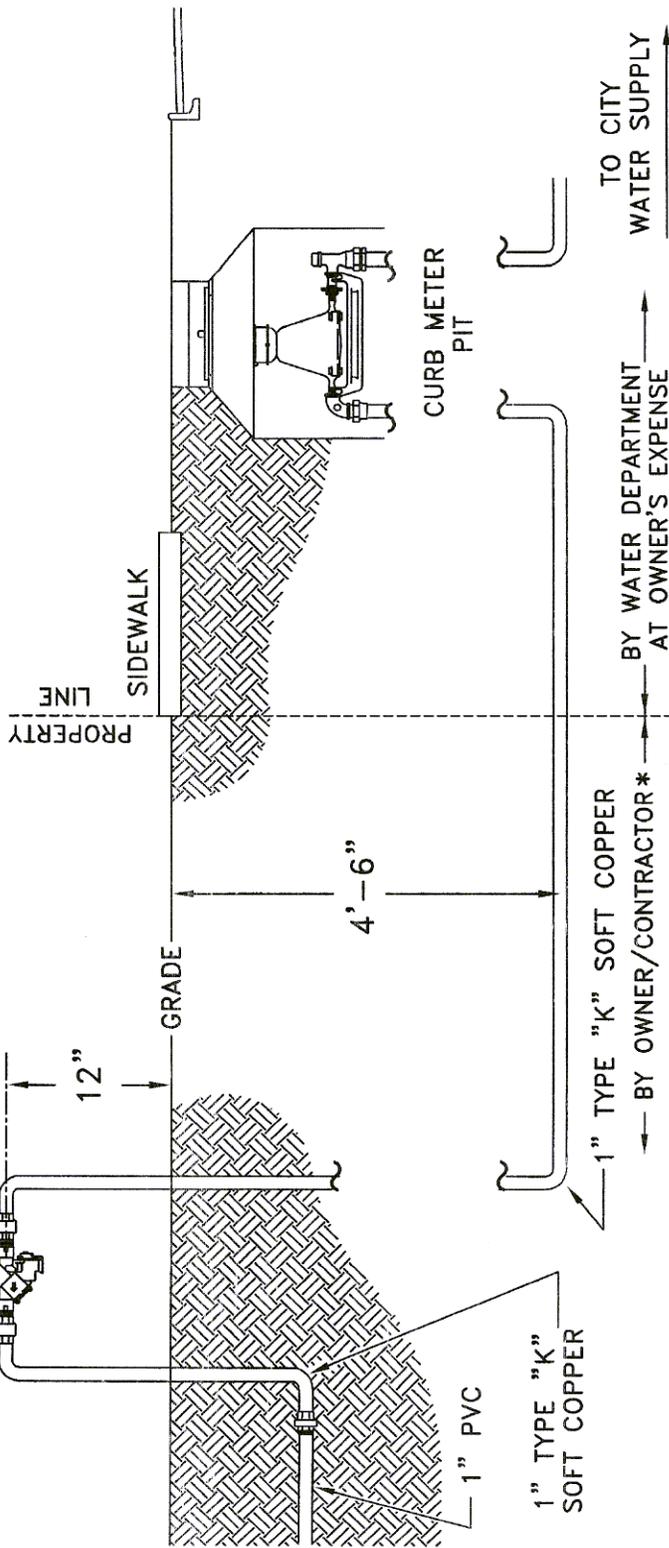


LAWN IRRIGATION

(CURB METER PIT AND R.P.Z. ABOVE GROUND)

ABUTTING BALL TYPE SHUT-OFF VALVES
SUPPLIED WITH BACKFLOW
PREVENTER

APPROVED TYPE REDUCED PRESSURE
PRINCIPLE BACKFLOW PREVENTER



TO CITY
WATER SUPPLY

BY WATER DEPARTMENT
AT OWNER'S EXPENSE

1" TYPE "K" SOFT COPPER

BY OWNER/CONTRACTOR*

* THE OWNER/CONTRACTOR PORTION OF WORK
MUST BE INSTALLED AND INSPECTED FOR
APPROVAL BY WATER DEPARTMENT PERSONNEL
PRIOR TO BACK FILLING AND THE
SERVICE INSTALLATION

APPROVED *T. E. 4-9-07*
UTILITIES ENGINEER
DATE

PAGE #26

Acc. F - 14280

The City of Akron, Ohio
Department of Public Service Public Utilities Bureau
Michael L. McGlinchy - Manager

LAWN IRRIGATION

(CURB METER PIT AND R.P.Z. ABOVE GROUND)

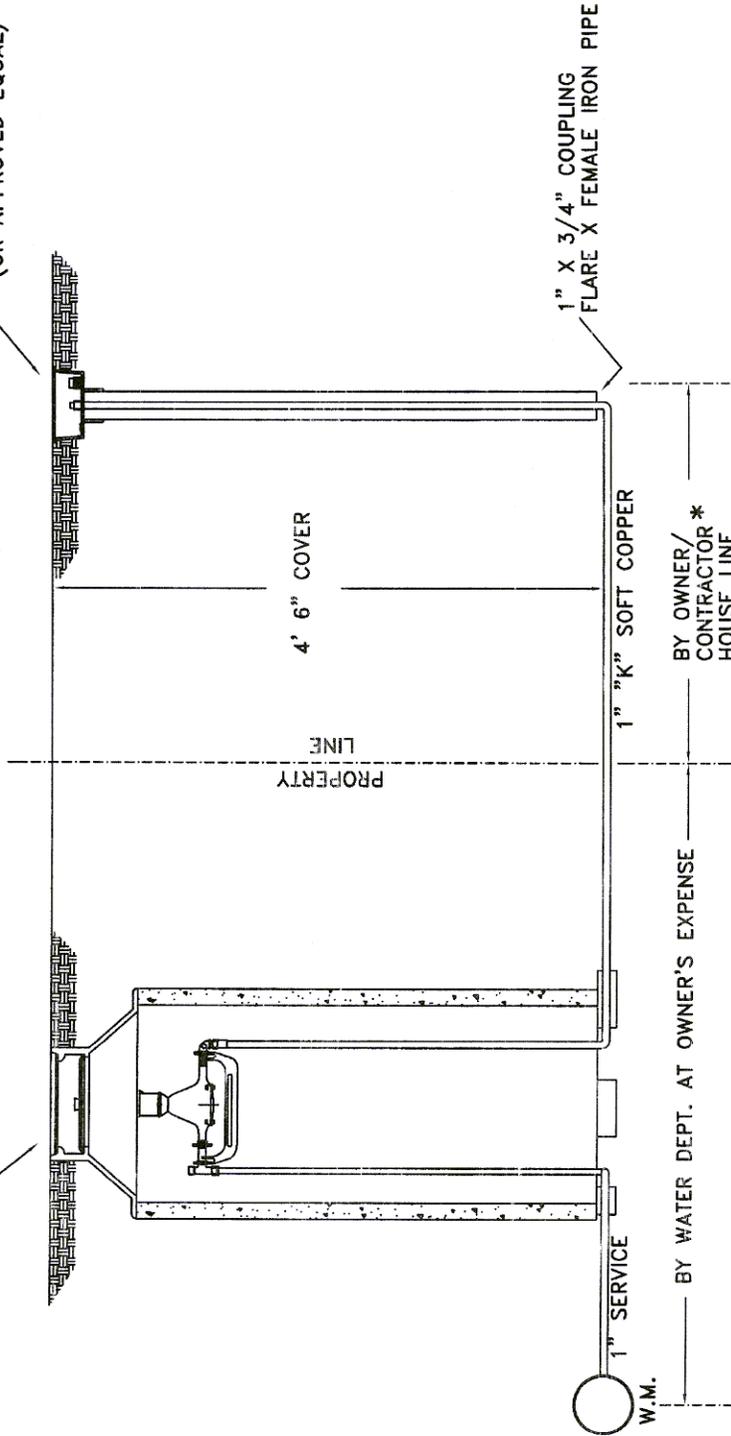


REVISED BY AK 3/07

NOT TO SCALE

MURDOCK FLUSH BOX
HYDRANT MODEL #V476
WITH LOCKING LID AND
BUILT IN VACUUM BREAKER
5' BURY
(OR APPROVED EQUAL)

CURB METER PIT



BY OWNER/
CONTRACTOR *
HOUSE LINE

BY WATER DEPT. AT OWNER'S EXPENSE

* THE OWNER/CONTRACTOR PORTION OF WORK
MUST BE INSTALLED AND INSPECTED FOR
APPROVAL BY WATER DEPARTMENT PERSONNEL
PRIOR TO BACK FILLING AND THE
SERVICE INSTALLATION

APPROVED

Tracy J. ...
UTILITIES ENGINEER

DATE

PAGE #27

Acc. F - 14282

The City of Akron, Ohio
Department of Public Service Public Utilities Bureau
Michael L. McGlinchy - Manager

MURDOCK YARD HYDRANT INSTALLATION

REVISED BY AK 3/07

NOT TO SCALE

