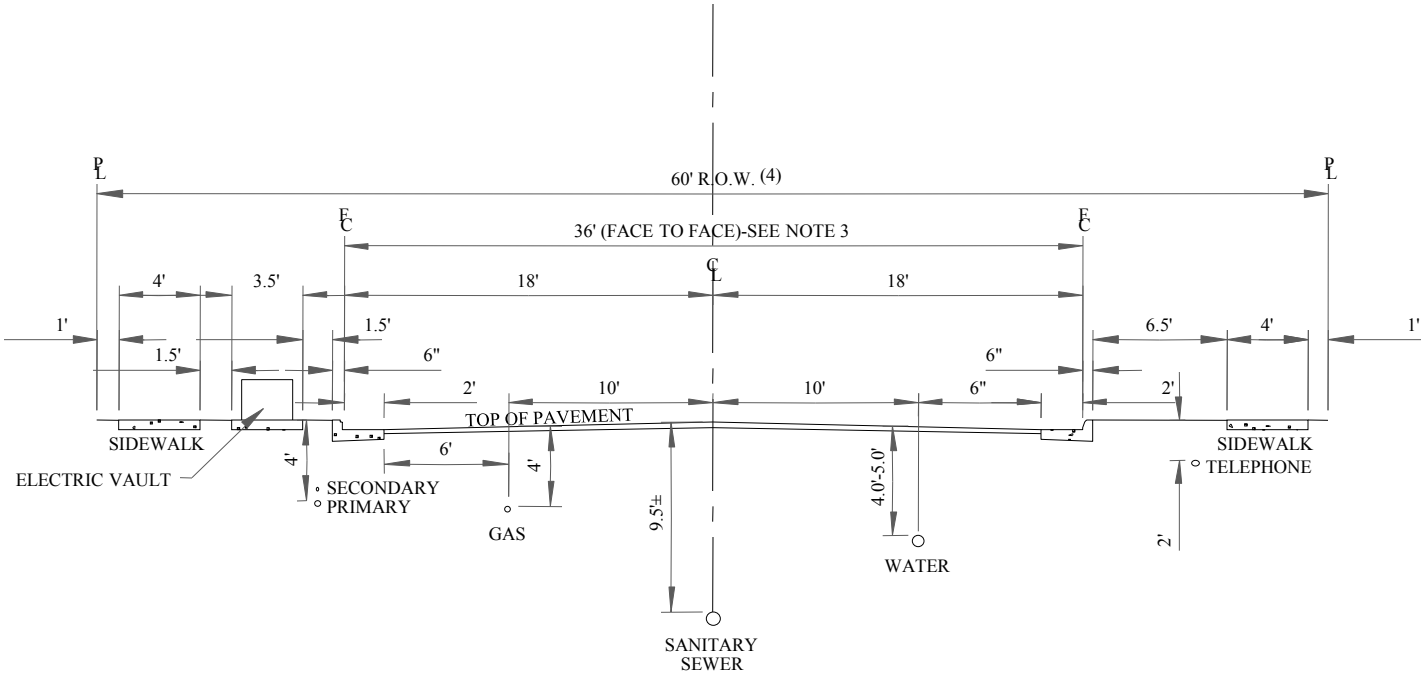
TYPICAL UTILITIES LOCATION



TYPICAL CROSS SECTION
UTILITIES LOCATION

GENERAL NOTES

1) STORM SEWERS SHALL MAINTAIN A TEN (10) FOOT CLEAR SEPARATION FROM WATER.

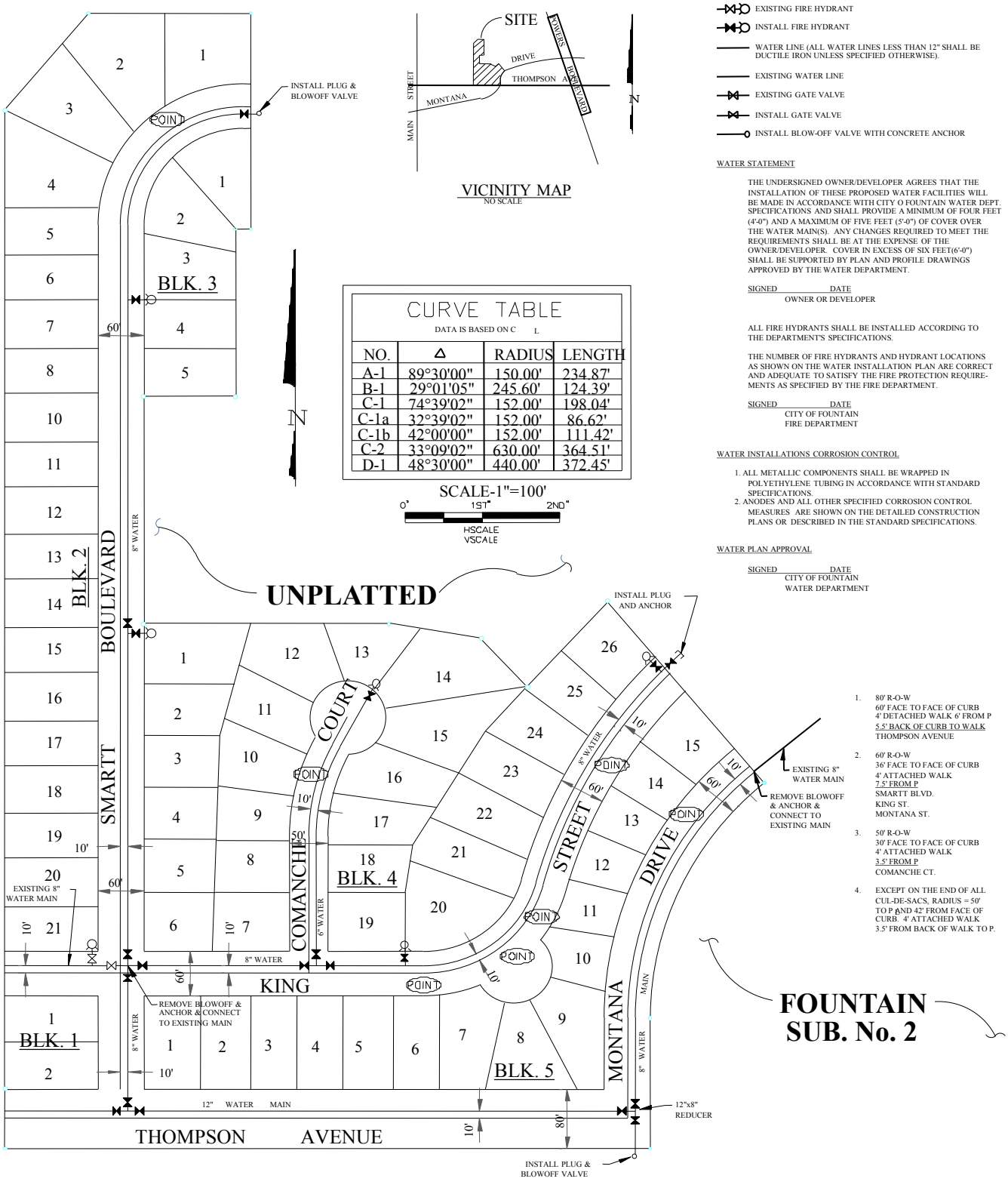
2) ELECTRIC CONDUITS SHALL BE ON THE OPPOSITE SIDE OF THE STREET FROM WATER.

3) FOR FORTY (40) FOOT WIDE STREET SECTIONS, MAINTAIN WATER 10 FEET FROM SANITARY SEWER AT STREET CENTERLINE.

4) FOR FITY (50) FOOT WIDE RIGHT-OF-WAY (ROW), A FIVE (5) FOOT WIDE SIDEWALK AND UTILITY EASEMENT ARE REQUIRED ADJACENT TO THE. STREET ROW. FIVE (5) FOOT SIDE ATTACHED SIDEWALK IS USED WITH ELECTRIC UTILITIES BEHIND WALK IN EASEMENT.

CITY OF FOUNTAIN Pure Colorado	**TYPICAL UTILITIES LOCATION**		
	DRAWN:	REVISED: WATER-MAIN-DEPTH-1/2001	**DWG - 1**
	DATE: OCT-1998	REVISED: JAN - 2006	
	SCALE: 1"=10'	REVISED:	

FOUNTAIN SUB. FILING NO. 1



WATER PLAN

LEGEND

- EXISTING FIRE HYDRANT
- INSTALL FIRE HYDRANT
- WATER LINE (ALL WATER LINES LESS THAN 12" SHALL BE DUCTILE IRON UNLESS SPECIFIED OTHERWISE).
- EXISTING WATER LINE
- EXISTING GATE VALVE
- INSTALL GATE VALVE
- INSTALL BLOW-OFF VALVE WITH CONCRETE ANCHOR

WATER STATEMENT

THE UNDERSIGNED OWNER/DEVELOPER AGREES THAT THE INSTALLATION OF THESE PROPOSED WATER FACILITIES WILL BE MADE IN ACCORDANCE WITH CITY O FOUNTAIN WATER DEPT. SPECIFICATIONS AND SHALL PROVIDE A MINIMUM OF FOUR FEET (4'-0") AND A MAXIMUM OF FIVE FEET (5'-0") OF COVER OVER THE WATER MAIN(S). ANY CHANGES REQUIRED TO MEET THE REQUIREMENTS SHALL BE AT THE EXPENSE OF THE OWNER/DEVELOPER. COVER IN EXCESS OF SIX FEET(6'-0") SHALL BE SUPPORTED BY PLAN AND PROFILE DRAWINGS APPROVED BY THE WATER DEPARTMENT.

SIGNED _____ DATE _____
OWNER OR DEVELOPER

ALL FIRE HYDRANTS SHALL BE INSTALLED ACCORDING TO THE DEPARTMENT'S SPECIFICATIONS.

THE NUMBER OF FIRE HYDRANTS AND HYDRANT LOCATIONS AS SHOWN ON THE WATER INSTALLATION PLAN ARE CORRECT AND ADEQUATE TO SATISFY THE FIRE PROTECTION REQUIREMENTS AS SPECIFIED BY THE FIRE DEPARTMENT.

SIGNED _____ DATE _____
CITY OF FOUNTAIN
FIRE DEPARTMENT

WATER INSTALLATIONS CORROSION CONTROL

1. ALL METALLIC COMPONENTS SHALL BE WRAPPED IN POLYETHYLENE TUBING IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
2. ANODES AND ALL OTHER SPECIFIED CORROSION CONTROL MEASURES ARE SHOWN ON THE DETAILED CONSTRUCTION PLANS OR DESCRIBED IN THE STANDARD SPECIFICATIONS.

WATER PLAN APPROVAL

SIGNED _____ DATE _____
CITY OF FOUNTAIN
WATER DEPARTMENT

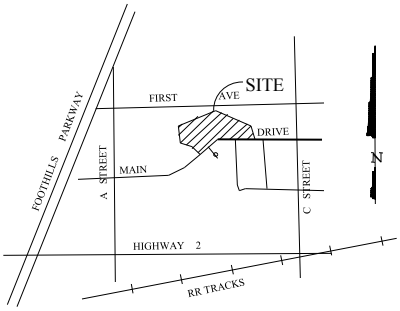
1. 80' R-O-W
   60' FACE TO FACE OF CURB
   4' DETACHED WALK 6' FROM P
   5.5' BACK OF CURB TO WALK
   THOMPSON AVENUE
2. 60' R-O-W
   36' FACE TO FACE OF CURB
   4' ATTACHED WALK
   7.5' FROM P
   SMARTT BLVD.
   KING ST.
   MONTANA ST.
3. 50' R-O-W
   30' FACE TO FACE OF CURB
   4' ATTACHED WALK
   3.5' FROM P
   COMANCHE CT.
4. EXCEPT ON THE END OF ALL CUL-DE-SACS, RADIUS = 50' TO P AND 42' FROM FACE OF CURB. 4' ATTACHED WALK 3.5' FROM BACK OF WALK TO P.

CITY OF FOUNTAIN
Pure Colorado

TYPICAL WATER PLAN, CITY MAINS

DRAWN:		REVISED: JAN 2001	DWG - 2
DATE:	OCT 1998	REVISED: JAN 2006	
SCALE:	NONE	REVISED:	

CITY BUSINESS PARK NO. 1



VICINITY MAP
NO SCALE

WATER NOTES

SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF FOUNTAIN SPECIFICATIONS.

THE UNDERSIGNED OWNER/DEVELOPER AGREES THAT THE INSTALLATION OF THESE PROPOSED WATER FACILITIES WILL BE MADE IN ACCORDANCE WITH THE CITY OF FOUNTAIN WATER DEPARTMENT SPECIFICATIONS AND SHALL PROVIDE A MINIMUM OF FOUR FEET (4'-0") AND A MAXIMUM OF FIVE FEET (5'-0") OF COVER OVER THE WATER MAIN(S). THE UNDERSIGNED UNDERSTANDING THAT ALL WATER MAINS, FIRE HYDRANTS AND APPURTENANCES AS INDICATED ON THIS WATER INSTALLATION PLAN SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE MAINTAINED BY THE OWNER.

SIGNED DATE
OWNER OR DEVELOPER

FIRE DEPARTMENT APPROVAL

THE NUMBER OF FIRE HYDRANTS AND HYDRANT LOCATIONS TOGETHER WITH THE MAIN SIZES INDICATED ON THIS WATER INSTALLATION PLAN ARE CORRECT AND ADEQUATE TO SATISFY THE FIRE PROTECTION REQUIREMENTS AS SPECIFIED BY THE FIRE DEPARTMENT.

SIGNED DATE
CITY OF FOUNTAIN
FIRE DEPARTMENT

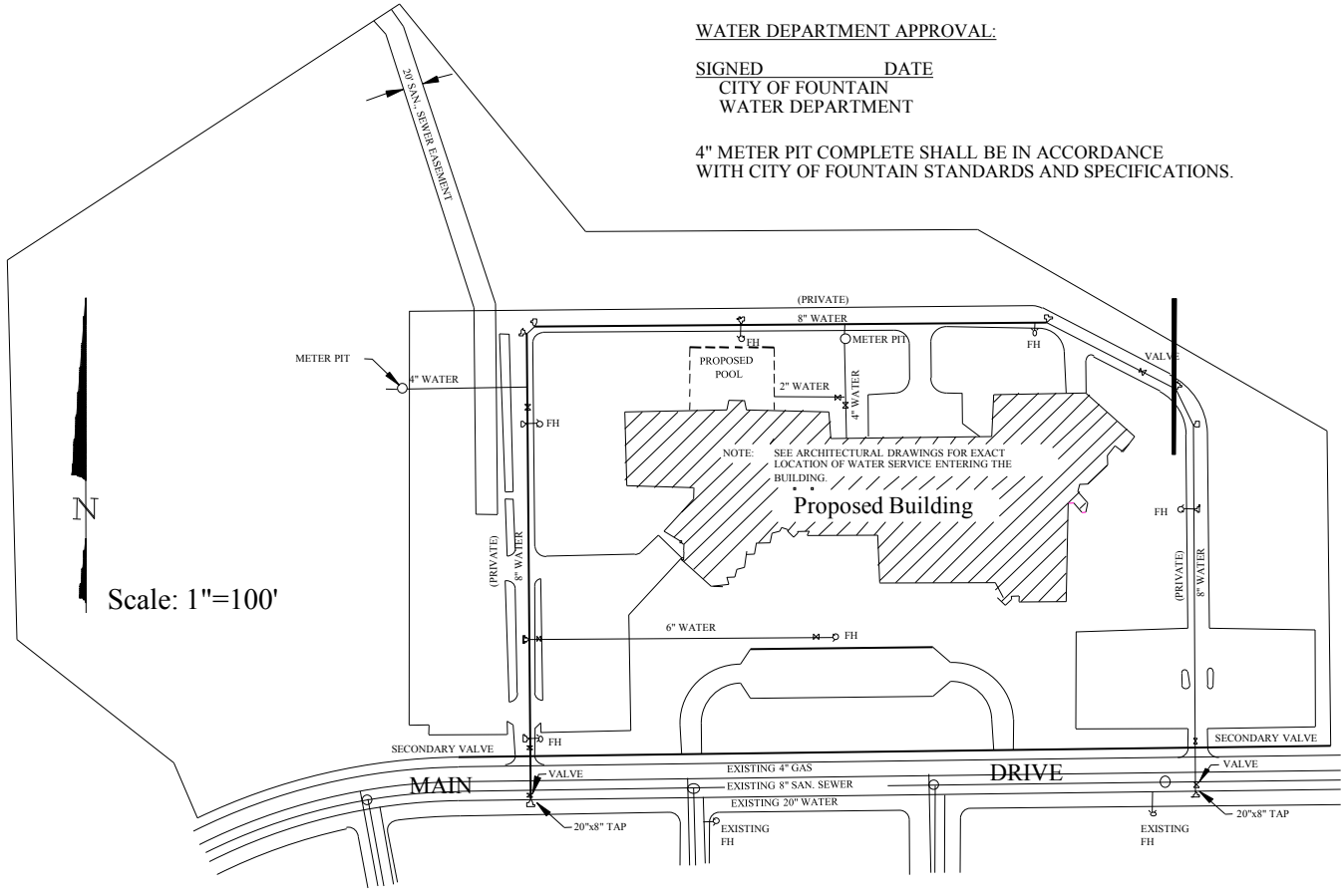
WATER INSTALLATION CORROSION CONTROL REQUIREMENTS
(TO BE DETERMINED PRIOR TO CONSTRUCTION)

☐ NONE REQUIRED
☐ REQUIRED, DESCRIBED AS FOLLOWS:

WATER DEPARTMENT APPROVAL:

SIGNED DATE
CITY OF FOUNTAIN
WATER DEPARTMENT

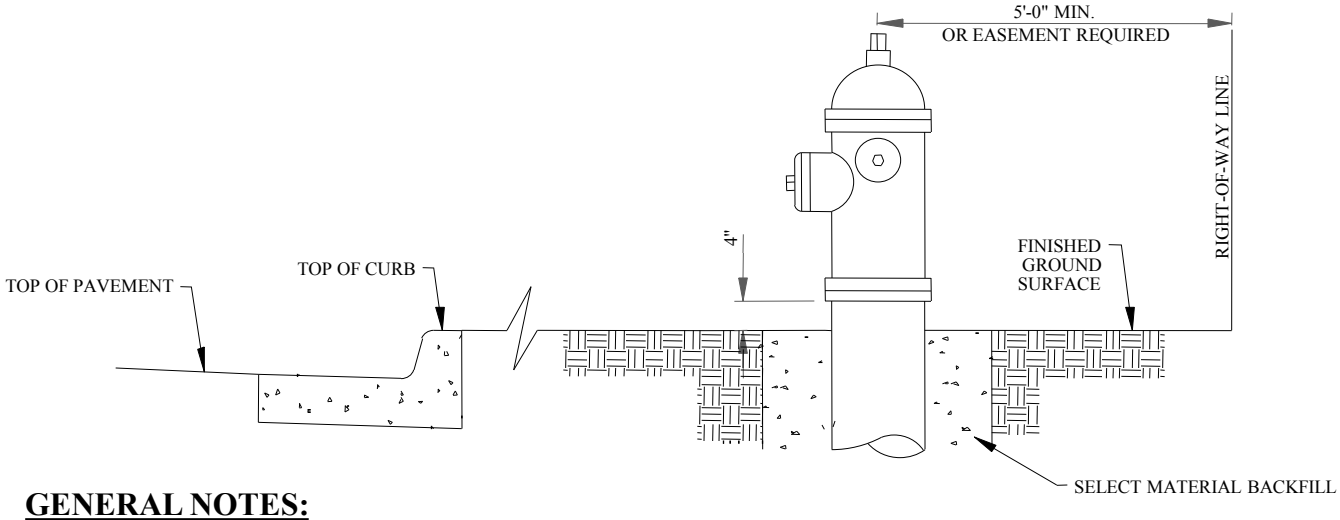
4" METER PIT COMPLETE SHALL BE IN ACCORDANCE WITH CITY OF FOUNTAIN STANDARDS AND SPECIFICATIONS.



TYPICAL WATER PLAN, PRIVATE MAINS

DRAWN:		REVISED: JAN 2001	DWG - 3
DATE:	OCT 1998	REVISED: JAN 2006	
SCALE:	NONE	REVISED:	

FIRE HYDRANT LOCATIONS



GENERAL NOTES:

1) HYDRANT NOZZLE SHALL BE POSITIONED AT RIGHT ANGLES TO THE CURB. IF NO CURB OR SIDEWALK EXISTS, NOZZLE SHALL BE PLACED AT RIGHT ANGLES TO STREET OR ALLEY.

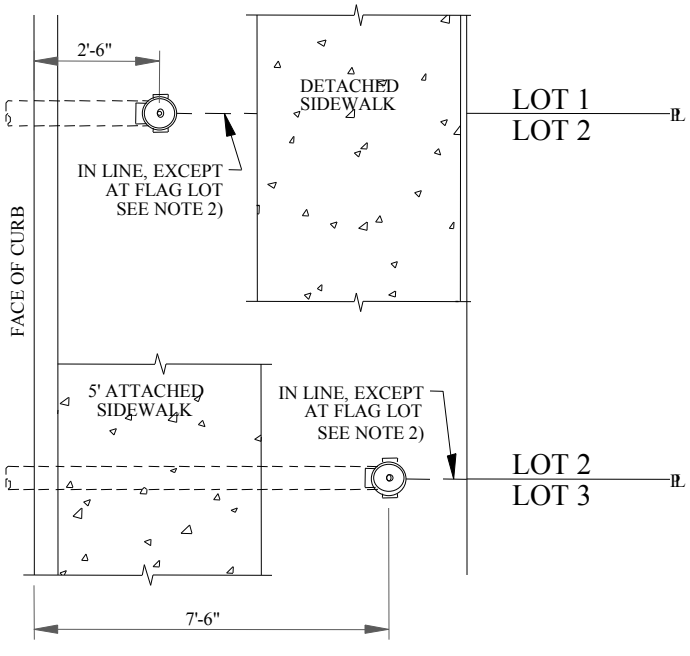
2) HYDRANTS INSTALLED AT FLAG LOT LINES SHALL BE OFFSET THREE (3) FEET FROM THE LOT LINE (AWAY FROM STEM).

3) HYDRANTS WILL BE PLACED A MINIMUM OF FIVE (5) FEET FROM ANY UTILITY OR DRAINAGE STRUCTURE.

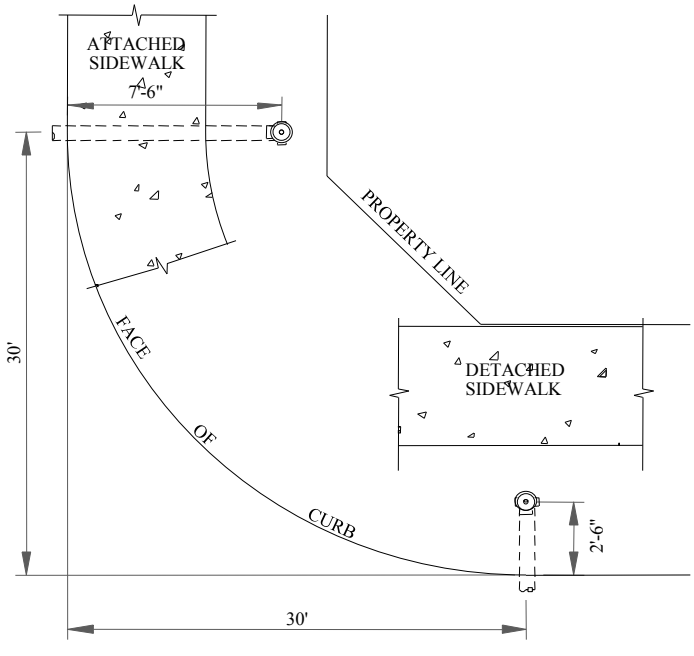
4) EASEMENTS MUST BE PROVIDED FOR ANY PUBLIC HYDRANT WHICH IS CLOSER THAN FIVE (5) FEET TO THE RIGHT-OF-WAY LINE.

5) ANY HYDRANTS BEING INSTALLED WITH CONDITIONS OTHER THAN THOSE MENTIONED AND/OR DETAILED BELOW WILL REQUIRE SIGNED APPROVAL FROM THE CITY OF FOUNTAIN'S WATER DEPARTMENT AND FIRE DEPARTMENT.

6) NO CONCRETE WITHIN TWO (2) FEET OF BASE OF HYDRANT.



LOT LINE LOCATIONS

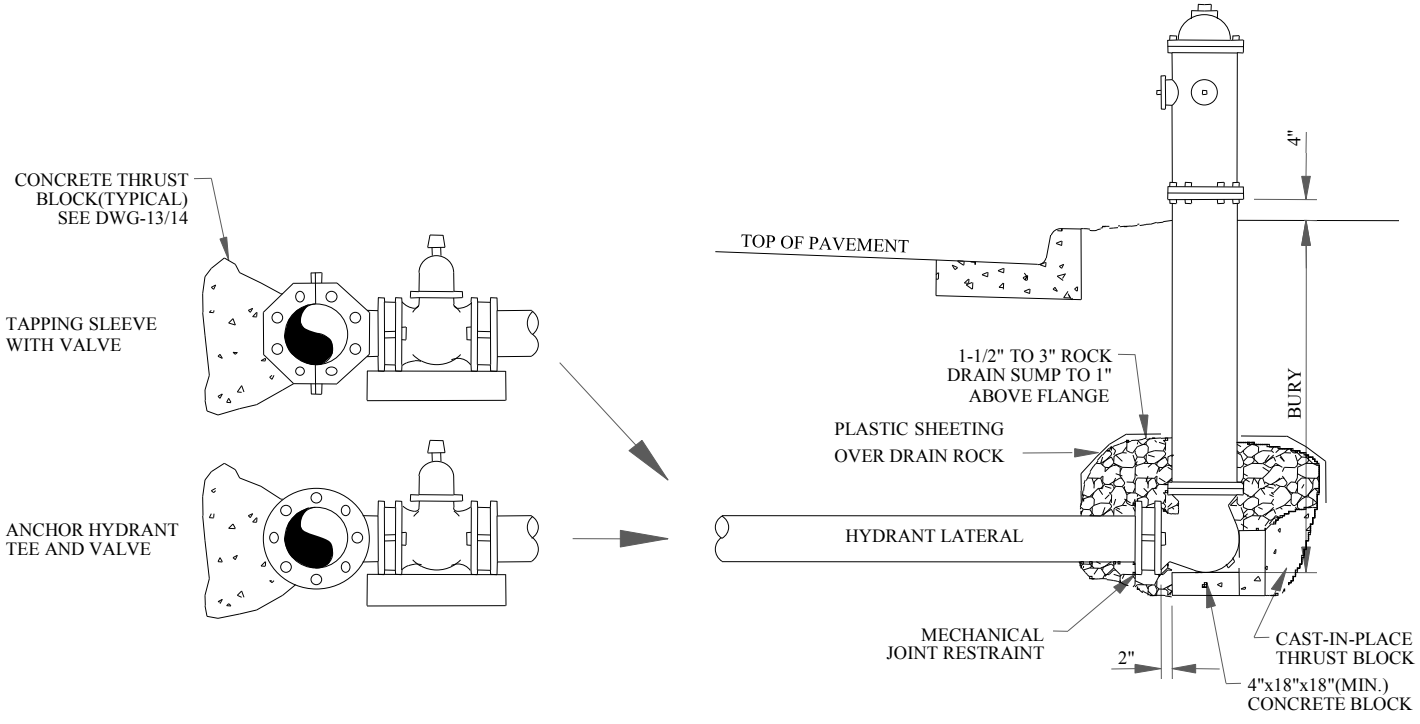


CORNER LOCATIONS

CITY OF FOUNTAIN Pure Colorado	**FIRE HYDRANT LOCATIONS**	
DRAWN:	REVISED: JAN 2006	**DWG - 4**
DATE: OCT 1998	REVISED:	
SCALE: NONE	REVISED:	

FIRE HYDRANT INSTALLATION

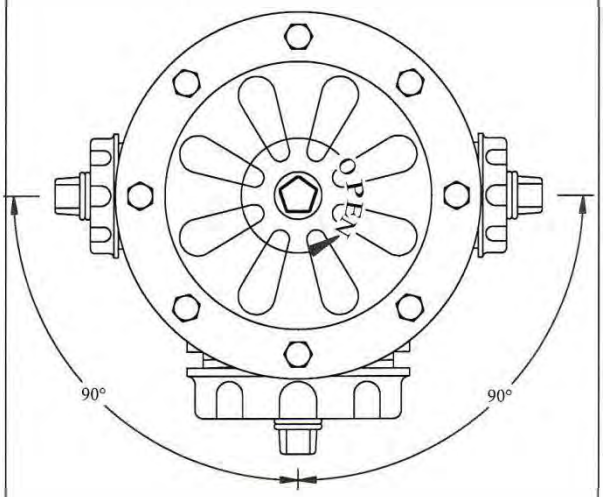
PLAN



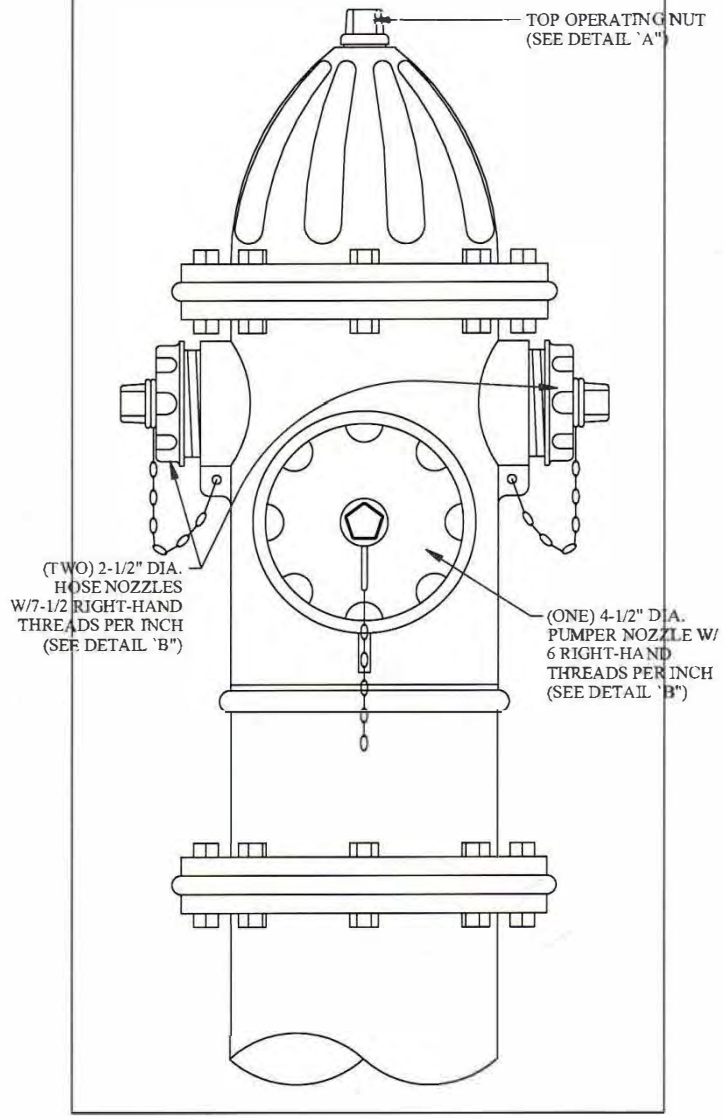
NOTES:

1. TIE BACK RODS:
   MAX. ROD LENGTH = 10'
   MIN. ROD LENGTH = 4'
2. MECHANICAL JOINT RESTRAINTS SHALL BE USED WITH ANCHOR & TIE RODS AND CONCRETE THRUST BLOCKS.
3. ANY HYD. LATERAL OVER TWENTY (20) FEET ' MUST HAVE JOINT RESTRAINTS.

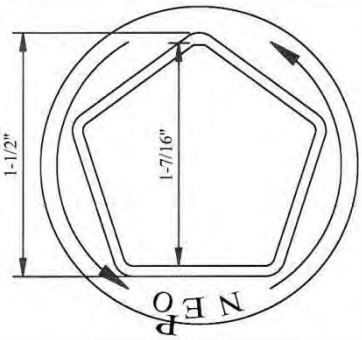
CITY OF FOUNTAIN Pure Colorado	**FIRE HYDRANT INSTALLATION**		
	DRAWN:	REVISED: JAN 2001	**DWG - 5**
	DATE: OCT 1998	REVISED: JAN 2006	
	SCALE: NONE	REVISED:	



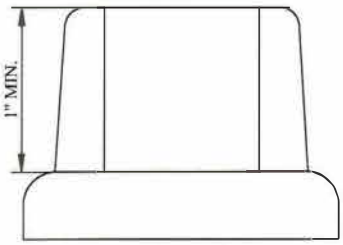
TOP (PLAN) VIEW



FACE VIEW

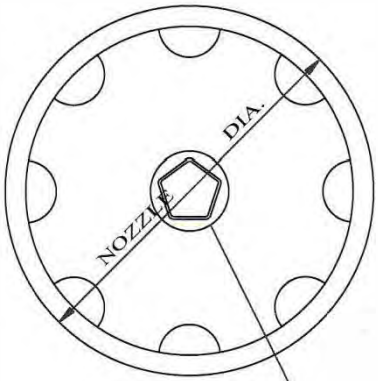


TOP (PLAN) VIEW

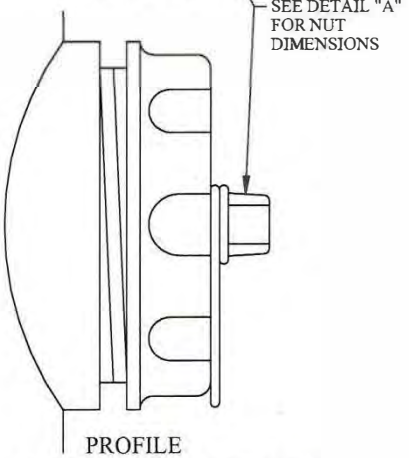


PROFILE

DETAIL `A"-OPERATING NUT



FACE VIEW



PROFILE

DETAIL `B"-NOZZLE DETAIL

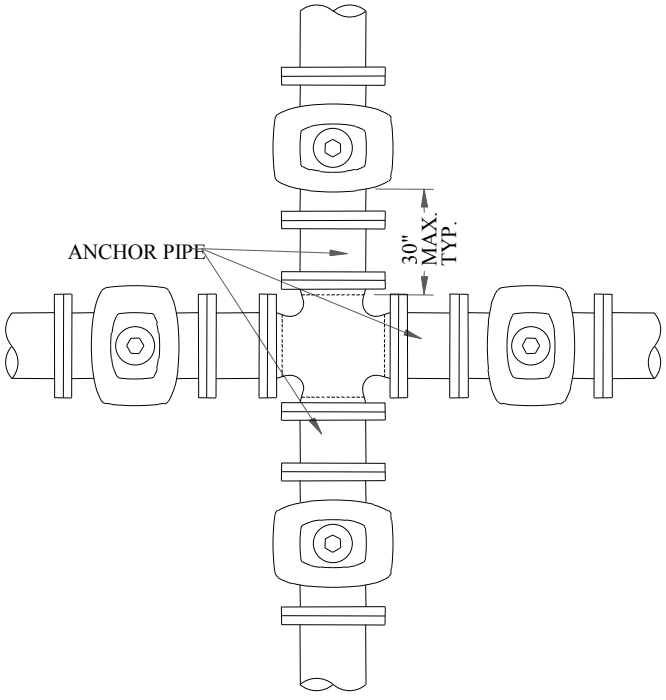
CAD-FILENAME

CITY OF FOUNTAIN
Pure Colorado

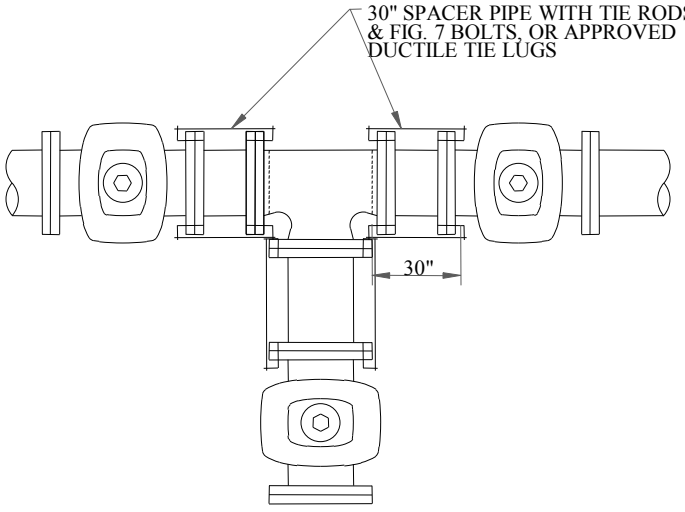
WATER DEPARTMENT-FIRE HYDRANT SPECIFICATIONS

DRAWN:		REVISED: JAN 2001	DWG - 6
DATE:	OCT 1998	REVISED:	
SCALE:	NONE	REVISED:	

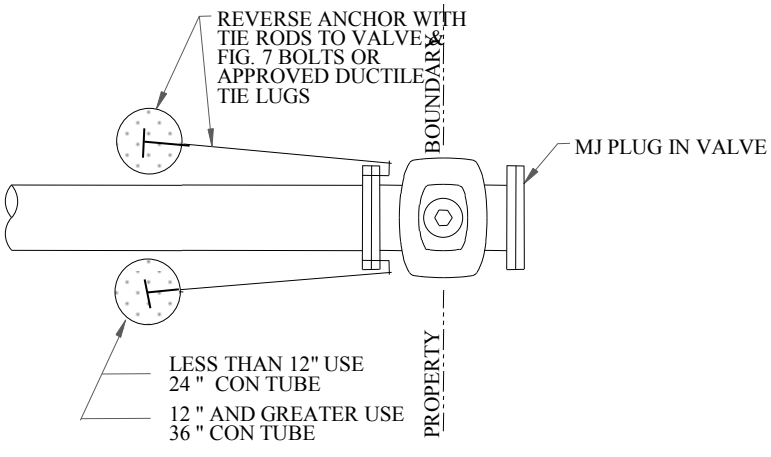
VALVE INSTALLATION & LOCATION



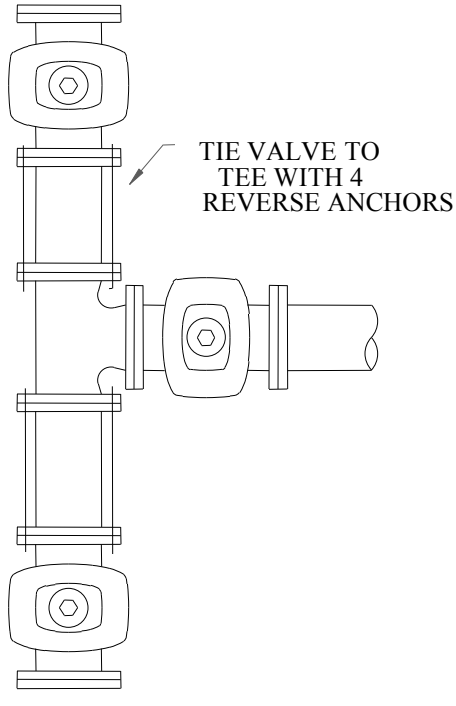
CROSS OR TEE WITH ANCHOR PIPES



CROSS OR TEE WITH SPACER PIPE & TIE RODS



AT END OF LINE USE REVERSE ANCHOR WITH TIE BACK RODS



WITH MJ ANCHOR TEE

GENERAL NOTES:

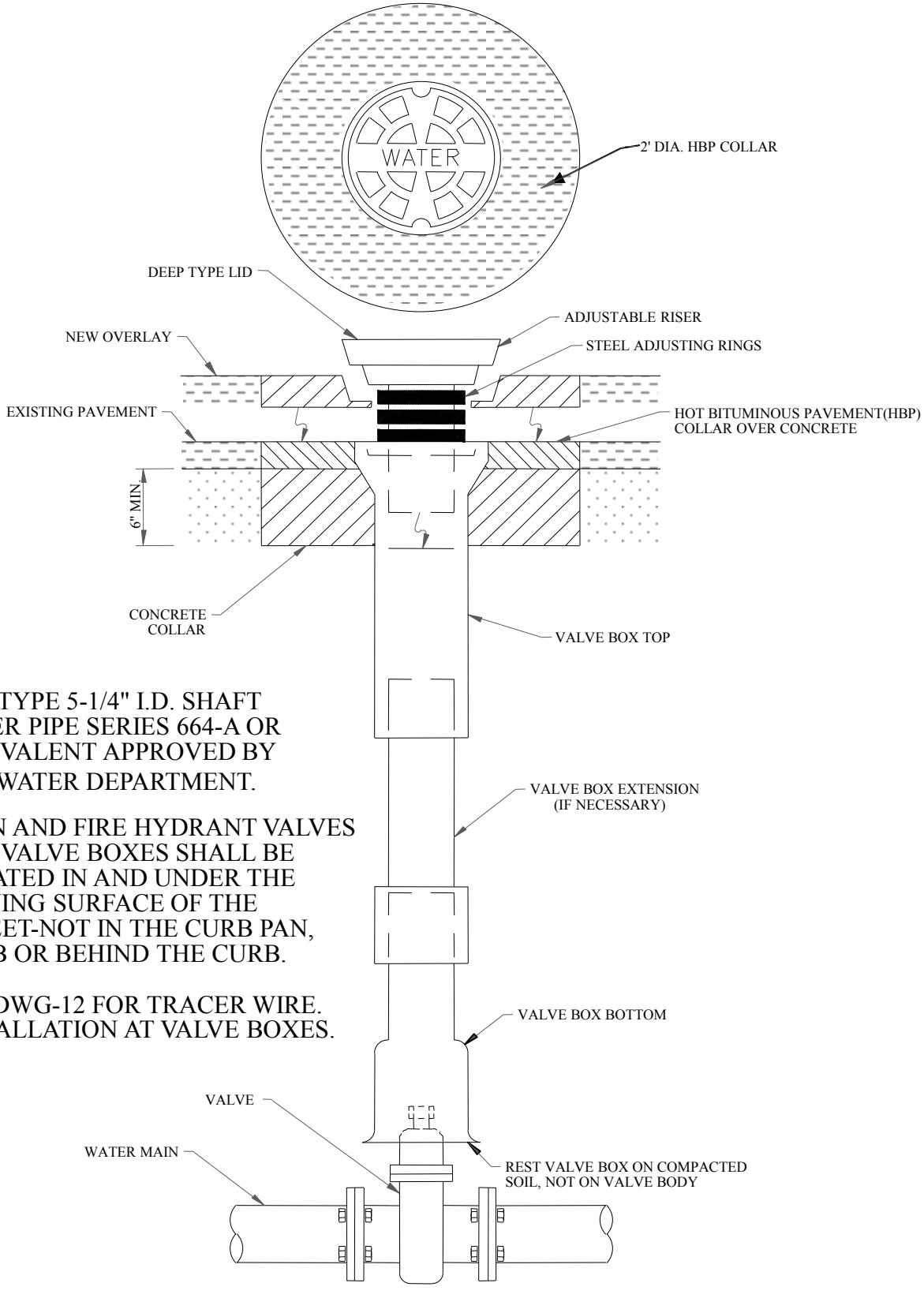
1. ON ANY VALVE INSTALLATION NEAR A FITTING, THE VALVE SHALL BE ANCHORED BY RODS, REVERSE ANCHOR AND MECHANICAL JOINT RESTRAINTS. 3/4" ALL-THREAD RODS SHALL BE USED WITH FIG. 7 BOLTS OR APPROVED DUCTILE TIE LUGS FOR DEAD END VALVES AND/OR PLUGS. ALL METALLIC COMPONENTS SHALL BE WRAPPED IN POLYETHYLENE TUBING.
2. ANCHOR PIPE MAY BE SUBSTITUTED FOR SPACER PIPE AND RODS.
3. THE CONCRETE REVERSE ANCHORS USED SHALL BE SIZED AS INDICATED ON DWG-18.
4. SEE DWG-27 & DWG-28 FOR APPLICATION OF MECHANICAL JOINT RESTRAINTS.
5. SEE DWG-8 FOR VALVE BOX INSTALLATION.

CITY OF FOUNTAIN
Pure Colorado

VALVE INSTALLATION & LOCATION

DRAWN:	REVISED: JAN 2001	**DWG - 7**
DATE: OCT 1998	REVISED:	
SCALE: NONE	REVISED:	

VALVE BOX INSTALLATION



NOTE:

1. SLIP TYPE 5-1/4" I.D. SHAFT TYLER PIPE SERIES 664-A OR EQUIVALENT APPROVED BY THE WATER DEPARTMENT.
2. MAIN AND FIRE HYDRANT VALVES AND VALVE BOXES SHALL BE LOCATED IN AND UNDER THE DRIVING SURFACE OF THE STREET-NOT IN THE CURB PAN, CURB OR BEHIND THE CURB.
3. SEE DWG-12 FOR TRACER WIRE. INSTALLATION AT VALVE BOXES.

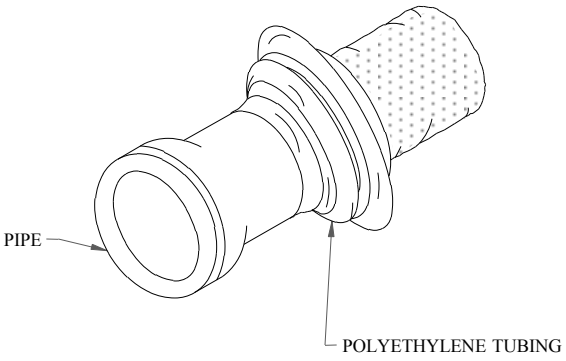
CITY OF FOUNTAIN
Pure Colorado

VALVE BOX INSTALLATION

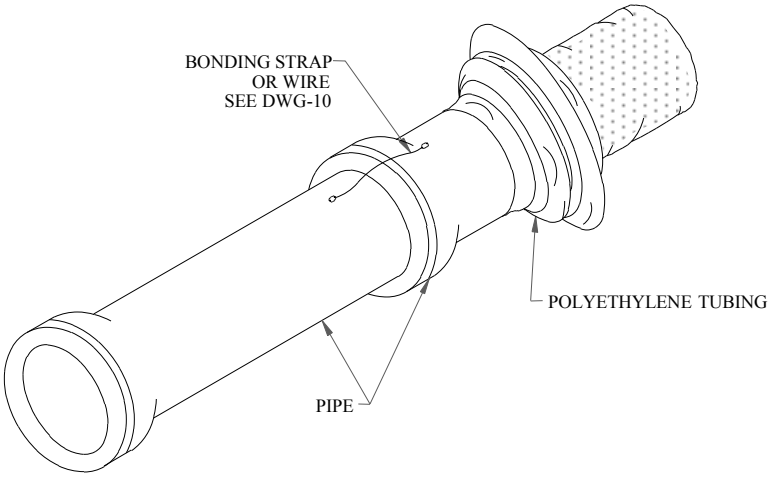
DRAWN:		REVISED: JAN 2001	**DWG - 8**
DATE:	OCT 1998	REVISED:	
SCALE:	NONE	REVISED:	

FIELD INSTALLATION OF POLYETHYLENE WRAP

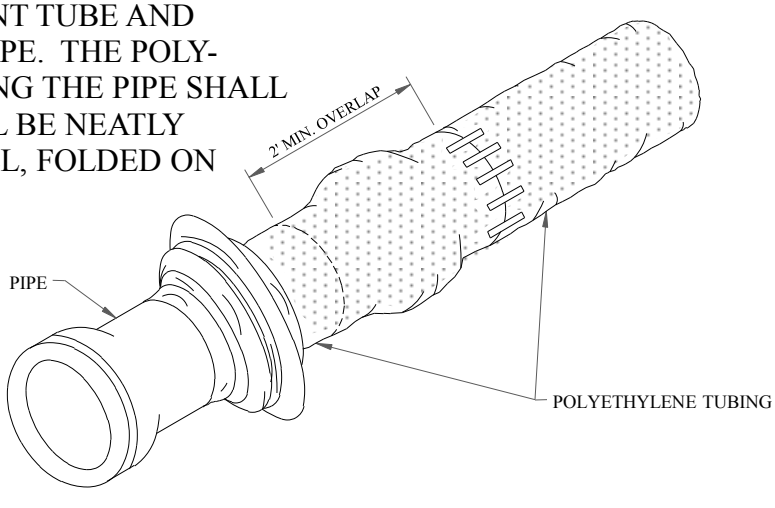
STEP 1:
PLACE TUBE OF POLYETHYLENE MATERIAL ON PIPE PRIOR TO LOWERING IT INTO TRENCH.



STEP 2:
PULL TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO END AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH TAPE TO HOLD THE PLASTIC TUBE IN PLACE. INSTALL BONDING STRAP OR WIRE AT EVERY JOINT OF PIPE PRIOR TO WRAPPING IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.



STEP 3:
OVERLAP FIRST TUBE WITH ADJACENT TUBE AND SECURE WITH PLASTIC ADHESIVE TAPE. THE POLY-ETHYLENE TUBE MATERIAL COVERING THE PIPE SHALL BE LOOSE. EXCESS MATERIAL SHALL BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED ON TOP OF PIPE AND TAPED IN PLACE.

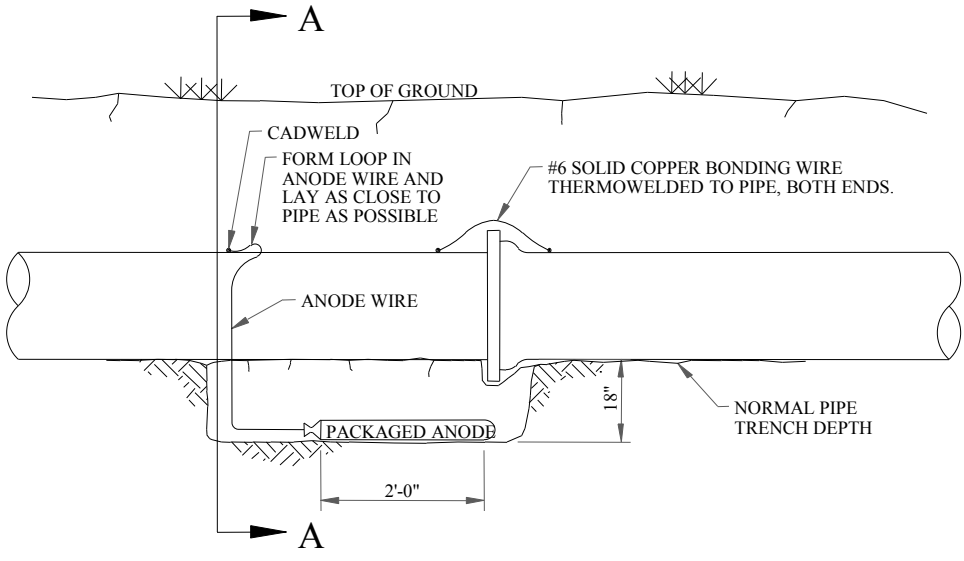


CITY OF FOUNTAIN
Pure Colorado

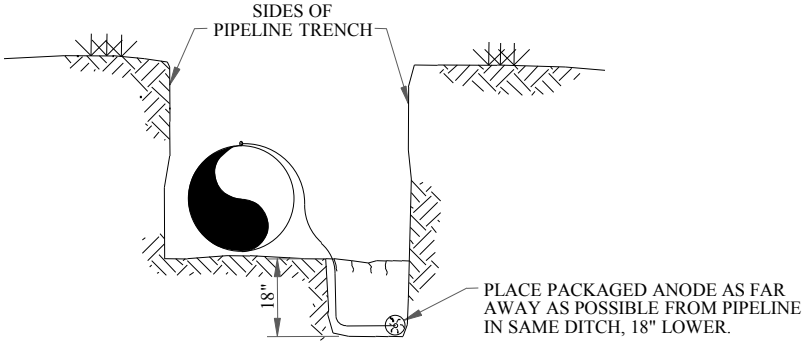
POLYETHYLENE WRAP

DRAWN:		REVISED: JAN 2001	**DWG - 9**
DATE:	OCT 1998	REVISED:	
SCALE:	NONE	REVISED:	

BONDING JOINT & ANODE INSTALLATION



ELEVATION



SECTION A-A

NOTE:

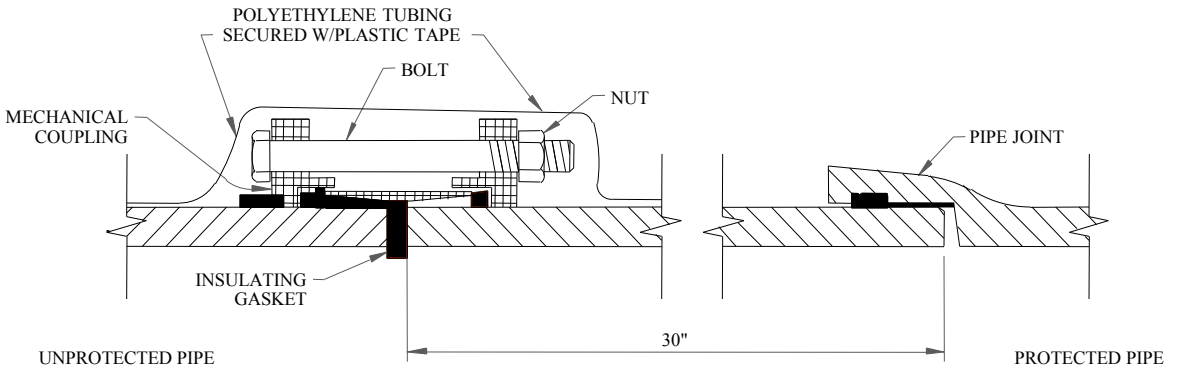
1. CADWELD CONNECTION TO BE PRIMED AND COATED CAREFULLY. PACKAGED ANODE SHOULD BE COVERED WITH FINE SOIL CONTAINING NO ROCKS OR DIRT CLUMPS, TAMPED.

2. WHEN ANODES ARE REQUIRED WITH METAL FITTINGS AND APPURTENANCES TOGETHER WITH PVC PIPE INSTALLATION, THE ANODES SHALL BE PLACED AND ATTACHED TO THE METAL IN SAME MANNER AS SHOWN IN THE DRAWING.

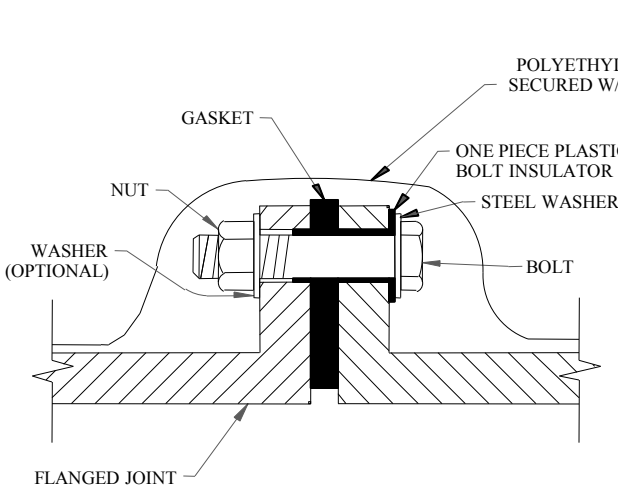
CITY OF FOUNTAIN
Pure Colorado

BONDING JOINT & ANODE INSTALLATION			
DRAWN:		REVISED: JAN 2001	DWG - 10
DATE:	OCT 1998	REVISED:	
SCALE:	NONE	REVISED:	

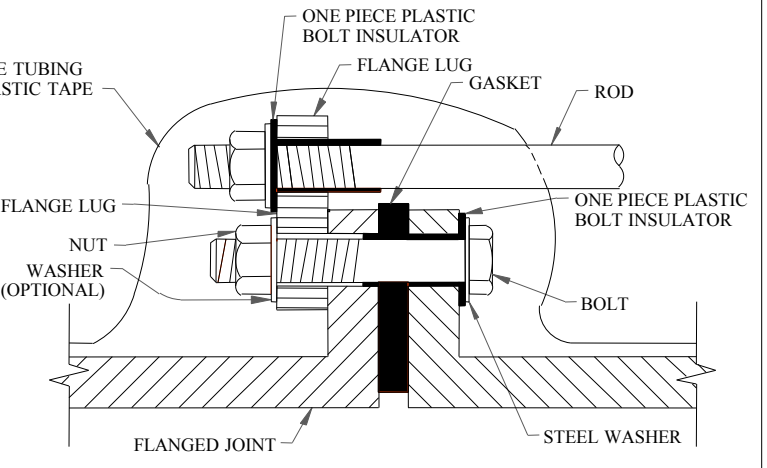
INSULATOR INSTALLATION



INSULATED MECHANICAL COUPLING



INSULATED FLANGE JOINT



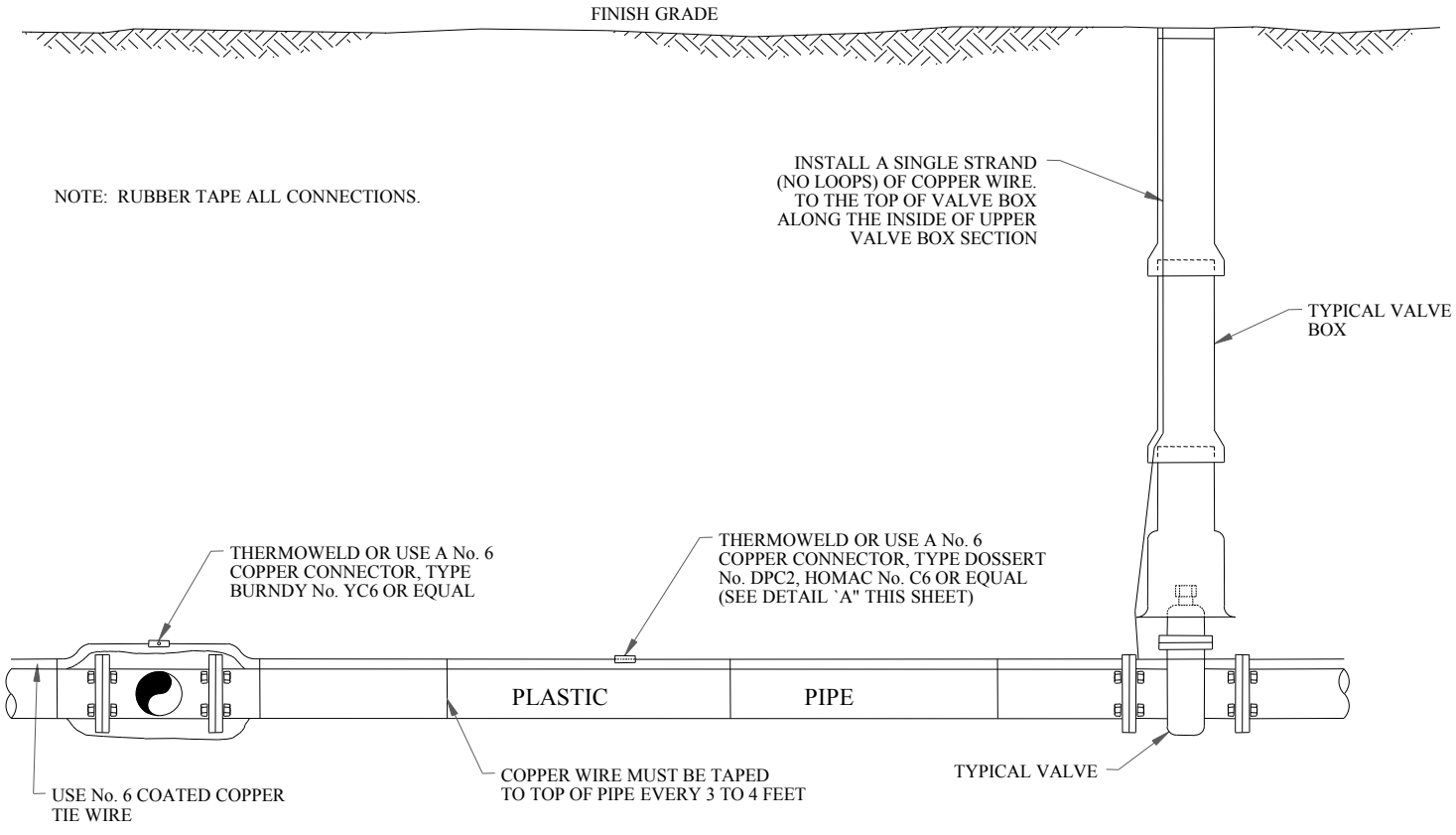
INSULATED TIE BACK ROD

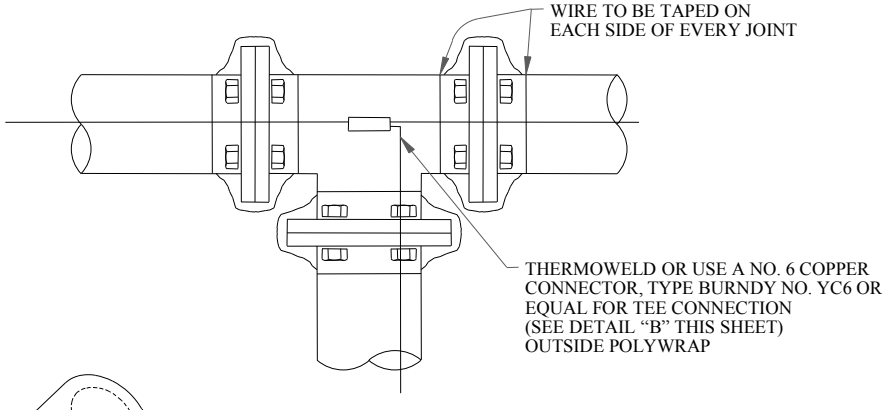
NOTE:

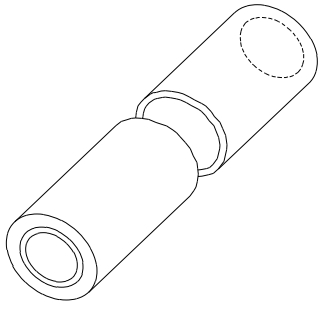
TEST WIRES TO BE USED WHEN REQUIRED.

INSULATOR INSTALLATION		
DRAWN:	REVISED: AUG 2002	DWG - 11
DATE: NOV 1998	REVISED:	
SCALE: NONE	REVISED:	

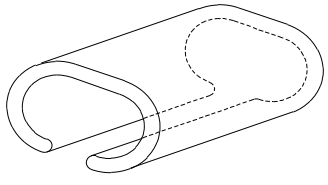
COPPER TRACER WIRE ON PVC PIPE







DETAIL "A"

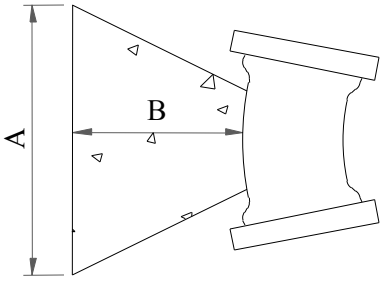


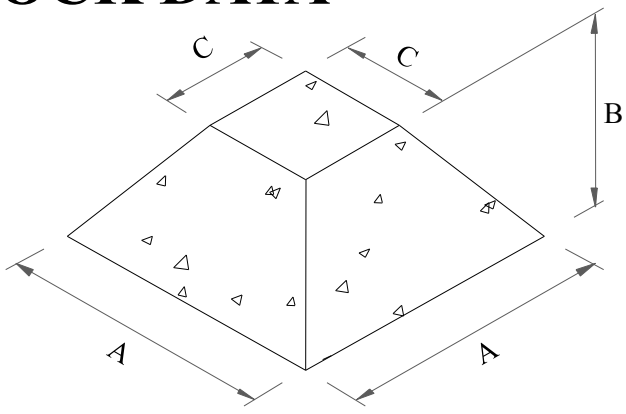
DETAIL "B"

COPPER TRACER WIRE ON PVC PIPE

DRAWN:		REVISED: AUG 2002	**DWG - 12**
DATE:	NOV 1998	REVISED: JAN 2006	
SCALE:	NONE	REVISED:	

THRUST BLOCK DATA





NOTE: SEE THE FOLLOWING VALUES FOR "C"

PIPE SIZE =	C =
12" & UNDER	1'-6"
16" TO 24"	2'-0"
30" TO 36"	3'-0"

OVER 36" A, B & C WILL BE GIVEN IN EACH INSTANCE

VOL. (yds)	A	B if C=1'-6"	B if C=2'-0"	B if C=3'-0"
1/8	2'-6"	0'-10"	n/a	n/a
1/4	2'-8"	1'-7"	n/a	n/a
1/2	3'-2"	2'-5"	2'-0"	n/a
3/4	4'-0"	2'-6"	2'-2"	n/a
1	4'-4"	3'-0"	2'-7"	2'-0"
1 1/4	4'-10"	3'-1"	2'-9"	2'-2"
1 1/2	5'-3"	3'-3"	2'-11"	2'-4"
1 3/4	5'-7"	3'-5"	3'-1"	2'-6"
2	5'-10"	3'-7"	3'-3"	2'-8"
2 1/4	6'-3"	3'-8"	3'-4"	2'-9"
2 1/2	6'-4"	3'-11"	3'-7"	3'-0"
2 3/4	6'-9"	3'-11"	3'-7"	3'-0"
3	6'-10"	4'-1"	3'-9"	3'-2"
3 1/4	7'-3"	4'-1"	3'-9"	3'-2"
3 1/2	7'-4"	4'-3"	3'-11"	3'-4"
3 3/4	7'-7"	4'-4"	4'-0"	3'-5"
4	7'-11"		4'-0"	3'-5"
4 1/4	8'-1"		4'-0"	3'-6"
4 1/2	8'-4"		4'-0"	3'-6"
4 3/4	8'-6"		4'-1"	3'-7"

VOL. (yds)	A	B if C=1'-6"	B if C=2'-0"	B if C=3'-0"
5	8'-8"		4'-2"	3'-8"
5 1/4	8'-11"		4'-2"	3'-8"
5 1/2	9'-1"		4'-3"	3'-9"
5 3/4	9'-3"		4'-4"	3'-10"
6	9'-4"		4'-5"	3'-11"
6 1/4	9'-6"		4'-6"	4'-0"
6 1/2	9'-8"		4'-6"	4'-0"
6 3/4	9'-11"		4'-6"	4'-0"
7	10'-2"		4'-6"	4'-0"
7 1/4	10'-3"		4'-7"	4'-1"
7 1/2	10'-4"		4'-8"	4-2"
7 3/4	10'-5"		4'-9"	4'-3"
8	10'-6"		4'-10"	4'-4"
8 1/4	10'-8"		4'-10"	4'-4"
8 1/2	10'-9"		4'-11"	4'-5"
8 3/4	10'-11"		4'-11"	4'-5"
9	11'-1"		4'-11"	4'-5"
9 1/4	11'-2"		5'-0"	4'-6"
9 1/2	11'-4"		5'-0"	4'-6"
9 3/4	11'-5"		5'-0"	4'-6"
10	11'-8"		5'-0"	4'-6"

ALL WATER MAINS GREATER THAN TWELVE (12) INCHES IN DIAMETER SHALL HAVE THRUST BLOCK DESIGNED & SHOWN ON THE CONSTRUCTION DOCUMENTS.

SEE VOLUMES ABOVE FOR A, B & C DIM.

FITTING	4"	6"	8"	12"
TEE	1/8 yd.	1/2 yd.	3/4 yd.	2 yd.
90° BEND	1/8 yd.	3/4 yd.	1 1/4 yd.	3 yd.
45° BEND	1/8 yd.	1/2 yd.	3/4 yd.	1 1/2 yd.
22-1/2° BEND	1/8 yd.	1/8 yd.	1/4 yd.	3/4 yd.
11-1/4° BEND	1/8 yd.	1/8 yd.	1/8 yd.	1/4 yd.

CITY OF FOUNTAIN
Pure Colorado

THRUST BLOCK DATA

DRAWN:		REVISED: AUG 2002	**DWG - 13**
DATE: NOV 1998		REVISED:	
SCALE: NONE		REVISED:	

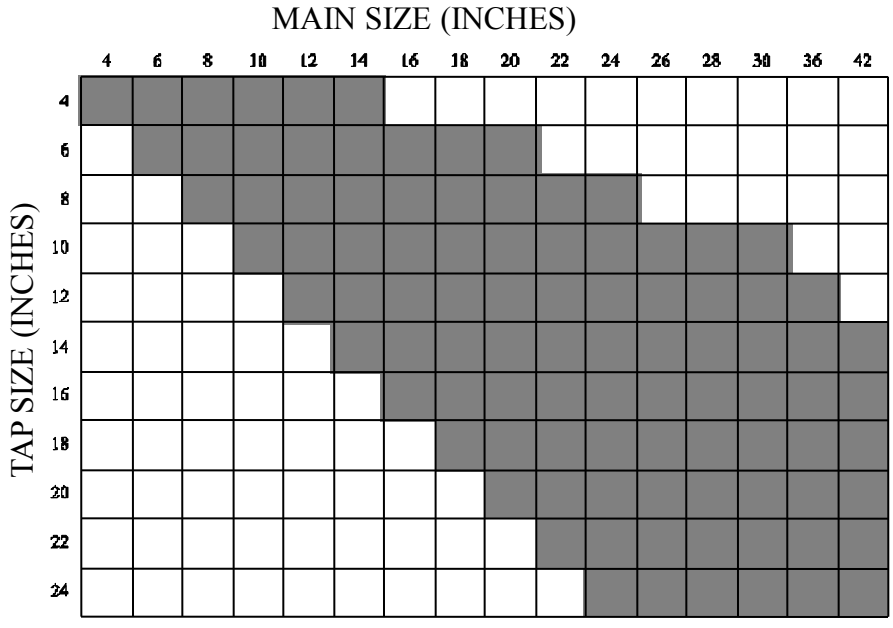
THRUST BLOCKS REQUIRED FOR TAPS

CONCRETE THRUST BLOCKS

WATER MAIN AND TAP SIZE COMBINATIONS WHICH REQUIRE A CONCRETE THRUST REACTION BLOCK BEHIND THE MAIN AT THE TAPPING SLEEVE OR SADDLE.

ALL WATER MAINS

■ INDICATES CONCRETE THRUST BLOCK REQUIRED



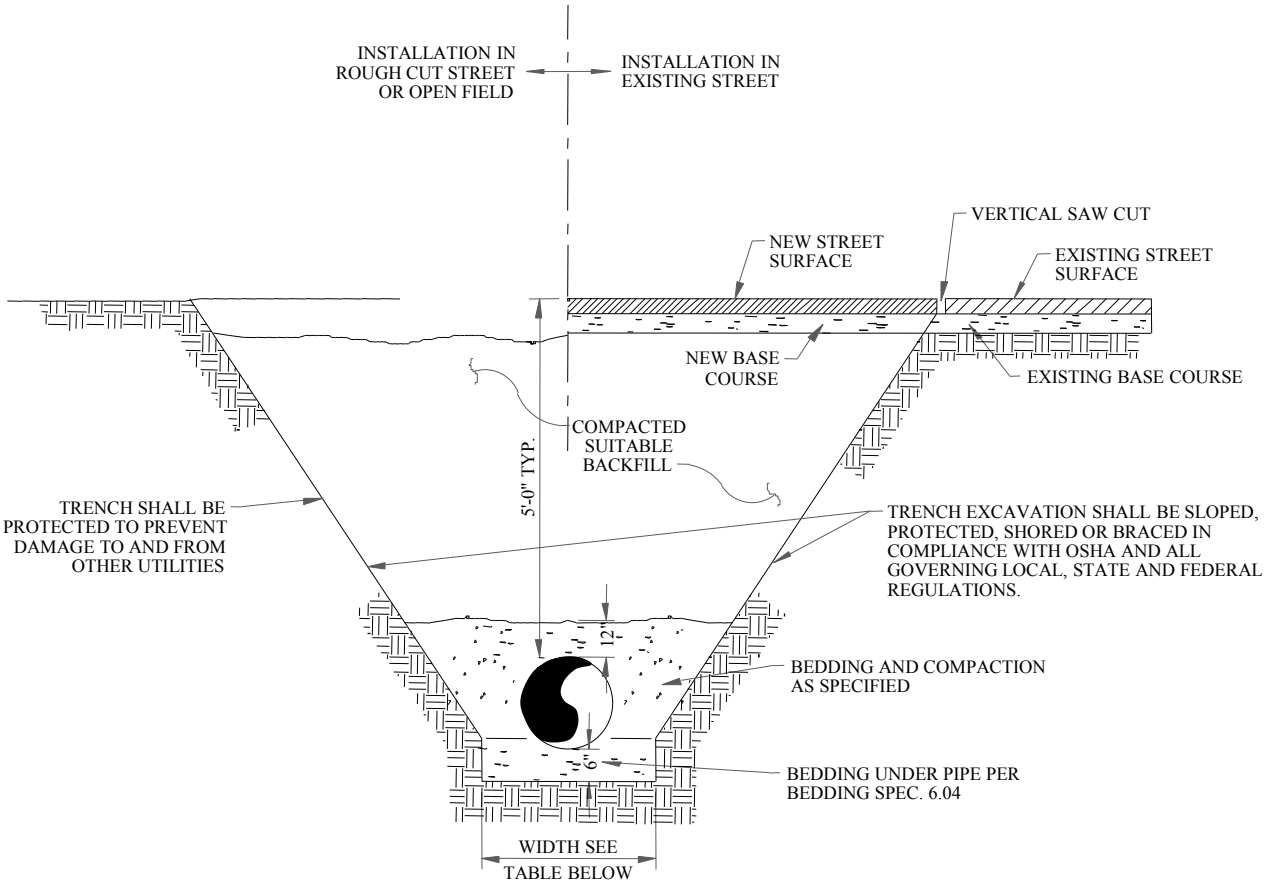
ANY THRUST REACTION BLOCK REQUIREMENTS FOR WATER MAIN AND TAP SIZE COMBINATIONS OTHER THAN THOSE SHOWN ABOVE WILL REQUIRE SPECIAL DESIGN APPROVAL BY THE CITY OF FOUNTAIN'S WATER DEPARTMENT.

CITY OF FOUNTAIN
Pure Colorado

THRUST BLOCKS REQUIRED FOR TAPS

DRAWN:		REVISED: AUG 2002	**DWG - 14**
DATE:	NOV 1998	REVISED:	
SCALE:	NONE	REVISED:	

TYPICAL TRENCH CROSS SECTION



BOTTOM OF TRENCH WIDTH		
PIPE DIAMETER	MINIMUM WIDTH	MAXIMUM WIDTH
4"	1'-5"	3'-9"
6"	1'-7"	3'-11"
8"	1'-9"	4'-1"
12"	2'-1"	4'-5"
16"	2'-6"	4'-9"
20"	2'-10"	5'-2"
24"	3'-2"	5'-6"

AN OVER EXCAVATED TRENCH SHALL BE REFILLED AND THOROUGHLY COMPACTED UNDER THE DIRECTION OF THE WATER DEPT.
UNDER NO CIRCUMSTANCES WILL PIPE BE LAID IN A PROPOSED FILL AREA PRIOR TO IT BEING COMPLETELY FILLED. THE FILL WILL BE PLACED FIRST TO PROPOSED GRADE AND COMPACTED AS REQUIRED. A TRENCH THEN WILL BE EXCAVATED AND THE PIPE INSTALLED IN THE USUAL MANNER.

CITY OF FOUNTAIN
Pure Colorado

TYPICAL TRENCH CROSS SECTION

DRAWN:	REVISED: AUG 2002	**DWG - 15**
DATE: NOV 1998	REVISED: JAN 2006	
SCALE: NONE	REVISED:	

MAXIMUM PIPELINE DEFLECTION DATA

MAXIMUM DEFLECTION

PER SLIP JOINT OF D.I.P.

PIPE DIAMETER			MFRS. DEFL.	DESIGN DEFLECTION (80% MAX.)			APPROX. RADIUS FOR DEFLECTING CURVES WITHOUT BENDS	
					MAX. DEFL. DIST.			
I.D.	O.D.(IN.)	O.D.(FT.)			(1)	(2)	20'L	18'L
4"	4.80"	.400'	5°00'00"	4°00'00"	16"	15"	286'	258'
6"	6.90"	.575'	5°00'00"	4°00'00"	16"	15"	286'	258'
8"	9.05"	.754'	5°00'00"	4°00'00"	16"	15"	286'	258'
10"	11.10"	.925'	5°00'00"	4°00'00"	16"	15"	286'	258'
12"	13.20"	1.100'	5°00'00"	4°00'00"	16"	15"	286'	258'
14"	15.30"	1.275'	3°00'00"	2°24'00"	10"	9"	477'	430'
16"	17.40"	1.450'	3°00'00"	2°24'00"	10"	9"	477'	430'
18"	19.50"	1.625'	3°00'00"	2°24'00"	10"	9"	477'	430'
20"	21.60"	1.800'	3°00'00"	2°24'00"	10"	9"	477'	430'
24"	25.80"	2.150'	3°00'00"	2°24'00"	10"	9"	477'	430'
30"	32.00"	2.666'	2°30'00"	2°00'00"	8"	7"	573'	516'
36"	38.30"	3.192'	2°00'00"	1°36'00"	6"	6"	716'	645'
42"	44.50"	3.708'	2°00'00"	1°36'00"	6"	6"	716'	645'

(1) 20'L = NORMAL TWENTY (20) FOOT JOINT LAYING LENGTH.

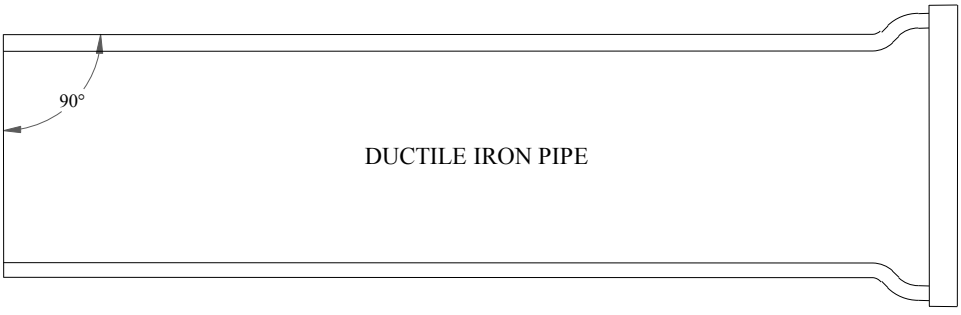
(2) 18'L = NORMAL EIGHTEEN (18) FOOT JOINT LAYING LENGTH.

CITY OF FOUNTAIN
Pure Colorado

MAXIMUM PIPELINE DEFLECTION DATA

DRAWN:	REVISED: JAN 2001	**DWG - 16**
DATE: NOV 1998	REVISED:	
SCALE: NONE	REVISED:	

PIPE CUTTING



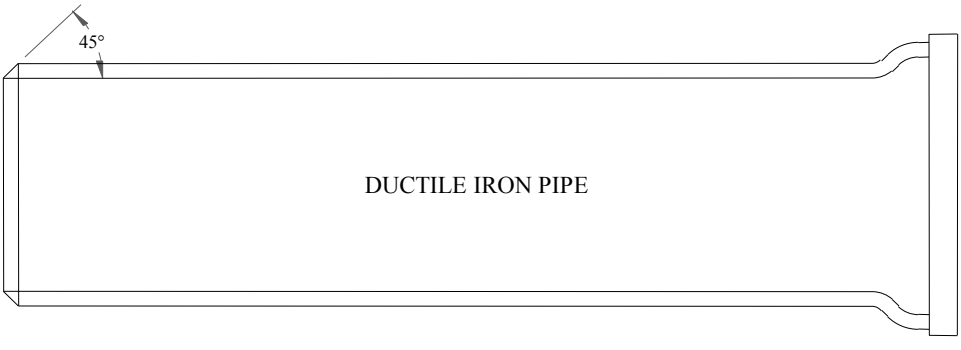
MECHANICAL JOINT CONNECTION

PIPE MUST BE CUT AT RIGHT ANGLES TO LONGITUDINAL CENTERLINE IN ALL CASES.

PIPE ENDS SHALL BE FREE OF BURRS.

MORTAR LINING SHALL BE FLUSH WITH PIPE END.

GOUGES CUT IN PIPE ENDS SHALL NOT BE ALLOWED.



SLIP JOINT CONNECTION

PIPE CUT IN STRAIGHT LINE AND BEVELED AT 45° ANGLE ON END.

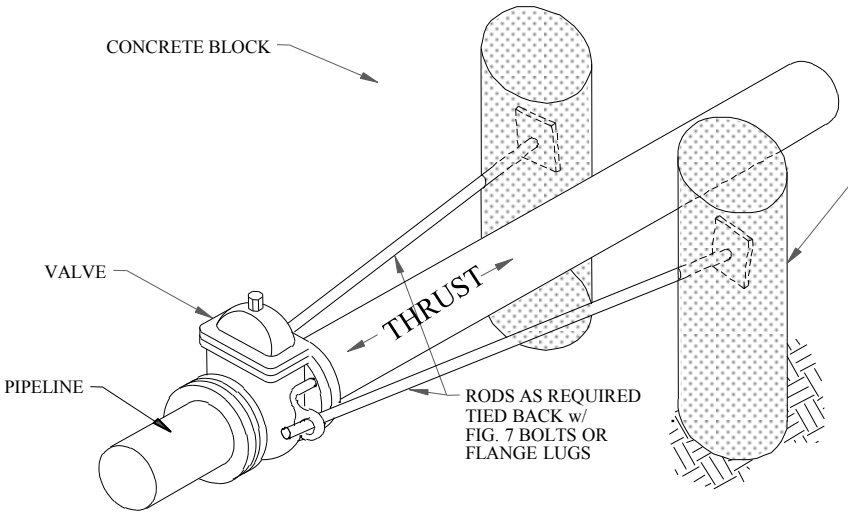
GENERAL NOTES:

1. ALL PIPE CUTTING EQUIPMENT AND PIPE CUTS MUST BE APPROVED BY THE CITY OF FOUNTAIN WATER DEPARTMENT INSPECTOR.
2. ALL PIPE ENDS TO BE USED IN INSTALLATION SHALL BE DRESSED SMOOTH TO THE SATISFACTION OF THE INSPECTOR PRIOR TO INSTALLATION.
3. AT THE REQUEST OF THE CONTRACTOR MAKING THE INSTALLATION, THE DEPARTMENT WILL MAKE PIPE CUTS, PROVIDING THE CURRENT FEE PER CUT IS PAID AND 24-HOUR NOTICE IS GIVEN (THE CURRENT FEE IS SUBJECT TO CHANGE).
4. ALL DIP DELIVERED TO JOB SITE MUST BE NEW MATERIAL.

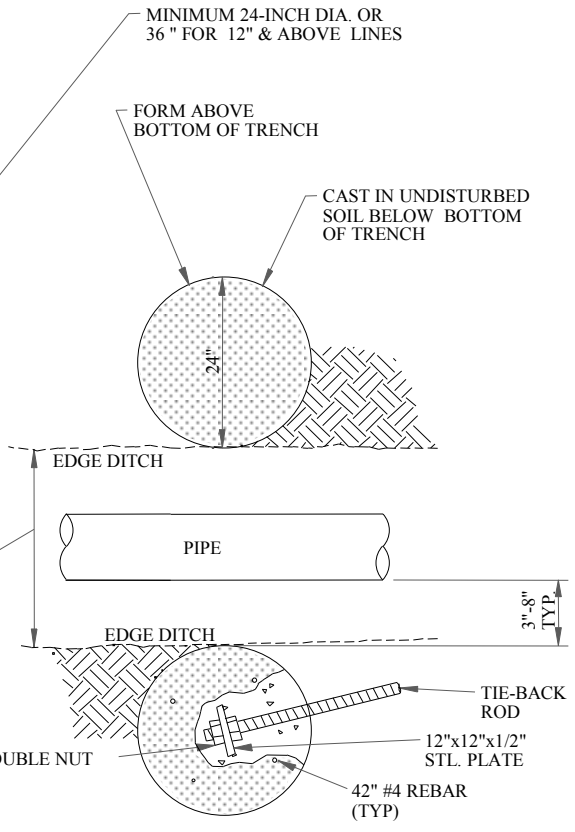
CITY OF FOUNTAIN
Pure Colorado

PIPE CUTTING			
DRAWN:		REVISED: JAN 2001	DWG - 17
DATE:	NOV 1998	REVISED:	
SCALE:	NONE	REVISED:	

REVERSE ANCHOR DETAIL

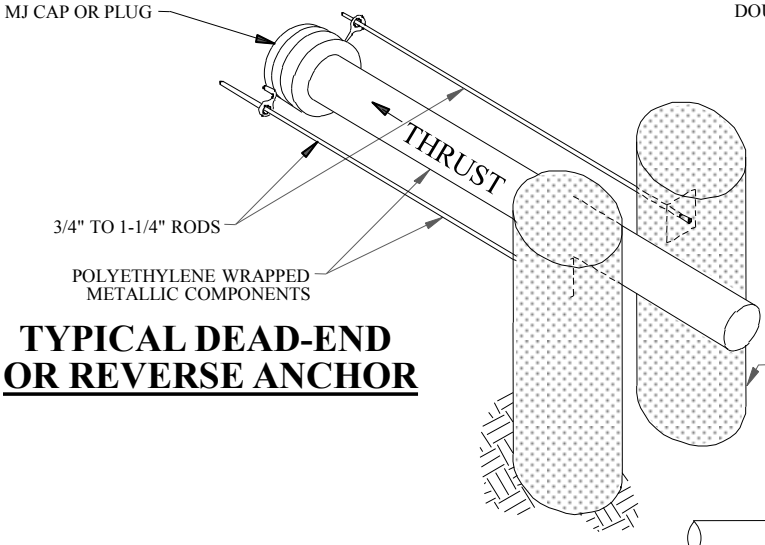


TYPICAL VALVE ANCHOR

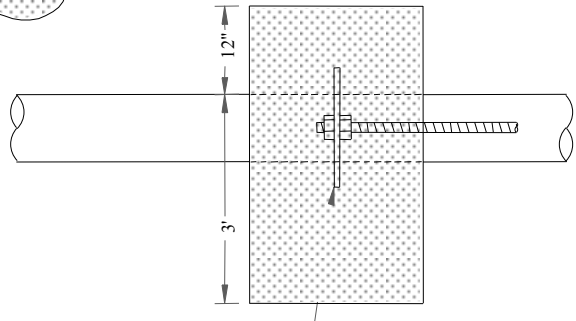


PLAN

(DEAD-END OR
REVERSE ANCHOR)



TYPICAL DEAD-END OR REVERSE ANCHOR



ELEVATION

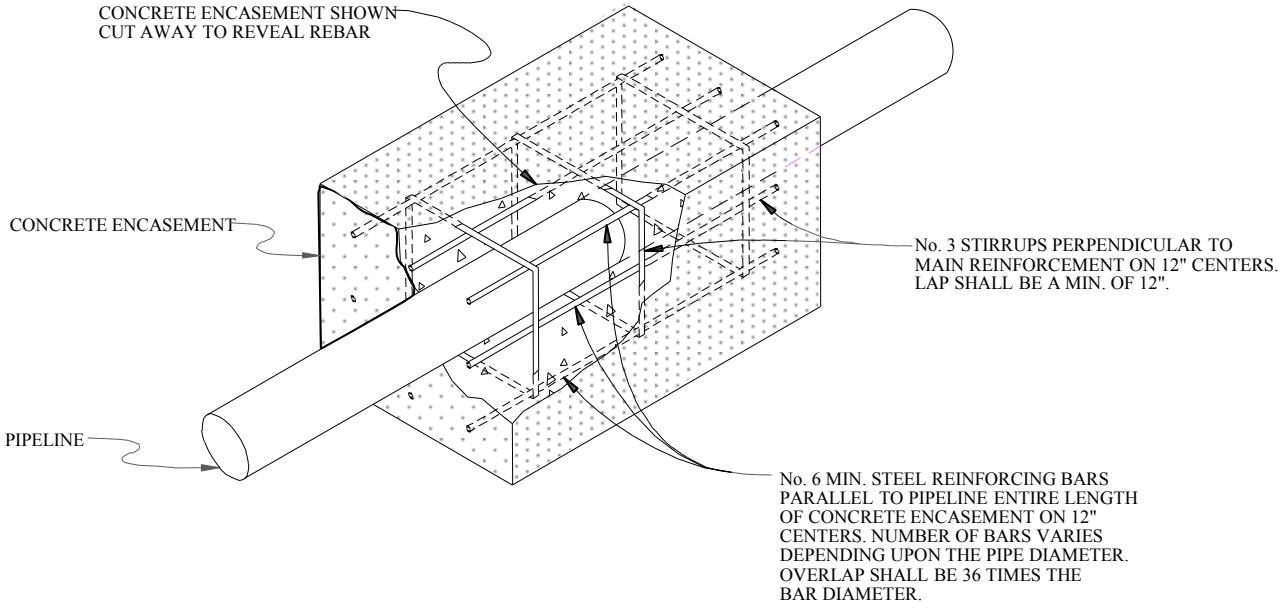
(DEAD-END OR
REVERSE ANCHOR)

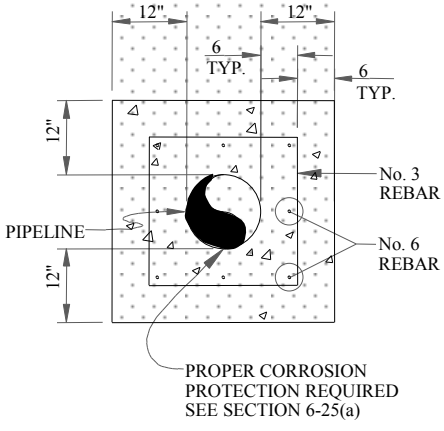
NOTES:

1. MAX. ROD LENGTH = 12'
   MIN. ROD LENGTH = 4'
2. ALL METALLIC COMPONENTS TO BE ENCASED IN CONCRETE OR POLYETHYLENE TUBING.

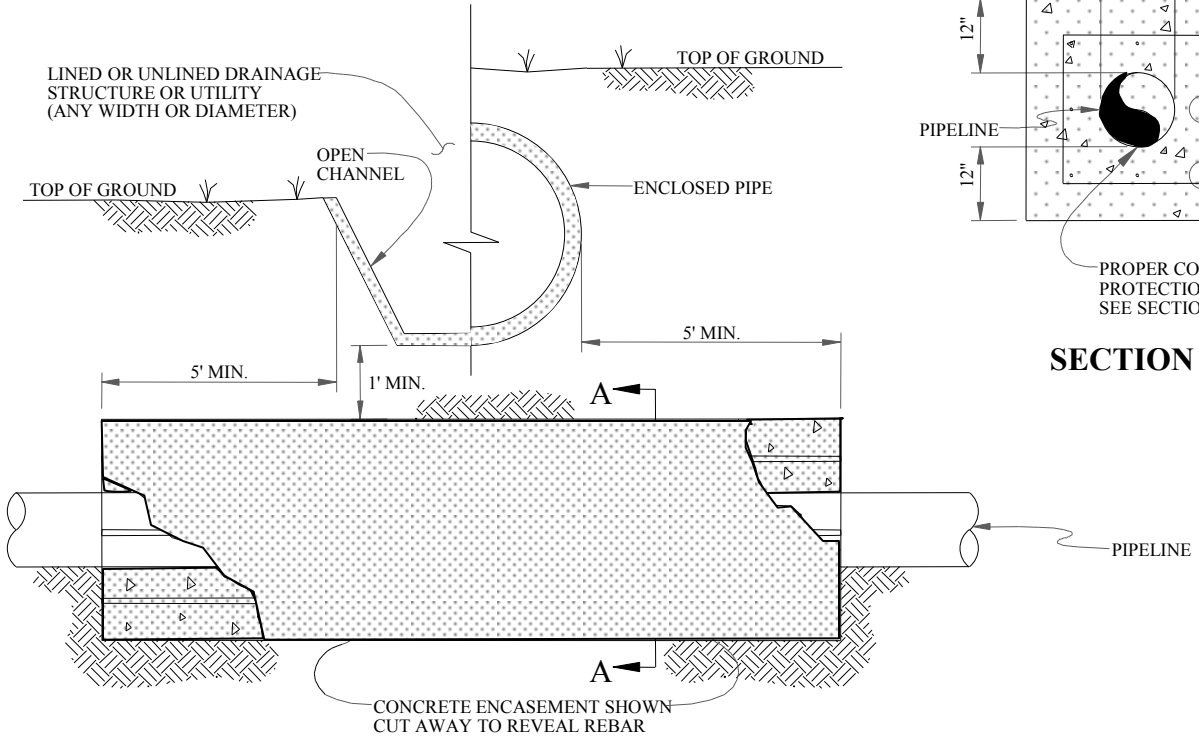
REVERSE ANCHOR DETAIL		
DRAWN:	REVISED: JAN 2001	DWG - 18
DATE: NOV 1998	REVISED:	
SCALE: NONE	REVISED:	

CONCRETE PIPE ENCASEMENT





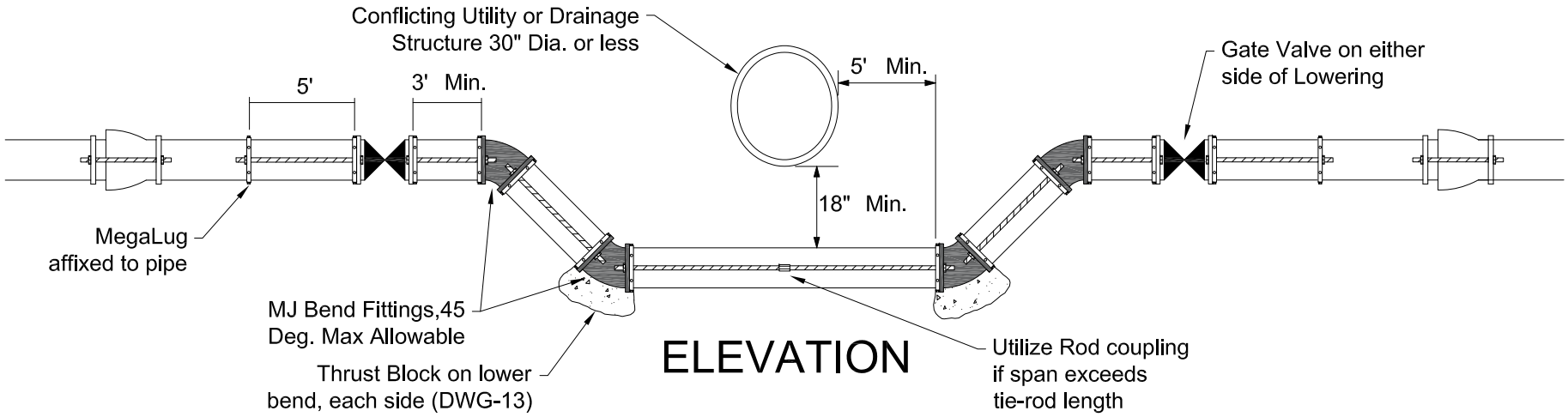
SECTION A-A



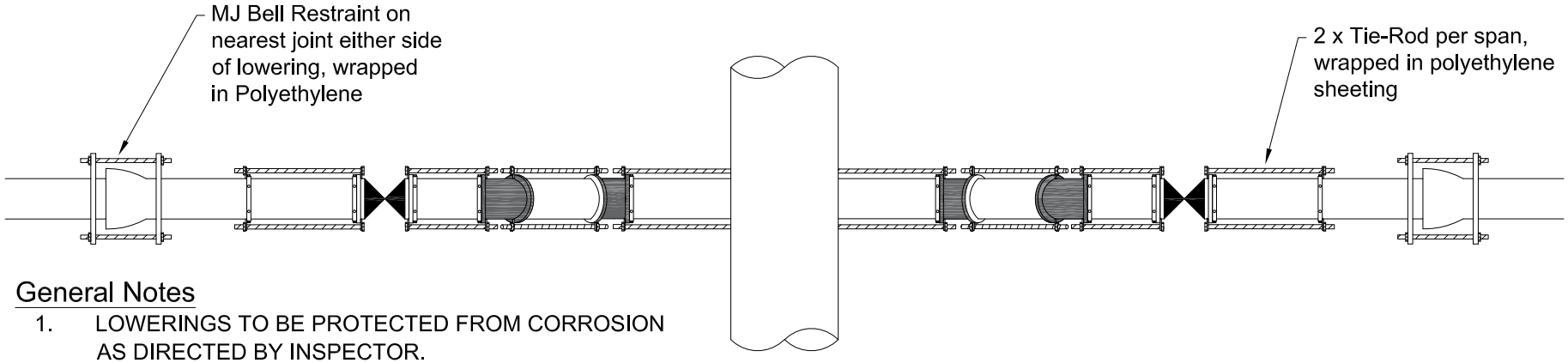
ELEVATION

CITY OF FOUNTAIN Pure Colorado	**CONCRETE PIPE ENCASEMENT**		
DRAWN:		REVISED: AUG 2002	**DWG - 19**
DATE:	OCT 1998	REVISED:	
SCALE:	NONE	REVISED:	

WATER LINE LOWERING DETAIL



ELEVATION



PLAN

General Notes

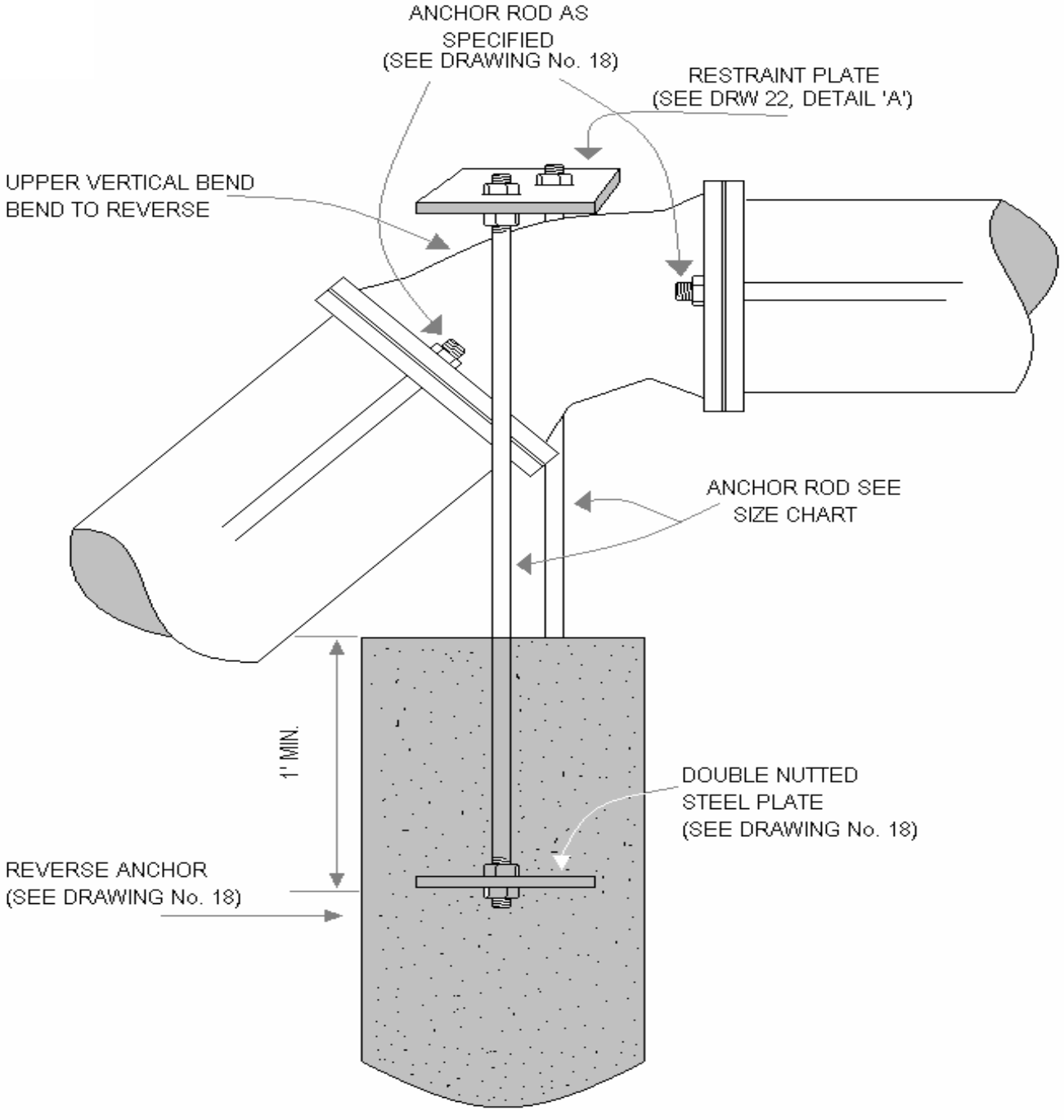
1. LOWERINGS TO BE PROTECTED FROM CORROSION AS DIRECTED BY INSPECTOR.
2. BELL RESTRAINTS SHALL BE EBAA IRON 1600 (OR EQUAL) MJ RESTRAINT.

CITY OF FOUNTAIN
Pure Colorado

WATER LINE LOWERING DETAIL

Drawn: TM/DL	Revised:	DWG - 20
Date: 7/15/2021	Revised:	
Scale: None	Revised:	

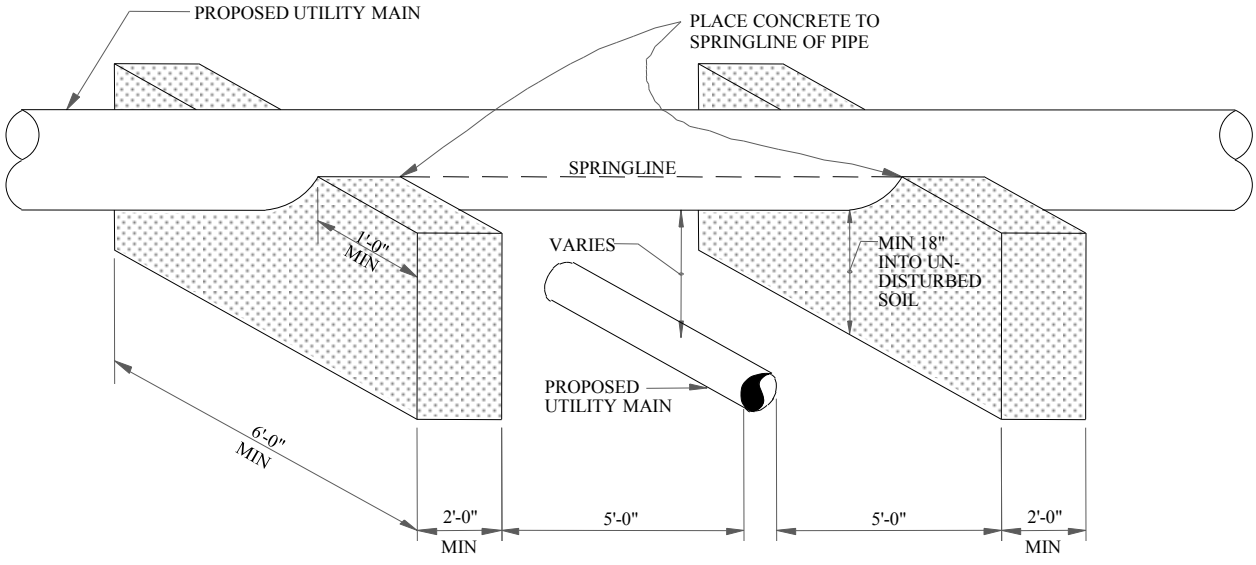
REVERSE ANCHOR DETAIL



City of Fountain
Pure Colorado

REVERSE ANCHOR DETAIL		
DRAWN:	REVISED: AUG 2002	**DWG – 20A**
DATE: FEB 1999	REVISED: JAN 2006	
SCALE: NONE	REVISED:	

PIPE BRIDGING DETAIL



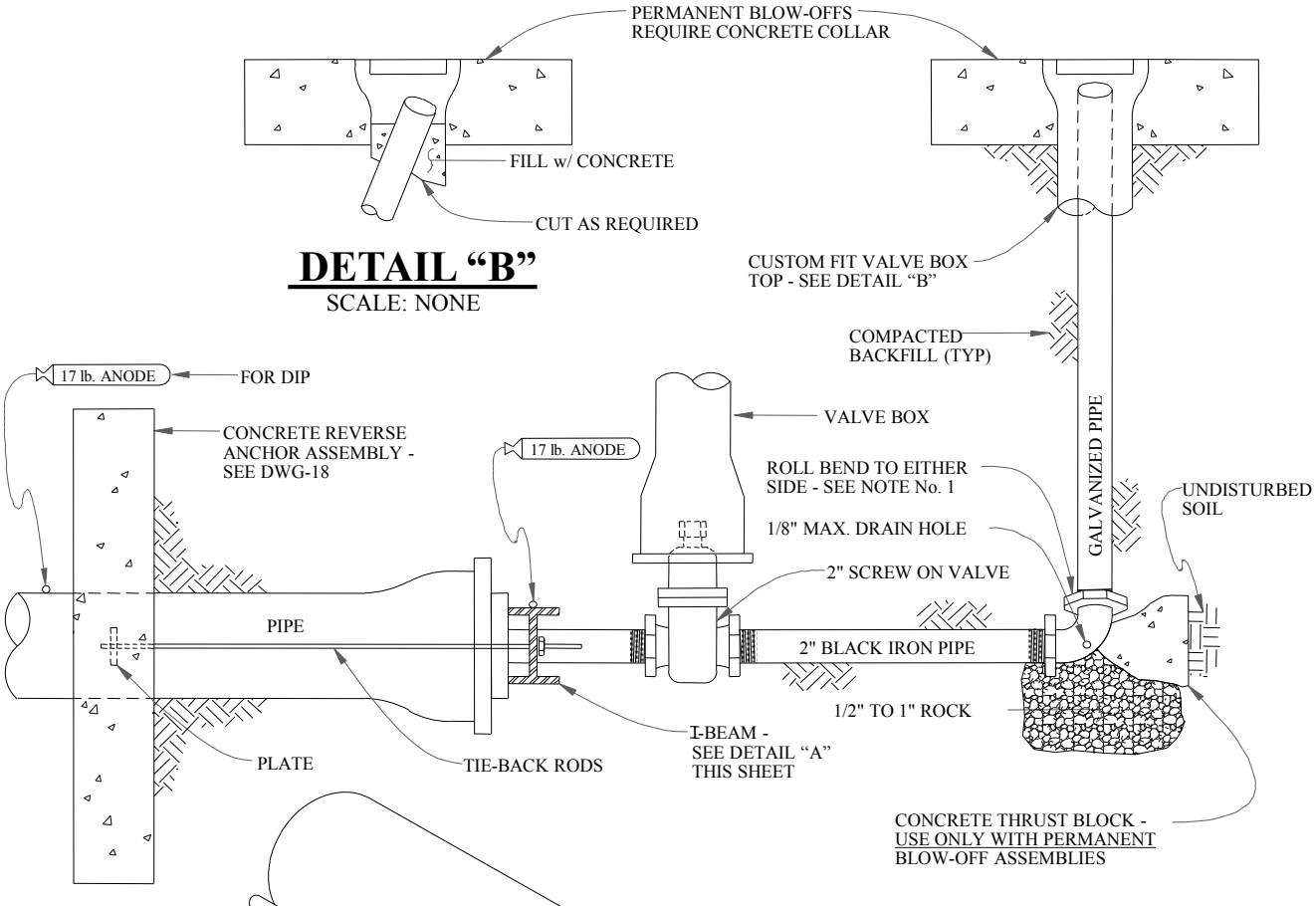
NOTES :

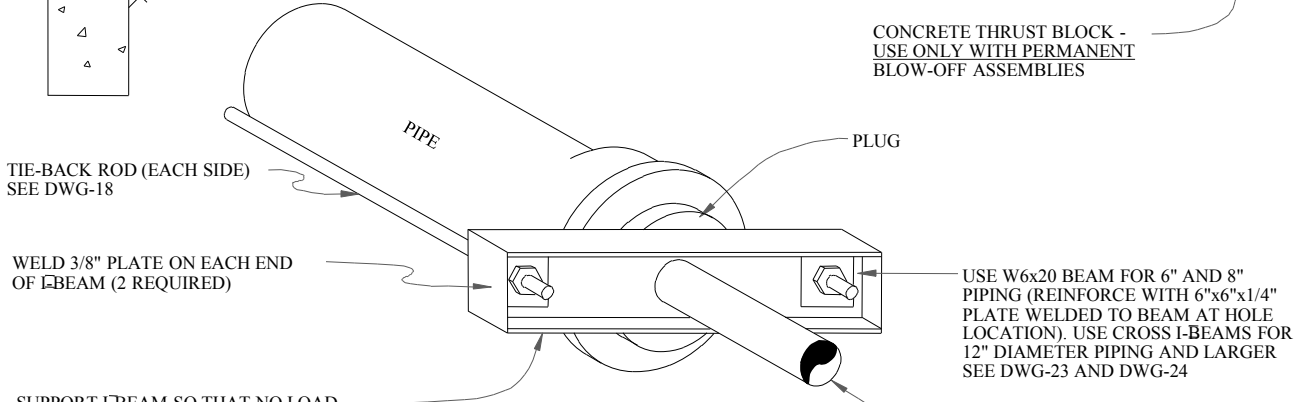
1. CONCRETE BLOCKS TO BE REINFORCED WITH NO. 6 REBAR SET ON TWELVE (12) INCH CENTERS.
2. NO JOINTS OF UTILITY MAIN SHALL BE ALLOWED BETWEEN CONCRETE BRIDGING BLOCKS.

CITY OF FOUNTAIN Pure Colorado	**PIPE BRIDGING DETAIL**		
	DRAWN:	REVISED: AUG 2002	**DWG - 21**
	DATE: OCT 1998	REVISED:	
	SCALE: NONE	REVISED:	

TEMPORARY AND PERMANENT BLOW-OFF ASSEMBLIES FOR 6" AND 8" MAINS

DETAIL "B"
SCALE: NONE





DETAIL "A"
SCALE: NONE

NOTES:

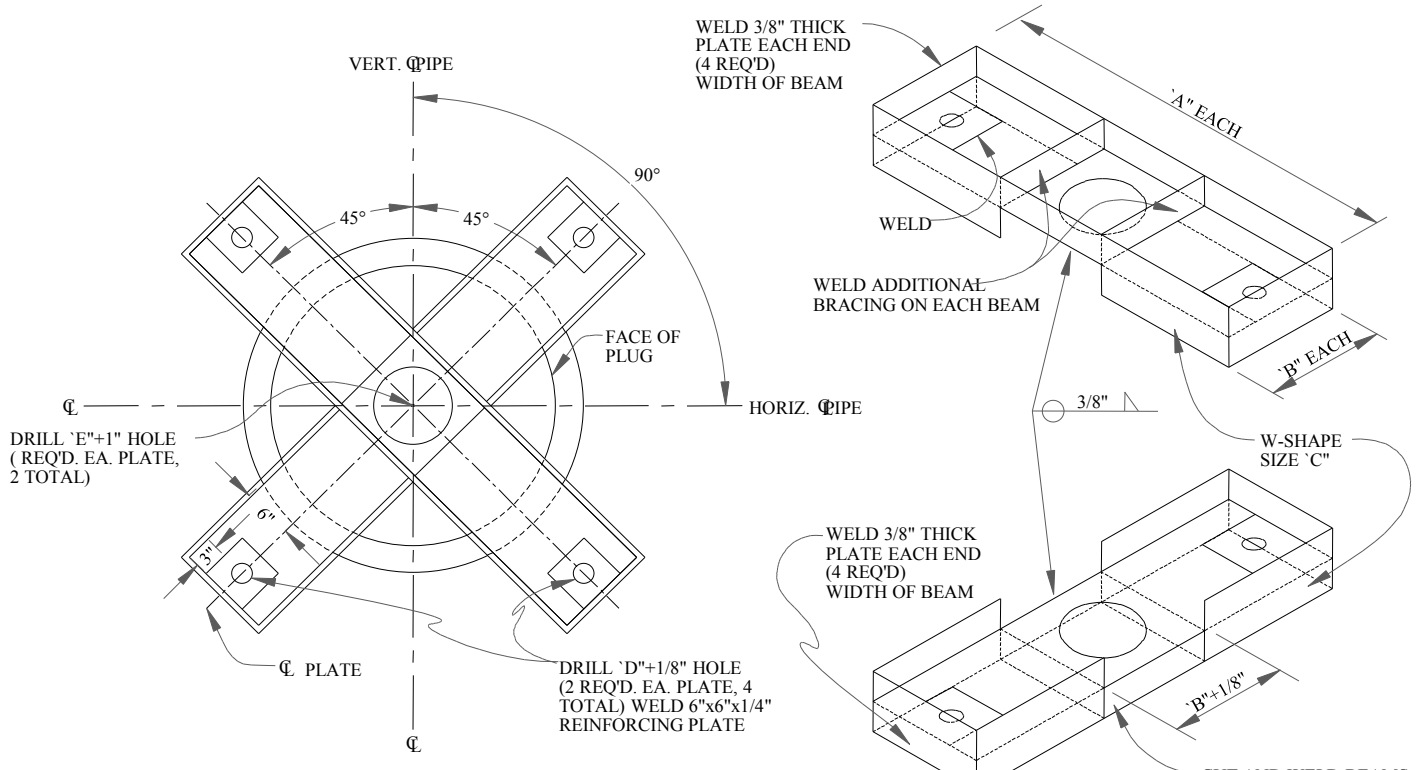
1. IF APPROPRIATE LOCATION FOR DISCHARGED WATER CANNOT BE REACHED BY ROLLING THE BEND, ADDITIONAL BENDS MAY BE REQUIRED BY THE INSPECTOR.
2. COAT TIE RODS, BEAM AND BLACK IRON PIPE WITH COAL TAR PROTECTION (SEE SECTION 4.09B AND DWG-36).
3. ENTIRE BLOW-OFF ASSEMBLY MUST BE FULLY SUPPORTED, CONCRETE STEPPING STONES MAY BE REQUIRED.
4. PIPE DOPE APPROVED FOR USE IN POTABLE WATER SYSTEMS MUST BE USED ON ALL THREADED JOINTS.

CITY OF FOUNTAIN
Pure Colorado

TEMPORARY AND PERMANENT BLOW-OFF ASSEMBLIES FOR 6" AND 8" MAINS

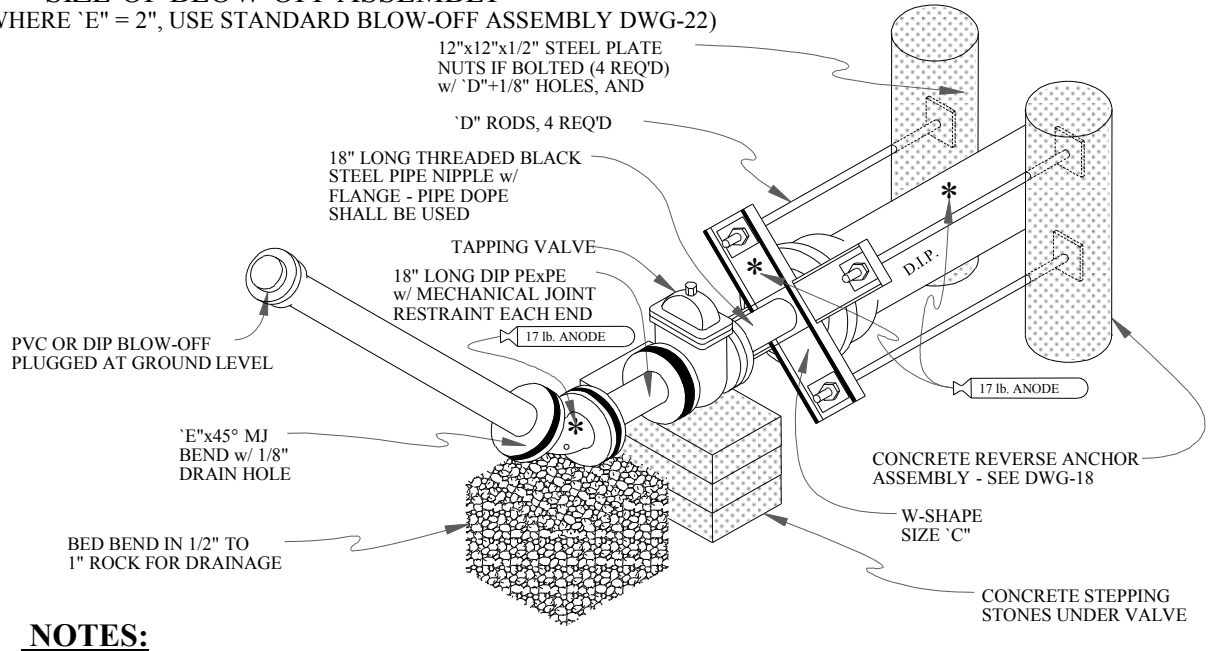
DRAWN:		REVISED: JAN 2001	**DWG - 22**
DATE:	OCT 1998	REVISED:	
SCALE:	NONE	REVISED:	

TEMPORARY AND PERMANENT BLOW-OFF ASSEMBLIES FOR MAINS 12" AND LARGER



REFER TO DWG-24 FOR ALL DIMENSIONS AND SIZES

"E" = SIZE OF BLOW-OFF ASSEMBLY
(WHERE `E" = 2", USE STANDARD BLOW-OFF ASSEMBLY DWG-22)



NOTES:

1. PIPE DOPE APPROVED FOR USE IN POTABLE WATER SYSTEMS MUST BE USED ON ALL THREADED JOINTS.
2. ENTIRE BLOW-OFF ASSEMBLY MUST BE FULLY SUPPORTED SO NO LOAD BEARS ON BLOW-OFF PIPING.
3. IF APPROPRIATE LOCATION FOR DISCHARGED WATER CANNOT BE REACHED BY ROLLING THE BEND, ADDITIONAL BENDS MAY BE REQUIRED.
4. COAT TIE RODS, BEAMS AND BLACK IRON PIPE WITH COAL TAR PROTECTION (SEE SECTION 4.09b AND DWG-36)

CITY OF FOUNTAIN
Pure Colorado

TEMPORARY AND PERMANENT BLOW-OFF ASSEMBLIES FOR MAINS 12" AND LARGER

DRAWN:		REVISED: JAN 2001	**DWG - 23**
DATE:	OCT 1998	REVISED:	
SCALE:	NONE	REVISED:	

BLOW-OFF ASSEMBLY SIZING

MAIN PIPE DIA. (IN)	STATIC PRESSURE RANGE (PSI)	DIMENSIONS FROM DWG-23				
		"A" (IN)	"B" (IN)	"C" (W-SHAPE)	"D" ROD SIZE (IN)	"E" BLOW-OFF PIPE SIZE (IN)
12	<100	36	10	W10x15	5/8	2
	101-150	36	10 1/4	W10x19	3/4	2
	151-200	36	10 1/8	W10x22	7/8	2
	201-250	36	10 1/8	W10x22	1	2
16	<100	40	12 1/4	W12x26	7/8	4
	101-150	40	12 1/4	W12x26	1	4
	151-200	40	12 1/4	W12x26	1 1/8	4
	201-250	40	12 1/2	W12x35	1 1/4	4
20	<100	44	12 1/4	W12x26	1	4
	101-150	44	12 1/2	W12x35	1 1/4	4
	151-200	44	12	W12x40	1 3/8	4
	201-250	44	12	W12x45	1 1/2	4
24	<100	48	12 1/2	W12x35	1 1/4	6
	101-150	48	12	W12x40	1 1/2	6
	151-200	48	12	W12x53	1 1/4 *	6
	201-250	48	12	W12x53	1 1/8 *	6
30	<100	54	12 1/4	W12x50	1 1/8 *	6
	101-150	54	12 1/4	W12x58	1 3/8 *	6
	151-200	54	12 1/8	W12x65	1 1/2 *	6
	201-250	54	12 1/4	W12x72	1 5/8 *	6
36	<100	60	12 1/4	W12x58	1 1/4 *	8
	101-150	60	12 1/4	W12x72	1 1/2 *	8
	151-200	60	12 3/4	W12x96	1 3/4 *	8

NOTES:

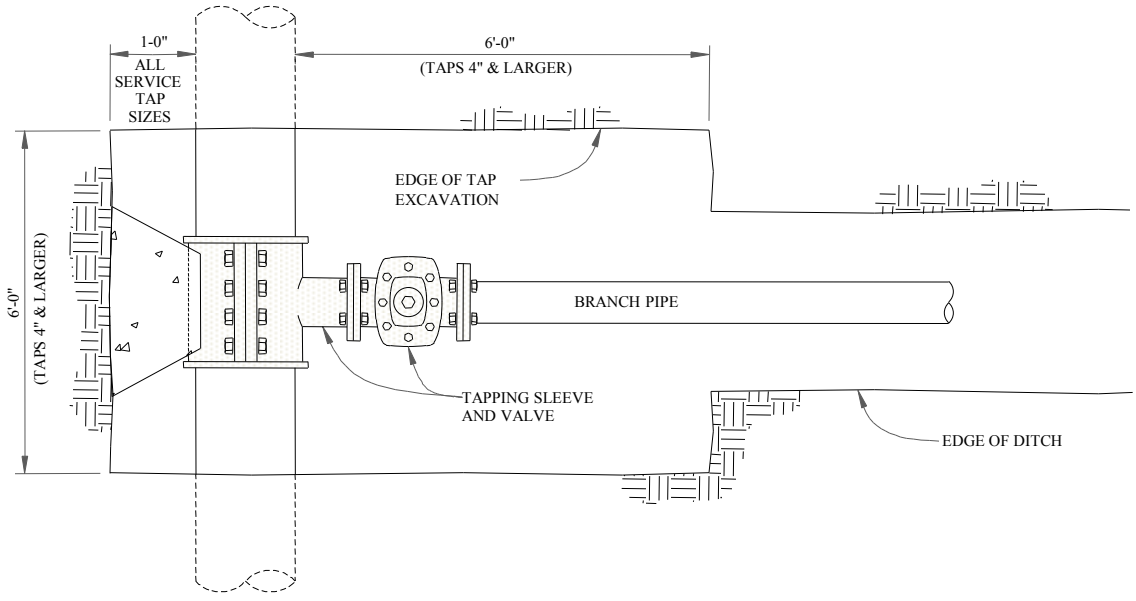
1. ALL W-SHAPES SHALL BE FABRICATED FROM A36 STEEL.
2. ALL RODS SHALL BE MINIMUM GRADE A307 EXCEPT WHERE NOTED AS* . THESE SHALL BE A MINIMUM STRENGTH EQUAL TO ASTM A325 RODS (SEE SECTION 4.06).
3. A 50% SURGE FACTOR HAS BEEN INCLUDED IN THE DESIGN.
4. FOR SIZES AND PRESSURES GREATER THAN THOSE SHOWN, SPECIAL DESIGN IS REQUIRED, APPROVED BY THE WATER DEPARTMENT.

CITY OF FOUNTAIN
Pure Colorado

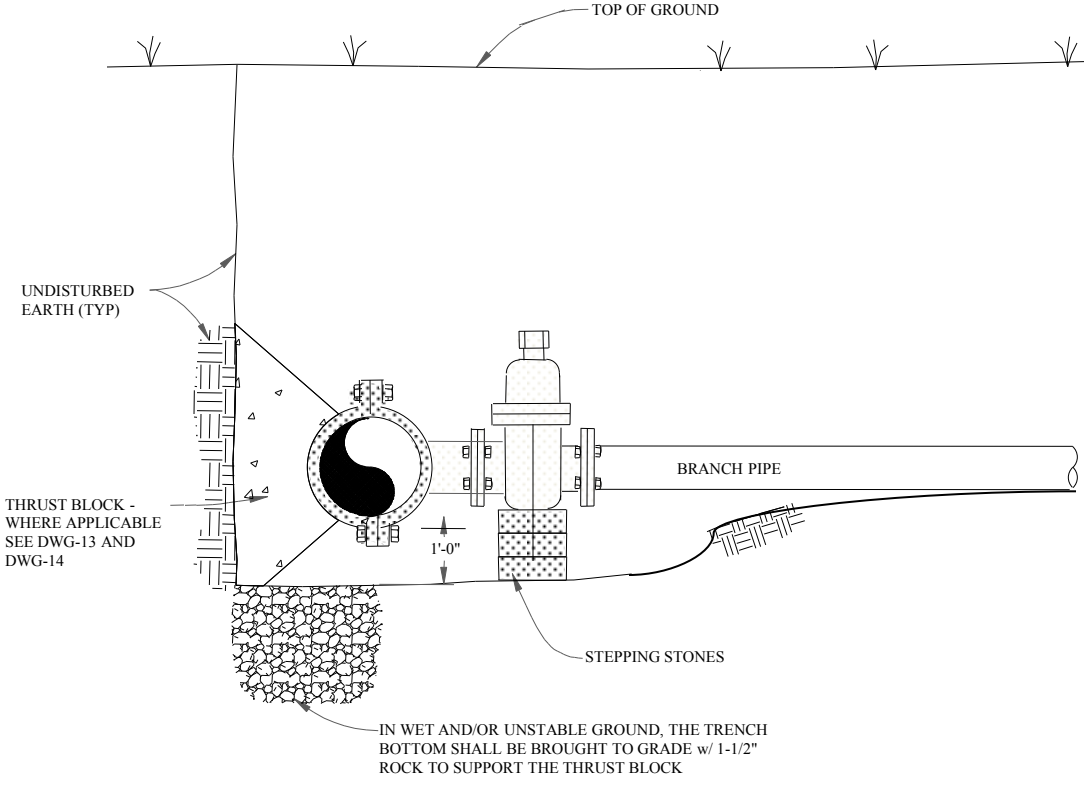
BLOW-OFF ASSEMBLY DIMENSION DATA FOR MAINS 12" AND LARGER

DRAWN:		REVISED: JAN 2001	**DWG - 24**
DATE:	OCT 1998	REVISED:	
SCALE:	NONE	REVISED:	

PIPE TAPPING DETAIL



PLAN

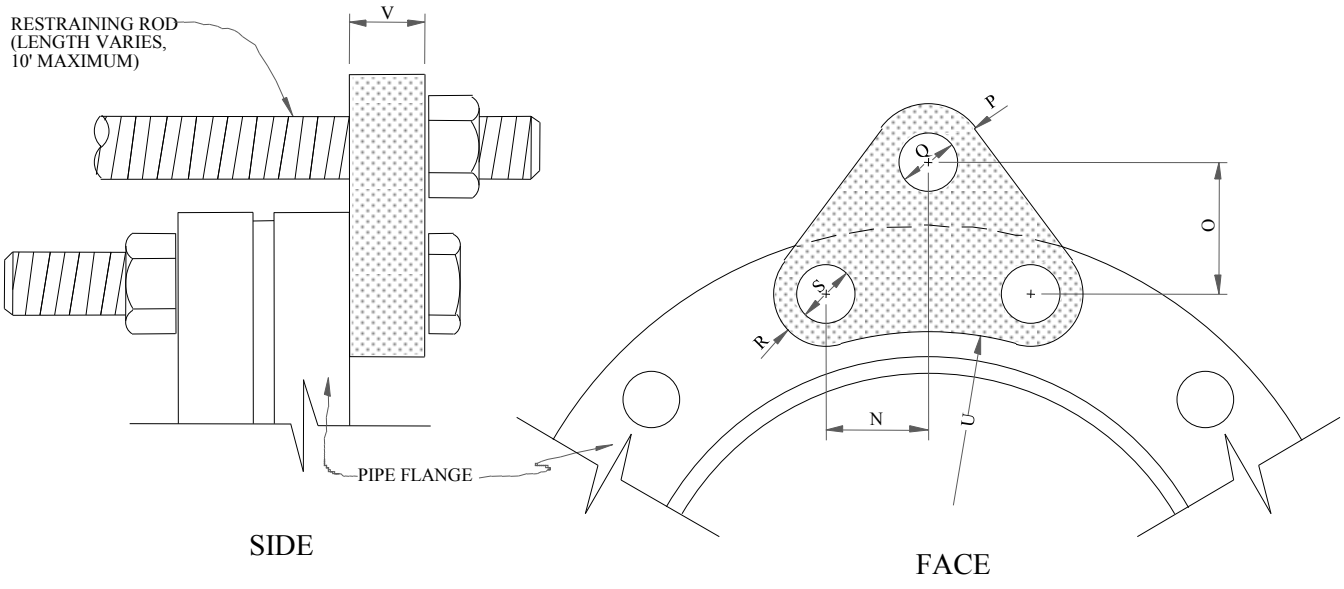


ELEVATION

CITY OF FOUNTAIN
Pure Colorado

PIPE TAPPING DETAIL			
DRAWN:		REVISED: AUG 2002	DWG - 25
DATE:	OCT 1998	REVISED:	
SCALE:	NONE	REVISED:	

FLANGE-LUG DETAIL



PIPE DIA. (IN)	PRESS. CLASS (PSI)	"N" (IN)	"O" (IN)	H.S. ROD "P" (IN)	H.S. ROD "Q" (IN)	H.S. ROD DIA. (IN)	M.S. ROD "P" (IN)	M.S. ROD "Q" (IN)	M.S. ROD DIA. (IN)	"R" (IN)	"S" (IN)	"U" (IN)	"V" (IN)	NO. REQ'D (EA)
6	150	1 15/16	2 1/4	1	7/8	3/4	1	7/8	3/4	7/8	7/8	3 3/4	3/4	2
	300	1 3/8	2 3/4	1	1	7/8	1	1	7/8	7/8	7/8	4 7/16	1	
8	150	2 1/4	2 3/4	1	7/8	3/4	1	7/8	3/4	1	7/8	4 7/8	3/4	2
	300	1 11/16	2 7/8	1	1	7/8	1	1	7/8	1	1	5 1/2	1	
12	150	2 3/16	2 3/4	1 1/4	1 1/8	1	1 1/4	1 1/8	1	1 1/8	1	7 1/4	7/8	2
	300	1 3/4	3 3/4	1 3/8	1 1/4	1 1/2	1 3/8	1 3/8	1 1/4	1 1/4	1 1/8	7 5/8	1 1/4	
16	150	2 1/16	2 3/4	1 1/2	1 3/8	1 1/4	1 1/2	1 3/8	1 1/4	1 1/4	1 1/8	9 3/8	1 1/8	3
	300	1 3/4	4 1/4	1 1/2	1 1/2	1 3/8	1 1/2	1 1/2	1 3/8	1 1/2	1 3/8	9 7/8	1 1/2	

NOTES

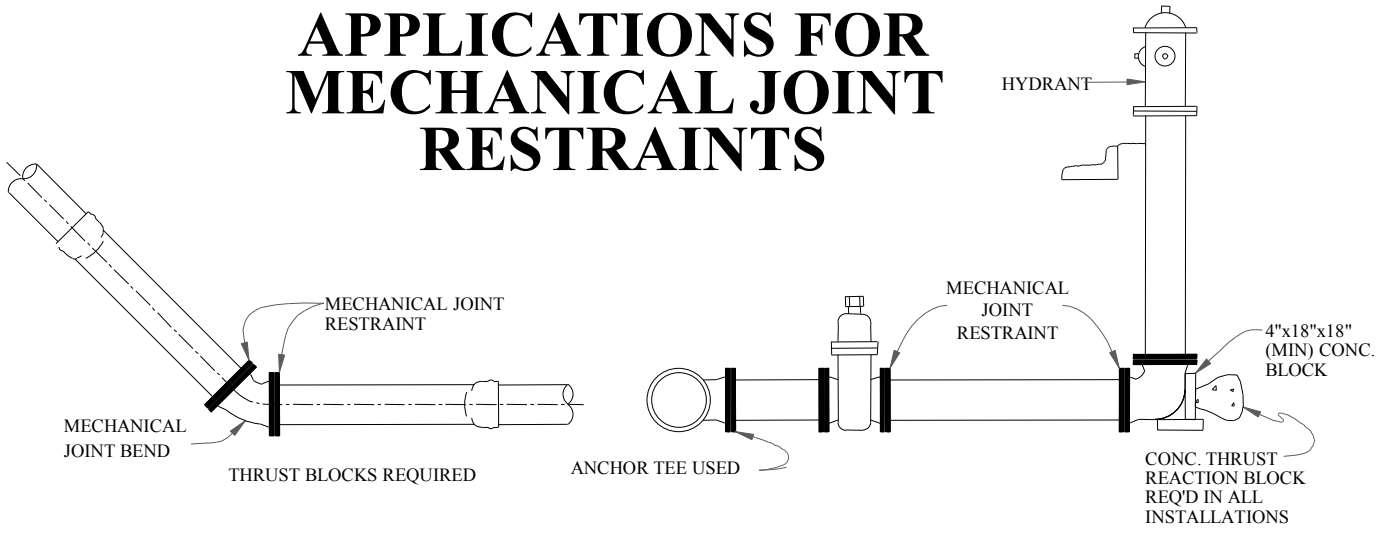
1. M.S. MEANS MILD STEEL ROD, ASTM STANDARD DESIGNATION A-36. NUTS SHALL BE ASTM STANDARD DESIGNATION A-307 GRADE A OR B HEXAGON HEAVY SERIES.
2. H.S. MEANS HIGH STRENGTH STEEL ROD, ASTM STANDARD DESIGNATION A-193 GRADE B-7. NUTS SHALL BE ASTM STANDARD DESIGNATION A-193 GRADE 2-H.

CITY OF FOUNTAIN
Pure Colorado

FLANGE-LUG DETAIL

DRAWN:	REVISED: AUG 2002	**DWG - 26**
DATE: OCT 1998	REVISED:	
SCALE: NONE	REVISED:	

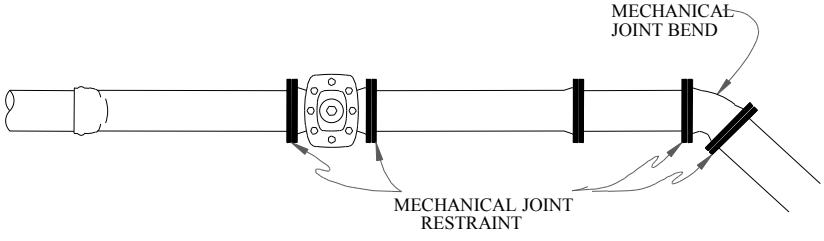
APPLICATIONS FOR MECHANICAL JOINT RESTRAINTS



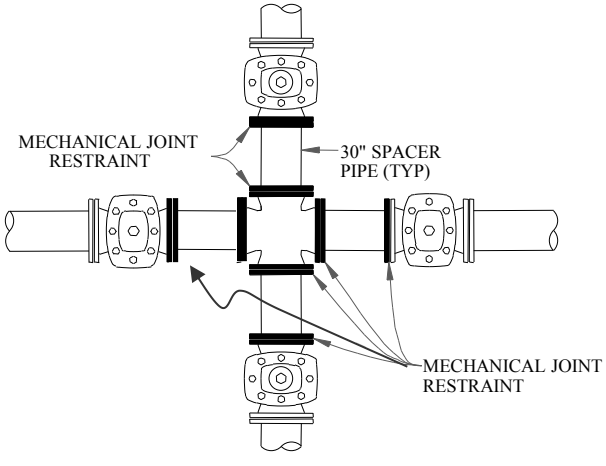
NOTE: ALL JOINTS BETWEEN HYDRANT AND TEE MUST BE RESTRAINED.

INSTALLATION FOR BENDS

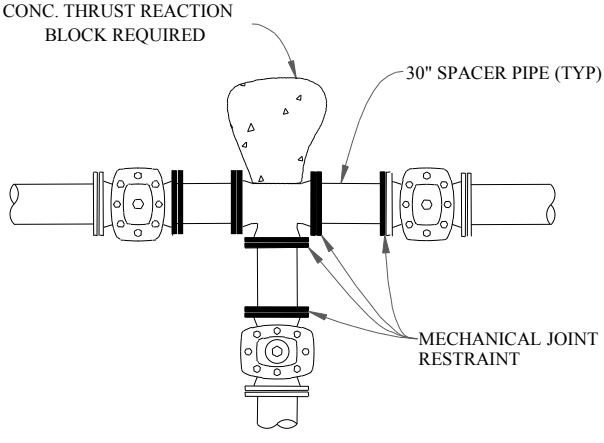
INSTALLATION FOR FIRE HYDRANT



INSTALLATION FOR LINE VALVE



CROSS INSTALLATION



TEE INSTALLATION

NOTES:

1. ALL MECHANICAL JOINTS MUST USE MEGGA LUG OR EQUAL.

APPLICATIONS FOR MECHANICAL JOINT RESTRAINTS			
DRAWN:		REVISED: AUG 2002	DWG - 27
DATE:	OCT 1998	REVISED: JAN 2006	
SCALE:	NONE	REVISED:	

RESTRAINED PIPE LENGTH (FT)

6-INCH — DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI)		
	<100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	31	47	62
45° BEND	13	19	25
22-1/2° BEND	6	8	11
11-1/4° BEND	3	5	6

8-INCH — DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI)		
	<100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	39	58	78
45° BEND	17	24	33
22-1/2° BEND	8	12	16
11-1/4° BEND	5	6	8

12-INCH — DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI)		
	<100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	56	84	112
45° BEND	23	35	47
22-1/2° BEND	11	17	22
11-1/4° BEND	6	8	11

NOTES:

1. PRESSURES GREATER THAN 200 PSI REQUIRE SPECIAL DESIGN APPROVED BY THE WATER DEPARTMENT.
2. LENGTH IS BASED ON MINIMUM FIVE (5) FOOT OF GROUND COVER AND SOIL COMPACTED ACCORDING TO SECTION 5.15 OF THESE SPECIFICATIONS.
3. APPROVED METHODS OF RESTRAINED PIPE BEYOND INITIAL FITTING SHALL BE:
   A. FOR DUCTILE IRON PIPE, 1100 SERIES MEGALUG BY EBAA IRON OR EQUAL ON MECHANICAL JOINT PIPE OR DOUBLE 1100 SERIES MEGALUG BY EBAA IRON OR EQUAL ON PUSH ON JOINT PIPE.
   B. FOR PVC PIPE, SERIES 1500 OR SERIES 2800 RESTRAINTS BY EBAA IRON OR EQUAL.

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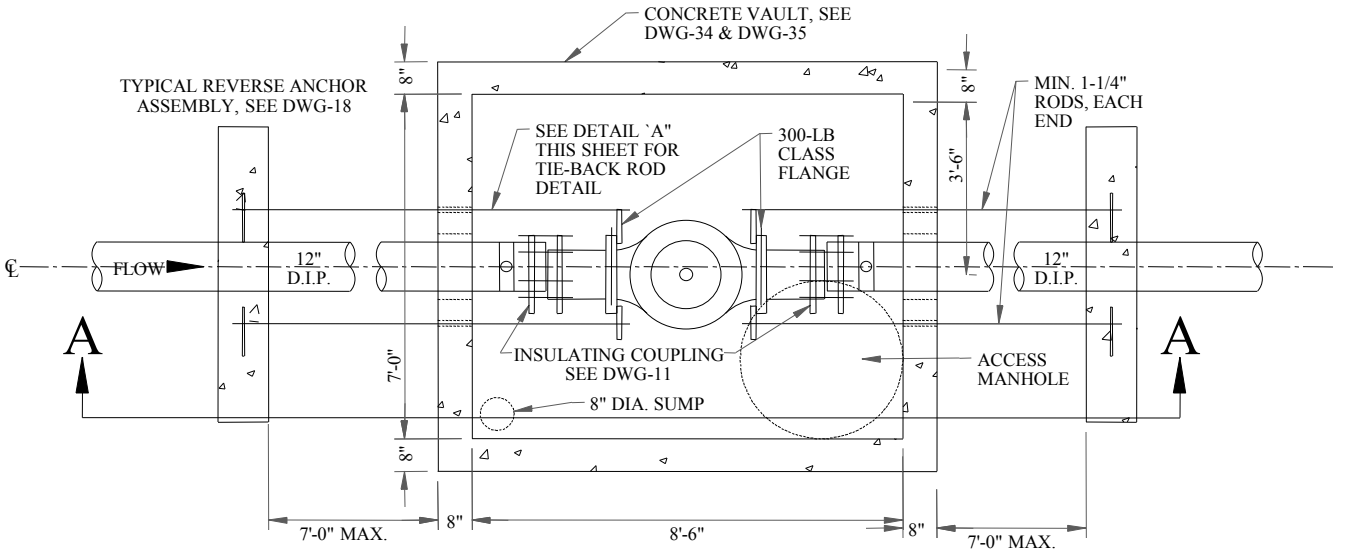
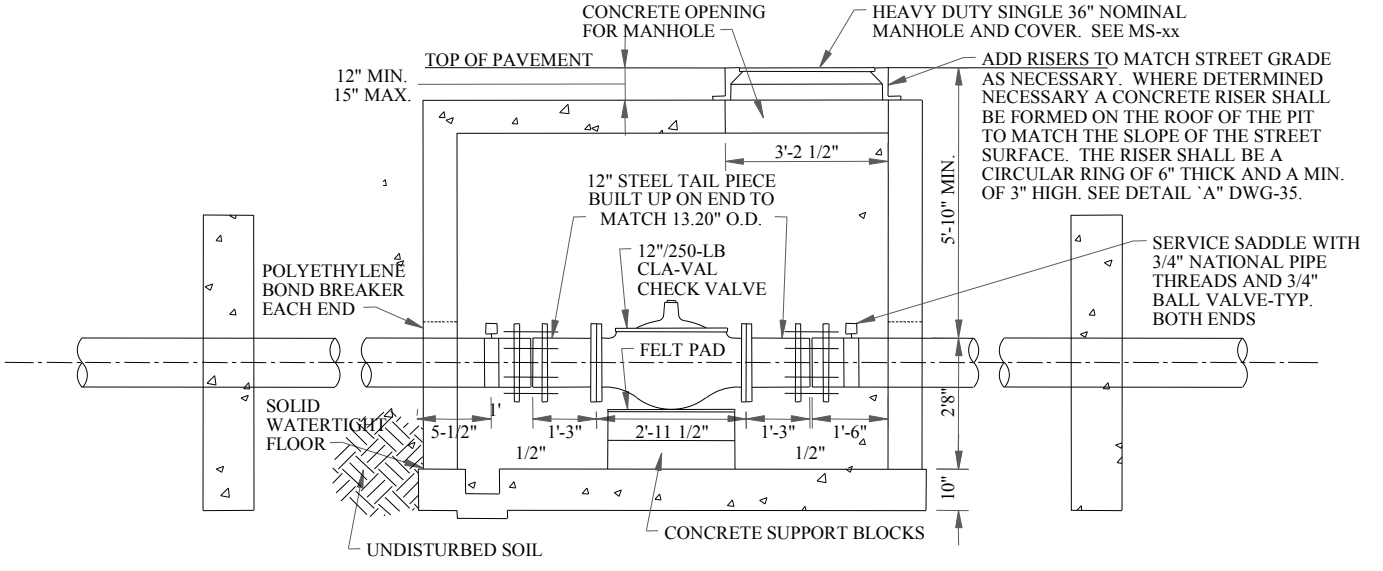
RESTRAINED PIPE LENGTH DATA

DRAWN:	REVISED: AUG 2002	**DWG - 28**
DATE: OCT 1998	REVISED:	
SCALE: NONE	REVISED:	

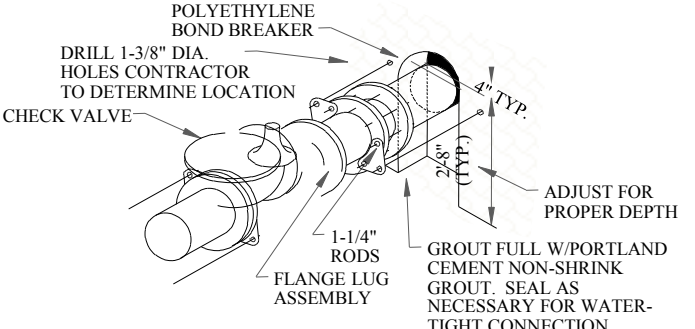
12" SIZE - CHECK VALVE STATION



PLAN



SECTION A-A



DETAIL "A" – PIPE ARCH

GENERAL NOTES

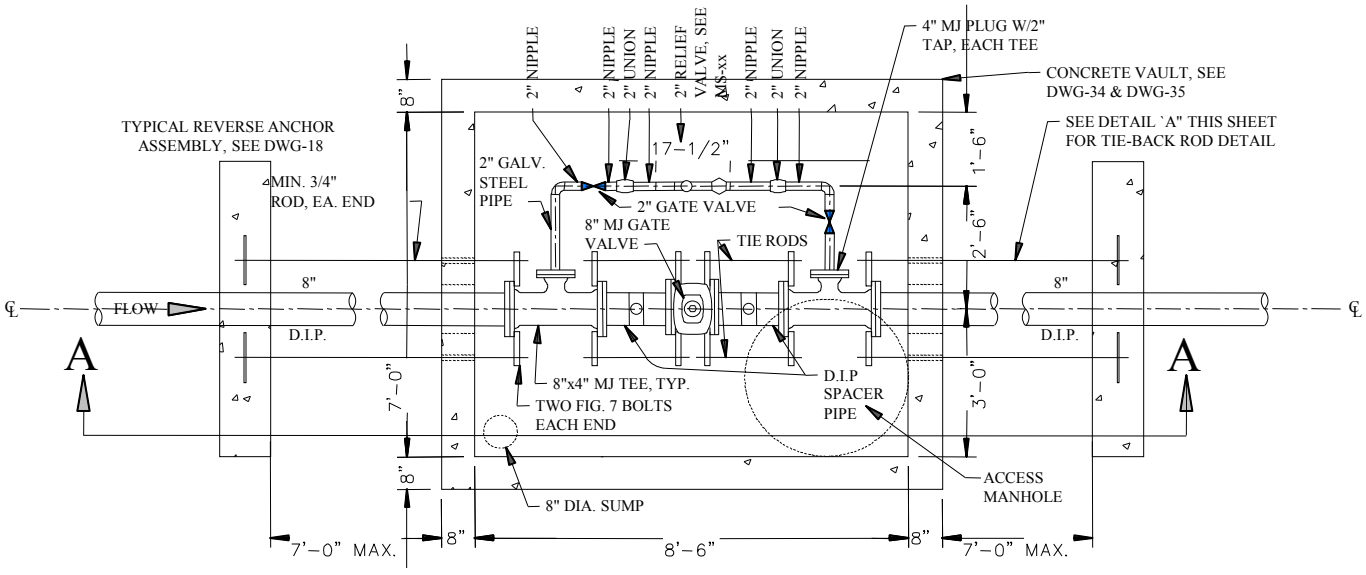
1. FOR VALVE INSTALLATIONS LESS THAN 12 INCH SIZE, DIMENSIONS SHALL BE ADJUSTED AT EACH END OF PIT.
2. CONCRETE VAULTS SHALL MEET ALL CRITERIA AS OUTLINED ON STANDARD DRAWINGS DWG-34 AND DWG-35.
3. ALL MATERIAL INSIDE VAULT SUPPLIED BY CONTRACTOR AND REIMBURSED BY CITY. SEE 3.05 OF THESE SPECIFICATIONS.

CITY OF FOUNTAIN
Pure Colorado

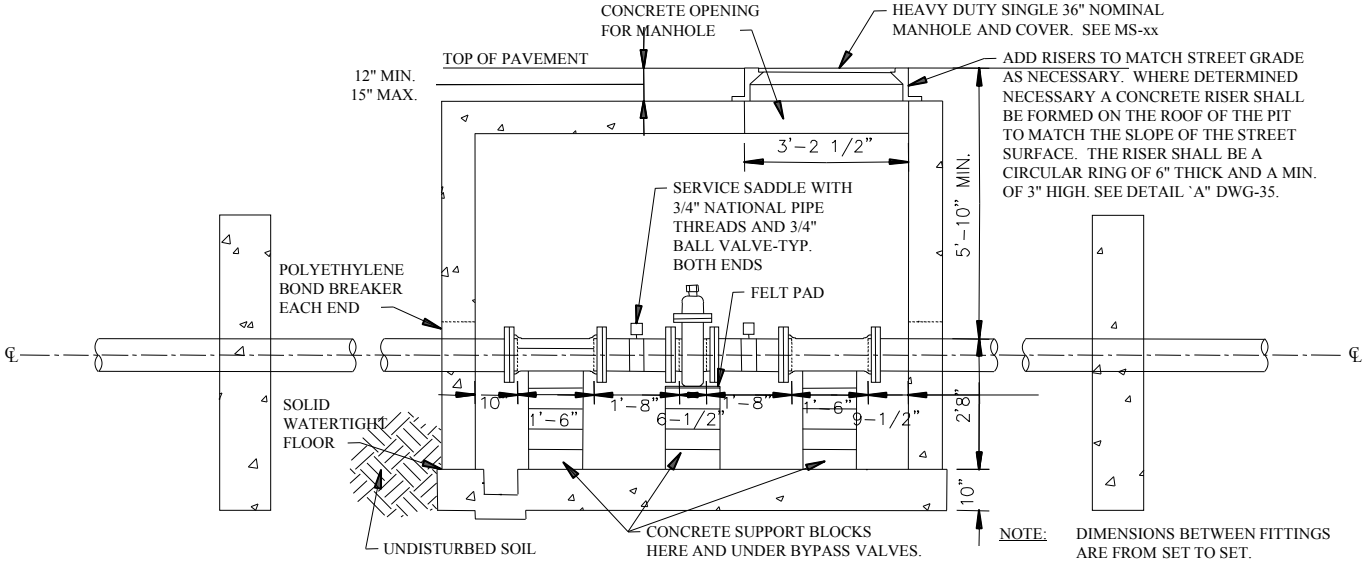
(12" SIZE) CHECK VALVE STATION

DRAWN:		REVISED: AUG 2002	**DWG - 29**
DATE:	NOV 1998	REVISED:	
SCALE:	NONE	REVISED:	

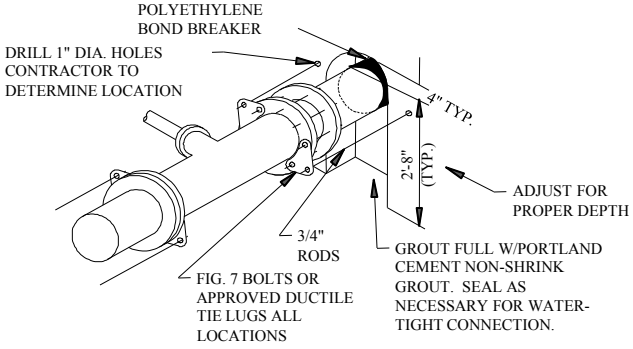
PRESSURE RELIEF STATION



PLAN



SECTION A-A



DETAIL "A"- Pipe Arch

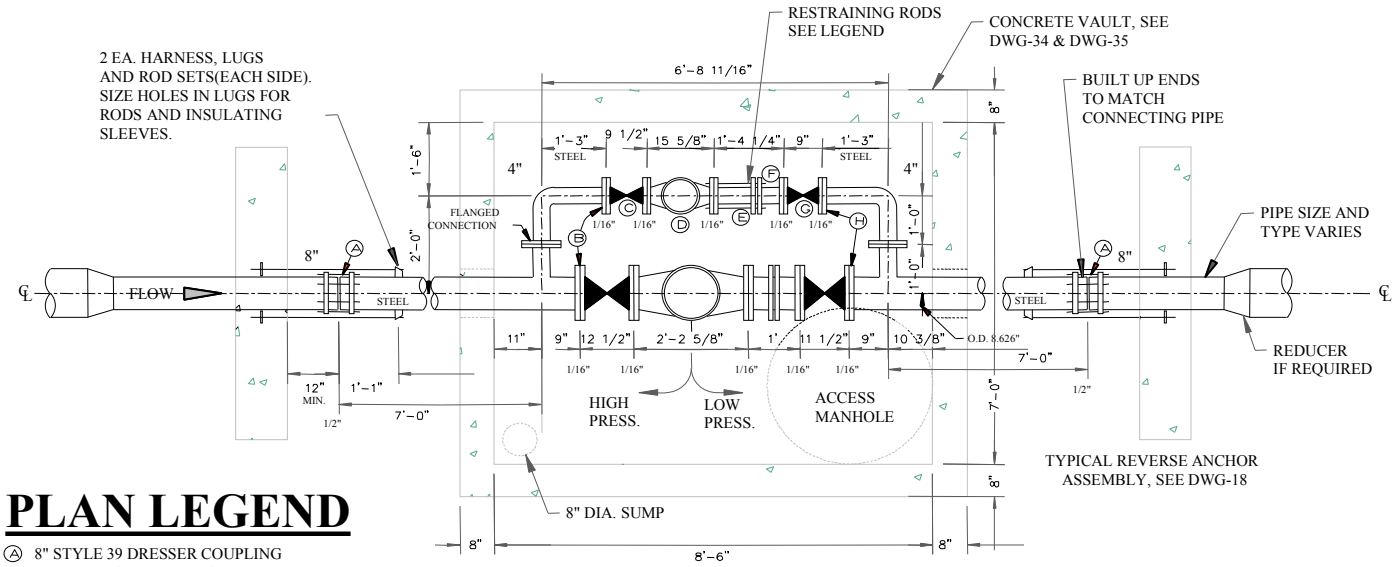
GENERAL NOTES

1. MECHANICAL JOINT RESTRAINTS MAY BE USED INSTEAD OF TIE RODS BETWEEN TEES AND VALVES.
2. CONTRACTOR SHALL DETERMINE DIMENSIONS OF ALL 2-INCH SIZE MATERIAL FOR PROPER INSTALLATION.
3. CONCRETE VAULTS SHALL MEET ALL CRITERIA AS OUTLINED ON STANDARD DRAWINGS DWG-34 AND DWG-35.
4. ALL MATERIAL INSIDE VAULT SUPPLIED BY CONTRACTOR AND REIMBURSED BY CITY. SEE 3.05 OF THESE SPECIFICATIONS.

CITY OF FOUNTAIN
Pure Colorado

PRESSURE RELIEF STATION			
DRAWN:		REVISED: AUG 2002	DWG - 30
DATE:	JAN 1999	REVISED:	
SCALE:	NONE	REVISED:	

8-INCH SIZE PRESSURE REGULATOR STATION

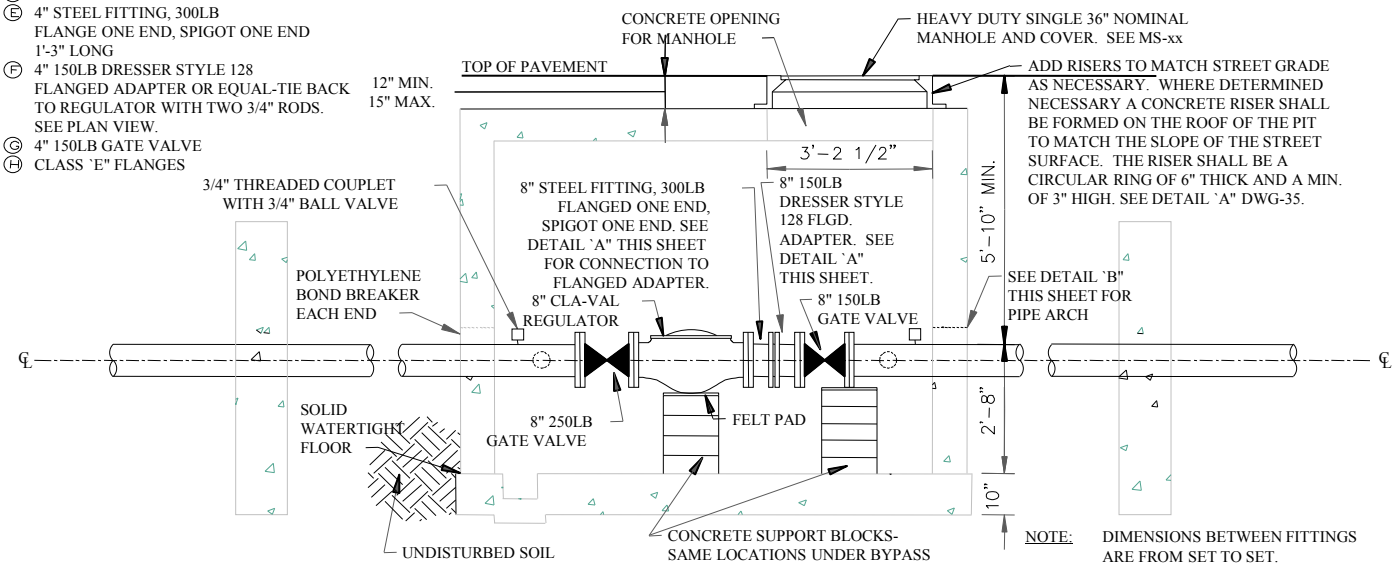


PLAN LEGEND

- Ⓐ 8" STYLE 39 DRESSER COUPLING OR EQUAL(SEE DWG-11)
- Ⓑ 300LB FLANGES
- Ⓒ 4" 250LB GATE VALVE
- Ⓓ 4" 250LB CLA-VAL REGULATOR
- Ⓔ 4" STEEL FITTING, 300LB FLANGE ONE END, SPIGOT ONE END 1'-3" LONG
- Ⓕ 4" 150LB DRESSER STYLE 128 FLANGED ADAPTER OR EQUAL-TIE BACK TO REGULATOR WITH TWO 3/4" RODS. SEE PLAN VIEW.
- Ⓖ 4" 150LB GATE VALVE
- Ⓗ CLASS `E" FLANGES

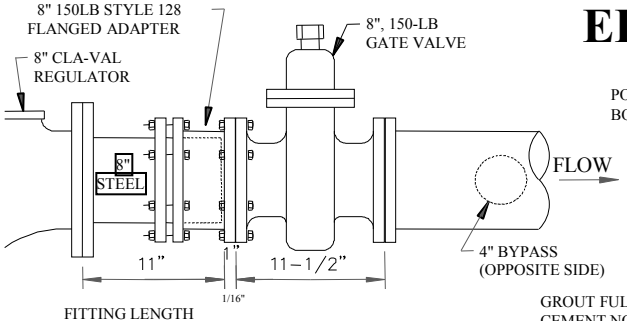
PLAN

(NO SCALE)

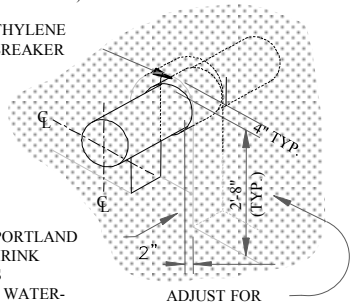


ELEVATION

(NO SCALE)



FITTING LENGTH (USE 1'-3" LONG STEEL FITTING FOR 4" ADAPTER INSTALLATION)



GROUT FULL W/PORTLAND CEMENT NON-SHRINK GROUT. SEAL AS NECESSARY FOR WATER-TIGHT CONNECTION.

ADJUST FOR PROPER DEPTH

GENERAL NOTES

1. CONCRETE VAULTS SHALL MEET ALL CRITERIA AS OUTLINED ON STANDARD DRAWINGS DWG-34 AND DWG-35.
2. ALL REGULATOR INSTALLATIONS LARGER THAN 8-INCH SHALL BE SPECIALLY DESIGNED AND APPROVED BY THE WATER DEPARTMENT.
3. ALL THE MATERIAL INSIDE VAULT SUPPLIED BY CONTRACTOR AND REIMBURSED BY CITY. SEE 3.05 OF THESE SPECIFICATIONS.

DETAIL "A"

Flanged Adapter

(NO SCALE)

DETAIL "B"

Pipe Arch

(NO SCALE)

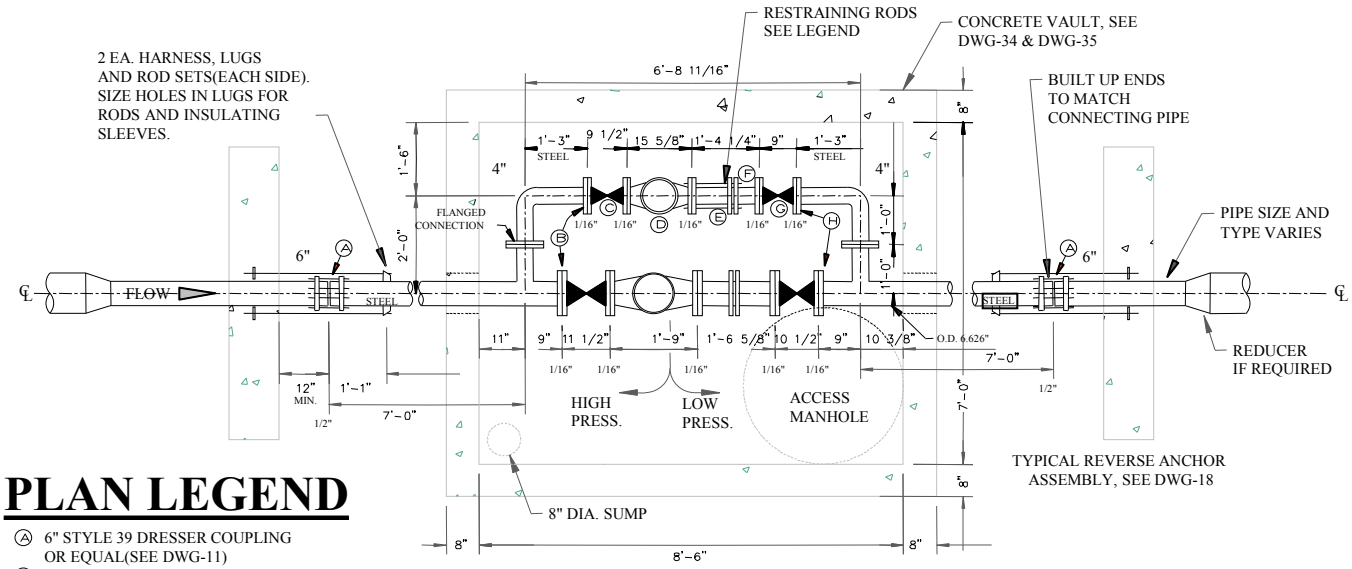
CITY OF FOUNTAIN
Pure Colorado

8-INCH SIZE PRESSURE REGULATOR STATION

DRAWN:		REVISED:	AUG 2002
DATE:	JAN 1999	REVISED:	
SCALE:	NONE	REVISED:	

DWG - 31

6-INCH PRESSURE REGULATOR STATION

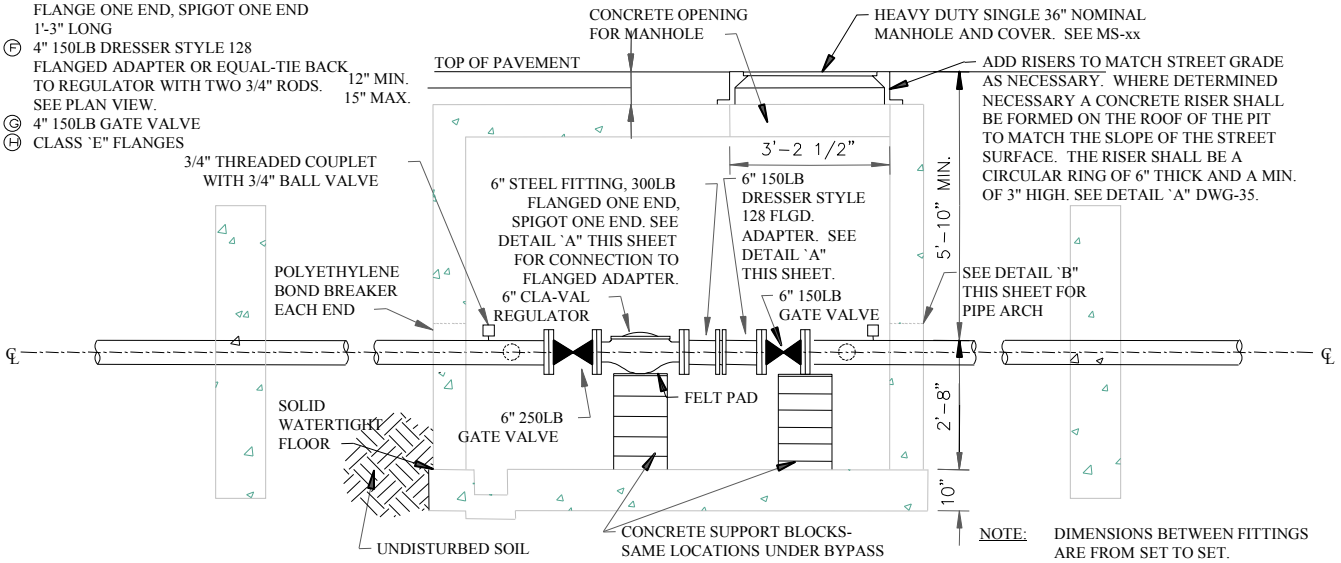


PLAN

(NO SCALE)

PLAN LEGEND

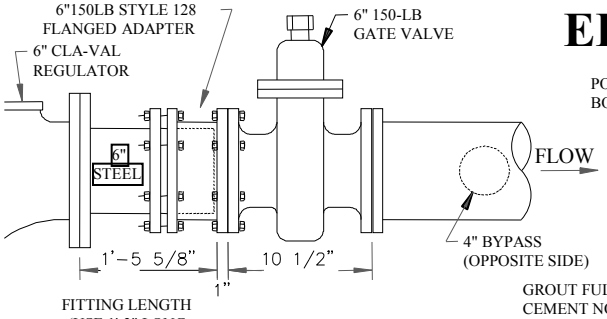
- Ⓐ 6" STYLE 39 DRESSER COUPLING OR EQUAL(SEE DWG-11)
- Ⓑ 300LB FLANGES
- Ⓒ 4" 250LB GATE VALVE
- Ⓓ 4" 250LB CLA-VAL REGULATOR
- Ⓔ 4" STEEL FITTING, 300LB FLANGE ONE END, SPIGOT ONE END 1'-3" LONG
- Ⓕ 4" 150LB DRESSER STYLE 128 FLANGED ADAPTER OR EQUAL-TIE BACK TO REGULATOR WITH TWO 3/4" RODS. SEE PLAN VIEW.
- Ⓖ 4" 150LB GATE VALVE
- Ⓗ CLASS `E" FLANGES

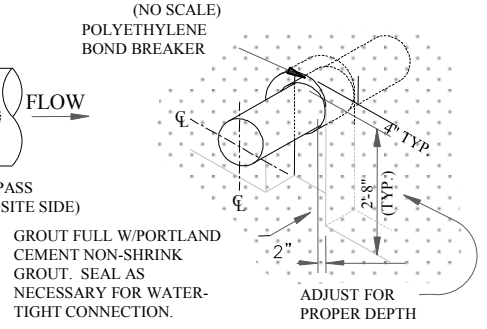


NOTE: DIMENSIONS BETWEEN FITTINGS ARE FROM SET TO SET.

ELEVATION

(NO SCALE)





GENERAL NOTES

1. CONCRETE VAULTS SHALL MEET ALL CRITERIA AS OUTLINED ON STANDARD DRAWINGS DWG-34 AND DWG-35.
2. ALL REGULATOR INSTALLATIONS LARGER THAN 8-INCH SHALL BE SPECIALLY DESIGNED AND APPROVED BY THE WATER DEPARTMENT.
3. ALL THE MATERIAL INSIDE VAULT SUPPLIED BY CONTRACTOR AND REIMBURSED BY CITY. SEE 3.05 OF THESE SPECIFICATIONS.

DETAIL "A"

Flanged Adapter

(NO SCALE)

DETAIL "B"

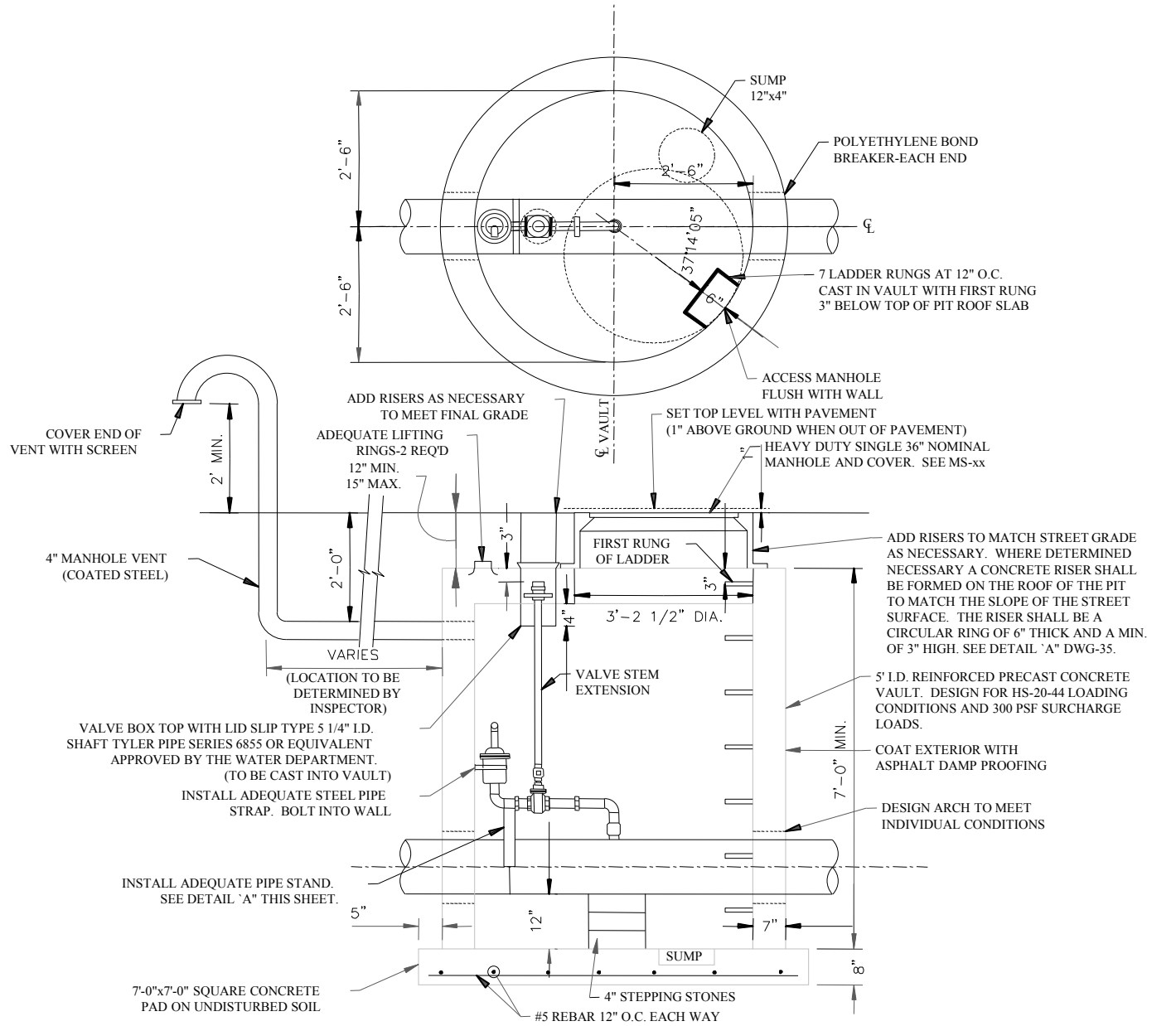
Pipe Arch

(NO SCALE)

CITY OF FOUNTAIN
Pure Colorado

6-INCH PRESSURE REGULATOR STATION			
DRAWN:		REVISED: AUG 2002	DWG - 32
DATE: FEB 1999		REVISED:	
SCALE: NONE		REVISED:	

2-INCH AIR & VACUUM VALVE STATION

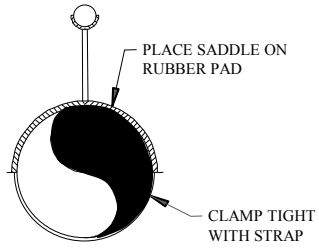


LEGEND

- Ⓐ 2" CORPORATION TAPERED THREADS INLET WITH 2" FEMALE IRON PIPE OUTLET(MUELLER OR FORD)
- Ⓑ 2"xCLOSE THREADED BRASS NIPPLE
- Ⓒ 2" THREADED GATE VALVE WITH STANDARD OPENING NUT
- Ⓓ 2" THREADED INLET CRISPIN AIR AND VACUUM VALVE-SEE MS-xx
- Ⓔ 2"x90° PLASTIC ELBOW
- Ⓕ 2"x90° BRASS BRASS THREADED ELBOW
- Ⓖ 2" BRASS UNION
- Ⓗ 2"x4" THREADED BRASS NIPPLE

GENERAL NOTES

1. ALL CONCRETE WORK SHALL COMPLY WITH THE LATEST ACI-318 SPECIFICATIONS.
2. AIR VALVE ASSEMBLY LARGER THAN 2" SIZE OR FOR MAINS LARGER THAN 16" SHALL BE SPECIALLY DESIGNED AND MEET THE WATER DEPARTMENT REQUIREMENTS.
3. ALL SUPPORT MATERIALS SHALL BE GIVEN 2 COATS OF RUST INHIBITIVE PAINT.
4. ALL LADDER RUNGS MUST LINE UP BOTH HORIZONTALLY AND VERTICALLY.
5. ALL SMALL DIA. PIPE AND AIR RELEASE SHALL BE WRAPPED WITH INSULATION AND TAPED



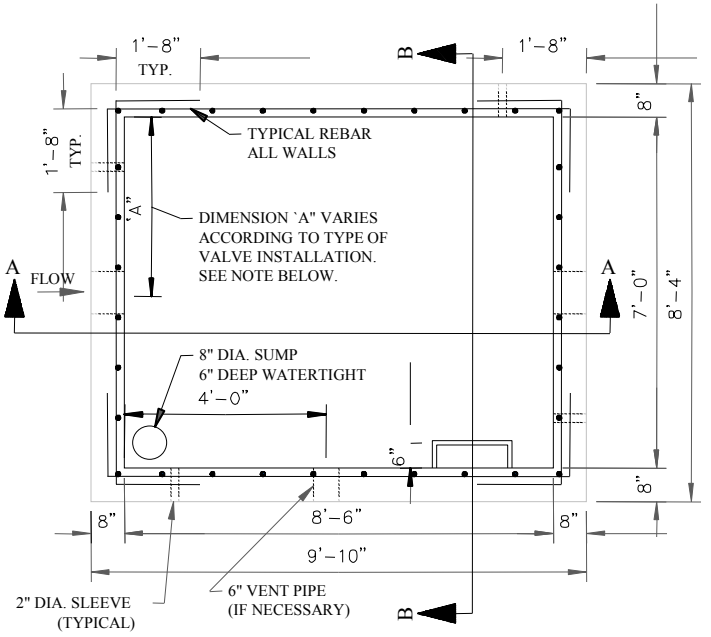
DETAIL "A"

Pipe Stand

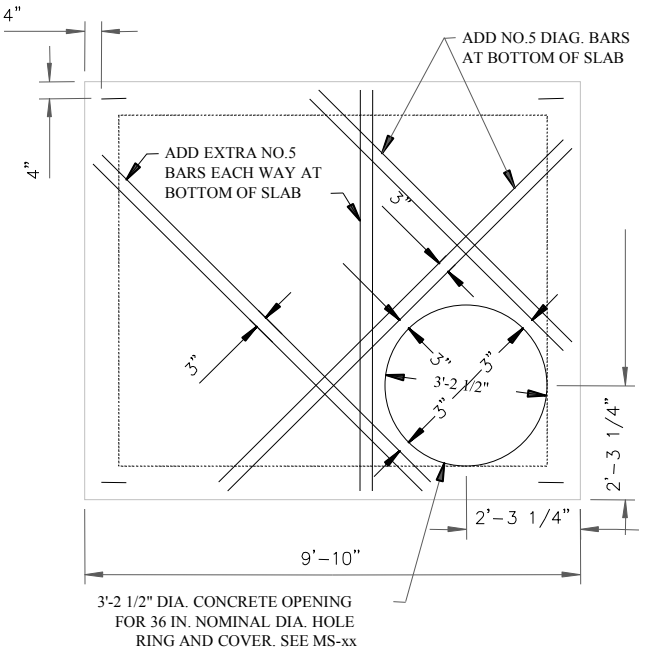
(NO SCALE)

2-INCH AIR & VACUUM VALVE STATION		
DRAWN: DAB	REVISED:	DWG - 33
DATE: FEB 1999	REVISED:	
SCALE: NONE	REVISED:	

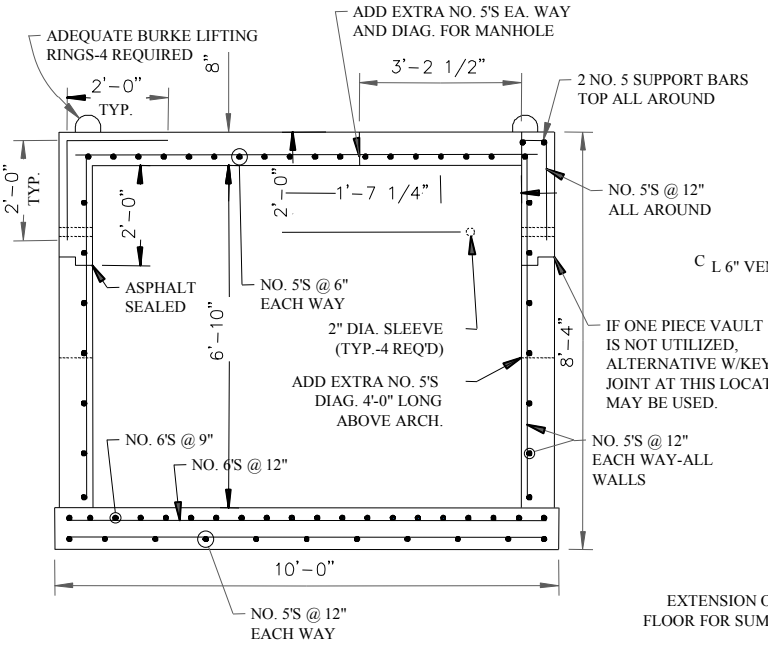
STANDARD CONCRETE VAULT FOR VALVE INSTALLATION - PRECAST



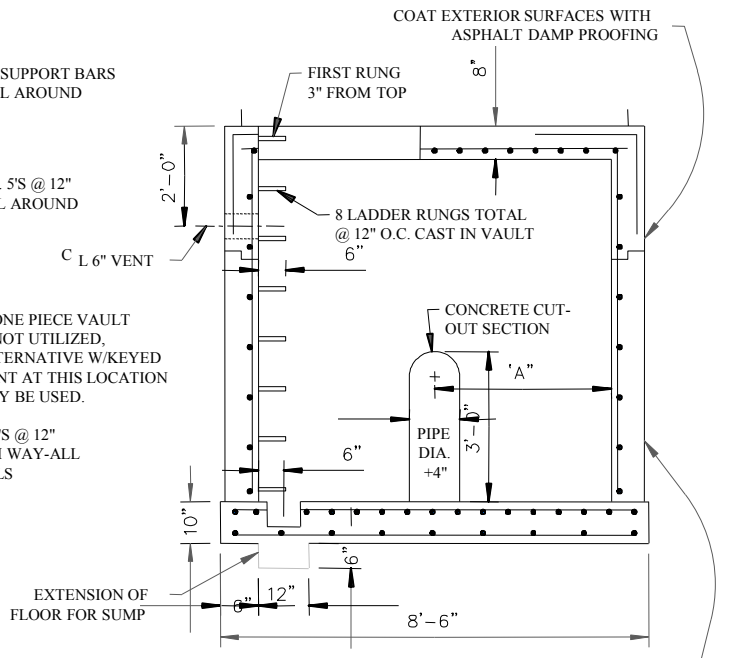
PLAN



ROOF PLAN



SECTION A-A



SECTION B-B

NOTES

DIMENSION "A" = 3'-6" FOR DWG-29,31,32
= 4'-0" FOR DWG-30

ALL CONCRETE WORK SHALL COMPLY WITH WATER DEPT. STANDARD SPECIFICATIONS AND LATEST A.C.I.-318 CODE.

MINIMUM CONCRETE CLEARANCES FOR REBAR:

- 3" WHERE POURED AGAINST THE GROUND.
- 2" WHERE FORMED AND THEN EXPOSED TO GROUND OR WEATHER FOR NO. 6 OR LARGER, 1 1/2" FOR NO. 5 AND SMALLER.
- 1" WHERE EXPOSED TO INTERIOR SURFACES

ALL VAULTS SHALL BE CONSTRUCTED TO

- MEET HS 20-44 TRAFFIC LOADING CONDITIONS AND 300 PSF SURCHARGE LOAD.

CITY OF FOUNTAIN
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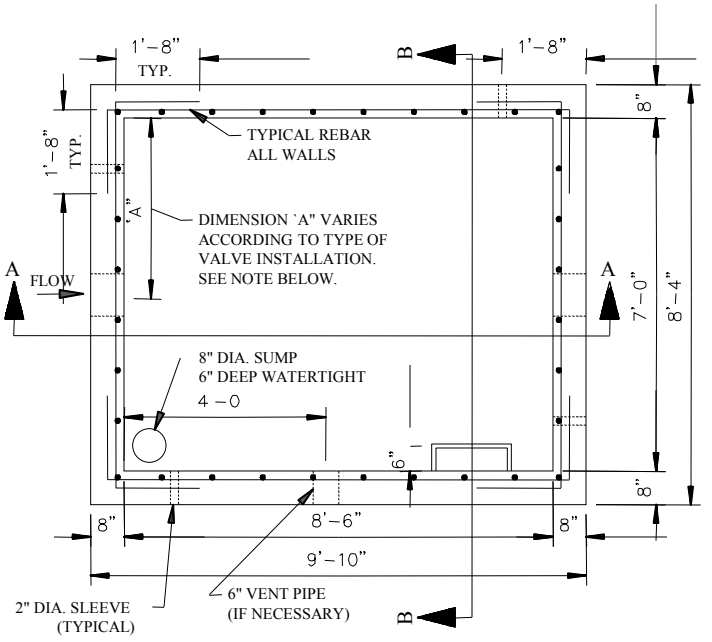
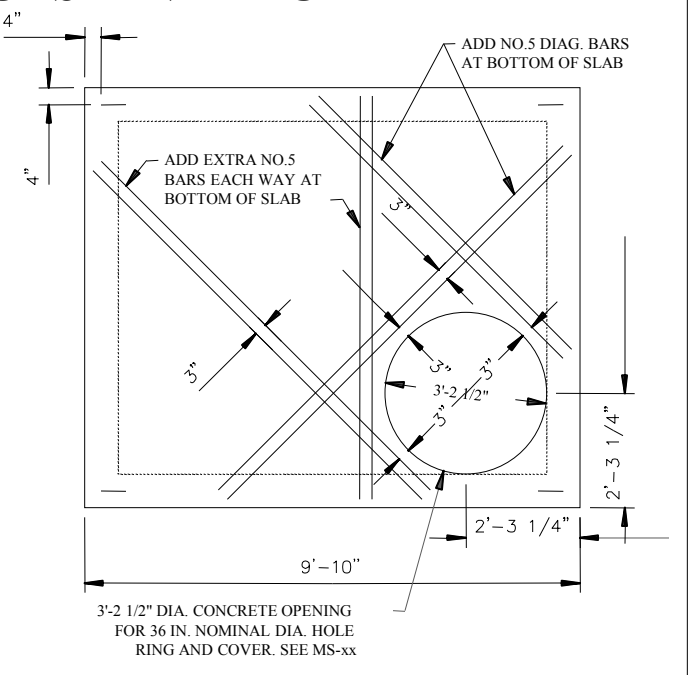
STANDARD CONCRETE VAULT FOR VALVE INSTALLATION-PRECAST			
DRAWN:		REVISED: AUG 2002	DWG - 34
DATE:	FEB 1999	REVISED:	
SCALE:	NONE	REVISED:	

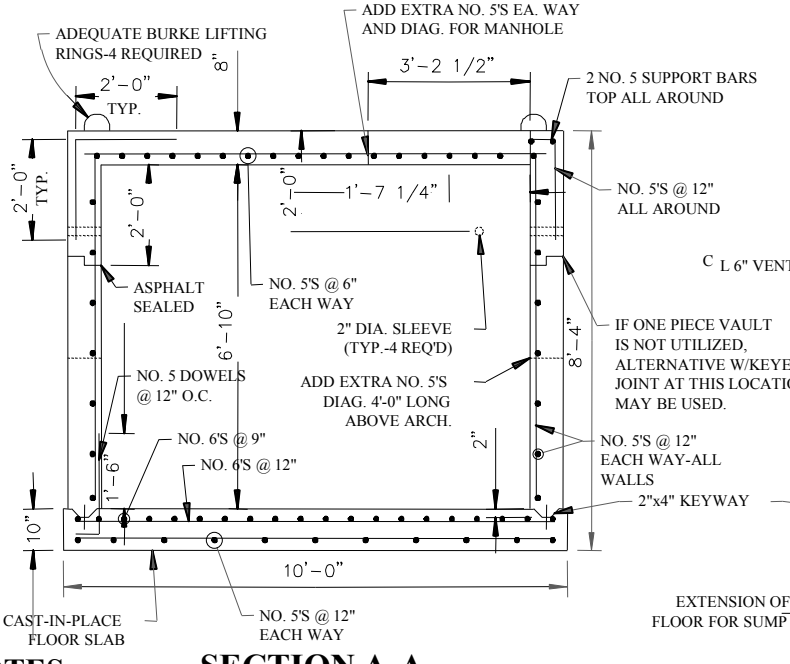
STANDARD CONCRETE VAULT FOR VALVE INSTALLATION – CAST IN PLACE

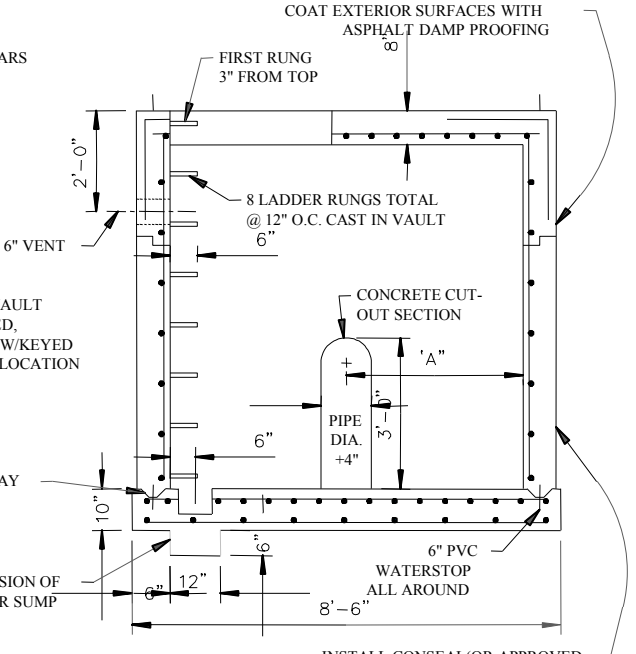


PLAN



ROOF PLAN





SECTION A-A

SECTION B-B

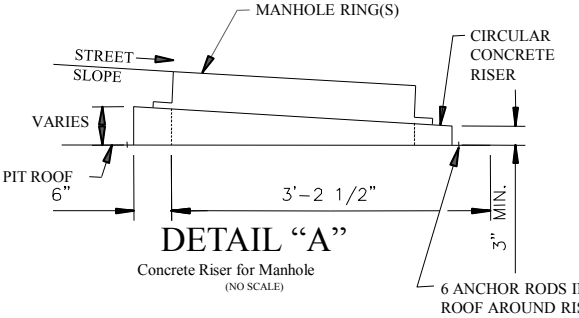
NOTES

DIMENSION "A" = 3'-6" FOR DWG-29,31,32
= 4'-0" FOR DWG-30

ALL CONCRETE WORK SHALL COMPLY WITH WATER DEPT. STANDARD SPECIFICATIONS AND LATEST A.C.I.-318 CODE.

MINIMUM CONCRETE CLEARANCES FOR REBAR:

- 3" WHERE POURED AGAINST THE GROUND.
- 2" WHERE FORMED AND THEN EXPOSED TO GROUND OR WEATHER FOR NO. 6 OR LARGER, 1 1/2" FOR NO. 5 AND SMALLER.
- 1" WHERE EXPOSED TO INTERIOR SURFACES
- ALL VAULTS SHALL BE CONSTRUCTED TO MEET HS 20-44 TRAFFIC LOADING CONDITIONS AND 300 PSF SURCHARGE LOAD.
- THE DEPT. OF WATER MAY REQUIRE A PRECAST VAULT WHEN WEATHER OR OTHER FIELD CONDITIONS WARRANT. SEE DWG-34.



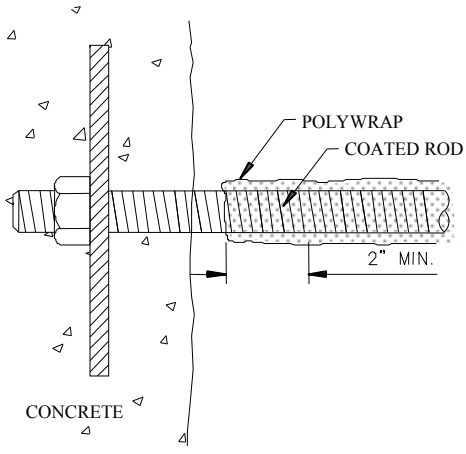
DETAIL "A"

Concrete Riser for Manhole
(NO SCALE)

DRAWN:		REVISED: AUG 2002	**DWG - 35**
DATE:	FEB 1999	REVISED:	
SCALE:	NONE	REVISED:	

STANDARD CONCRETE VAULT FOR VALVE INSTALLATION – CAST IN PLACE

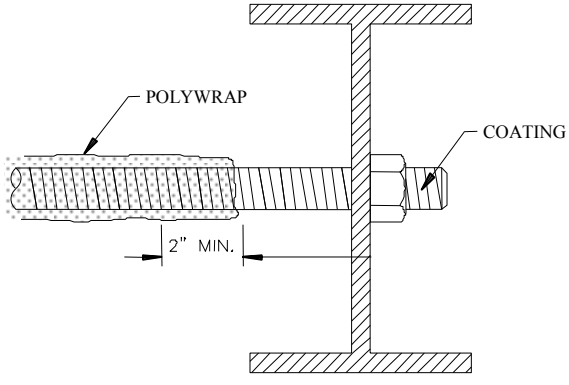
PROTECTING TIE-RODS



NO SCALE

METAL IN CONCRETE:

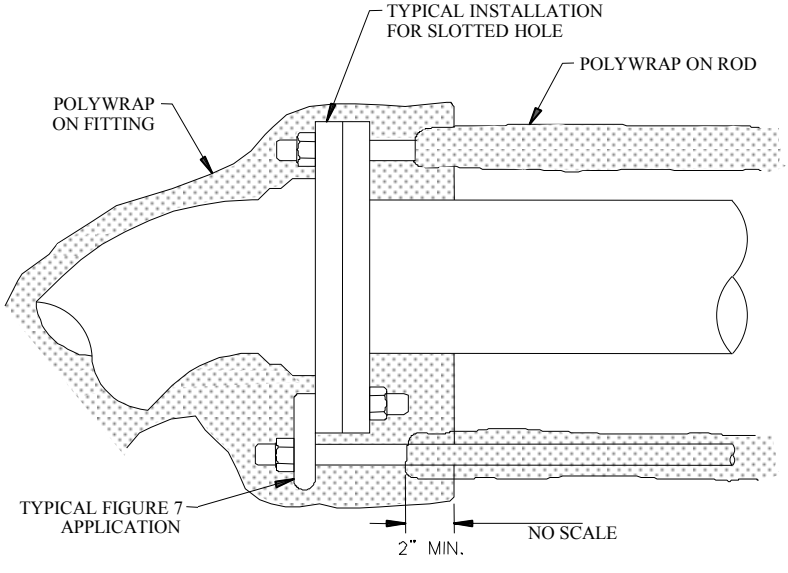
1. COAT METAL PARTS WHERE IN CONTACT WITH CONCRETE, EXTENDING COATING SEVERAL INCHES BEYOND THE CONCRETE. SEE SECTION 4.12(b) AND 4.12(g).
2. POLYWRAP THE ROD, OVERLAPPING THE POLYWRAP AND THE COATING A MINIMUM OF 2".
3. SECURE POLYWRAP TO THE ROAD USING 2" WIDE, 10-MIL POLYETHYLENE PRESSURE-SENSITIVE TAPE.



NO SCALE

ROD THROUGH I-BEAM:

1. COAT ENTIRE I-BEAM. SEE SECTION 4.12(d) AND 4.12(g).
2. COAT NUT AND ROD, EXTENDING COATING SEVERAL INCHES BEYOND THE BEAM.
3. POLYWRAP THE ROD, OVERLAPPING THE COATING A MINIMUM OF 2".
4. SECURE POLYWRAP WITH TAPE.



RODS IN MJ FITTING:

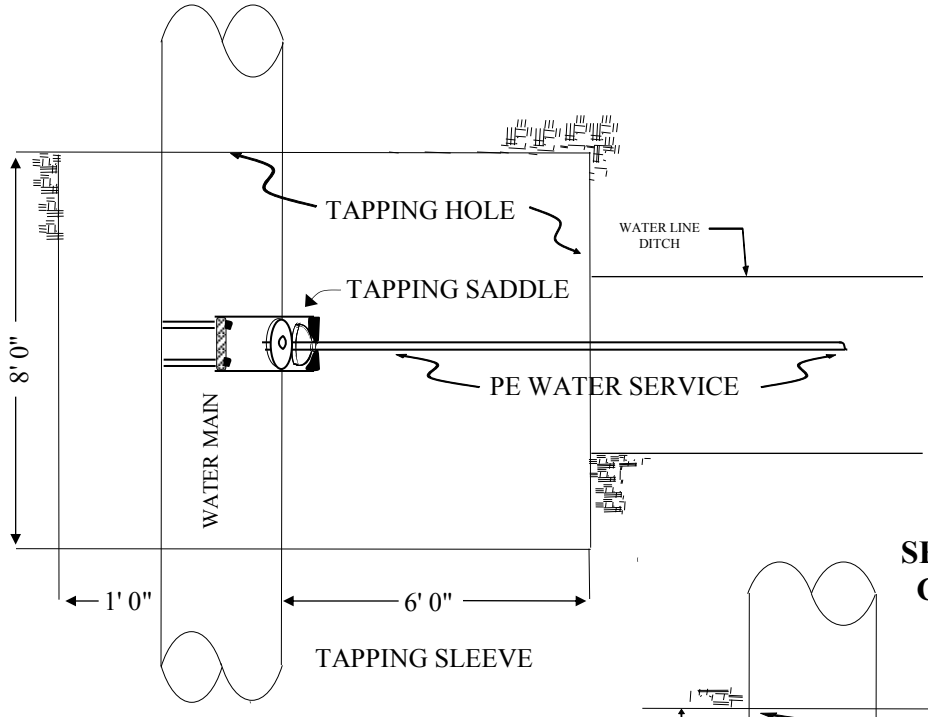
1. POLYWRAP THE ROD AND SECURE WITH TAPE. SEE SECTION 4.12(g).
2. POLYWRAP THE FITTING, OVERLAPPING THE POLYWRAP ON THE ROD A MINIMUM OF 2" AND SECURE WITH TAPE.

CITY OF FOUNTAIN
Pure Colorado

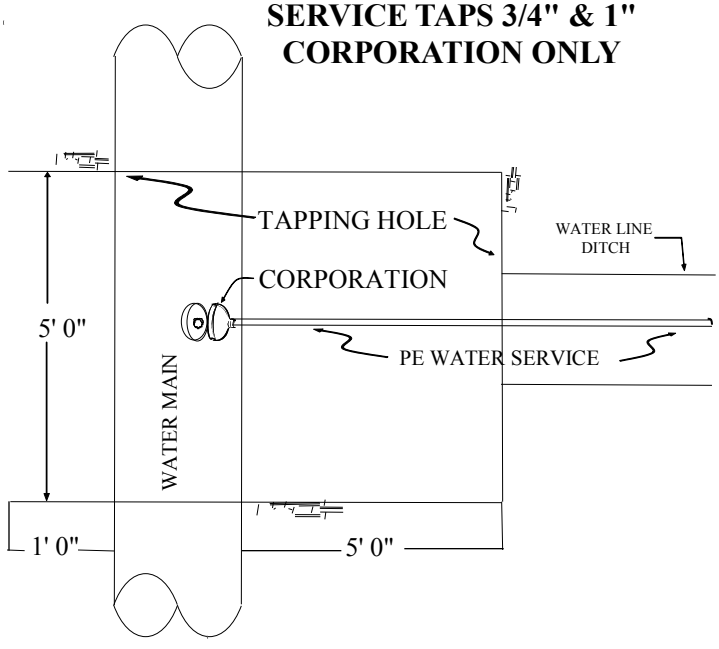
PROTECTING TIE-RODS			
DRAWN:		REVISED: AUG 2002	DWG - 36
DATE:	FEB 1999	REVISED:	
SCALE:	NONE	REVISED:	

TAPPING DETAIL 3/4" THRU 2"

SERVICE TAPS 1-1/2" & 2"
TAPPING SADDLE



SERVICE TAPS 3/4" & 1"
CORPORATION ONLY



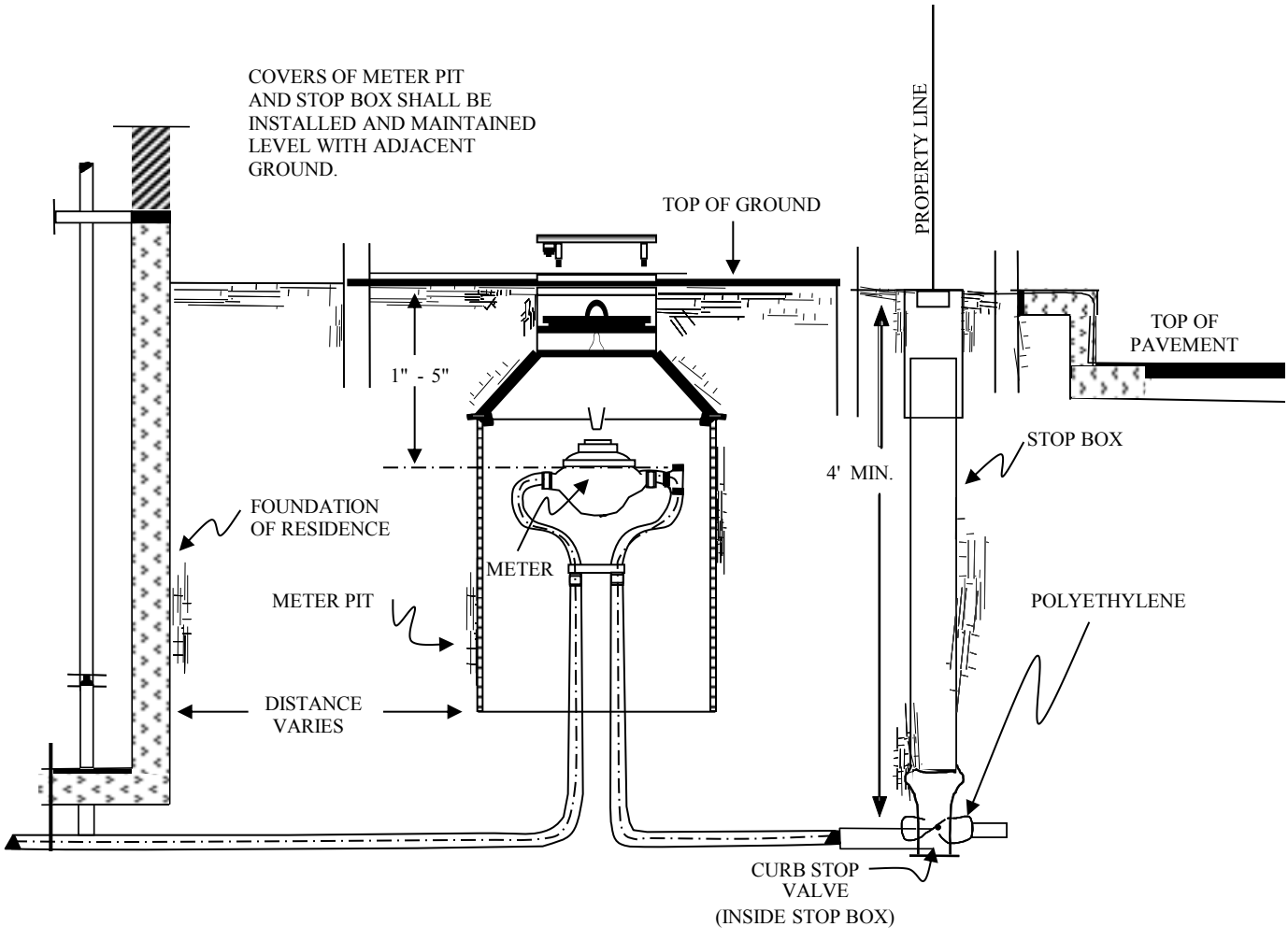
NOTE:

DIRECT TAPS TO THE WATER MAIN SHALL BE MADE ONLY WHEN THE STATIC WATER PRESSURE IS LESS THAN 100 PSI. TAPPING SADDLES SHALL BE USED WHENEVER THE PRESSURE IS 100 PSI OR GREATER. TAPPING SADDLES SHALL HAVE TWO STAINLESS STEEL BANDS WITH A BRASS OR BRONZE CORPORATION CONNECTION. (FORD 202 BS)

CITY OF FOUNTAIN
Pure Colorado

TAPPING DETAIL ¾" THRU 2"		
DRAWN:	REVISED: AUG 2002	DWG - 37
DATE: FEB 1999	REVISED: DEC 2005	
SCALE: NONE	REVISED:	

INSTALLATION FOR SERVICE LINE STOP BOX AND METER



NOTE:

1.) SHOULD ANY SITUATION BE ENCOUNTERED OTHER THAN SPECIFICATION STANDARDS, NOTIFY THE WATER DEPARTMENT.

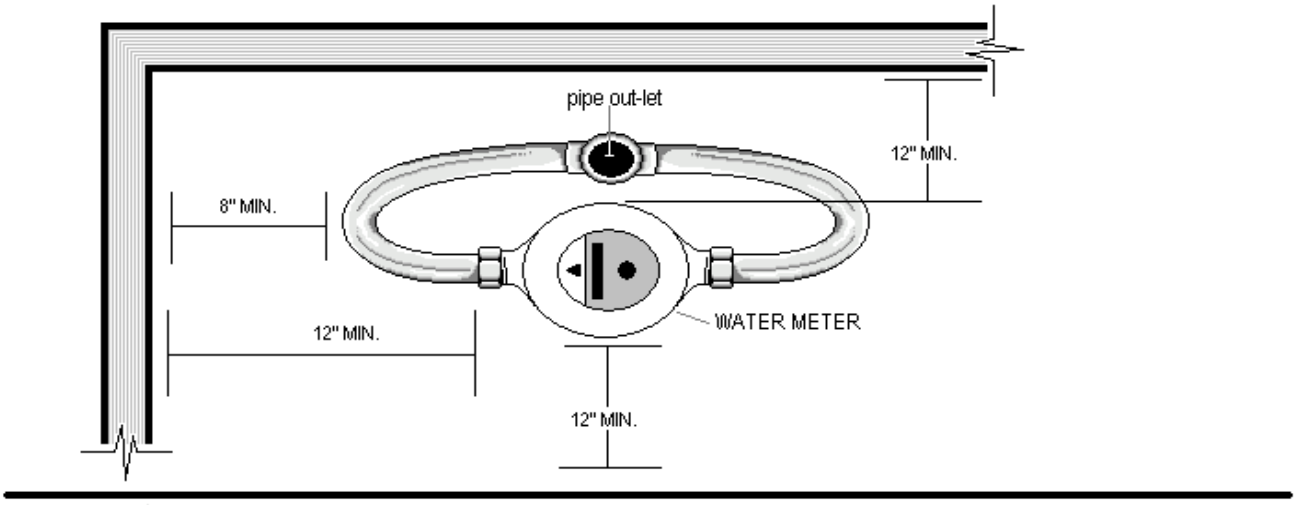
2.) SERVICE LINE FROM WATER MAIN TO CURB STOP OR PROPERTY LINE, WHICH EVER IS CLOSEST TO THE WATER MAIN IS THE RESPONSIBILITY OF THE DEPARTMENT. ALL OTHER PARTS OF THE WATER SERVICE LINE ARE THE RESPONSIBILITY OF THE CUSTOMER/OWNER FOR OPERATION AND MAINTENANCE.

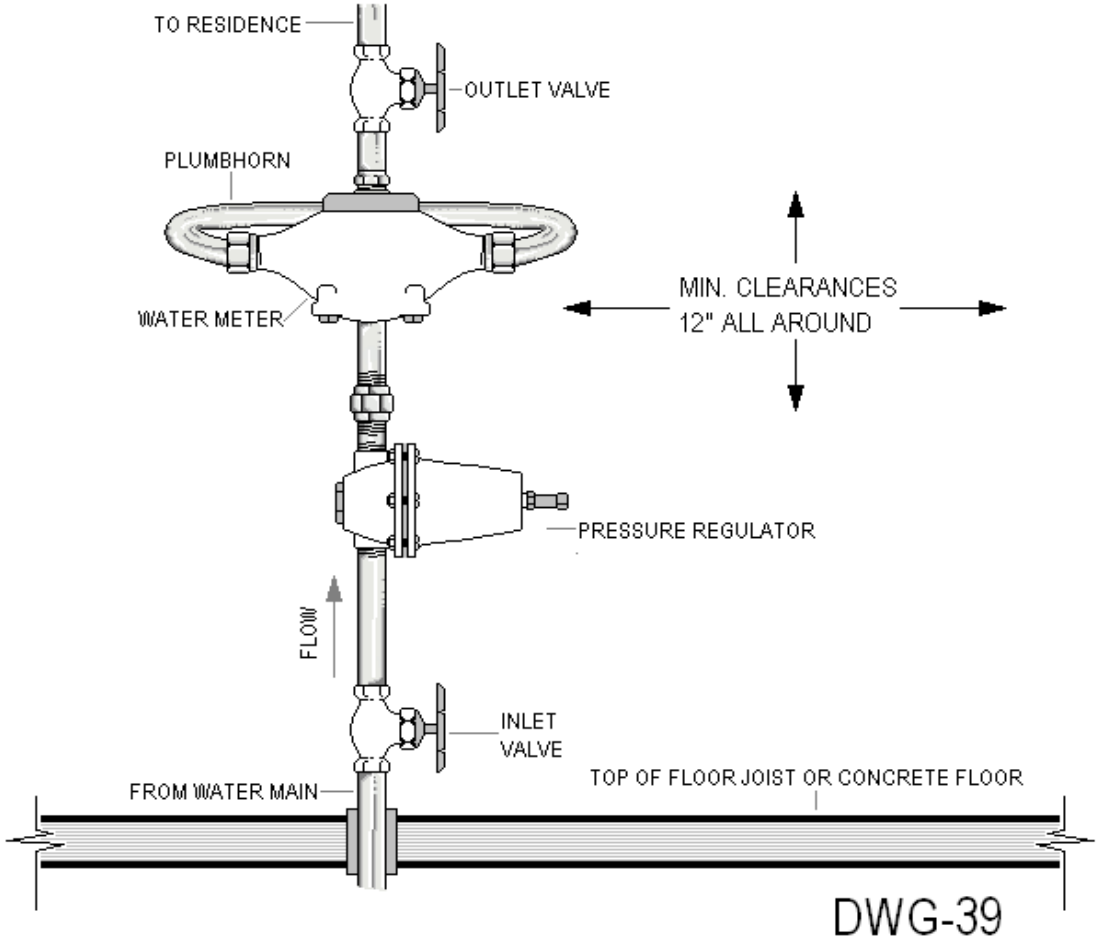
CITY OF FOUNTAIN
Pure Colorado

INSTALLATION FOR SERVICE LINE STOP BOX AND METER

DRAWN:	REVISED: AUG 2002	**DWG - 38**
DATE: FEB 1999	REVISED: JAN 2006	
SCALE: NONE	REVISED:	

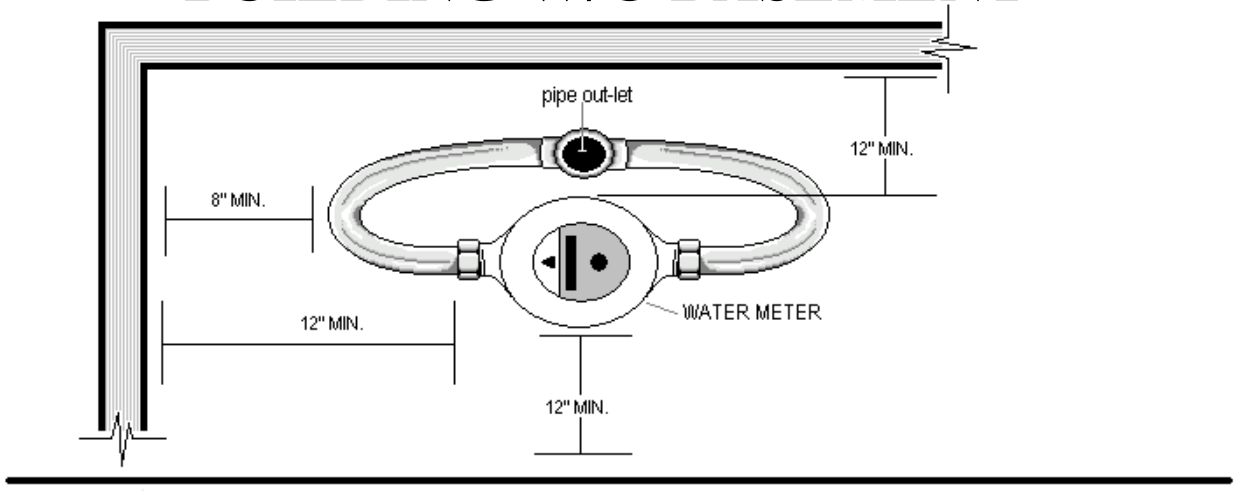
WATER METER LOOP 5/8” – 1” METERS

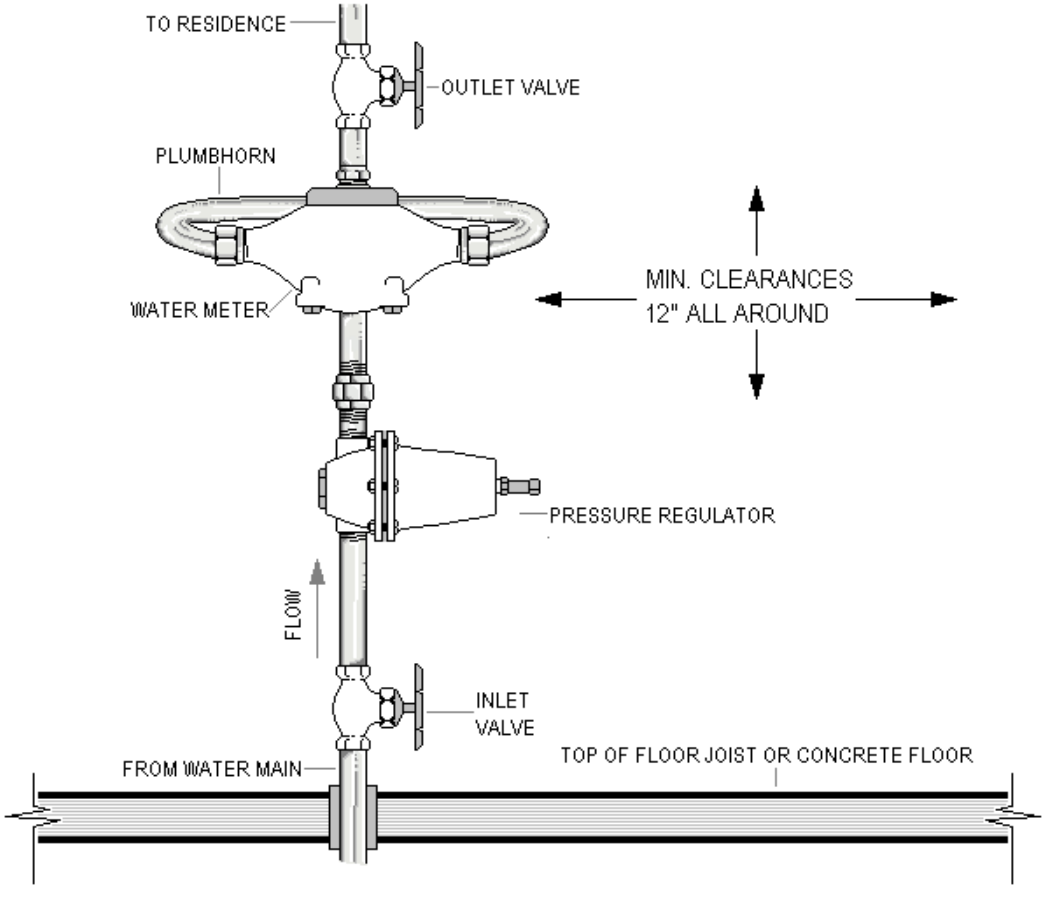




WATER METER LOOP 5/8” – 1” METERS		
DRAWN:	REVISED: AUG 2002	DWG - 39
DATE: FEB 1999	REVISED: JUN 2006	
SCALE: NONE	REVISED:	

WATER METER 5/8” – 1” INSIDE A BUILDING W/O BASEMENT

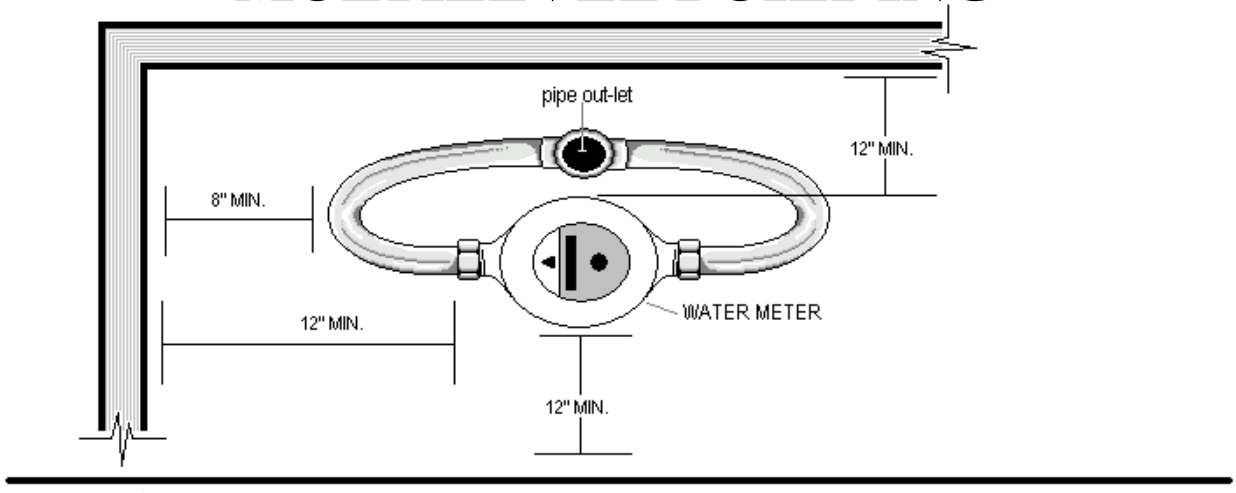


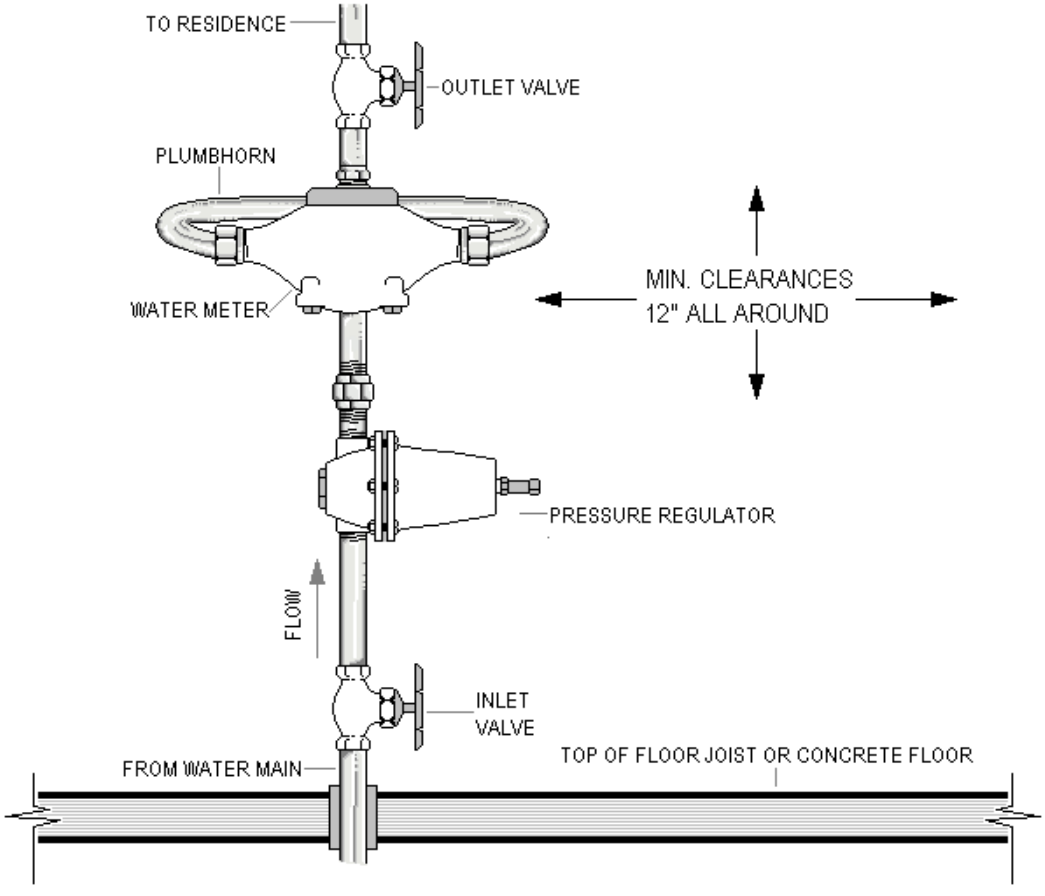


NOTE:
Drawing is same view as DWG. #39

WATER METER 5/8” – 1” INSIDE A BUILDING W/O BASEMENT		
DRAWN:	REVISED: AUG 2002	DWG - 40
DATE: FEB 1999	REVISED: JUN 2006	
SCALE: NONE	REVISED:	

WATER METER 5/8” – 1” INSIDE A MULTILEVEL BUILDING

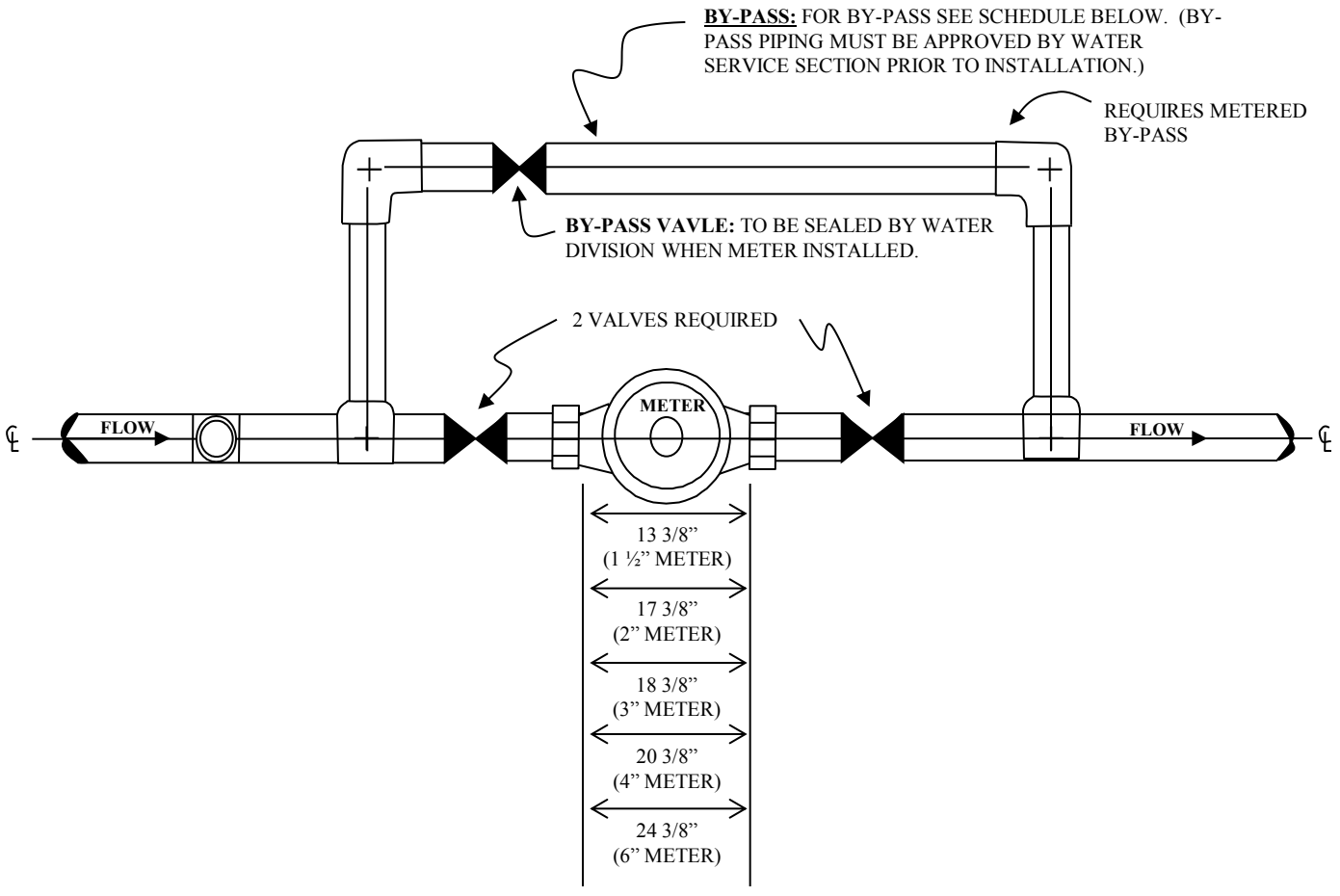




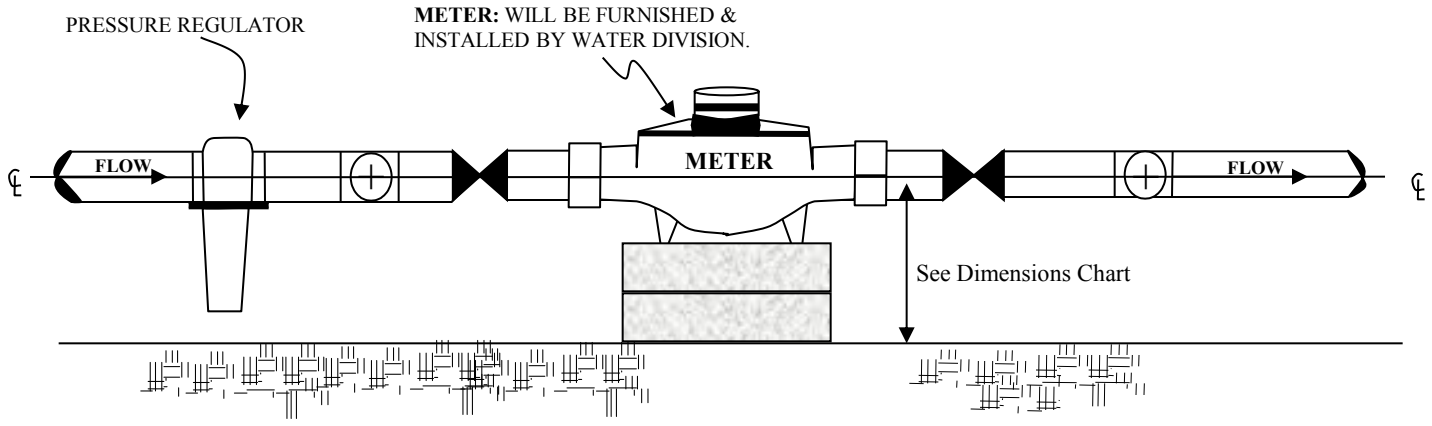
NOTE:
Drawing is same view as DWG. #39

WATER METER 5/8” – 1” INSIDE A MULTILEVEL BUILDING		
DRAWN:	REVISED: AUG 2002	DWG - 41
DATE: FEB 1999	REVISED: JUN 2006	
SCALE: NONE	REVISED:	

WATER METER BY-PASS 1-½" THRU 6"



PLAN



METER SIZE	BY-PASS DIA.
1 ½" & 2	3"
3"	4 ½"
4"	5"
6"	5"

ELEVATION

"D" DIMENSIONS:

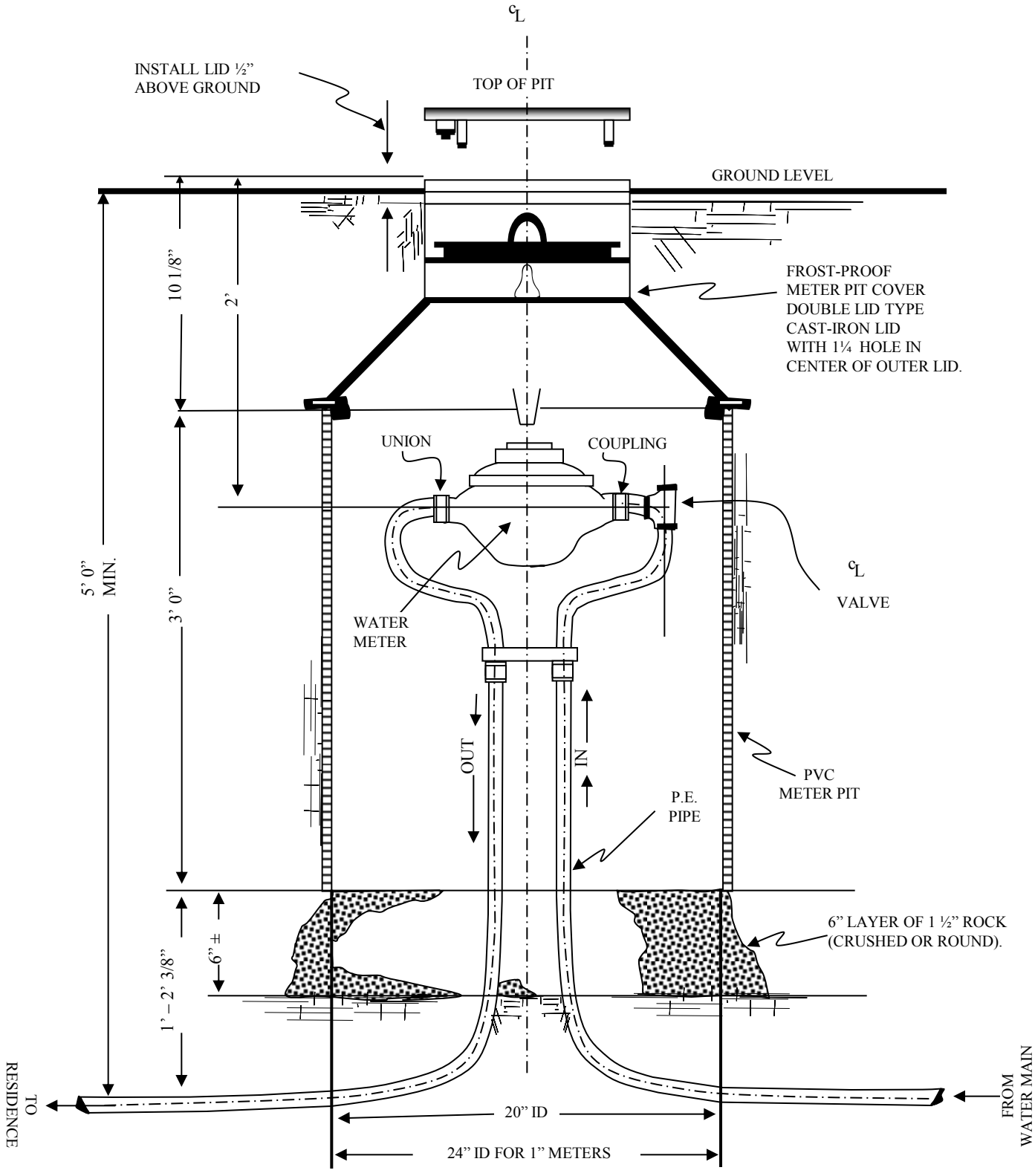
METER SIZE	DISTANCE
1 ½" & 2	3"
3"	4 ½"
4"	5"
6"	5"

CITY OF FOUNTAIN
Pure Colorado

WATER METER BY-PASS 1-½" THRU 6"

DRAWN:	REVISED: AUG 2002	**DWG - 42**
DATE: FEB 1999	REVISED: JAN 2006	
SCALE: NONE	REVISED:	

WATER METERS 5/8” – 1” OUTSIDE

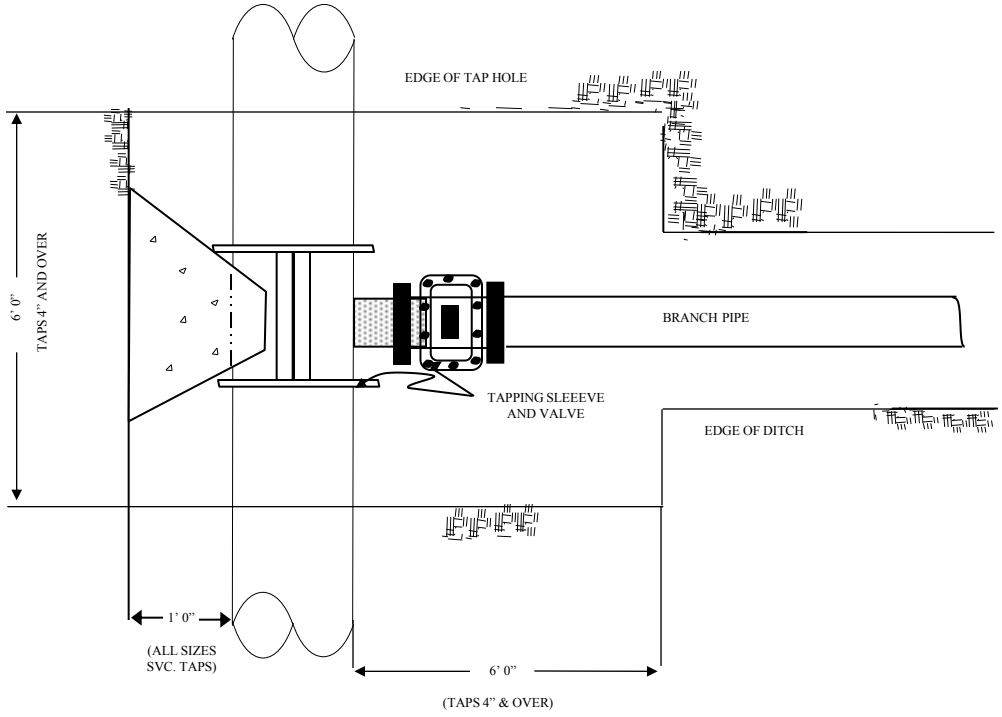


NOTE:

1.) THIS DETAIL SHALL BE USED ONLY FOR LOADS IMPOSED BY PEDESTRIAN TRAFFIC, SEE CHAPTER 5.

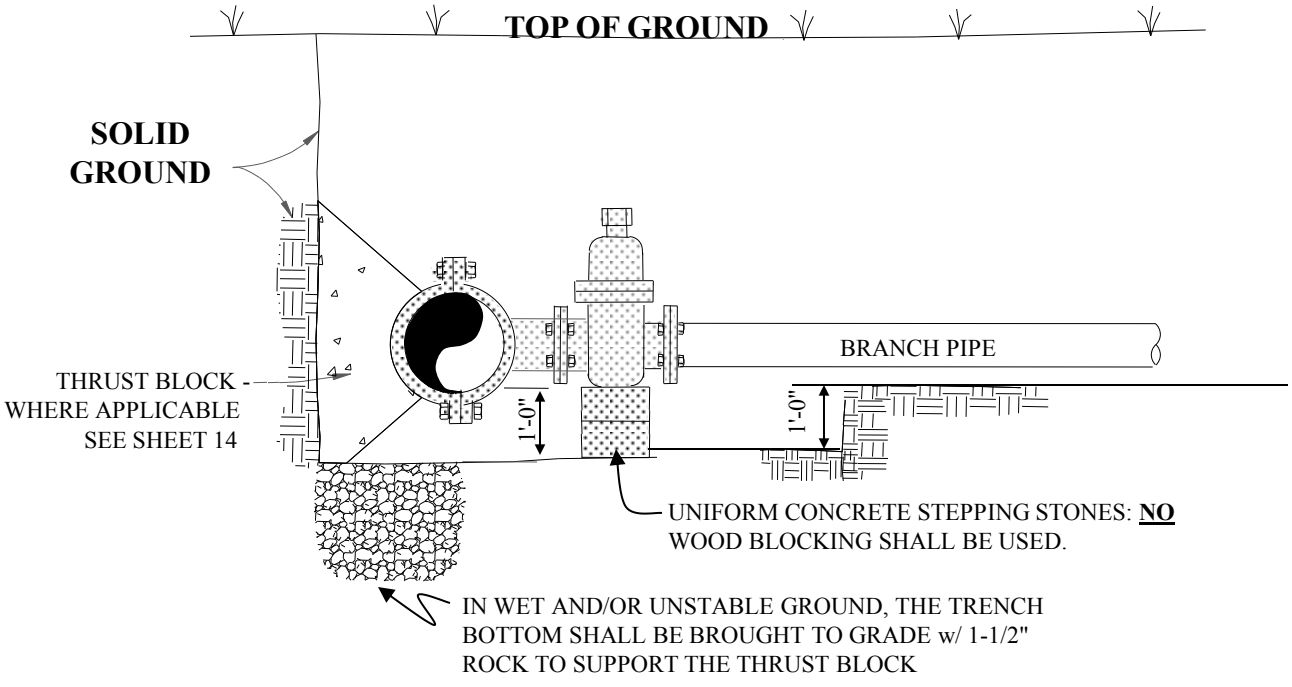
WATER METERS 5/8” – 1” OUTSIDE		
DRAWN:	REVISED: AUG 2002	DWG - 43
DATE: FEB 1999	REVISED: JAN 2006	
SCALE: NONE	REVISED:	

DETAIL FOR TAPS 4” AND OVER



PLAN

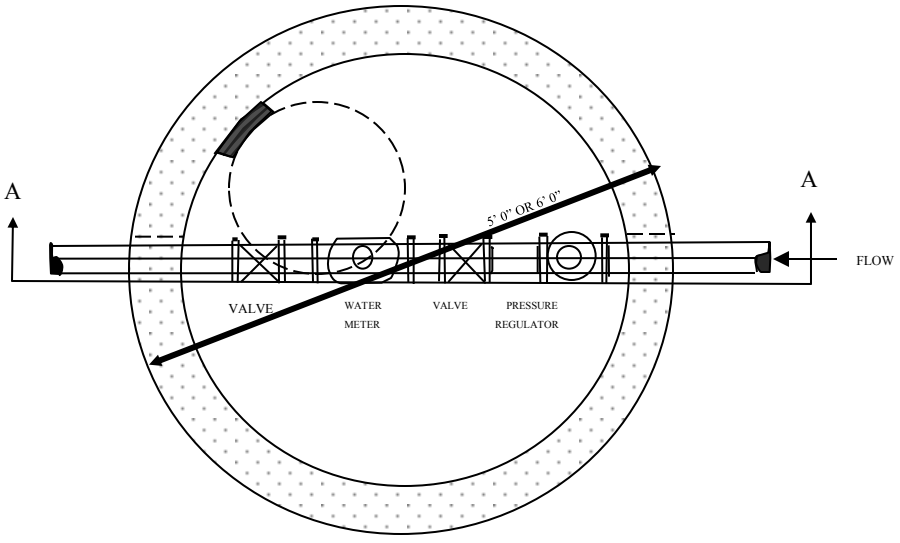
TAPPING SADDLES SHALL BE STAINLESS STEEL, “FULL CIRCLE” TAPPING SADDLE UNLESS APPROVED OTHERWISE BY THE WATER DEPARTMENT OR CITY INSPECTOR.



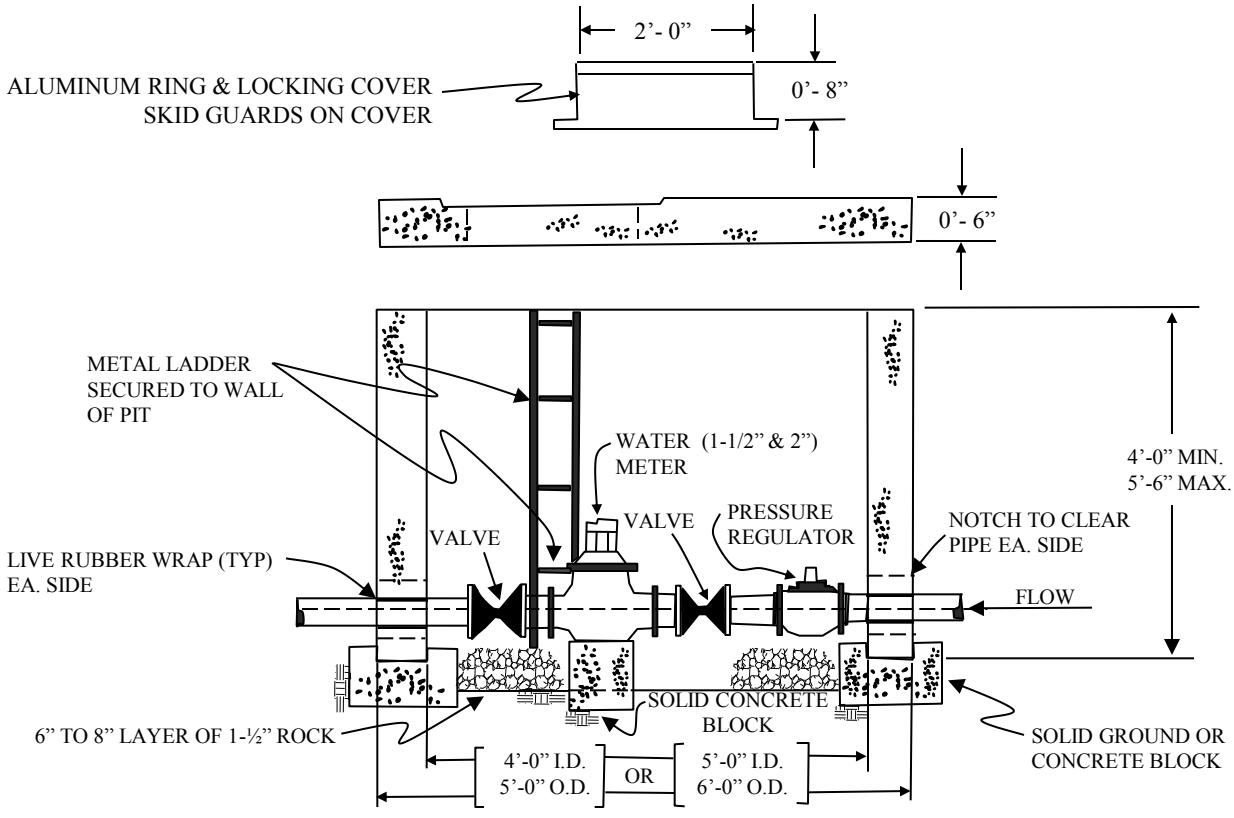
ELEVATION

	DETAIL FOR TAPS 4” AND OVER		
CITY OF FOUNTAIN Pure Colorado	DRAWN:	REVISED: AUG 2002	DWG - 44
	DATE: FEB 1999	REVISED:	
	SCALE: NONE	REVISED:	

STANDARD ROUND PRECAST PIT FOR 1-1/2" & 2" METERS



PLAN: STANDARD ROUND MANHOLE



ELEVATION – SECTION A-A

NOTES:

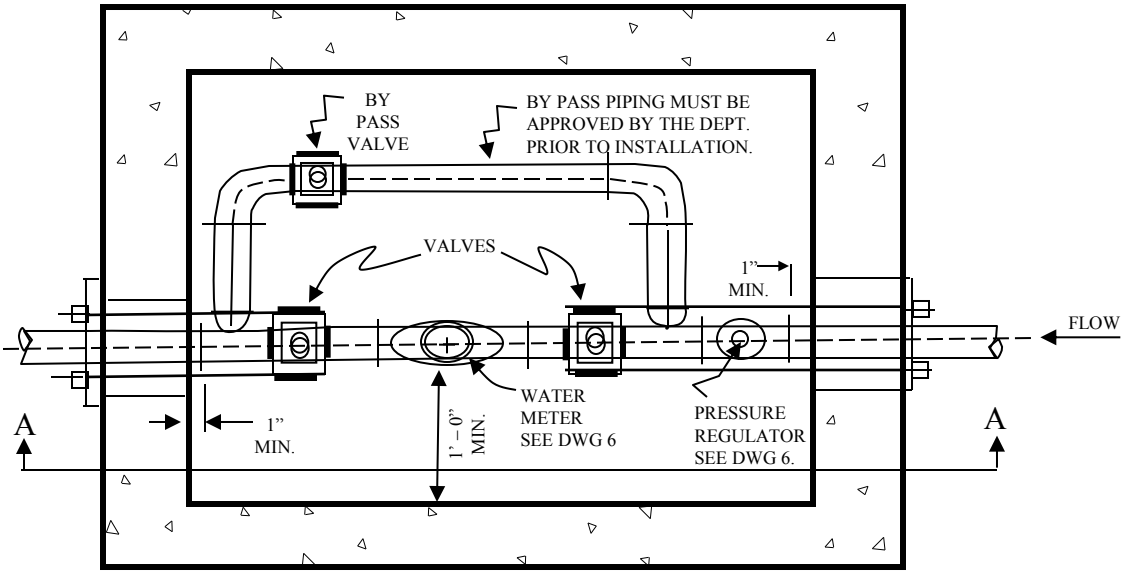
IF PRESSURE EXCEEDS 100 LBS., THE REGULATOR IS TO BE INSTALLED ON THE INLET SIDE.

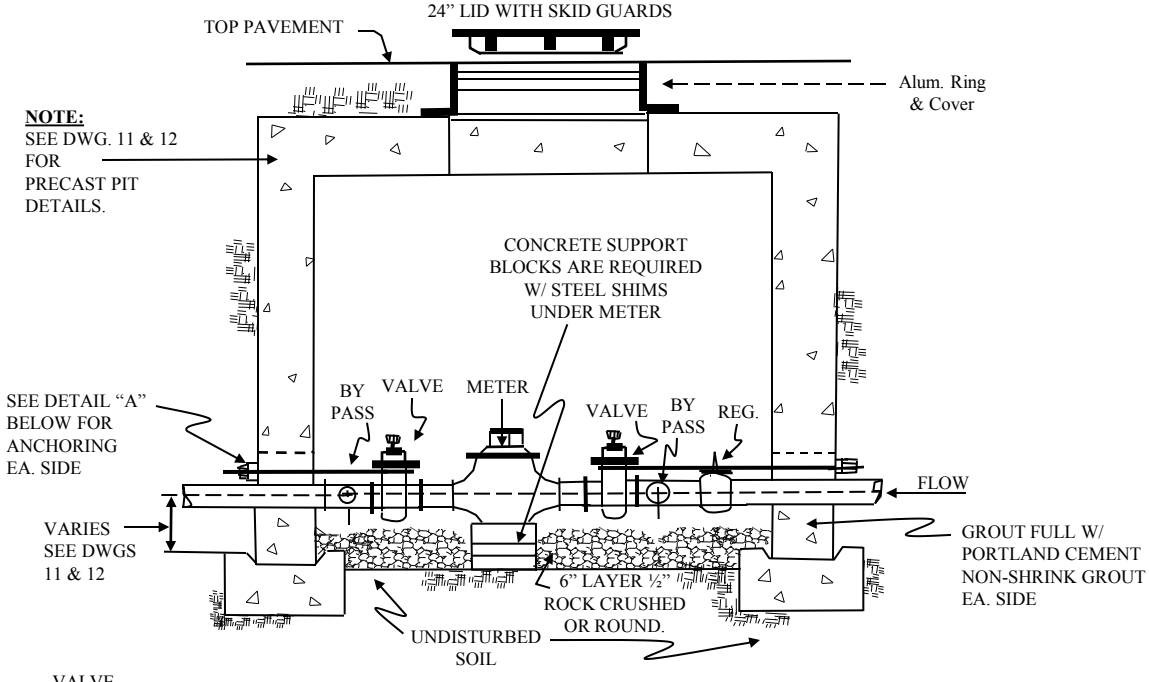
BY-PASS PIPING IS LEFT TO THE DISCRETION OF THE DEPARTMENT.INSTALLED ON THE INLET SIDE.

THIS DRAWING IS FOR 5 FT. AND 6 FT. O.D. DIA. METER PITS. THEY SHALL BE PRECAST CONCRETE, DESIGNED FOR HS 20-44 TRAFFIC LOADING, ONLY.

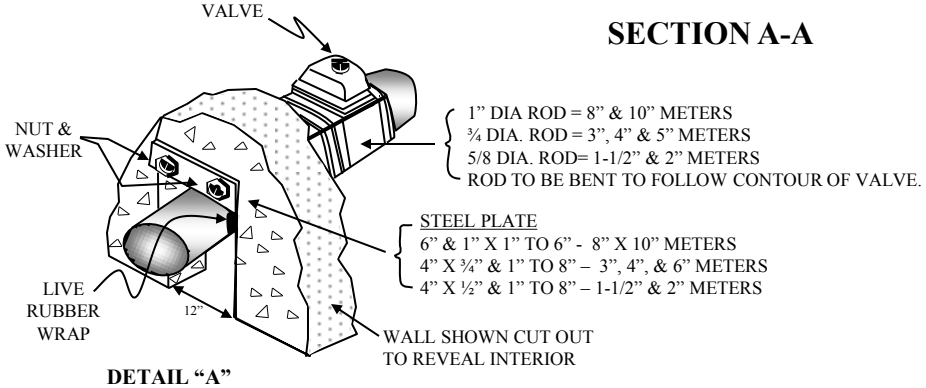
STANDARD ROUND PRECAST PIT FOR 1-1/2" & 2" METERS		
DRAWN:	REVISED: AUG 2002	DWG - 45
DATE: FEB 1999	REVISED:	
SCALE: NONE	REVISED:	

PRECAST CONCRETE PIT FOR 1-½" THRU 6" METERS





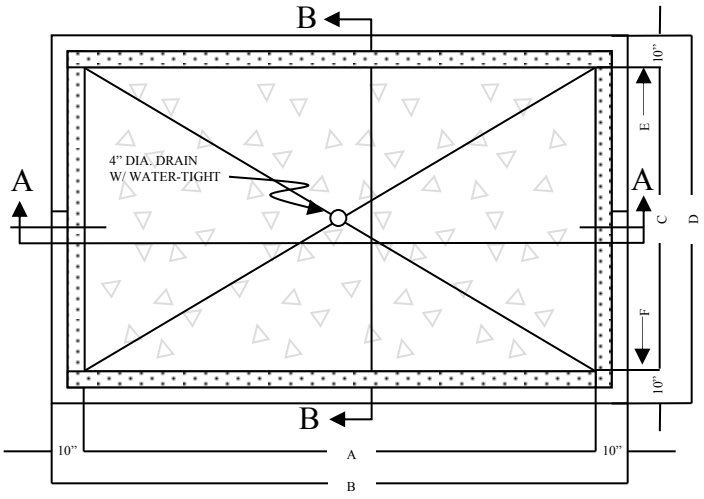
SECTION A-A



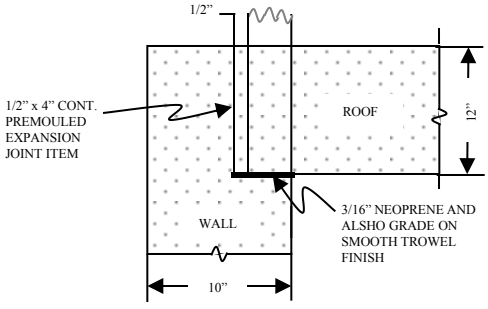
DETAIL "A"

CITY OF FOUNTAIN Pure Colorado	**PRECAST CONCRETE PIT FOR 1-½" THRU 6" METERS**		
DRAWN:	REVISED: AUG 2002		**DWG - 46**
DATE: FEB 1999	REVISED: JAN 2006		
SCALE: NONE	REVISED:		

PRECAST CONCRETE PIT FOR 8” & 10” METERS

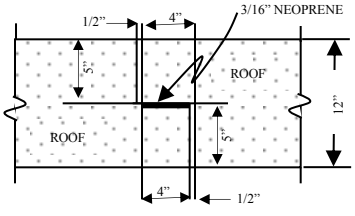


PLAN



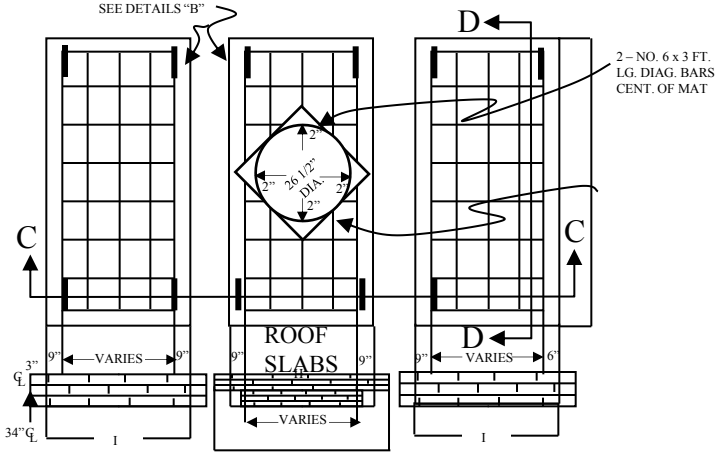
DETAIL “A”

CORNER ROOF JOINT
NO SCALE

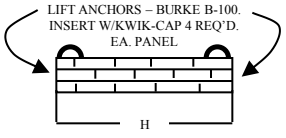


DETAIL “B”

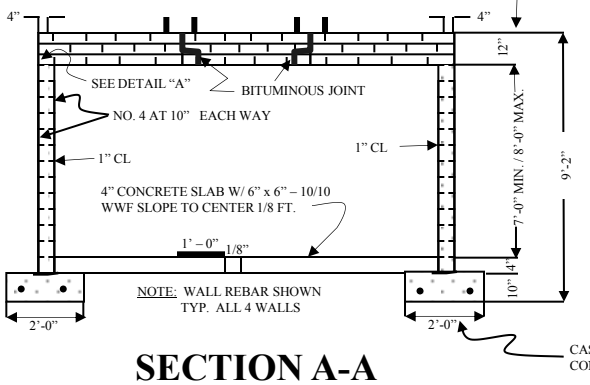
CENTER SLAB JOINT
NO SCALE



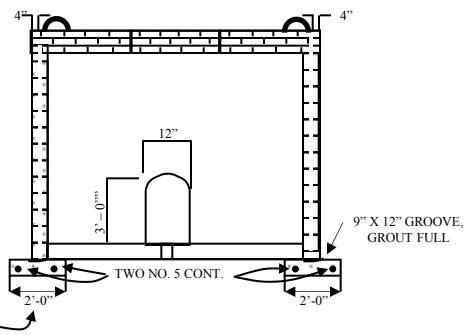
SECTION C-C



SECTION D-D



SECTION A-A



SECTION B-B

METER SIZE	A	B	C	D	E	F	G	H	I
8”	13’-4”	15’-0”	8’-10”	10’-6”	4’-9”	4’-1”	9’-9”	4’-8”	4’-9”
10”	15’-6”	17’-2”	10’-0”	11’-8”	5’-6”	4’-5”	10’-11”	5’-6”	5’-5”

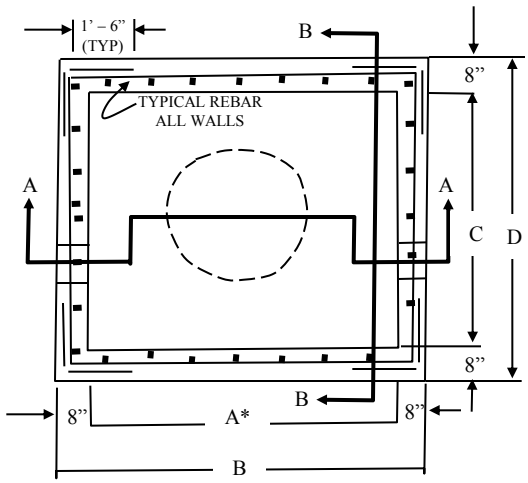
NOTE: ALL PITS SHALL BE FABRICATED TO MEET 115 – 20- 44 TRAFFIC LOADING CONDITIONS.

CITY OF FOUNTAIN
Pure Colorado

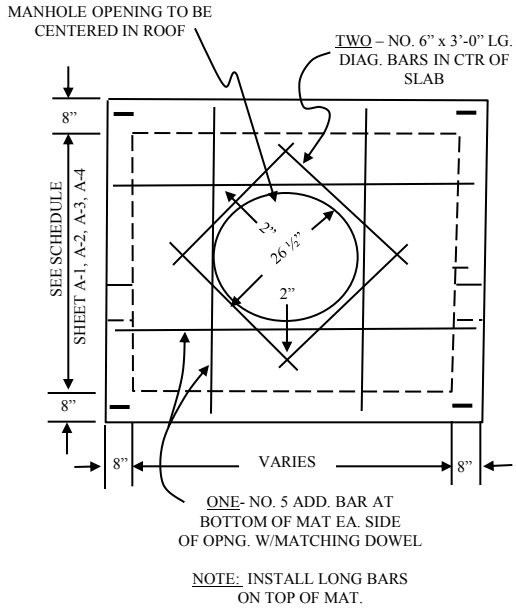
PRECAST CONCRETE PIT FOR 8” AND 10” METERS

DRAWN:	REVISED: AUG 2002	**DWG - 47**
DATE: FEB 1999	REVISED:	
SCALE: NONE	REVISED:	

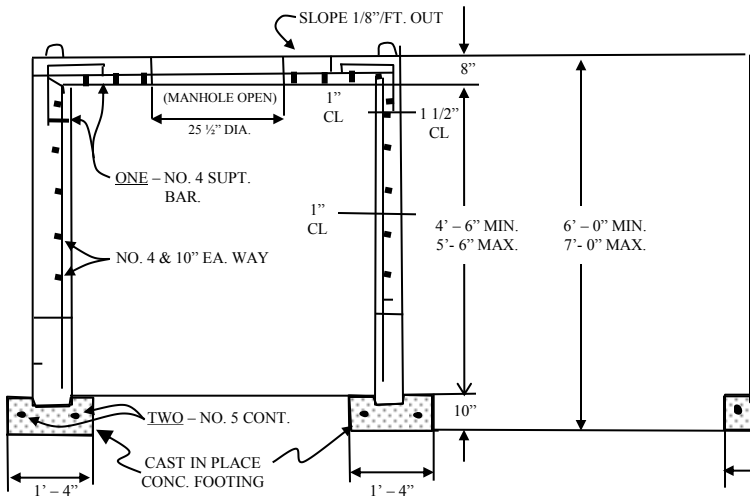
PRECAST CONCRETE PIT FOR 1-1/2” THRU 6” METERS



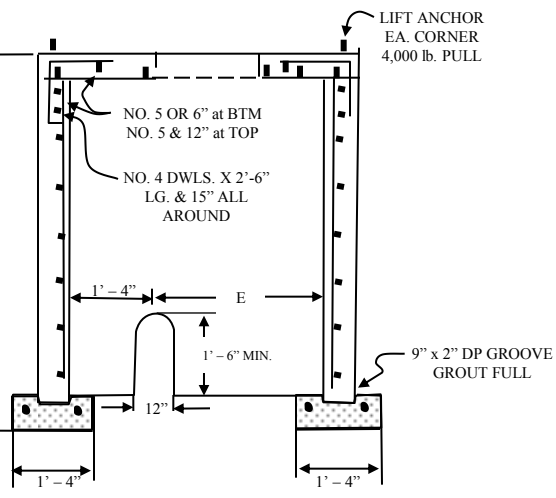
PLAN



ROOF PLAN



SECTION A - A



SECTION B - B

NOTE:

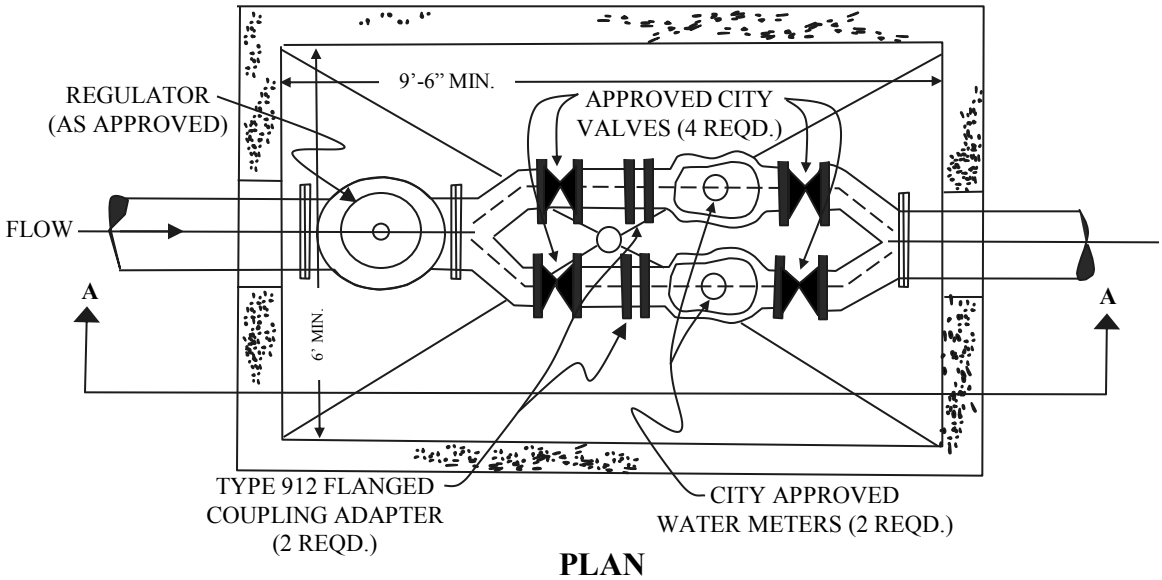
CONCRETE PIT SHALL BE PRECAST, DESIGNED FOR HS 20-44 TRAFFIC LOADING, UNLESS APPROVED OTHERWISE.

METER SIZE	A*	B	C	D	E
1 ½” & 2”	5’ – 0”	6’ – 4”	4’ – 0”	5’ – 4”	2’ – 8” ±
3” & 4”	7’ – 0”	8’ – 4”	5’ – 0”	6’ – 4”	3’ – 8” ±
6	8’ – 0”	9’ – 4”	5’ – 0”	6’ – 4”	3’ – 8” ±

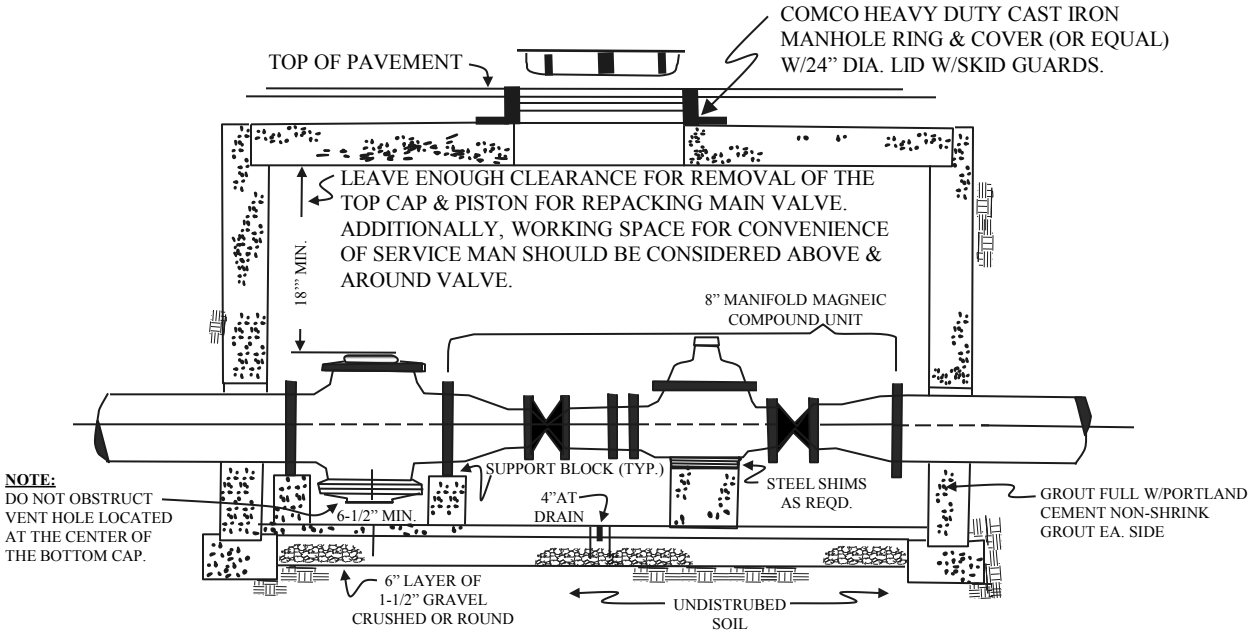
CITY OF FOUNTAIN
Pure Colorado

PRECAST CONCRETE PIT FOR 1-1/2” THRU 6” METERS			
DRAWN:		REVISED: AUG 2002	DWG - 48
DATE:	FEB 1999	REVISED:	
SCALE:	NONE		

SPECIAL MANIFOLD INSTALLATION FOR 4” THRU 10” METERS



PLAN



SECTION A-A

NOTES:

PLANS FOR MANIFOLD METER INSTALLATION MUST BE SUBMITTED TO AND APPROVED BY THE WATER DEPARTMENT PRIOR TO ANY CONSTRUCTION.

ALL PITS SHALL BE PRECAST CONCRETE, DESIGNED FOR HS 20-44 TRAFFIC LOADING ONLY.

CITY OF FOUNTAIN Pure Colorado	**SPECIAL MANIFOLD INSTALLATION FOR 4” THRU 10” METERS**		
DRAWN:		REVISED: AUG 2002	
DATE:	FEB 1999	REVISED:	**DWG - 49**
SCALE:	NONE	REVISED:	

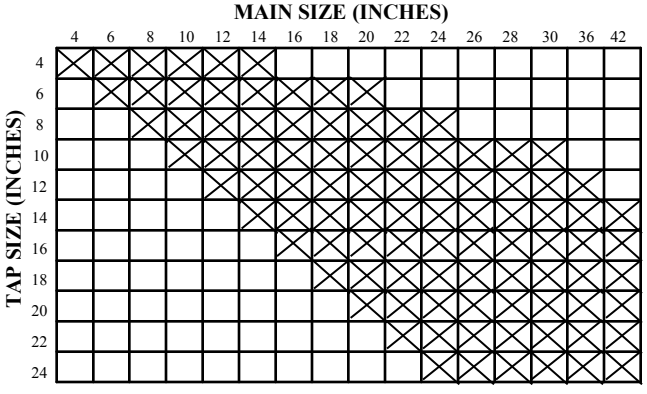
THRUST BLOCKS DATA

CONCRETE THRUST BLOCKS

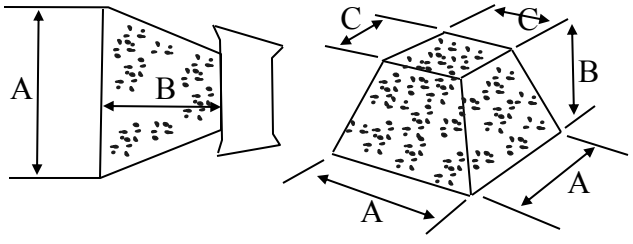
WATER MAIN AND TAP SIZE COMBINATIONS WHICH REQUIRE A CONCRETE THRUST REACTION BLOCK BEHIND THE MAIN AT THE TAPPING SLEEVE OR SADDLE.

ALL WATER MAINS

☒ INDICATES CONCRETE THRUST BLOCK REQUIRED



ANY THRUST REACTION BLOCK REQUIREMENTS FOR WATER MAIN AND TAP SIZE COMBINATIONS OTHER THAN THOSE SHOWN ABOVE WILL REQUIRE SPECIAL DESIGN APPROVAL BY THE WATER RESOURCES DEPARTMENT, ENGINEERING SECTION.



NOTE: USE THE FOLLOWING VALUES FOR "C"

PIPE SIZE =	C =
12" & UNDER	1' – 6"
16" TO 24"	2' – 0"
30" TO 36"	3' – 0"
OVER 36" A, B & C WILL BE GIVEN IN EACH INSTANCE	

SEE VOLUMES ON RIGHT FOR A, B & C DIM.

FITTINGS	4"	6"	8"
TEE	1/4 yd.	1/2 yd.	3/4 yd.
90" BEND	1/4 yd.	3/4 yd.	1-1/4 yd.
45" BEND	1/4 yd.	1/2 yd.	3/4 yd.
22-1/2" BEND	1/4 yd.	1/4 yd.	1/4 yd.
11-1/4" BEND	1/4 yd.	1/4 yd.	1/4 yd.

VOL (IN YDS.)	A	B if C= 1'-6"	B if C=2'-0"	B if C=3'-0"
¼	2'-8"	1'-7"	N/A	N/A
½	3'-2"	2'-5"	2'-0"	N/A
¾	4'-0"	2'-6"	2'-2"	N/A
1	4'-4"	3'-0"	2'-7"	2'-0"
1-1/4	4'-10"	3'-1"	2'-9"	2'-2"
1-1/2	5'-3"	3'-3"	2'-11"	2'-4"
1-3/4	5'-7"	3'-5"	3'-1"	2'-6"
2	5'-10"	3'-7"	3'-3"	2'-8"
2-1/4	6'-3"	3'-8"	3'-4"	2'-9"
2-1/2	6'-4"	3'-11"	3'-7"	3'-0"
2-3/4	6'-9"	3'-11"	3'-7"	3'-0"
3	6'-10"	4'-1"	3'-9"	3'-2"
3-1/4	7'-3"	4'-1"	3'-9"	3'-2"
3-1/2	7'-4"	4'-3"	3'-11"	3'-4"
3-3/4	7'-7"	4'-4"	4'-0"	3'-5"
4	7'-11"		4'-0"	3'-5"
4-1/4	8'-1"		4'-0"	3'-6"
4-1/2	8'-4"		4'-0"	3'-6"
4-3/4	8'-6"		4'-1"	3'-7"
5	8'-8"		4'-2"	3'-8"
5-1/4	8'-11"		4'-2"	3'-8"
5-1/2	9'-1"		4'-3"	3'-9"
5-3/4	9'-3"		4'-4"	3'-10"
6	9'-4"		4'-5"	3'-11"
6-1/4	9'-6"		4'-6"	4'-0"
6-1/2	9'-8"		4'-6"	4'-0"
6-3/4	9'-11"		4'-6"	4'-0"
7	10'-2"		4'-6"	4'-0"
7-1/4	10'-3"		4'-7"	4'-1"
7-1/2	10'-4"		4'-8"	4'-2"
7-3/4	10'-5"		4'-9"	4'-3"
8	10'-6"		4'-10"	4'-4"
8-1/4	10'-8"		4'-10"	4'-4"
8-1/2	10'-9"		4'-11"	4'-5"
8-3/4	10'-11"		4'-11"	4'-5"
9	11'-1"		4'-11"	4'-5"
9-1/4	11'-2"		5'-0"	4'-6"
9-1/2	11'-4"		5'-0"	4'-6"
9-3/4	11'-6"		5'-0"	4'-6"
10	11'-8"		5'-0"	4'-6"

ALL WATER MAINS WILL HAVE VOLUMES SHOWN ON PLAN & PROFILE DRAWINGS.

CITY OF FOUNTAIN
Pure Colorado

THRUST BLOCKS DATA

DRAWN:		REVISED: AUG 2002	**DWG - 50**
DATE:	FEB 1999	REVISED:	
SCALE:	NONE	REVISED:	

AIR GAP SEPARATION

Air Gap Separation

An Air Gap Separation means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture or other device and the flood level or overflow rim of the receptacle. An "Approved Air Gap Separation" shall be at least double the diameter of the supply pipe measuring vertically above the overflow rim of the vessel and in no case shall the gap be less than one (1) inch. The tank should be installed as close to the property line as practical. The piping between the water meter and the air gap separation should be entirely visible to insure that no connections or tees are made in that area. To eliminate possible entrance of vermin, screened protections over the entire A/G set-up are encouraged. (See General Instructions, Page 1)

AIR GAP SEPARATION

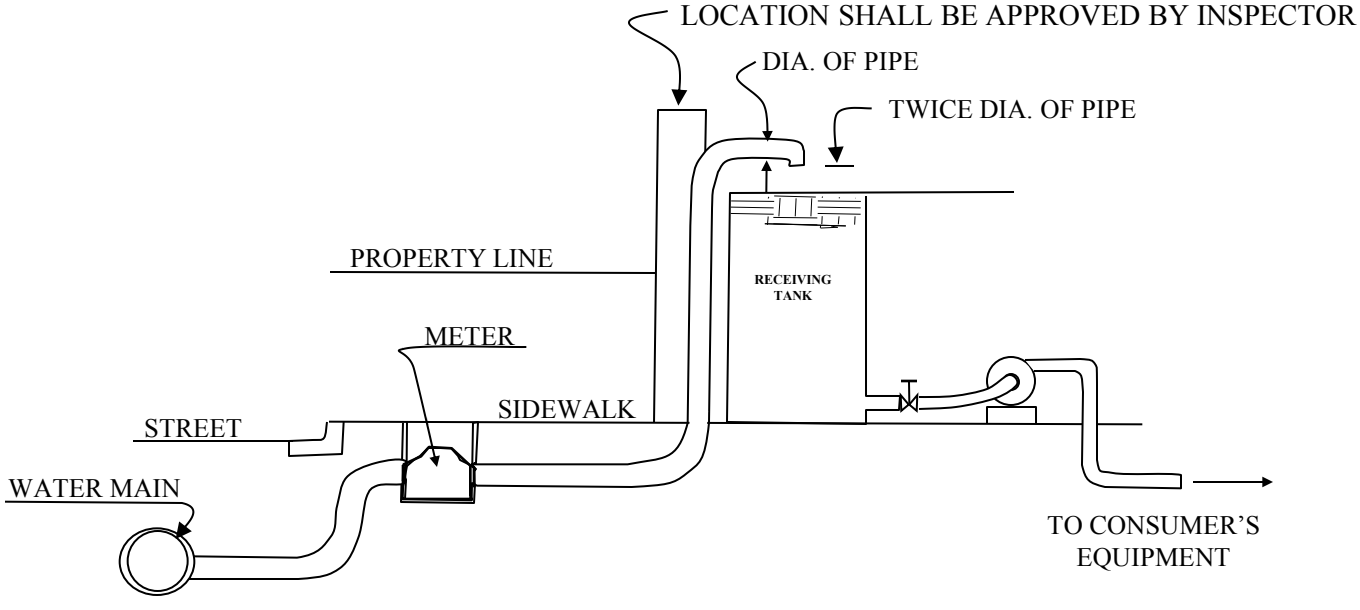
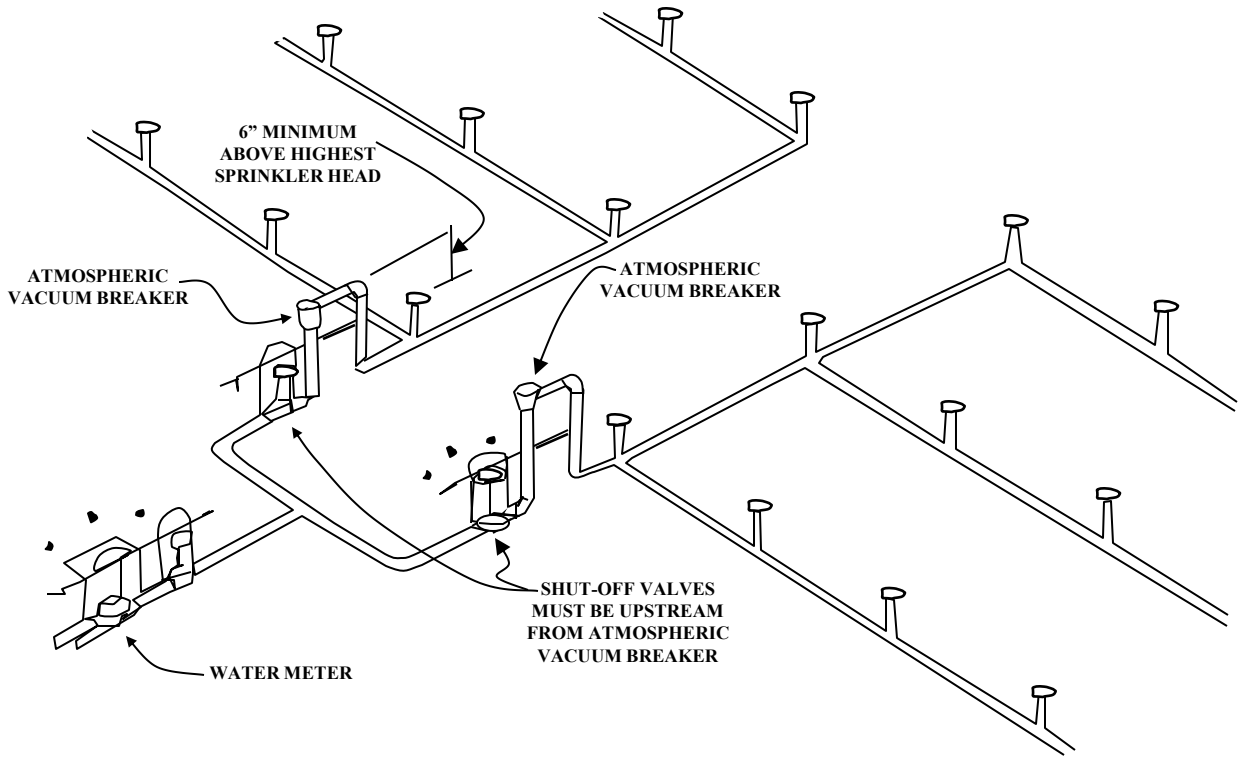


FIGURE E

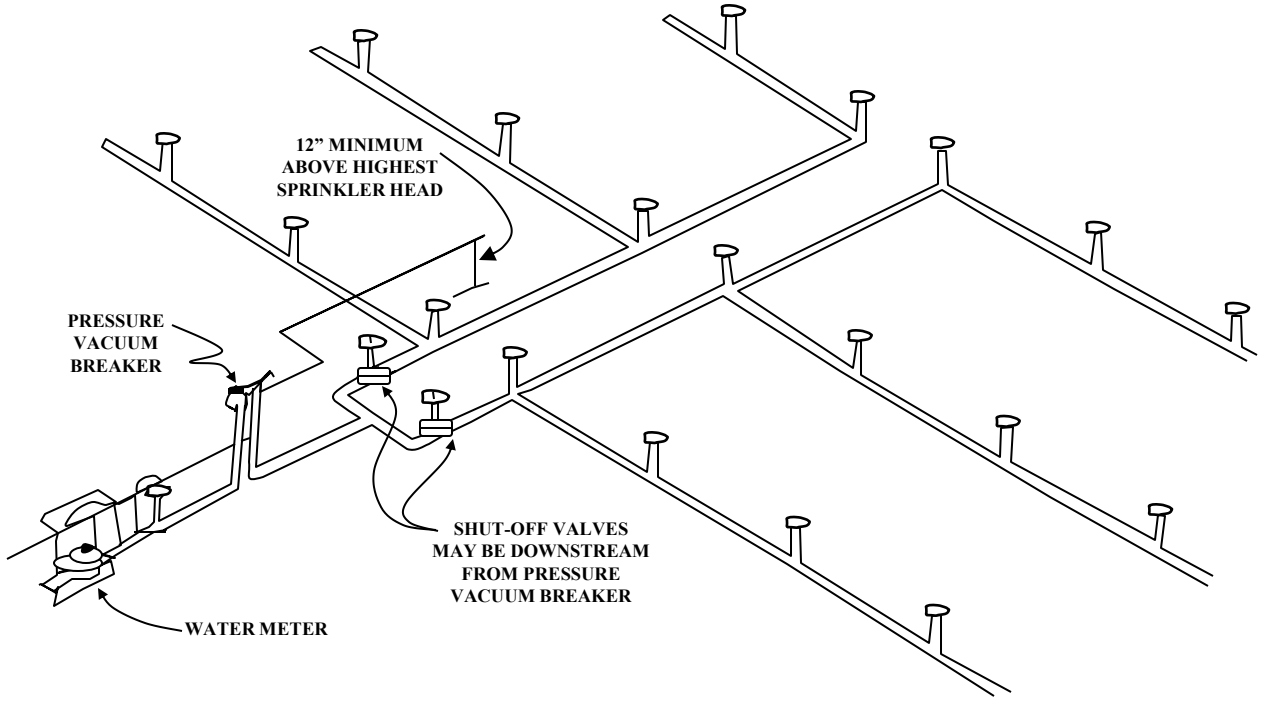
	AIR GAP SEPARATION		
CITY OF FOUNTAIN Pure Colorado	DRAWN:	REVISED: AUG 2002	
	DATE: FEB 1999	REVISED:	DWG - 51
	SCALE: NONE	REVISED:	

LEVEL TERRAIN – MULTI-ZONE IRRIGATION SYSTEM

WITH ATOMOSPHERIC VACUUM BREAKER

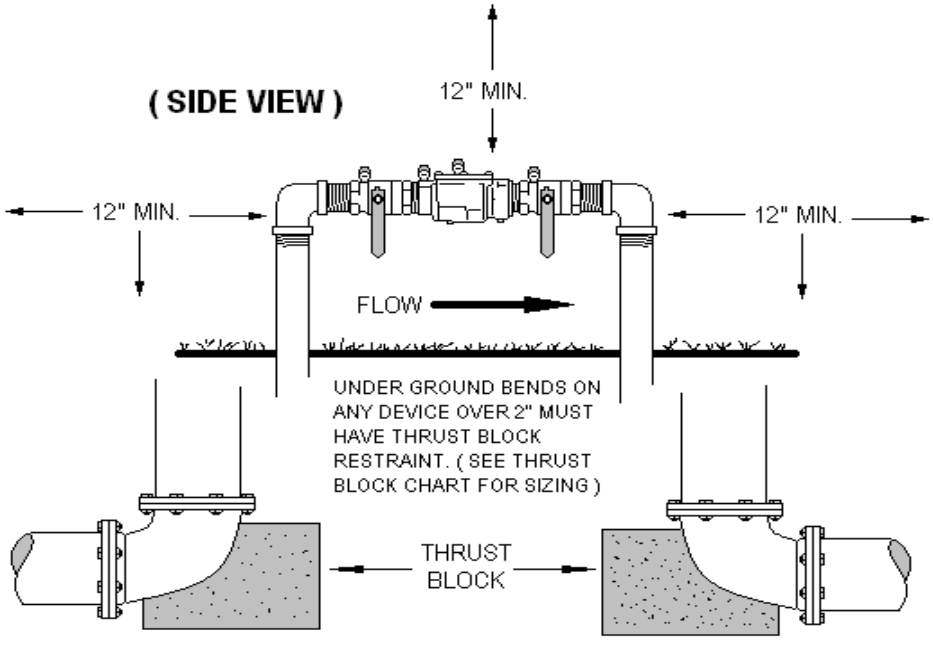


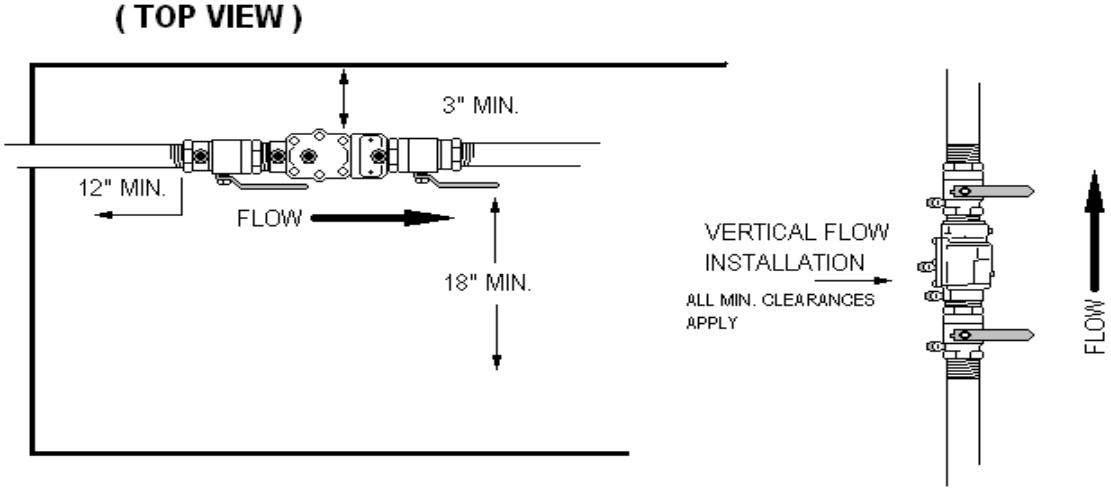
WITH PRESSURE VACUUM BREAKER



LEVEL TERRAIN – MULTI-ZONE IRRIGATION SYSTEM			
DRAWN:		REVISED: AUG 2002	
DATE:	FEB 1999	REVISED:	DWG - 52
SCALE:	NONE	REVISED:	

DOUBLE CHECK VALVE "DC"



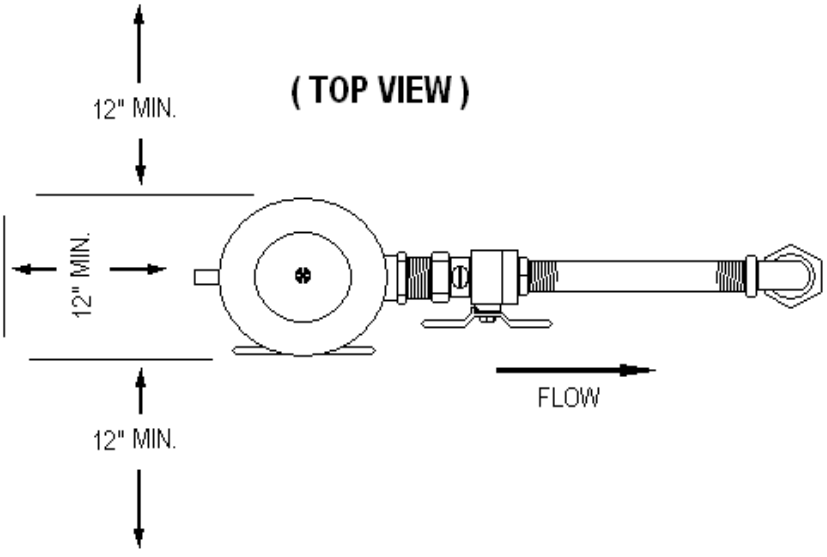


INSTALLATION:

These instructions apply to DC sizes ½" – 2". The valves may be installed only in the orientation/ flow direction as shown. The DC must be installed where it is accessible for periodic testing and Maintenance. Clearances shown in the installation views apply to the exterior and interiors and Pit/vault installations. These minimums do not apply to removable protective enclosures. On DC Devices of greater than 2" all minimum clearances apply. Also all under ground bends (i.e., 90's, 45's, 22 ½'s, etc.) must have thrust block restraint (see thrust block chart for sizing).

	DOUBLE CHECK VALVE "DC"		
CITY OF FOUNTAIN Pure Colorado	DRAWN:	REVISED:	DWG - 53
	DATE: JAN 2006	REVISED:	
	SCALE: NONE	REVISED:	

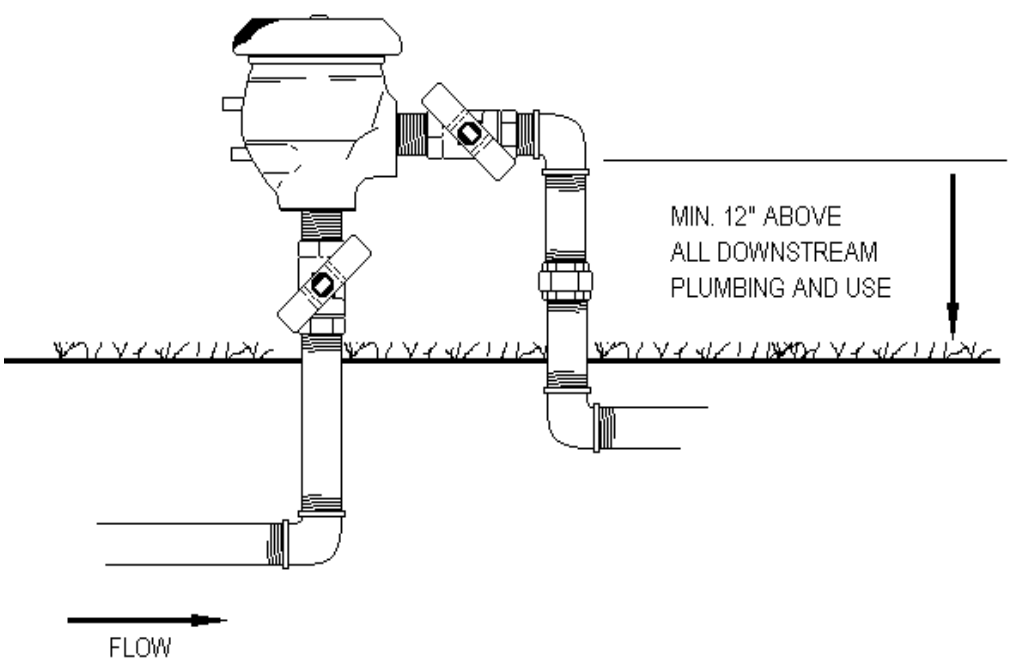
PRESSURE VACUUM BREAKER "PVB"



INSTALLATION:

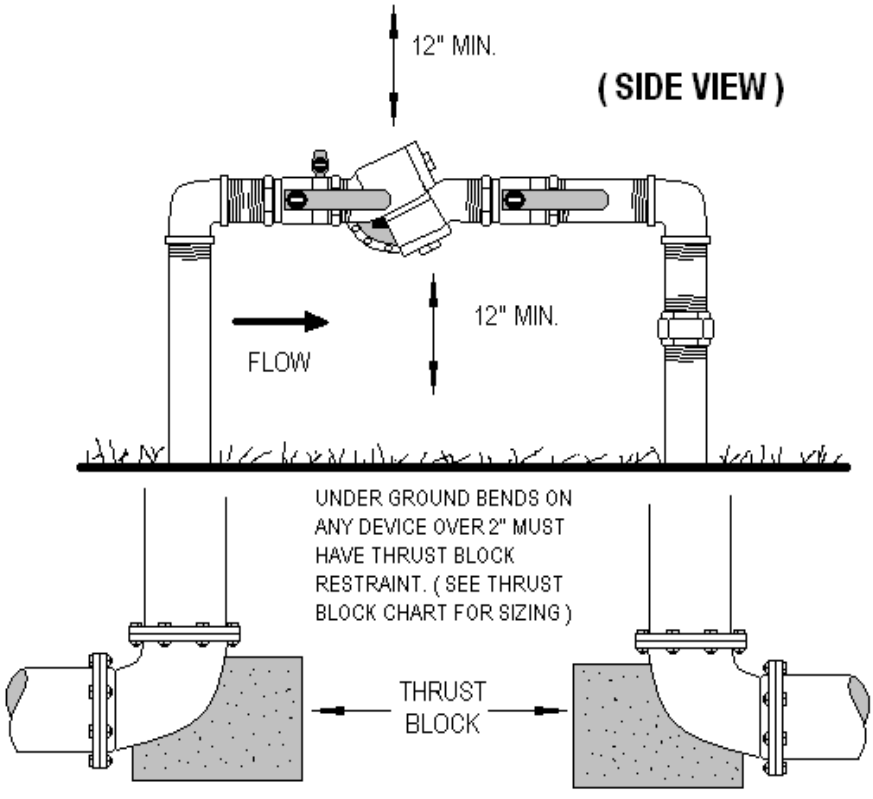
These instructions apply to RVB sizes ½" – 2". The valves may be installed only in the orientation/flow direction as shown. The PVB must be installed where it is accessible for periodic testing and maintenance. Clearances shown in the installation views apply to the exterior and interiors installations. These minimums do not apply to removable protective enclosures, with exception to the 12" height measurement. The outlet must meet the minimum requirements of 12" above all down stream plumbing and use.

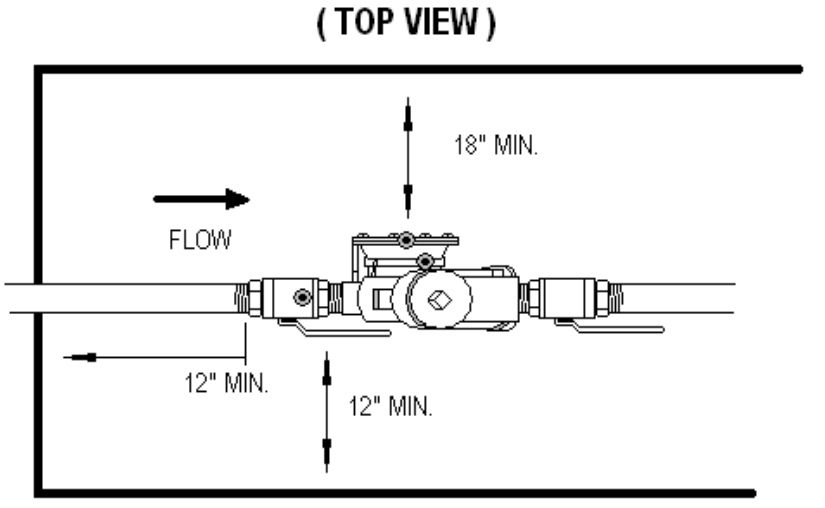
(SIDE VIEW)



CITY OF FOUNTAIN Pure Colorado	**PRESSURE VACUUM BREAKER "PVB"**	
DRAWN:	REVISED:	**DWG - 54**
DATE: JAN 2006	REVISED:	
SCALE: NONE	REVISED:	

REDUCED PRESSURE "RP"





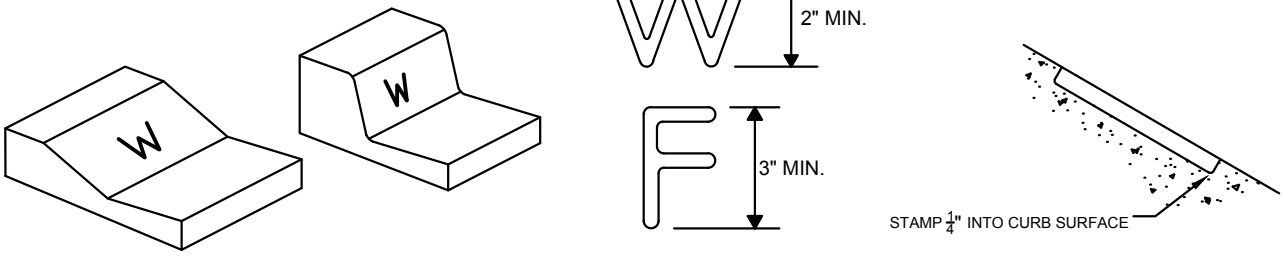
INSTALLATION:

These instructions apply to RP sizes ½" – 2". The valves may be installed only in the orientation/flow direction as shown. The RP must be installed where it is accessible for periodic testing and maintenance. Clearances shown in the installation views apply to the exterior and interiors and pit/fault installations. These minimums do not apply to removable protective enclosures. On RP devices of greater than 2", all minimum clearances apply. Also all under ground bends (i.e., 90's, 45's, 22 ½'s, etc.) must have thrust block restraint (see thrust block chart for sizing.)

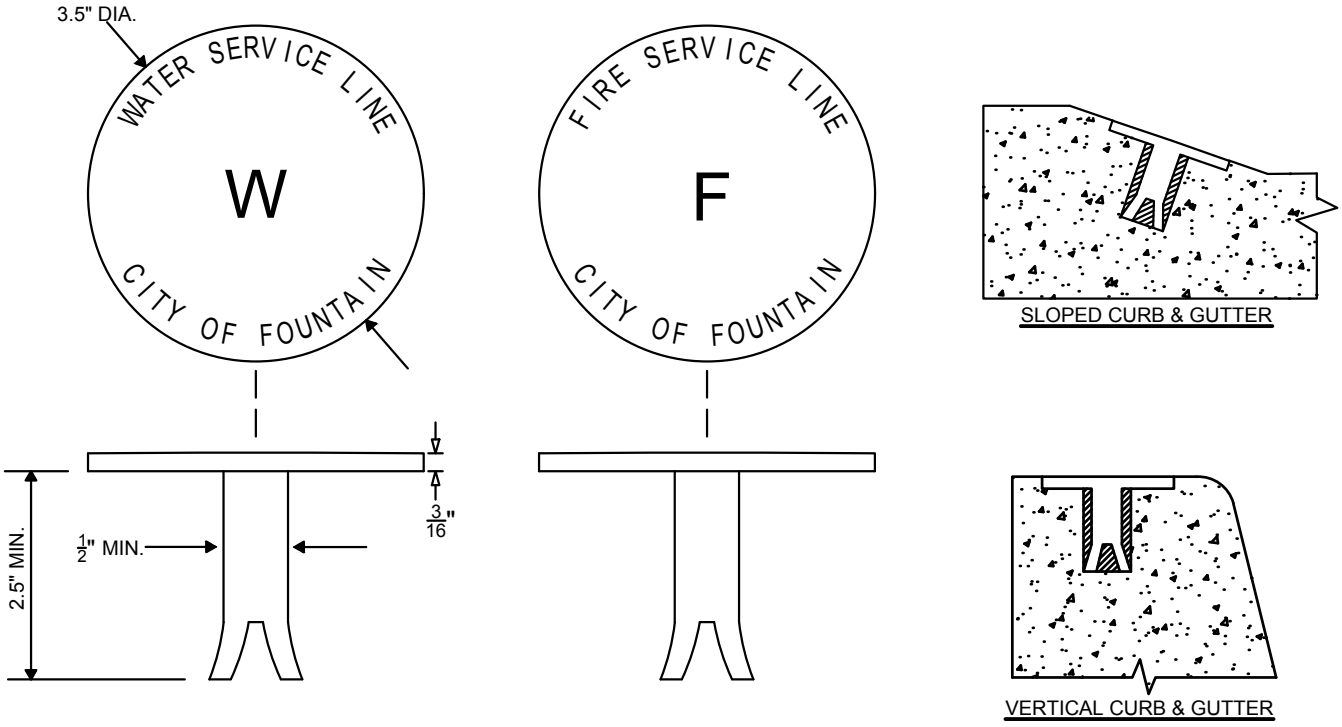
CITY OF FOUNTAIN Pure Colorado	**REDUCED PRESSURE "RP"**	
	DRAWN:	REVISED:
	DATE: JAN 2006	REVISED:
	SCALE: NONE	REVISED:
		DWG - 55

MARKING CURBS ABOVE SERVICE LINES

OPTION 1 - STAMP FACE OF CURB WITH '**W**' FOR WATER SERVICE LINE OR '**F**' FOR FIRE SERVICE LINE WHILE CONCRETE IS PLASTIC



OPTION 2 - DRILL AND EPOXY A BRONZE MARKER INTO FACE OF CURB FOR SLOPED CURB, OR HEAD OF CURB FOR VERTICAL CURB, ABOVE THE LINE LOCATION AFTER CONCRETE HAS CURED



NOTE:

1.) IF THE CURB IS NOT STAMPED WHILE THE CONCRETE IS PLASTIC THEN OPTION 2 MUST BE USED.
2.) STAINING OR GRINDING OF A CONCRETE SURFACE TO INDICATE SERVICE LINE LOCATION IS NOT PERMITTED.
3.) USE MANUFACTURERS RECOMMENDED EPOXY OR ANCHORING CEMENT TO AFFIX MARKERS INTO CONCRETE.
4.) USE COUNTERSINK DRILL-BIT TO ENSURE TOP OF BRONZE MARKER IS FLUSH WITH CONCRETE SURFACE.

CITY OF FOUNTAIN	MARKING CURBS ABOVE SERVICE LINES		
	Drawn:	Revised:	DWG - 56
	Date: APRIL 2018	Revised:	
	Scale: NONE	Revised:	