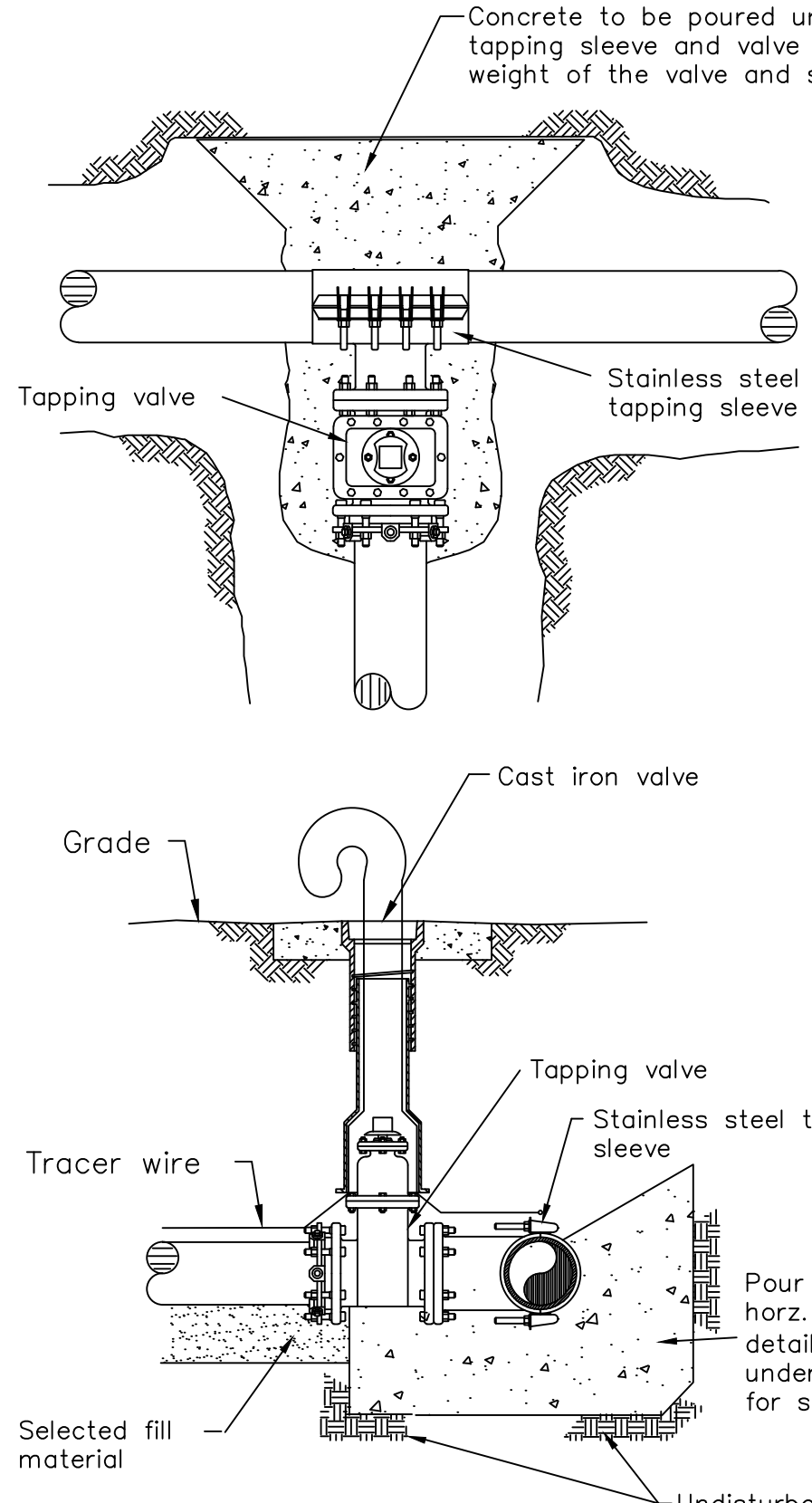
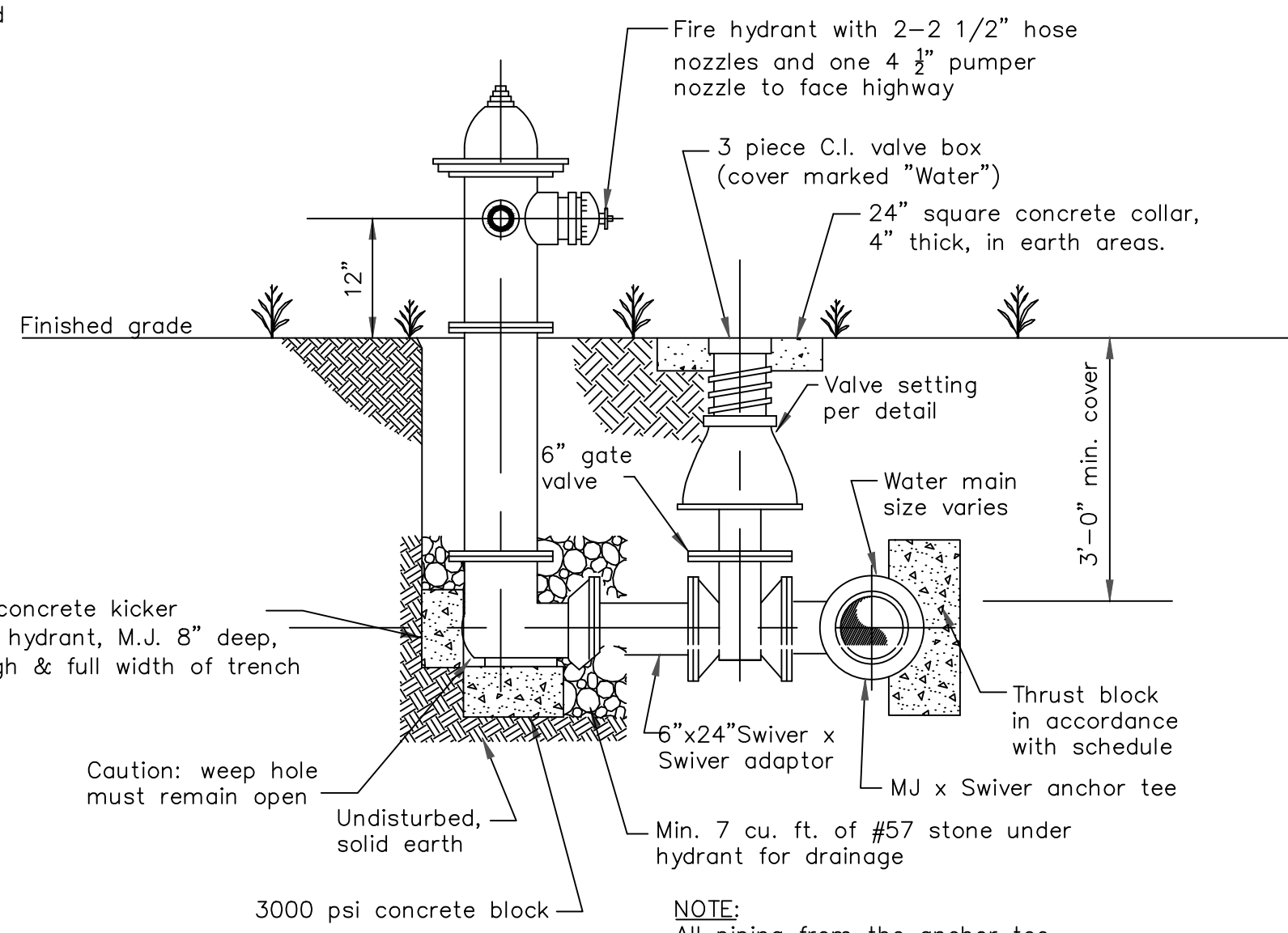


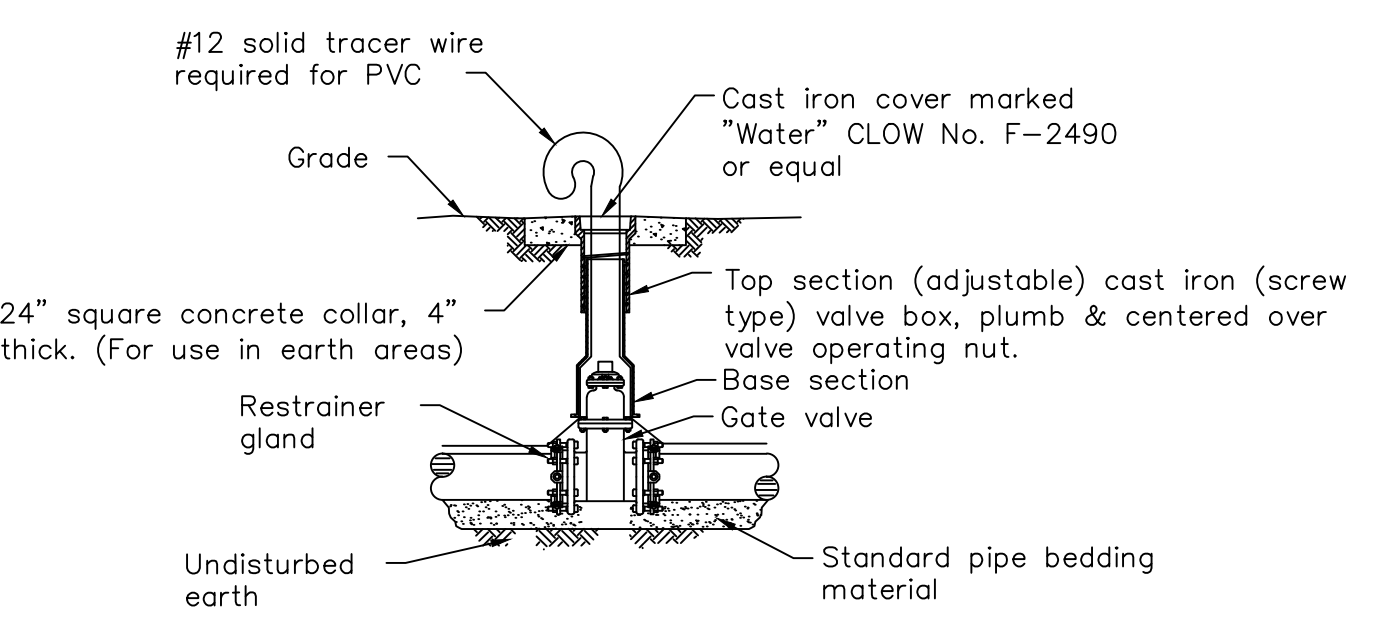
**WATER MAIN TRENCH AND BACKFILL DETAIL**



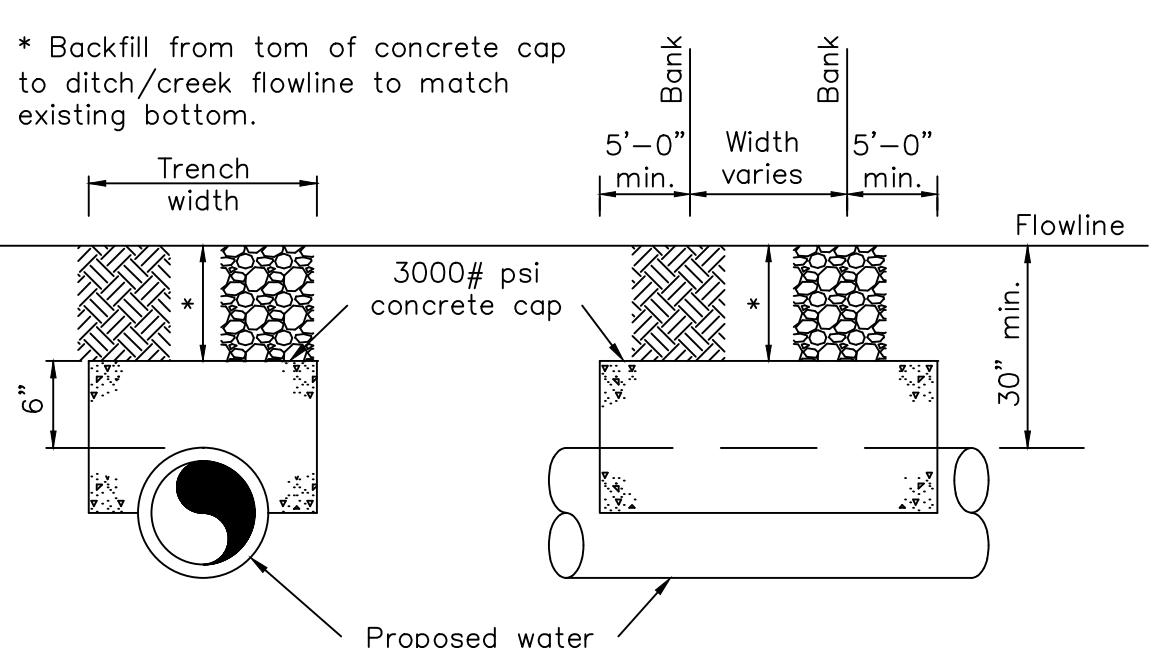
**TAPPING SLEEVE AND VALVE**



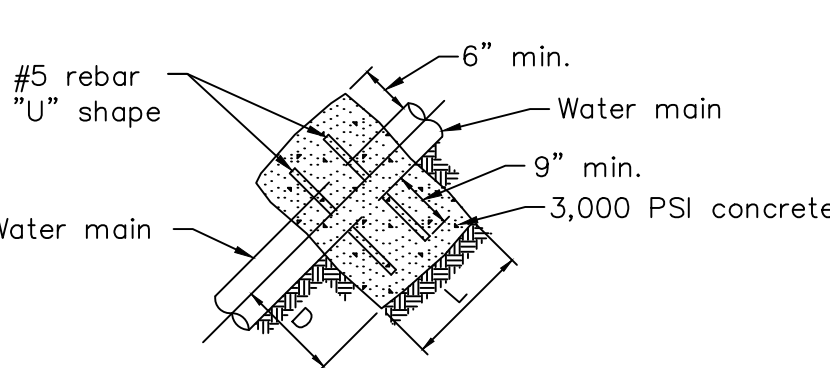
**FIRE HYDRANT ASSEMBLY**



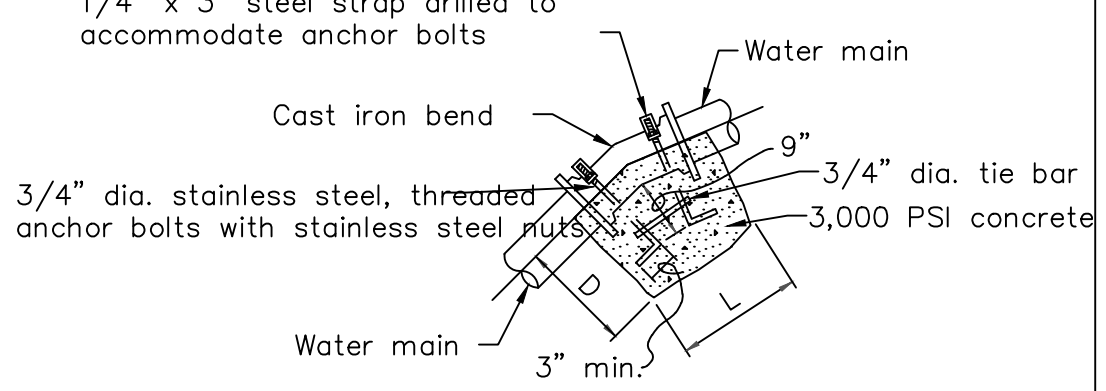
**BURIED VALVE AND BOX**



**END VIEW SIDE VIEW**  
**MINOR DITCH/CREEK CROSSING**



**STRAIGHT PIPE**

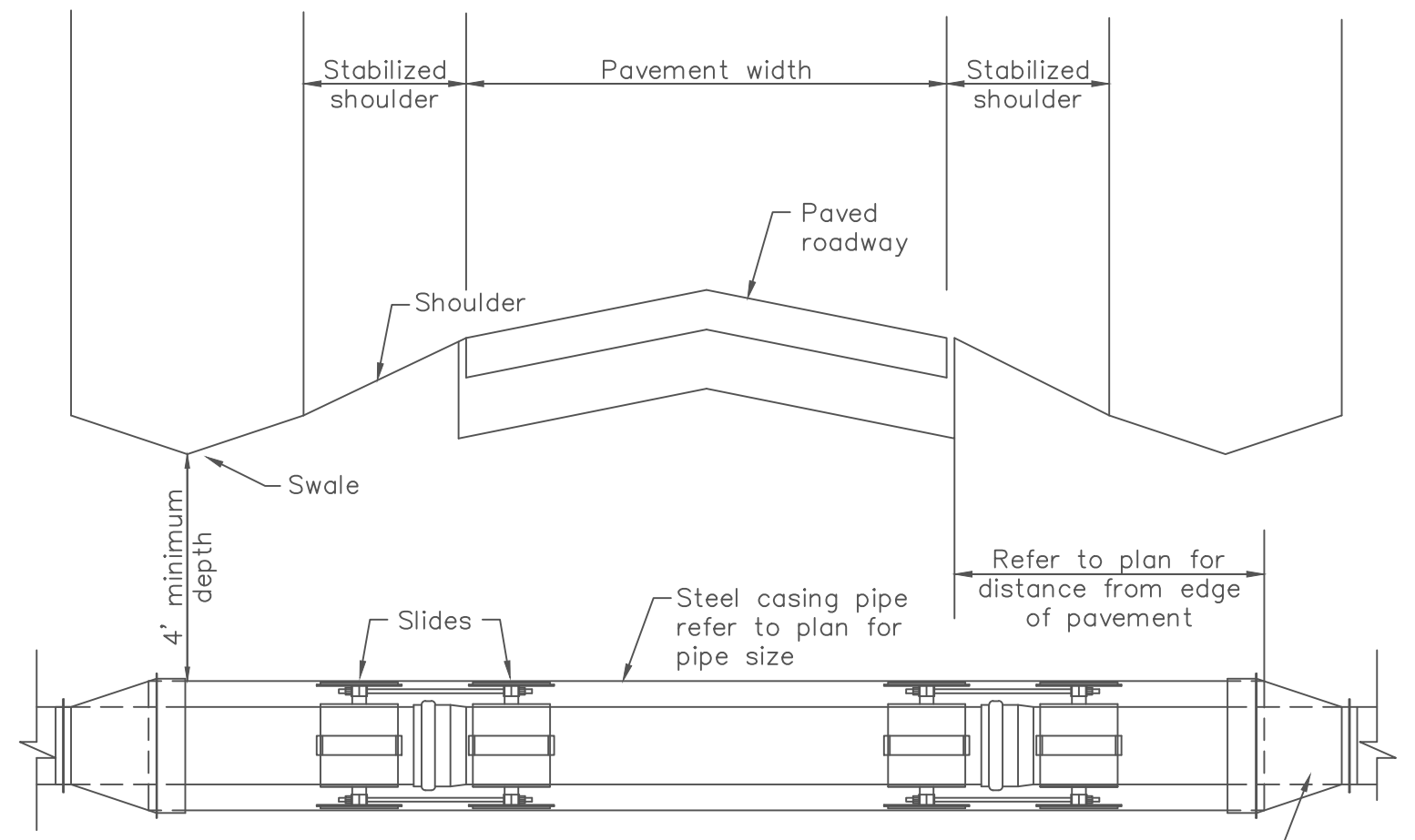


**VERTICAL BENDS**

VERTICAL BEND & STRAIGHT PIPE												
SIZE	2"	3"	4"	6"	8"	10"	12"	14"	16"			
D	15"	15"	15"	15"	15"	18"	18"	21"	24"			
L	12"	18"	18"	24"	24"	30"	30"	36"	42"			
TEES												
SIZE	2"	3"	4"	6"	8"	10"	12"	14"	16"			
D	6"	6"	6"	8"	8"	10"	10"	12"	12"			
L	4"	6"	8"	10"	10"	21"	30"	36"	36"			
CROSS												
SIZE	2"	3"	4"	6"	8"	10"	12"	14"	16"			
D	15"	15"	15"	15"	15"	18"	18"	21"	24"			
L	12"	18"	18"	24"	24"	30"	30"	36"	42"			
PLUGS												
SIZE	2"	3"	4"	6"	8"	10"	12"	14"	16"			
D	6"	6"	6"	6"	6"	6"	6"	12"	12"			
L&W	14"	16"	18"	20"	22"	24"	24"	24"	24"			
(11 1/4") THIRTY-SECOND BENDS												
SIZE	2"	3"	4"	6"	8"	10"	12"	14"	16"			
D	6"	6"	6"	8"	8"	10"	10"	12"	12"			
L	15"	18"	21"	24"	27"	30"	34"	34"	34"			
T	10"	12"	14"	16"	18"	20"	22"	28"	28"			
(22 1/2") SIXTEENTH BENDS												
SIZE	2"	3"	4"	6"	8"	10"	12"	14"	16"			
D	6"	6"	6"	8"	8"	10"	10"	12"	12"			
L	15"	18"	21"	24"	27"	30"	34"	34"	34"			
T	10"	12"	14"	16"	18"	20"	22"	28"	28"			
(45") EIGHTH BENDS												
SIZE	2"	3"	4"	6"	8"	10"	12"	14"	16"			
D	6"	6"	6"	8"	8"	10"	10"	12"	12"			
L	15"	18"	21"	24"	27"	30"	34"	34"	43"			
T	10"	12"	14"	16"	18"	20"	22"	28"	36"			
(90") QUARTER BENDS												
SIZE	2"	3"	4"	6"	8"	10"	12"	14"	16"			
D	6"	6"	6"	8"	8"	10"	10"	12"	12"			
L	15"	18"	21"	24"	27"	30"	34"	34"	34"			
T	10"	12"	14"	16"	18"	20"	22"	28"	36"			

**NOTES:**  
1. All mechanical joints shall be restrained with Megalug or approved equal.  
2. Anchors and blocks to be full width of trench and placed against undisturbed earth.

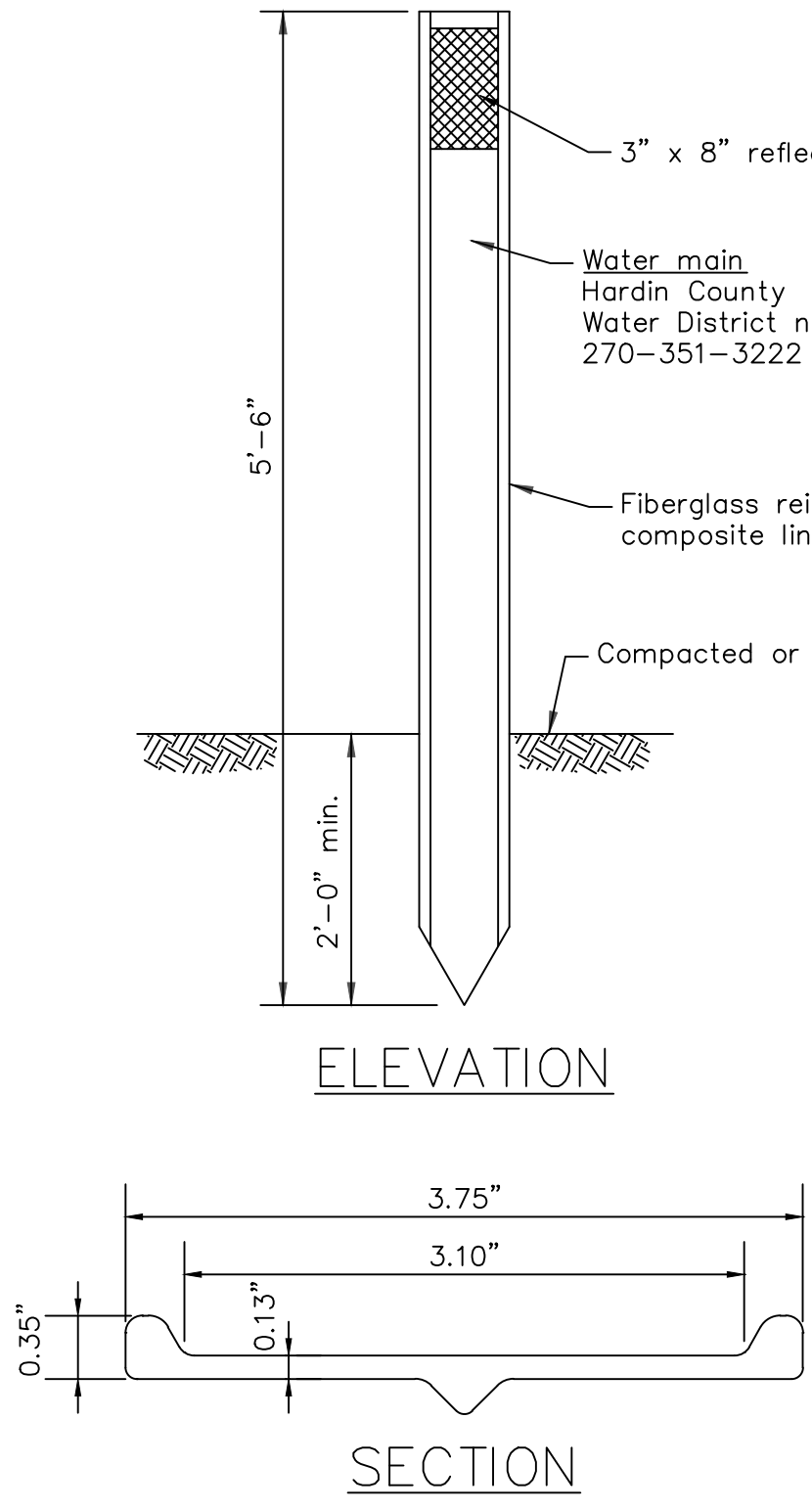
**THRUST BLOCK SCHEDULE**



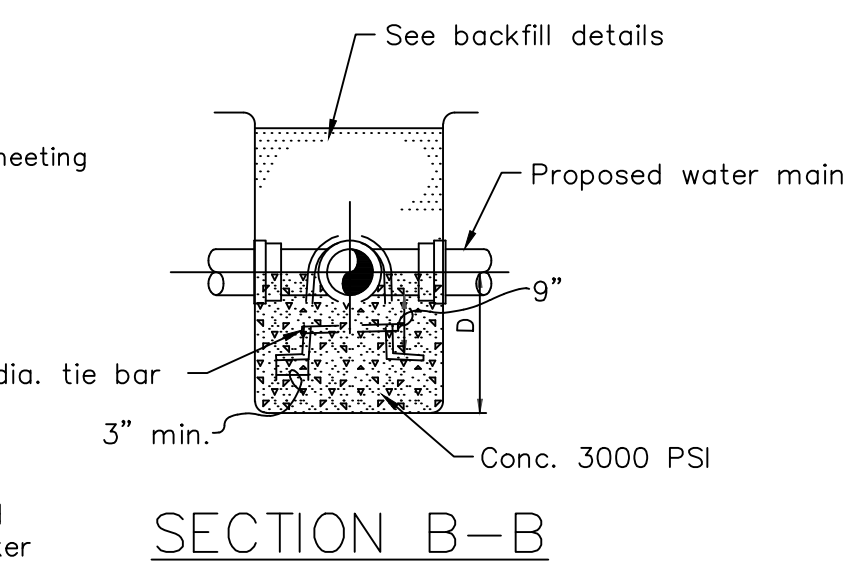
**TYPICAL CROSS SECTION**

**BORE & JACK CASING DETAIL**

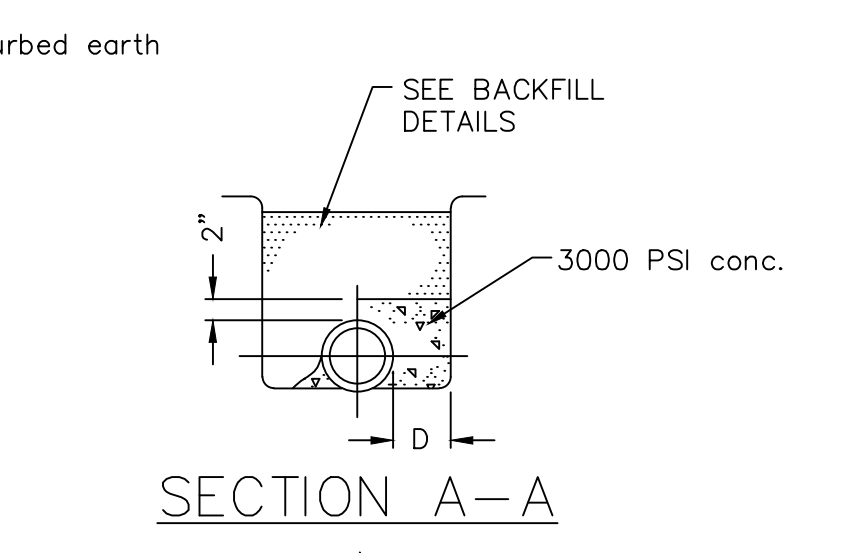
Note: the number of spacers shall be per the manufacturers recommendations.



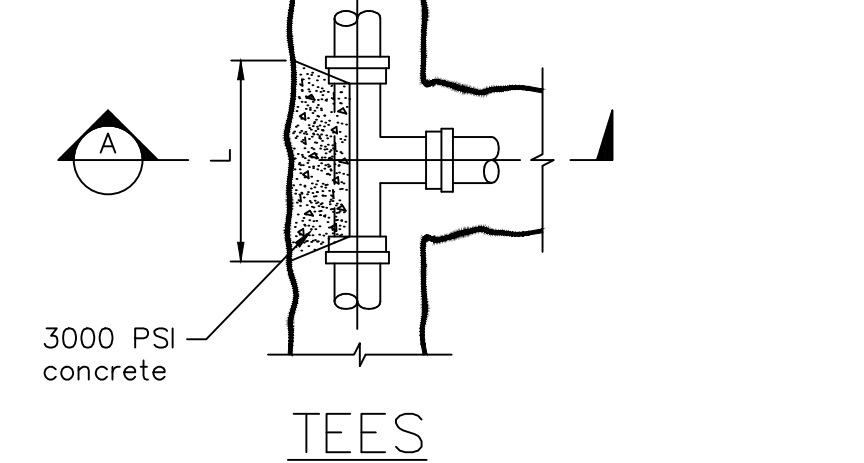
**LINE MARKER**



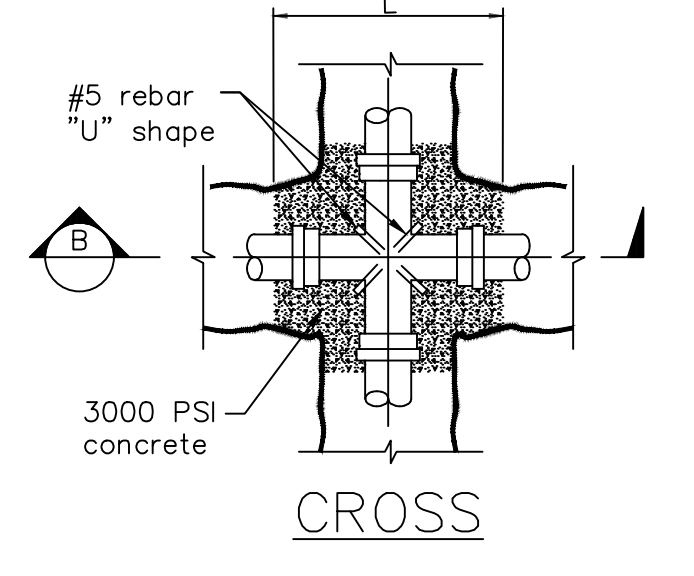
**SECTION B-B**



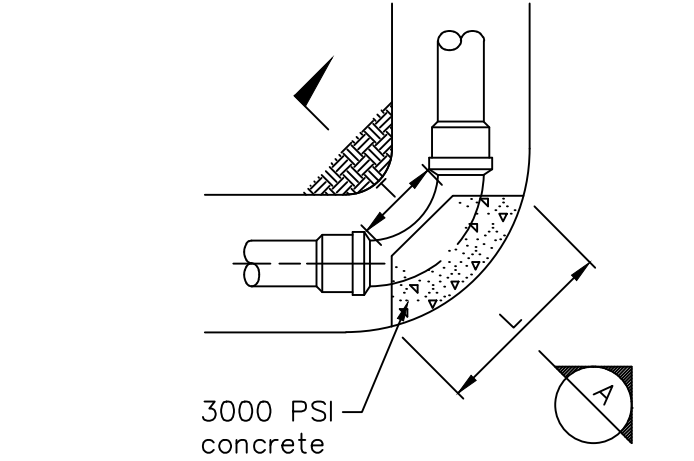
**SECTION A-A**



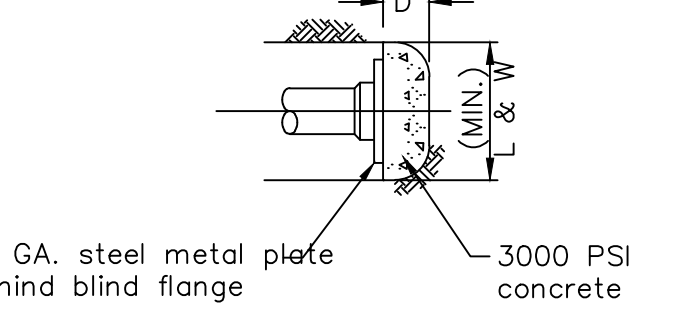
**TEES**



**CROSS**

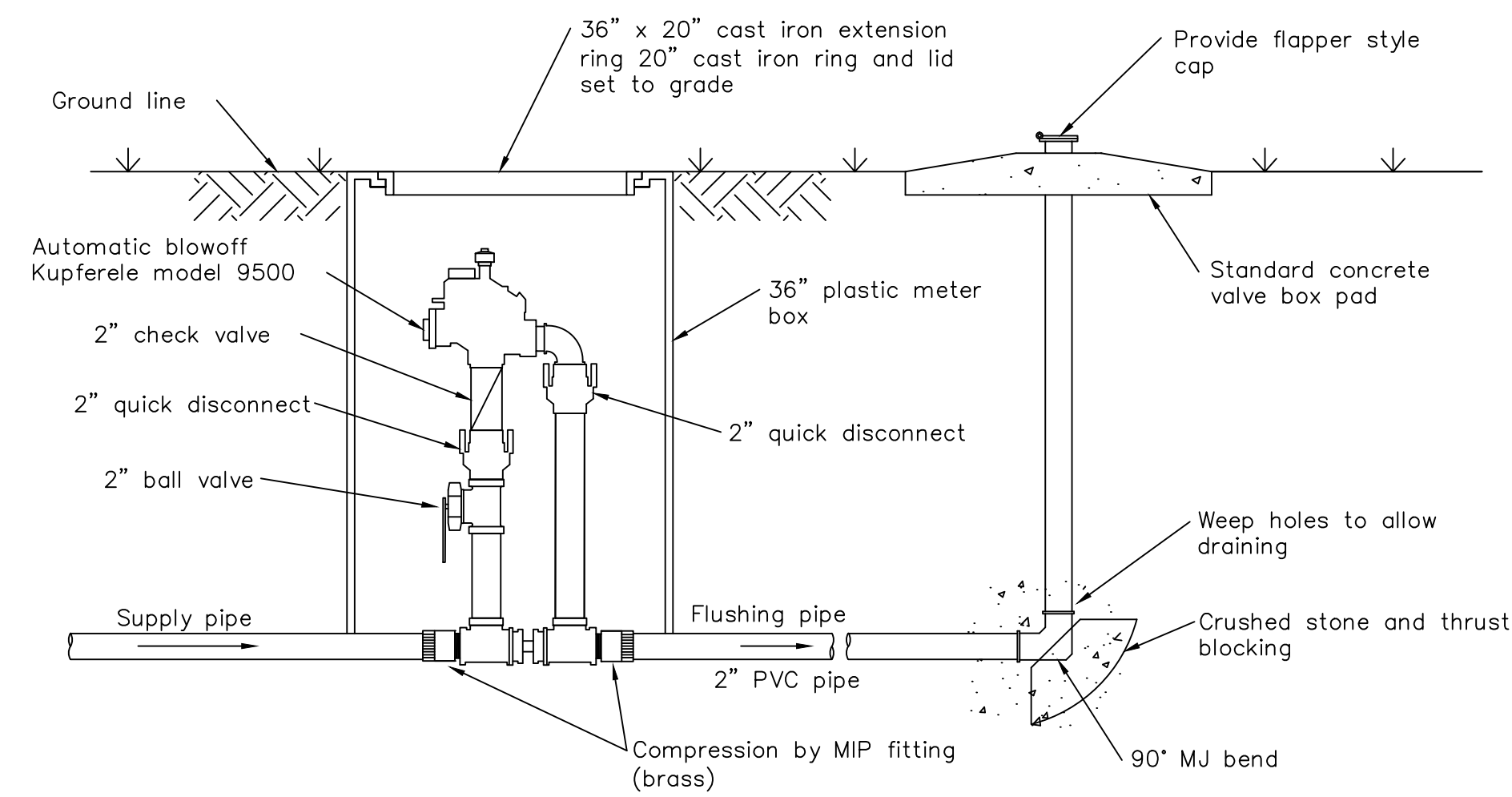


**BENDS**

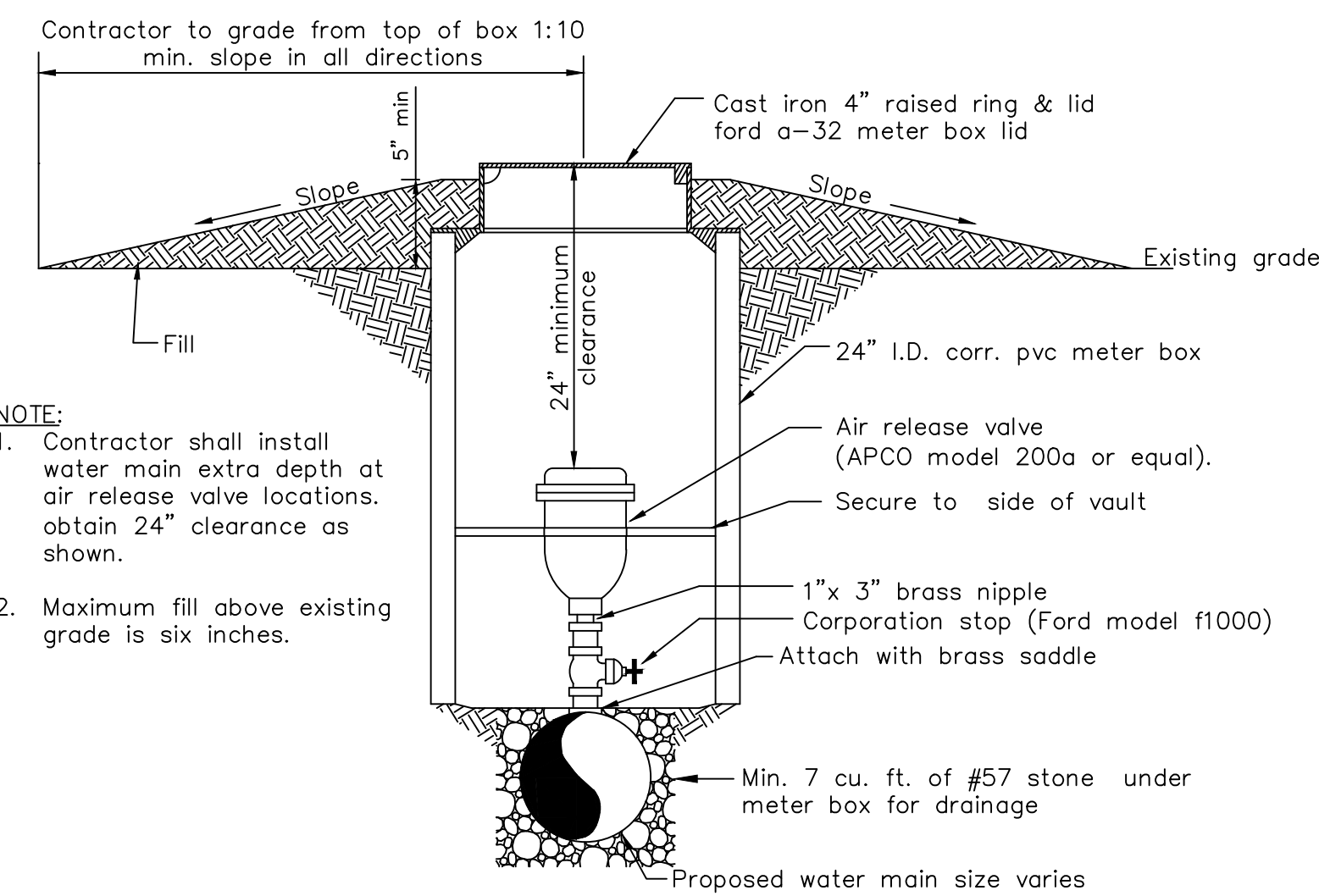


**PLUGS**

**CONCRETE THRUST BLOCKS**



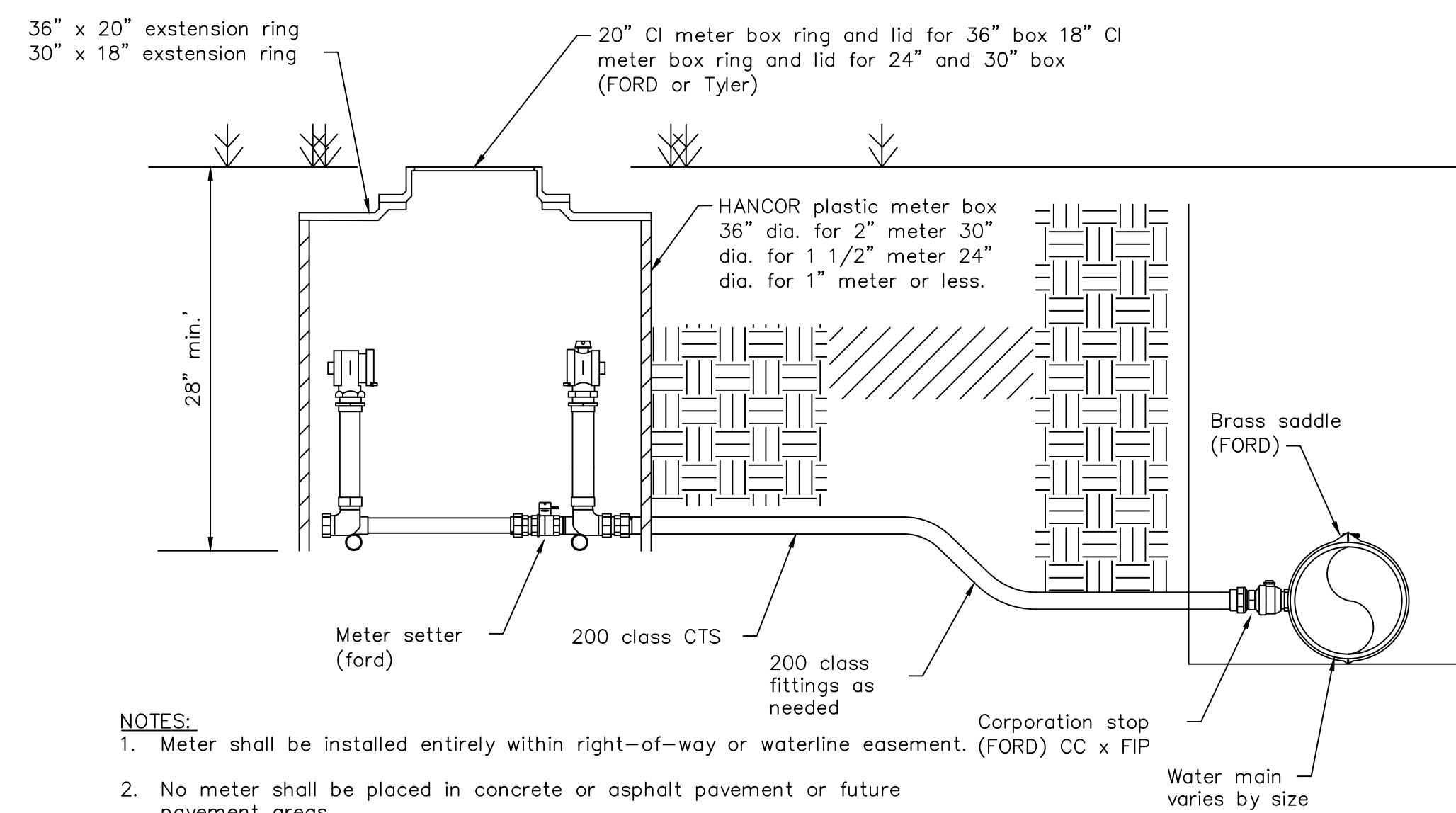
TYPICAL AUTOMATIC BLOW-OFF ASSEMBLY



NOTE:

- Contractor shall install water main extra depth at air release valve locations. obtain 24" clearance as shown.
- Maximum fill above existing grade is six inches.

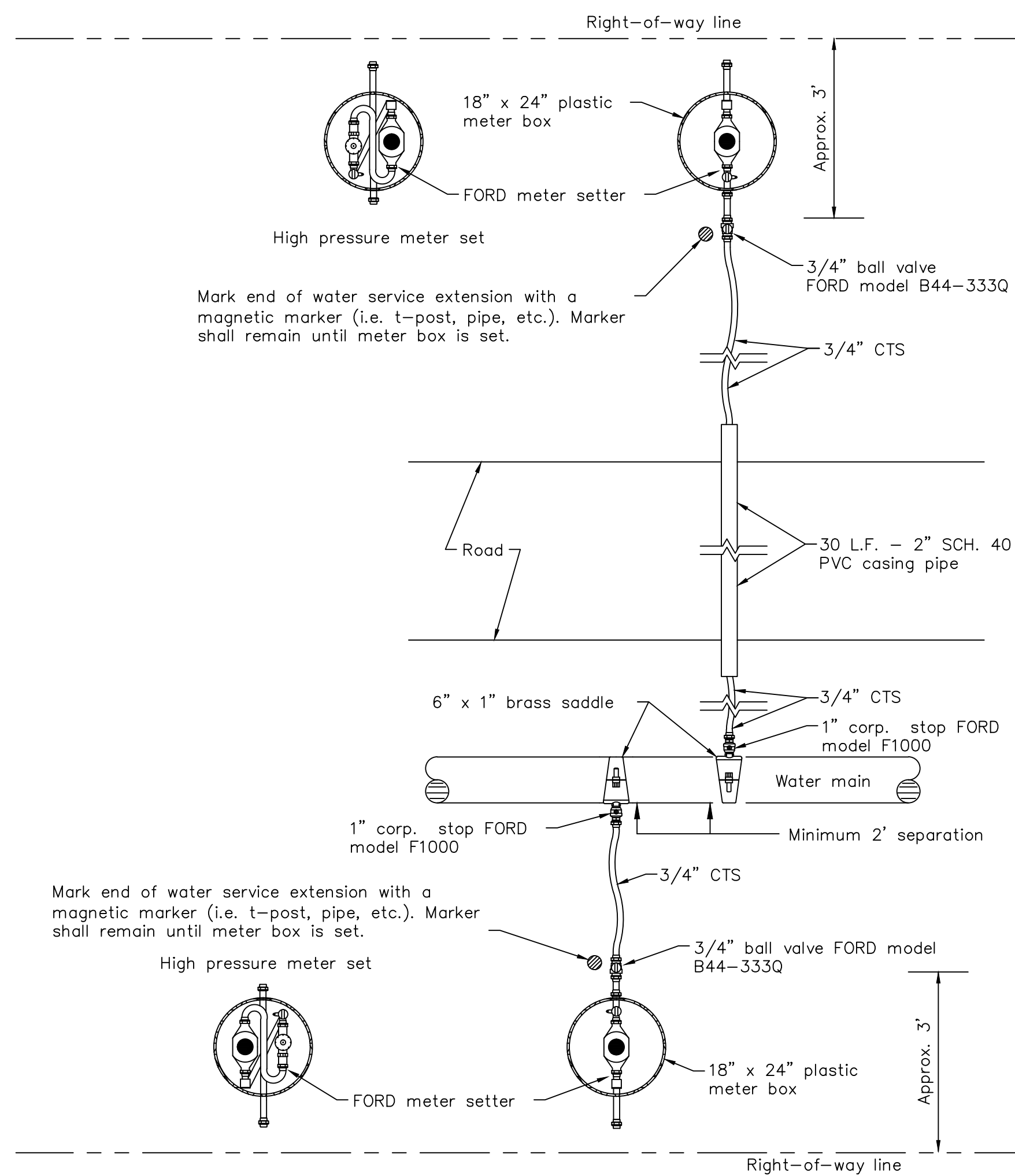
AIR RELEASE VALVE



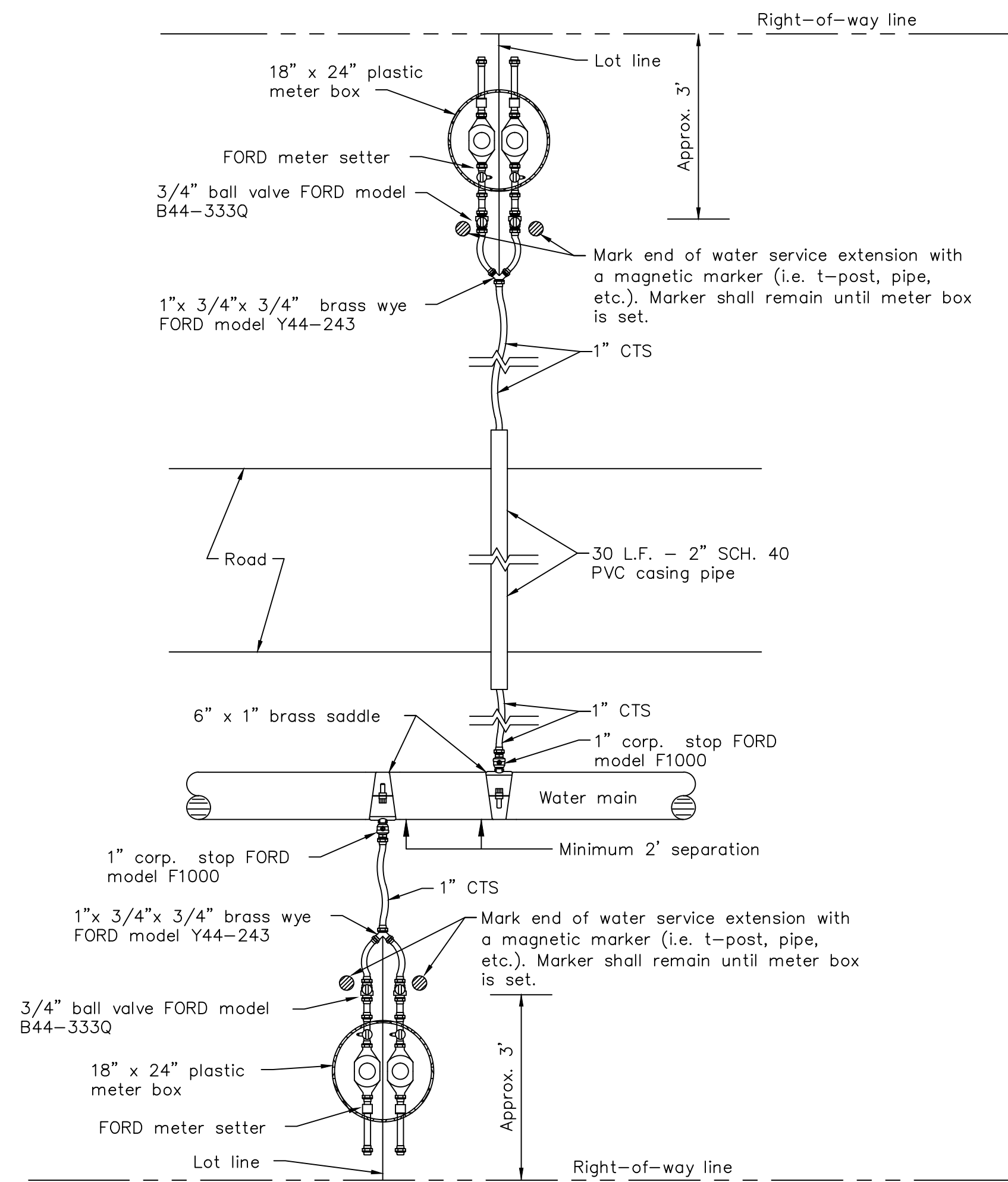
NOTES:

- Meter shall be installed entirely within right-of-way or waterline easement. (FORD) CC x FIP
- No meter shall be placed in concrete or asphalt pavement or future pavement areas.
- Final location of meter shall be approved by HCWD No. 1.

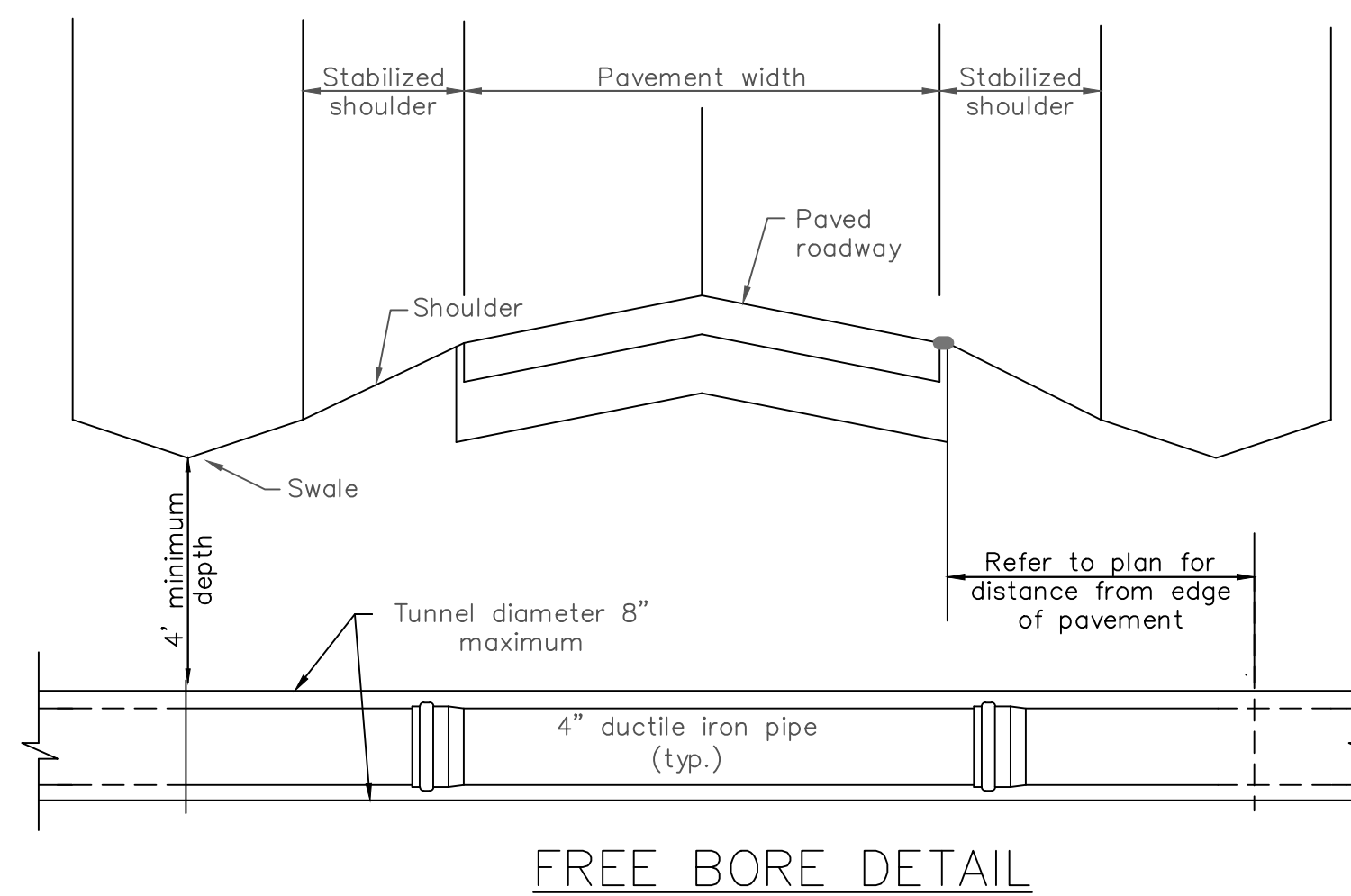
TYPICAL CTS 200 CLASS SERVICE



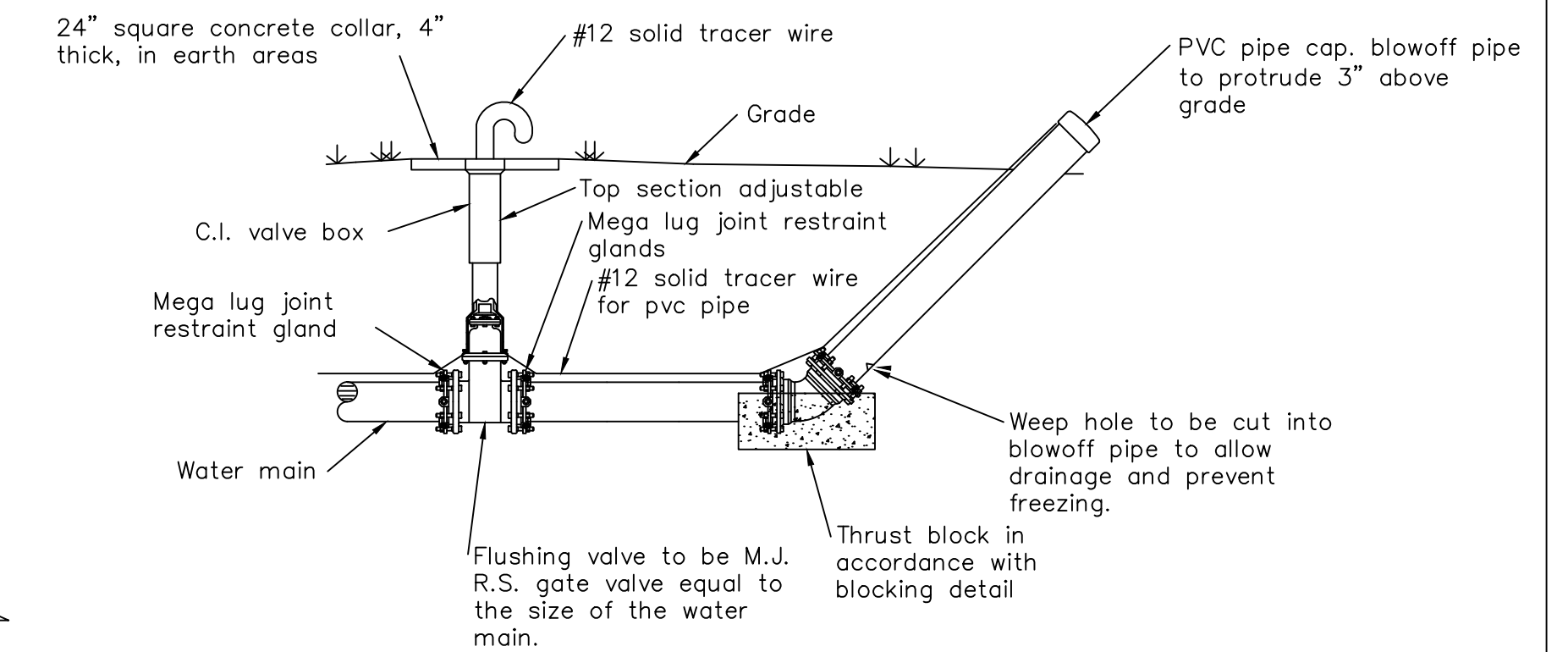
SINGLE SERVICE LAYOUT



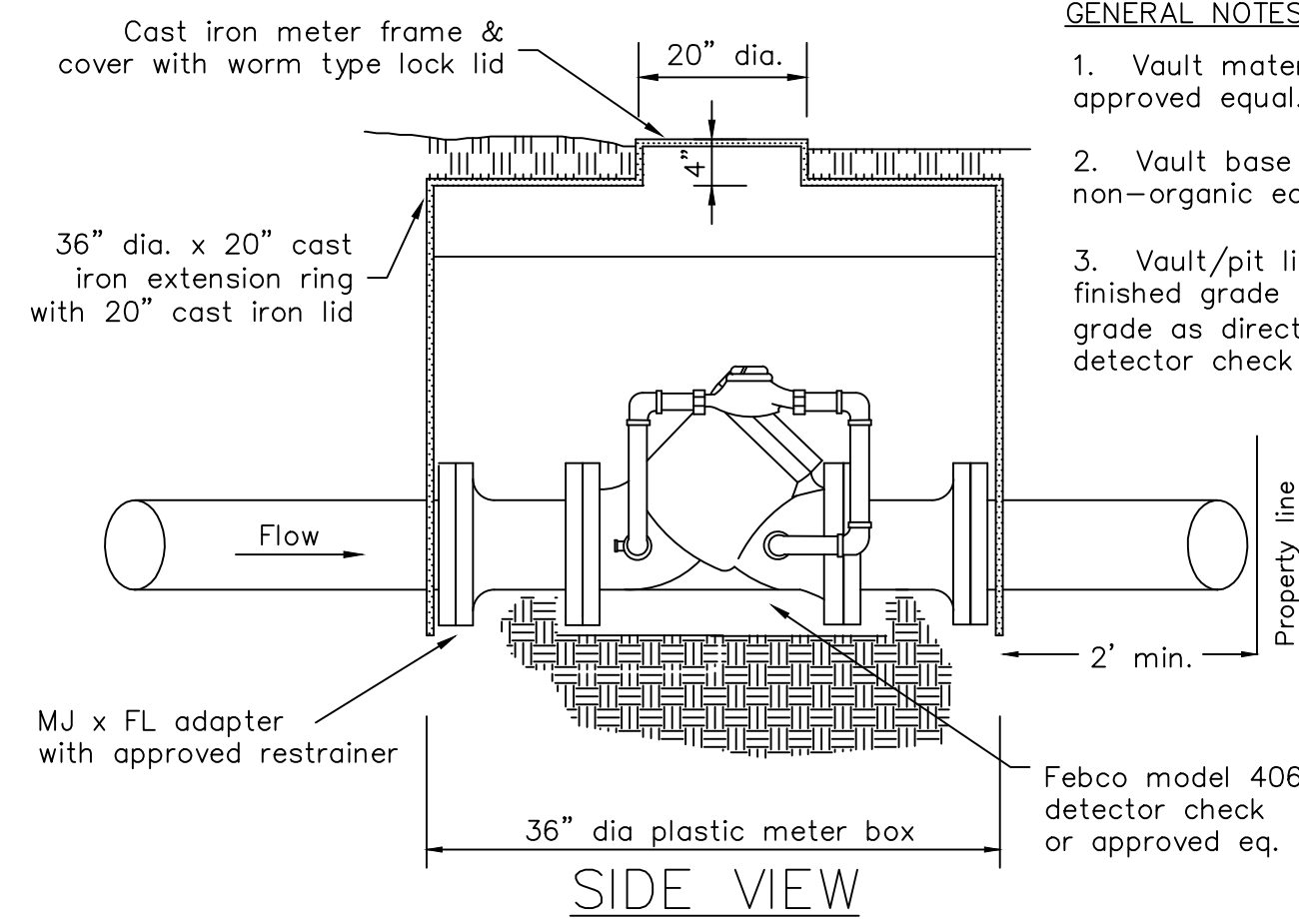
DOUBLE SERVICE LAYOUT



FREE BORE DETAIL

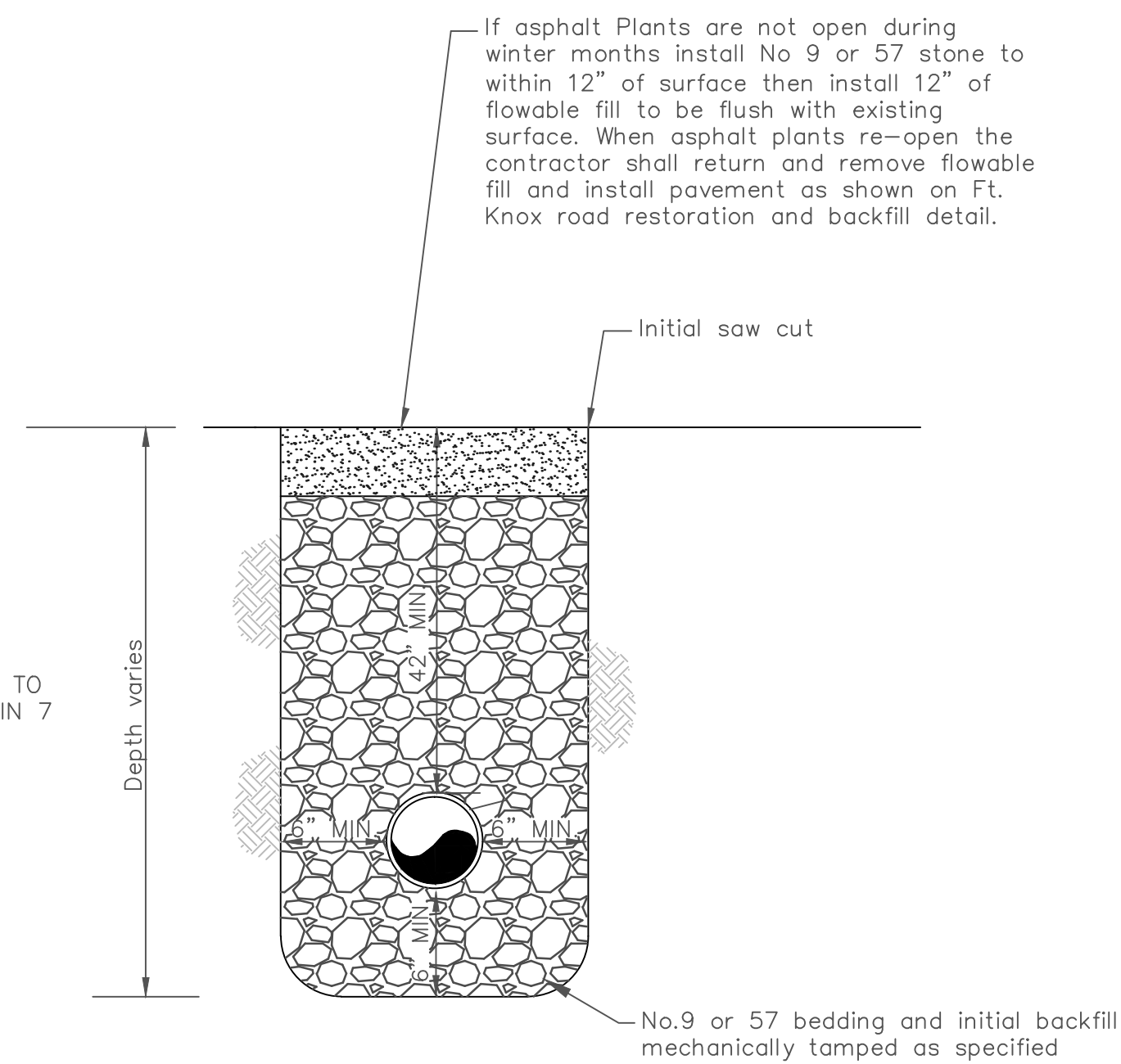
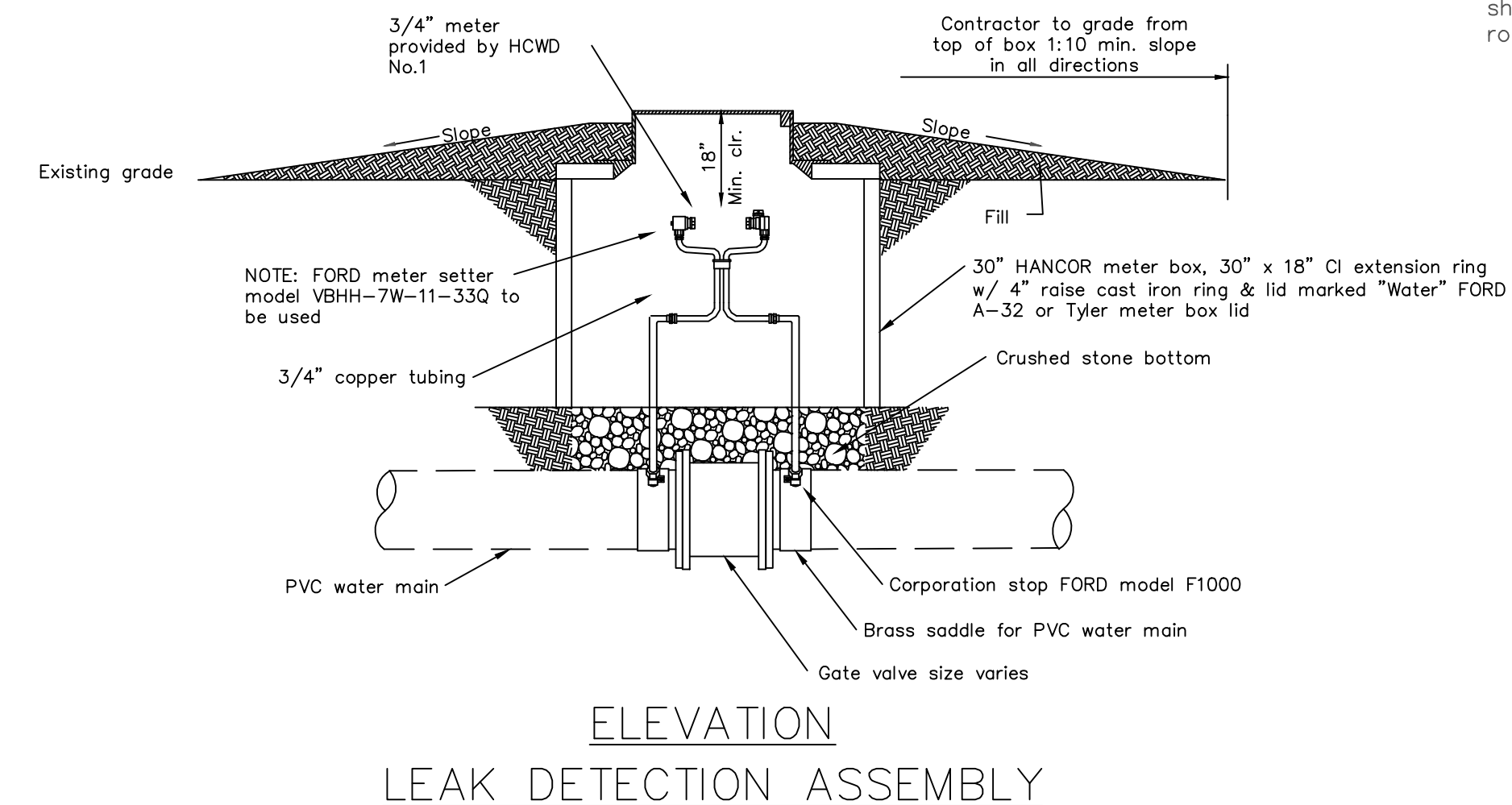
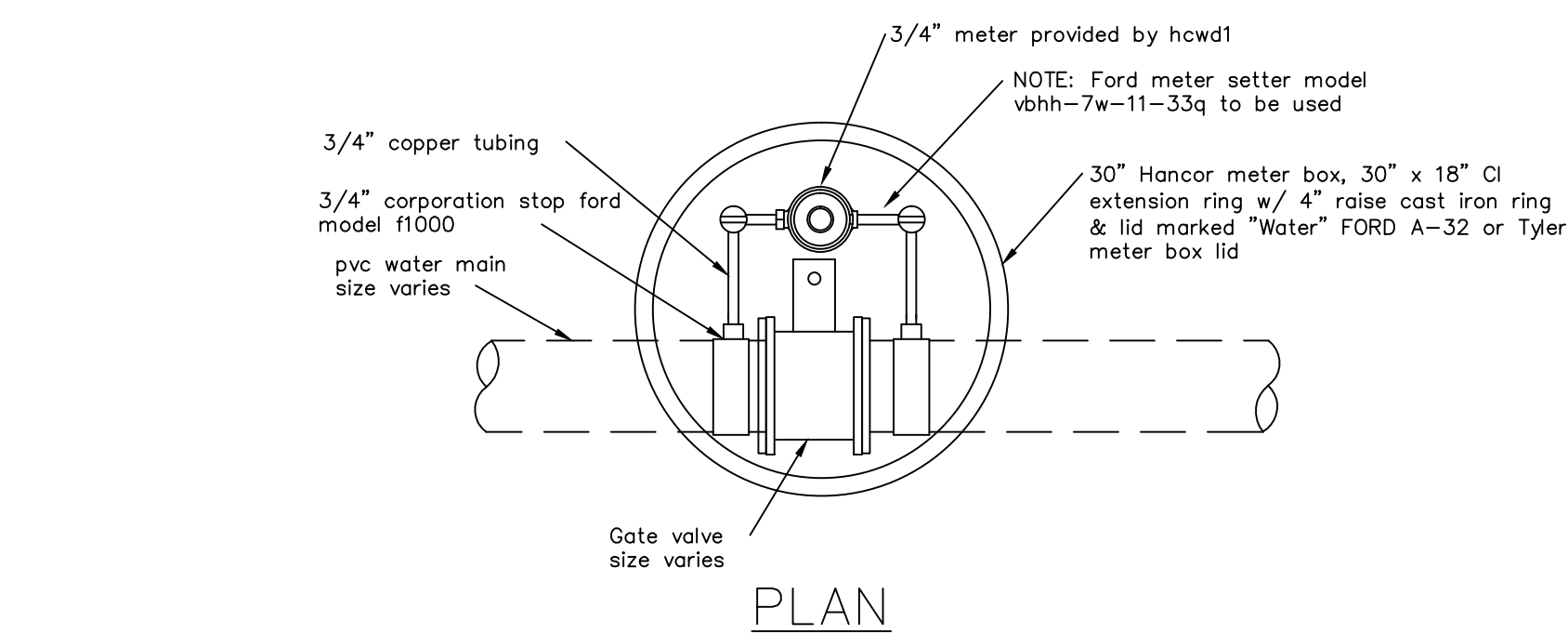
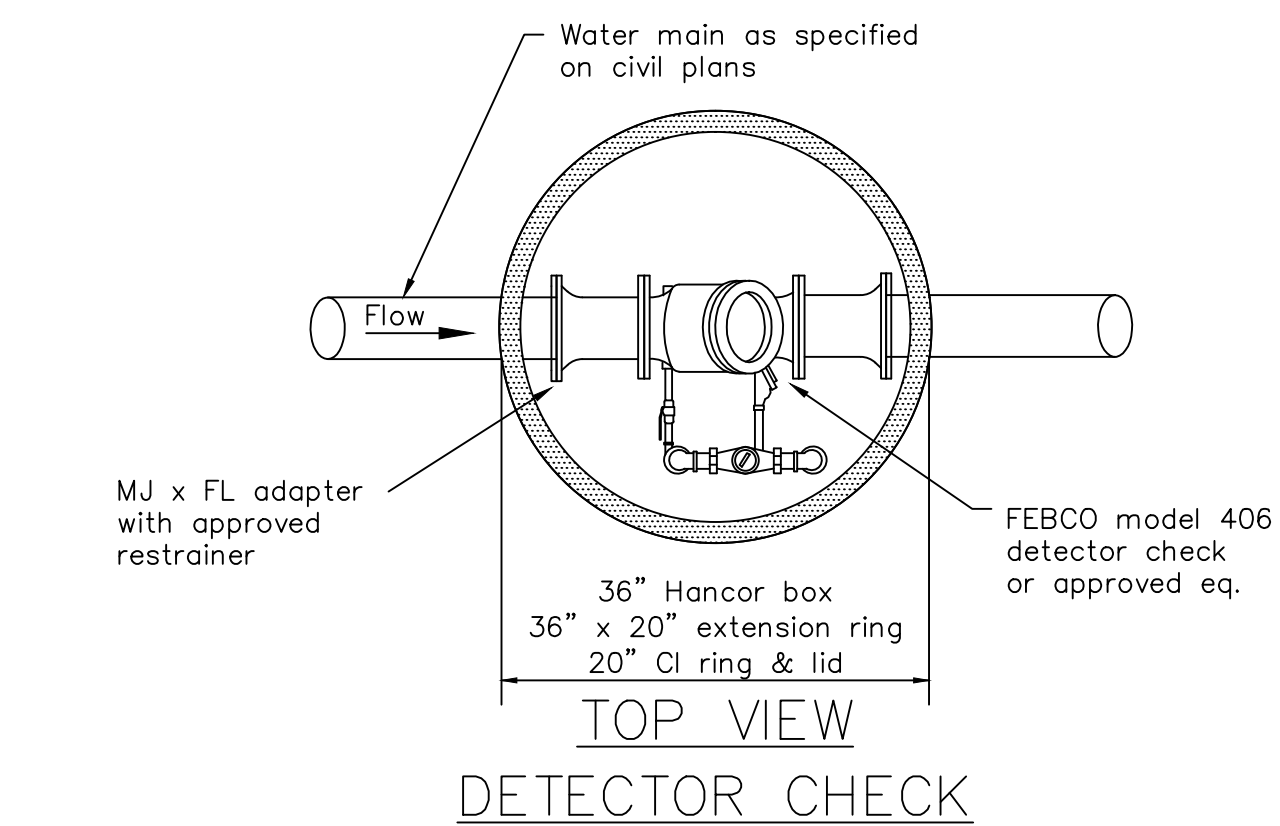


TYPICAL MANUAL BLOW-OFF (4" AND LARGER)



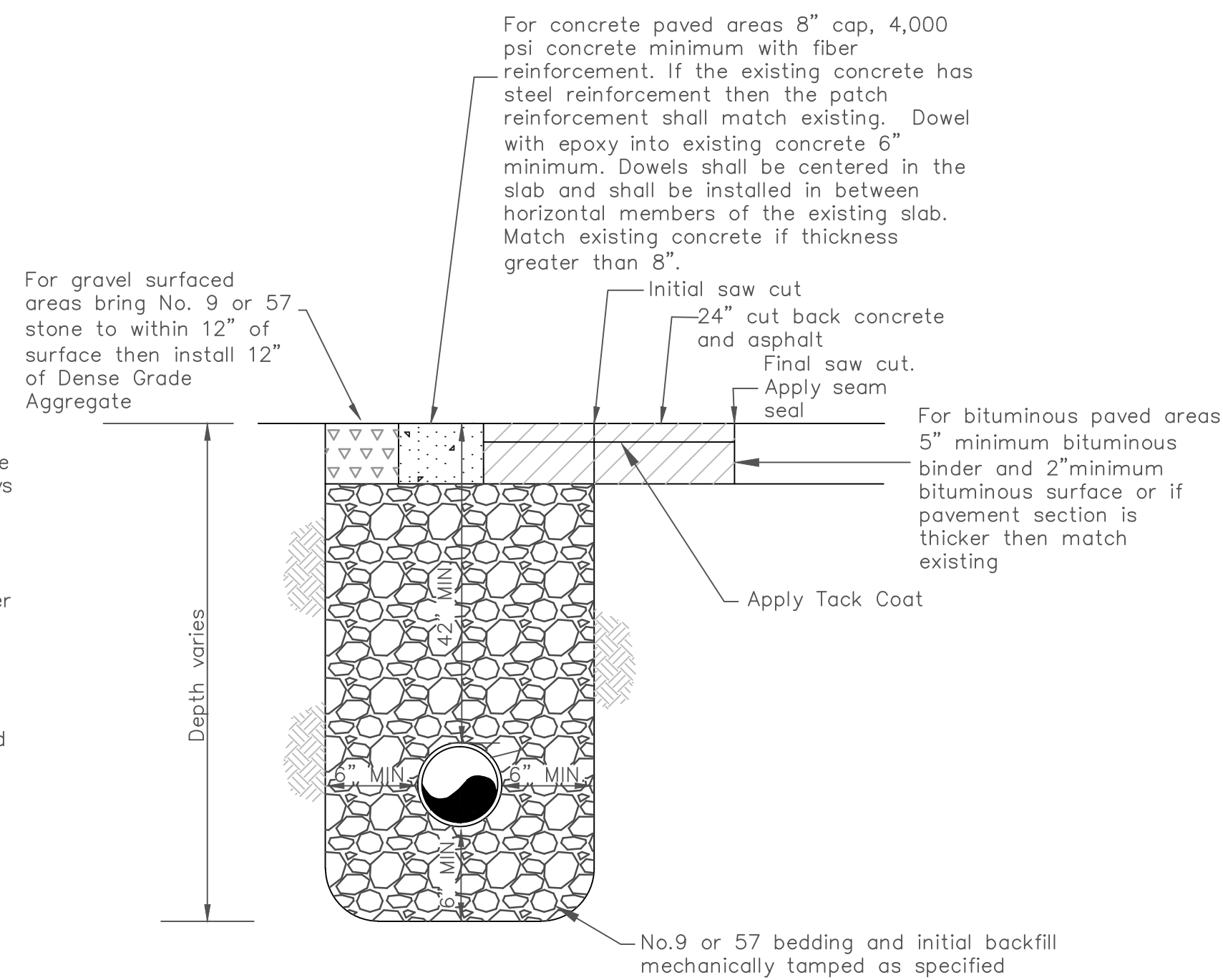
**GENERAL NOTES**

1. Vault material shall be plastic or approved equal.
2. Vault base backfill material to be non-organic earthen material.
3. Vault/pit lid to be flush with finished grade or at proposed finished grade as directed by owner/builder and detector check must be centered in box.

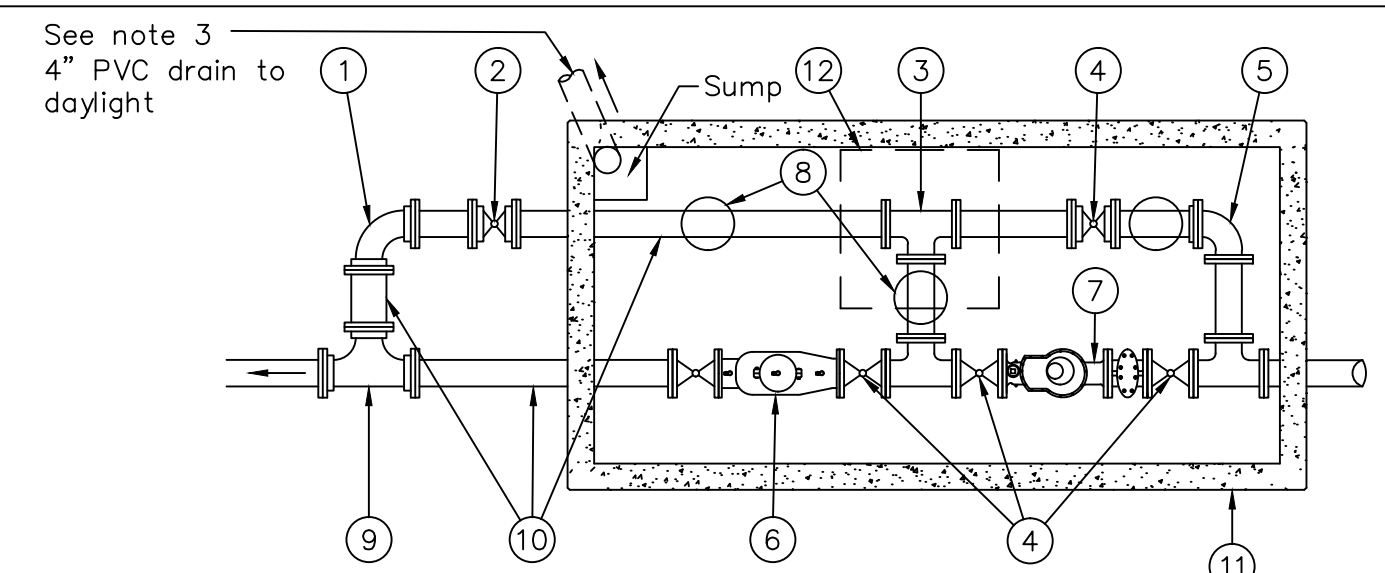


**FT. KNOX TEMPORARY ROAD RESTORATION AND BACKFILL DETAIL**

NOTE: RESTORATION TO BE COMPLETED WITHIN 7 DAYS OF OPEN CUT



**FT. KNOX ROAD RESTORATION AND BACKFILL DETAIL**



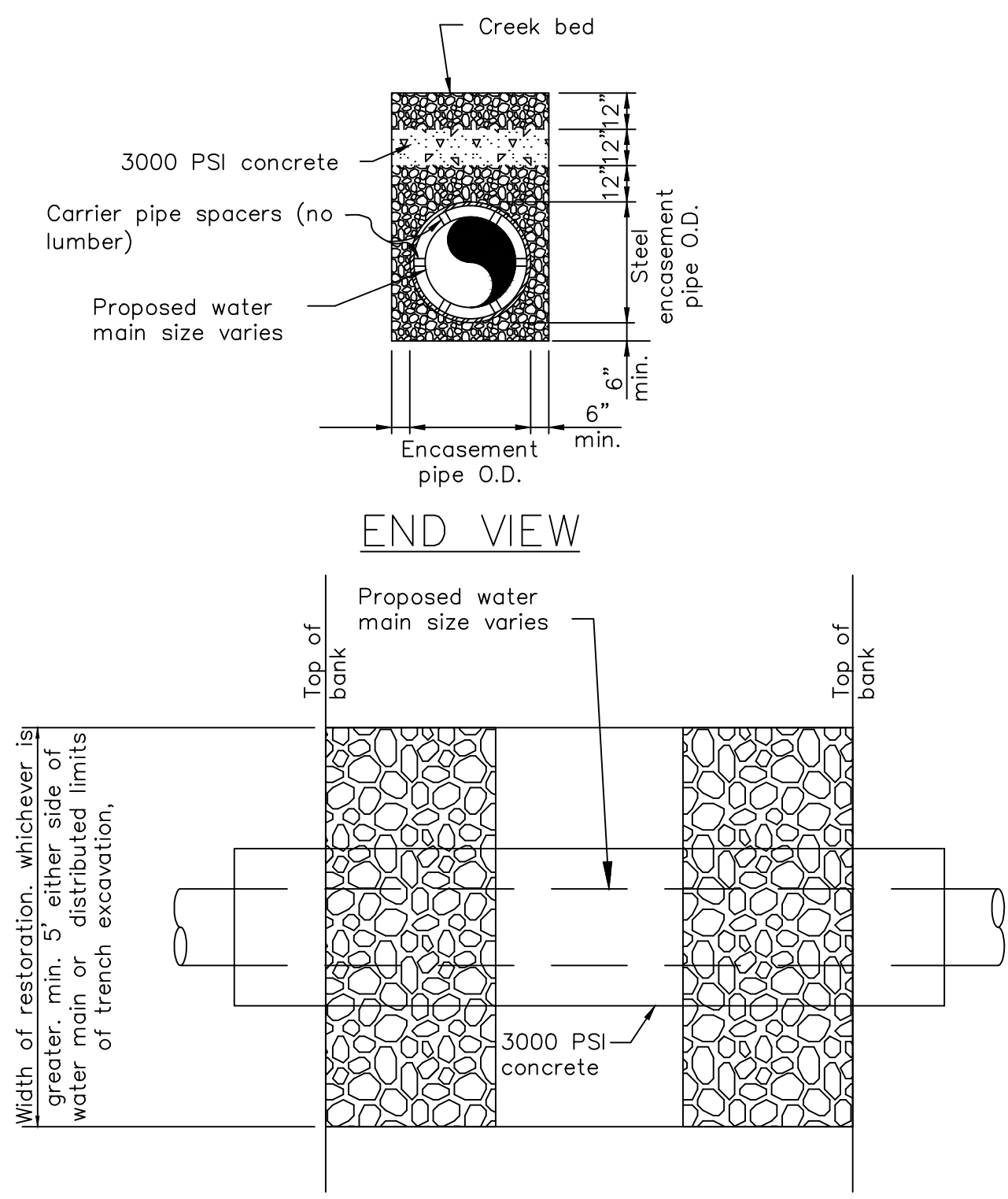
**NOTES:**

1. Vaults equipment, valves & piping shown is a schematic layout. Actual size and equipment selection shall be designed to meet ultimate water demands.
2. Shop drawings for all equipment, piping dimensional drawings shall be submitted for approval to HCWD No. 1.
3. If vault cannot be drained to daylight, a 4'x4'x4' deep (below bottom of vault) crushed stone french drain shall be installed.
4. No MJ fitting shall be inside the vault.

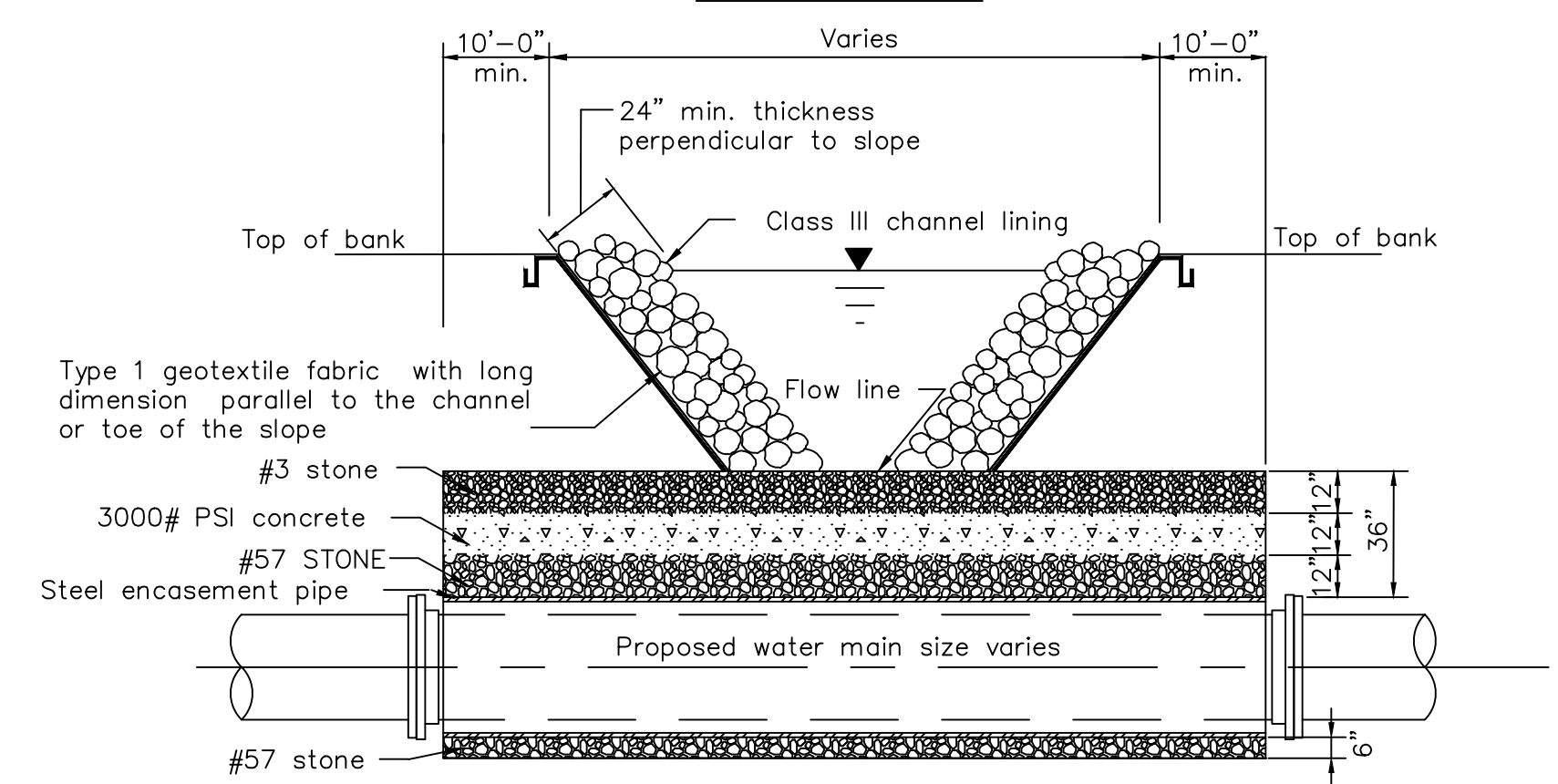
**EQUIPMENT LEGEND**

- |                 |                                      |
|-----------------|--------------------------------------|
| 1 MJ 90 bend    | 7 Meter w/strainer                   |
| 2 MJ gate valve | 8 Concrete pipe support              |
| 3 FL tee        | 9 MJ tee                             |
| 4 FL gate valve | 10 FL X FL and FL X PE length varies |
| 5 FL 90 bend    | 11 Concrete vault dimensions varies  |
| 6 AMES 2000 bfp | 12 36" X 36" aluminum lid            |

**TYPICAL MASTER METER VAULT**



**PLAN VIEW**



**SECTION VIEW**

**MAJOR CREEK CROSSING**