

1

2

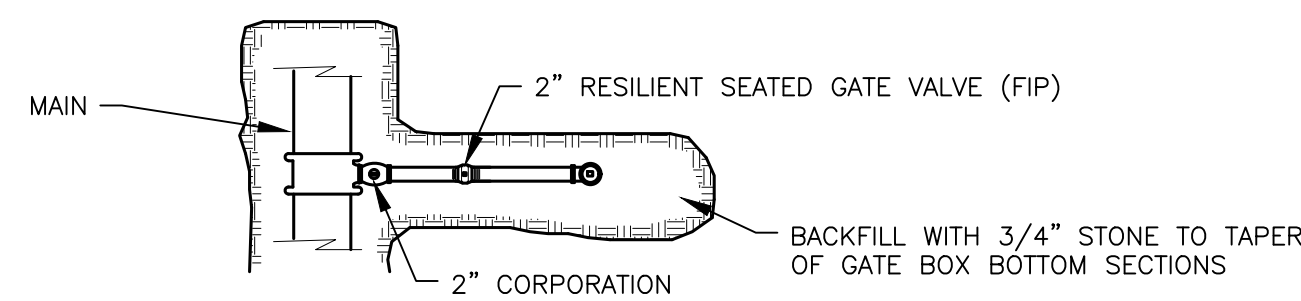
3

4

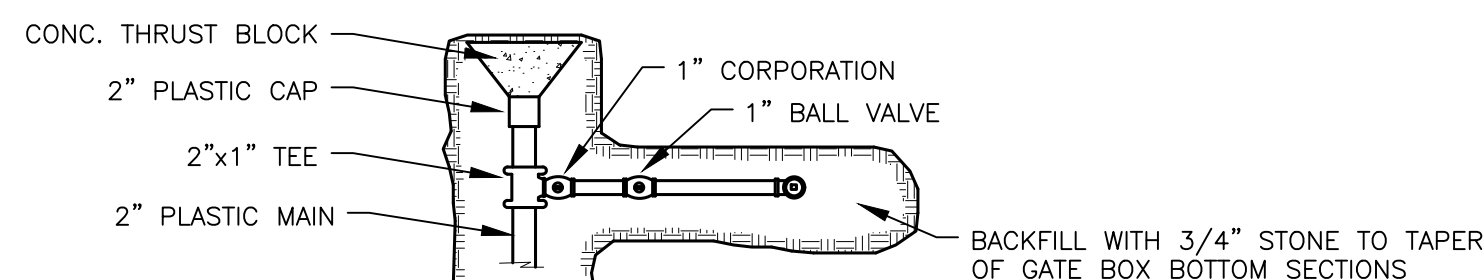
5

6

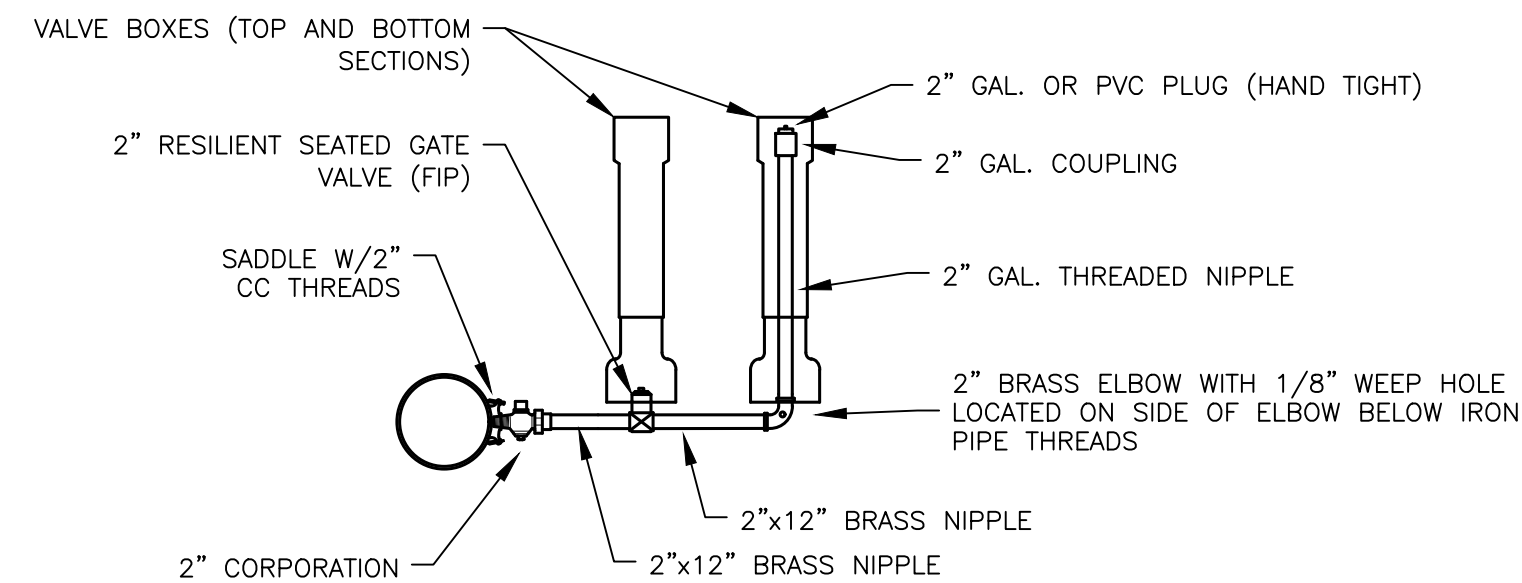
A



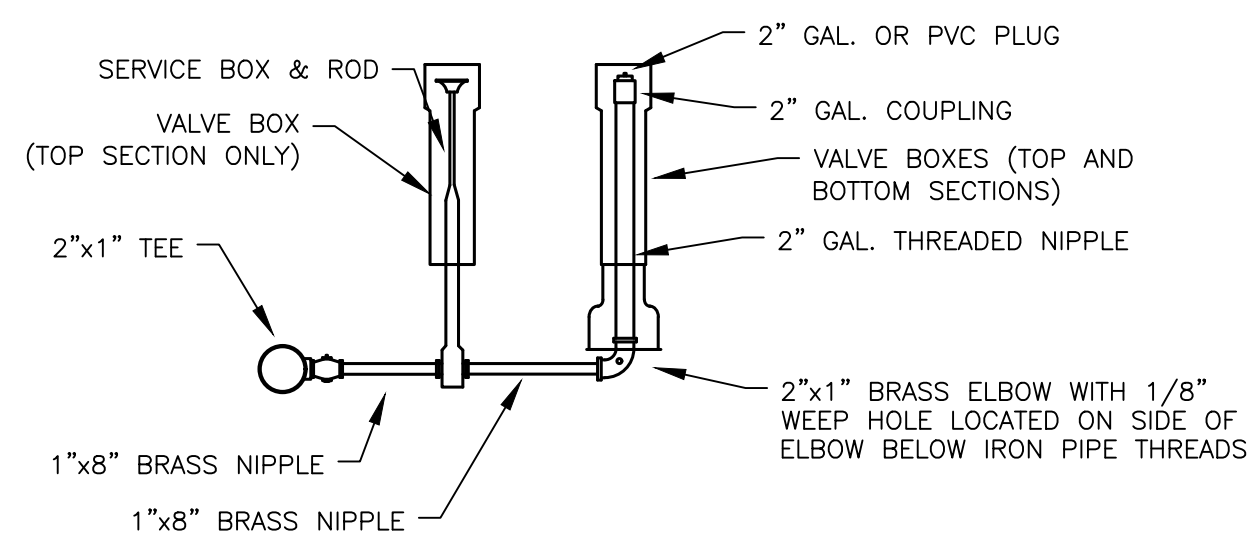
TOP VIEW



TOP VIEW



SIDE VIEW

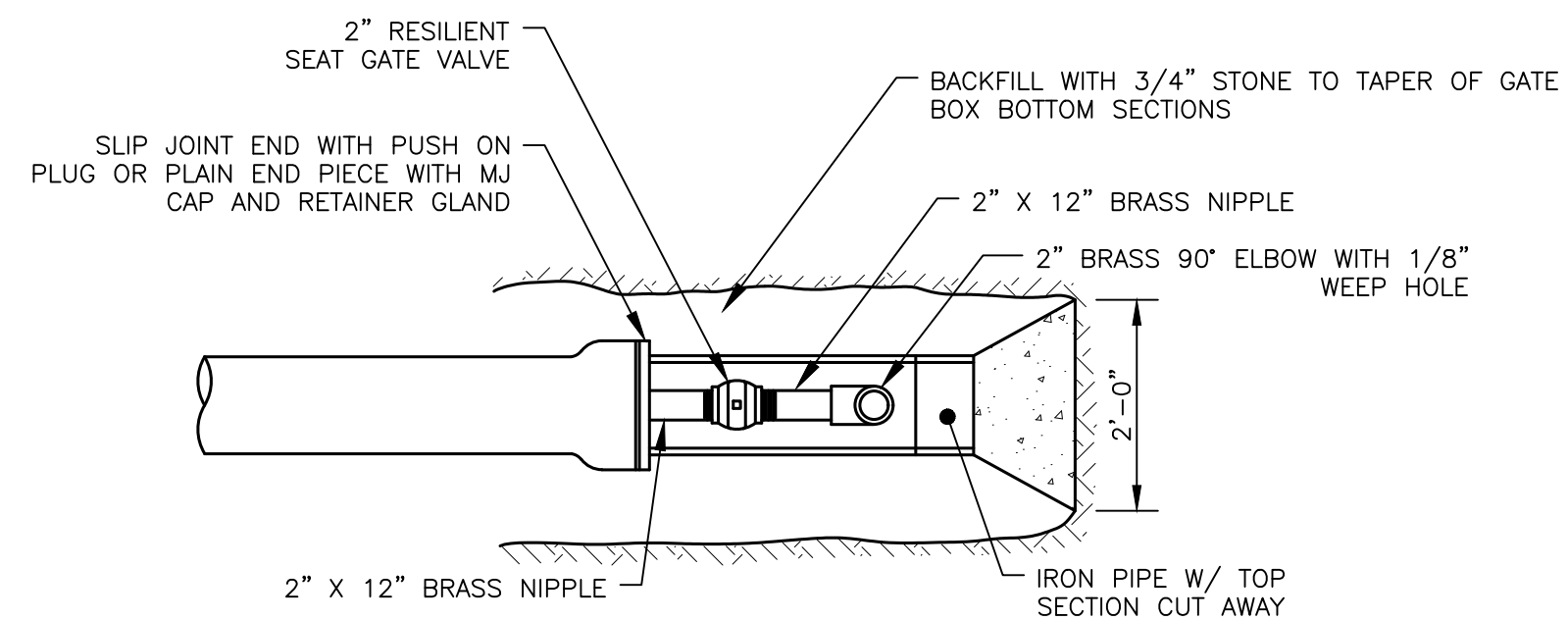


SIDE VIEW

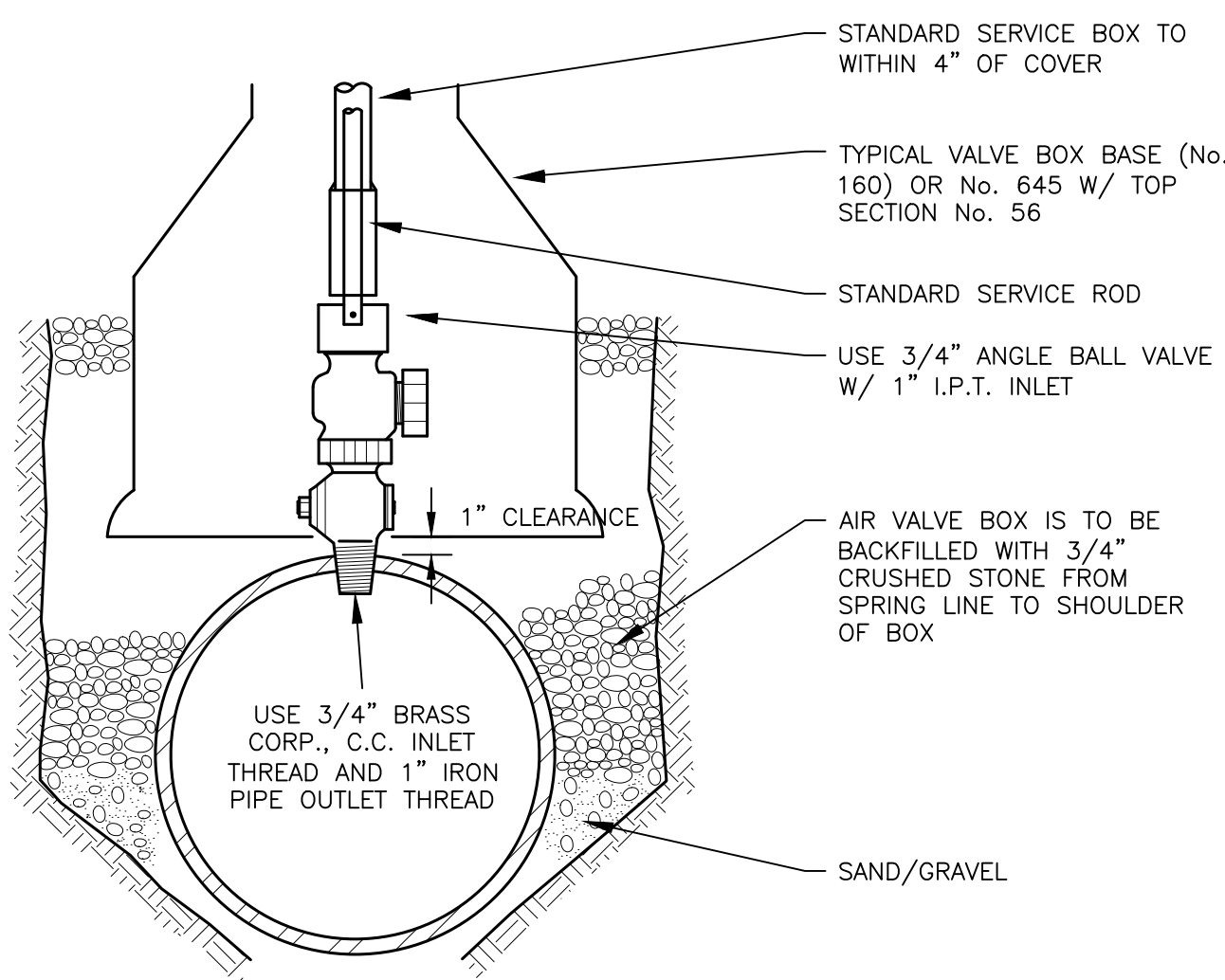
SIDE-ARM BLOW-OFF (4" & LARGER MAINS)

SIDE-ARM BLOW-OFF (2" MAIN)

B

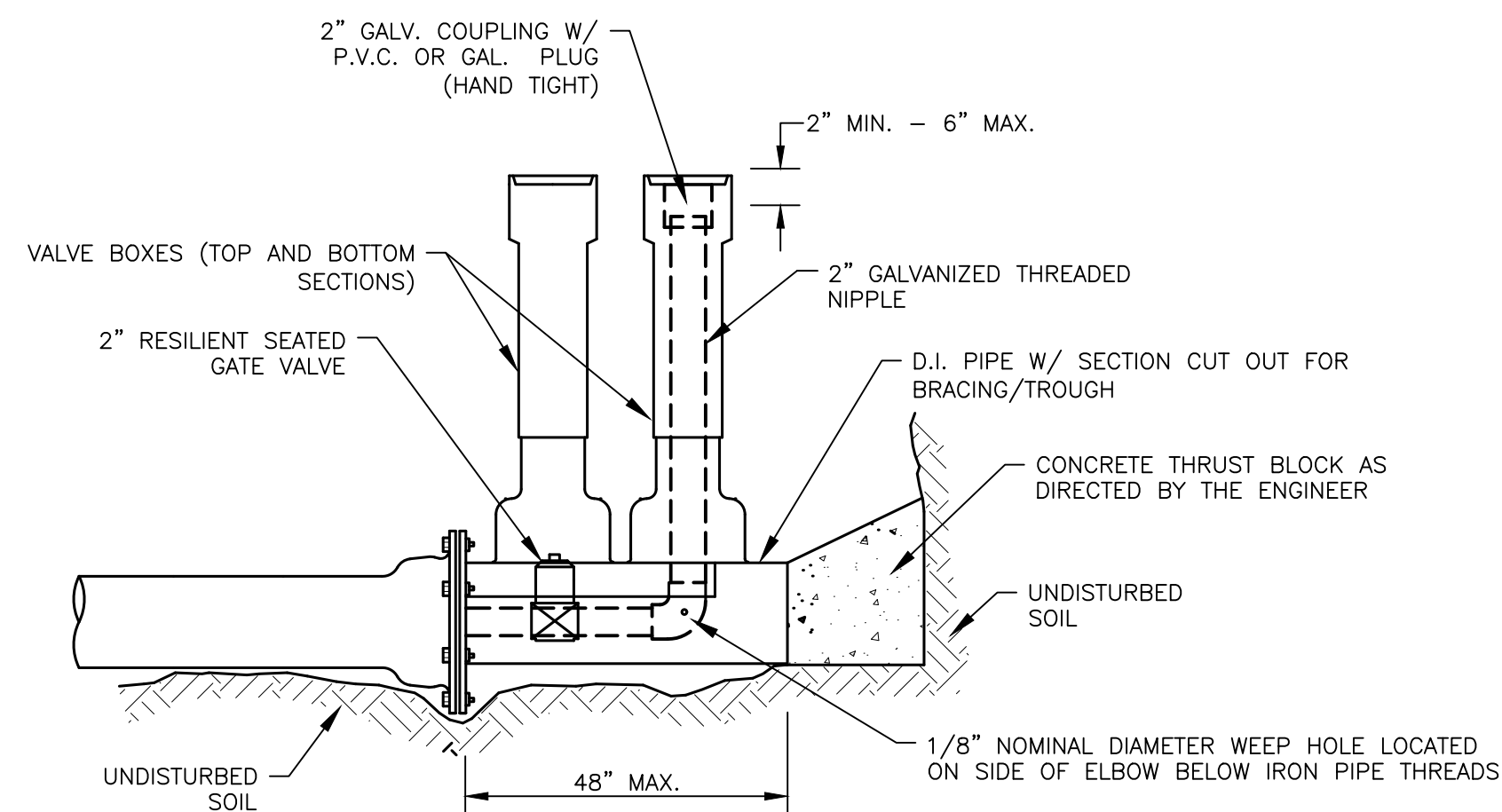


TOP VIEW



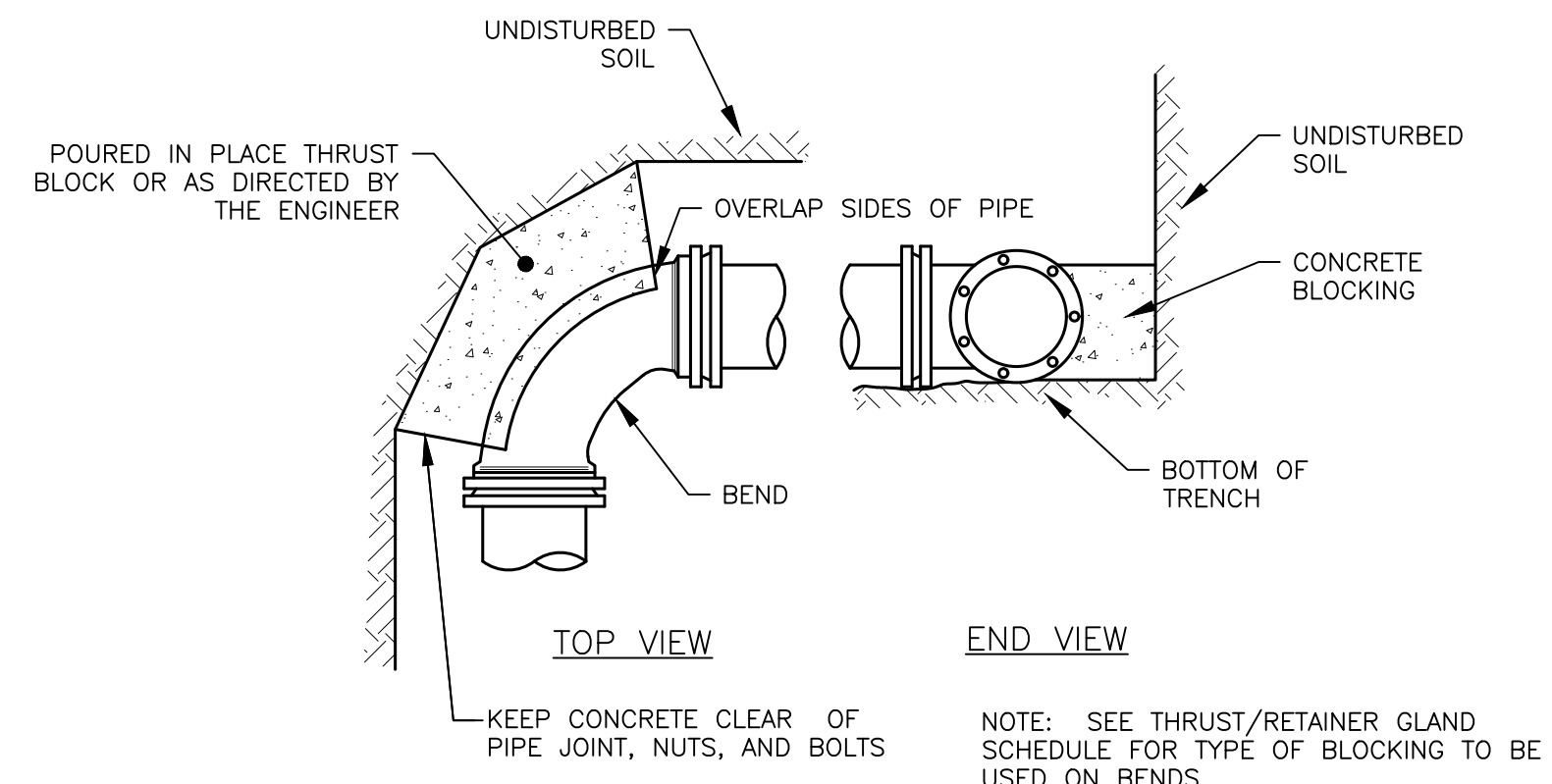
TYPICAL AIR VALVE (1")

C

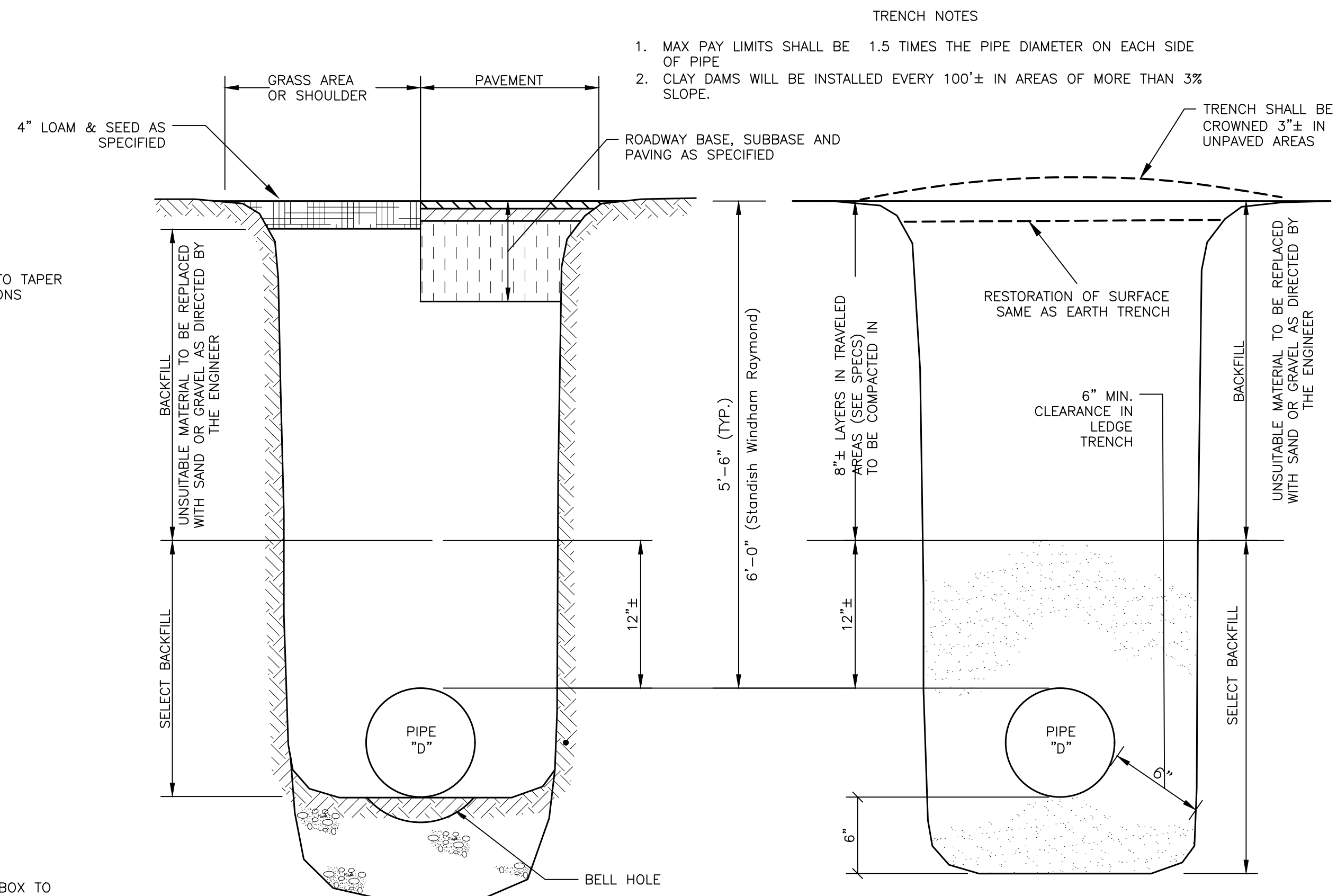


STANDARD 2" BLOW OFF

D

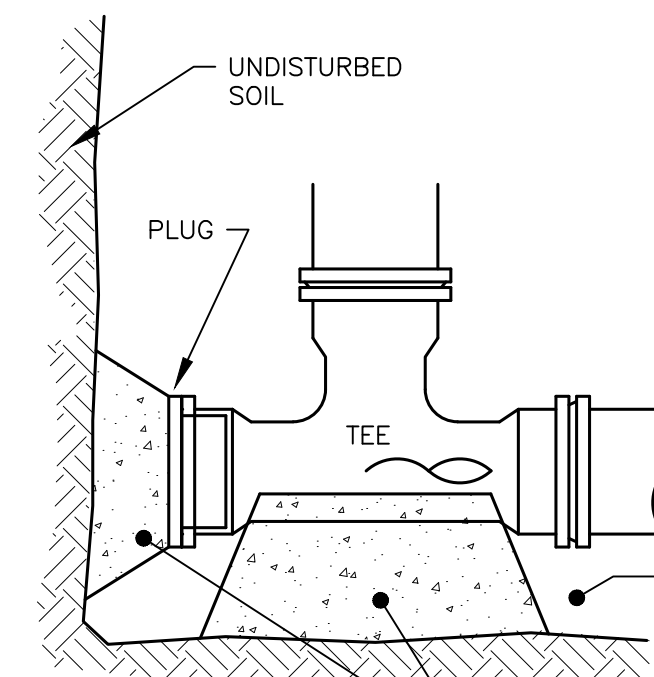


STANDARD BEND BLOCKING

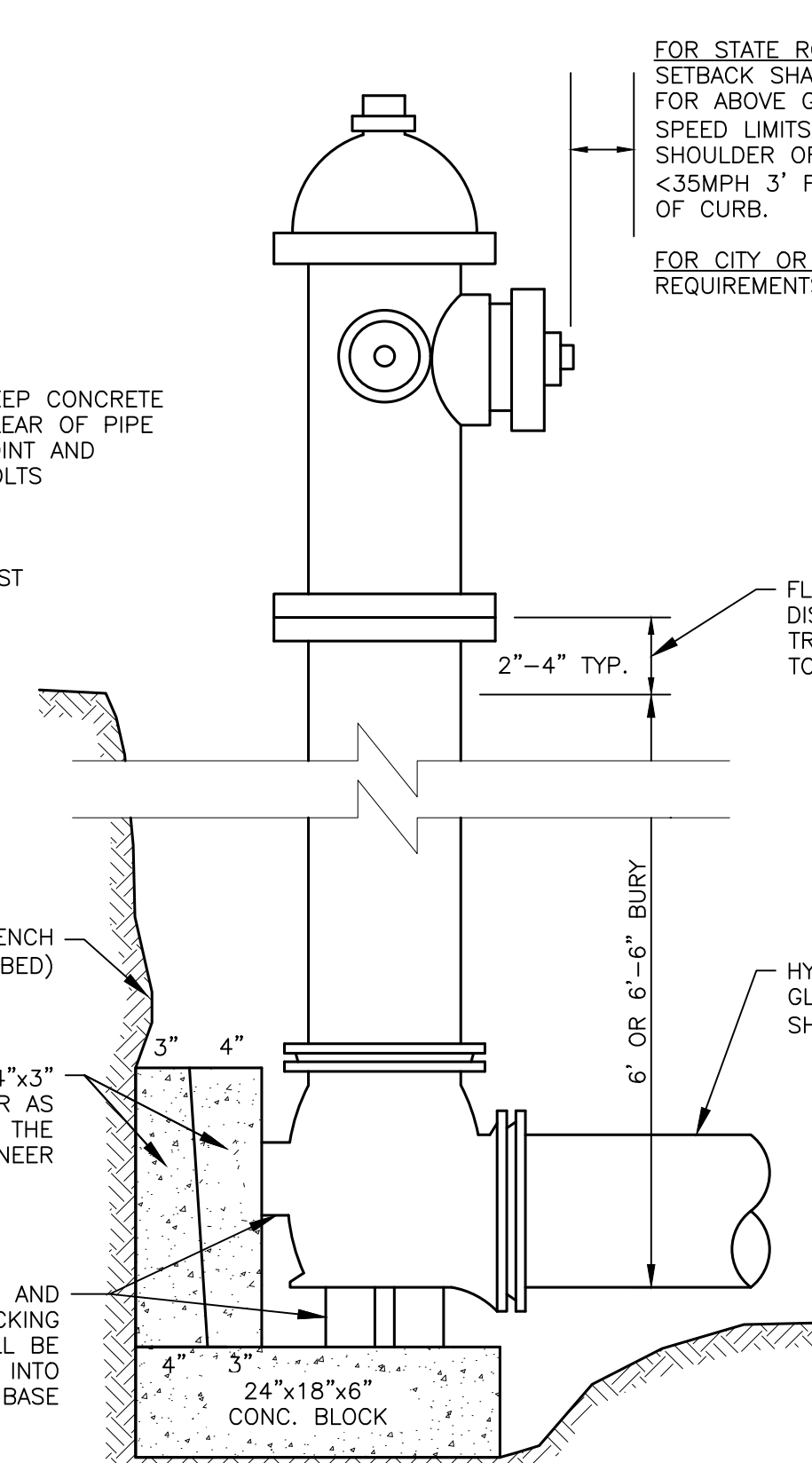


SECTION THRU EARTH TRENCH

SECTION THRU LEDGE TRENCH



NOTE: IF DEAD END WITH TEE, THRUST BLOCK WOULD BE REQUIRED OR AS DIRECTED BY THE ENGINEER



TYPICAL HYDRANT INSTALLATION DETAIL

FOR STATE ROADS SETBACK SHALL CONFORM TO M.D.O.T. POLICY FOR ABOVE GROUND UTILITY LOCATIONS. FOR SPEED LIMITS >35MPH 6.5' FROM EDGE OF SHOULDER OR FACE OF CURB. FOR SPEED LIMITS <35MPH 3' FROM EDGE OF SHOULDER OR 1' FROM FACE OF CURB.

FOR CITY OR TOWN ROADS CHECK WITH MUNICIPALITY FOR REQUIREMENTS

FLANGE TO FINISH GRADE DISTANCE IS CRITICAL FOR TRAFFIC BREAKAWAY FEATURE TO WORK PROPERLY

HYDRANT BRANCH (NOTE: ALL GLANDS ON HYDRANT BRANCH SHALL BE RETAINER GLANDS)

24"x18"x6" CONC. BLOCK

3" 4" 6" OR 6'-6" BURY

2-18"x12"x4"x3" CONC. WEDGES OR AS DIRECTED BY THE ENGINEER

HORIZONTAL AND VERTICAL BLOCKING PLANES SHALL BE MANUFACTURED INTO HYDRANT BASE

TRENCH NOTES

1. MAX PAY LIMITS SHALL BE 1.5 TIMES THE PIPE DIAMETER ON EACH SIDE OF PIPE
2. CLAY DAMS WILL BE INSTALLED EVERY 100'± IN AREAS OF MORE THAN 3% SLOPE.

TRENCH SHALL BE CROWNED 3"± IN UNPAVED AREAS

RESTORATION OF SURFACE SAME AS EARTH TRENCH

6" MIN. CLEARANCE IN LEDGE TRENCH

8"± LAYERS IN TRAVELED AREAS (SEE SPECS) TO BE COMPACTED IN

5'-6" (TYP.)

12"±

6"

BACKFILL

UNUSABLE MATERIAL TO BE REPLACED WITH SAND OR GRAVEL AS DIRECTED BY THE ENGINEER

ROADWAY BASE, SUBBASE AND PAVING AS SPECIFIED

PAVEMENT

GRASS AREA OR SHOULDER

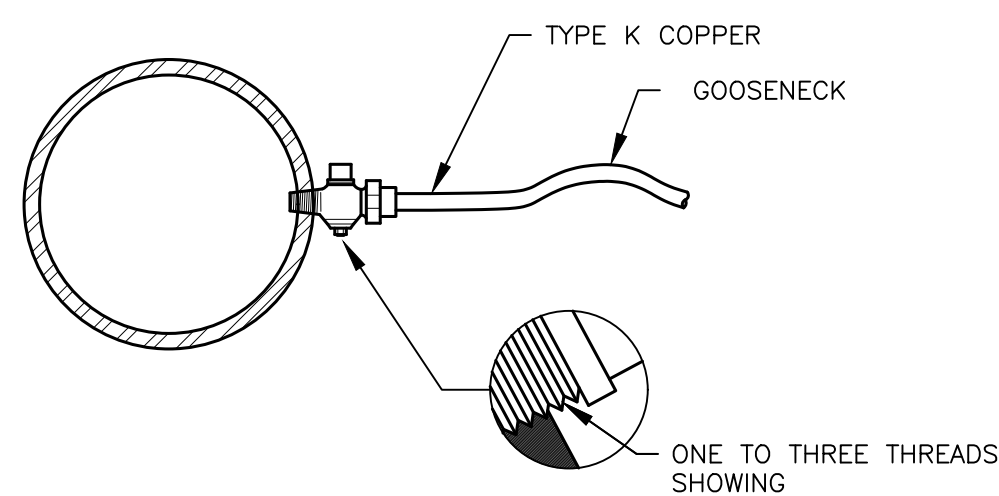
4" LOAM & SEED AS SPECIFIED

DESIGNED BY:	TAW/KAW
CHECKED BY:	GSJ
DRAWN BY:	SHB-2021.DWG
REVISION	DATE
12/20	10/11
KAW UPDATED SMALL METER PIT GEOMETRY	
JGH TYP. OFFSET & CHART ADDED	
DESCRIPTION	

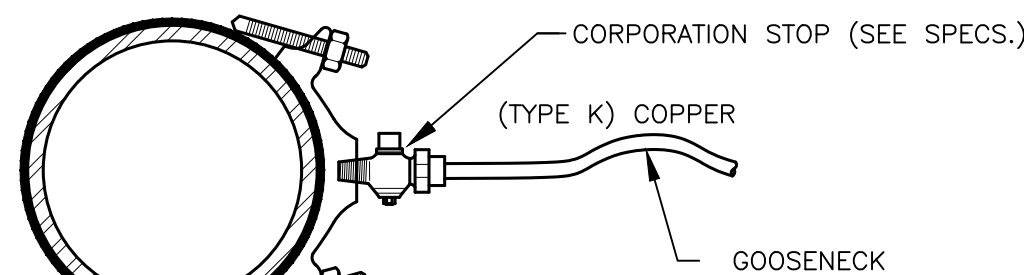
STANDARD WATER DETAILS

PORTLAND WATER DISTRICT
STANDARD DETAILS

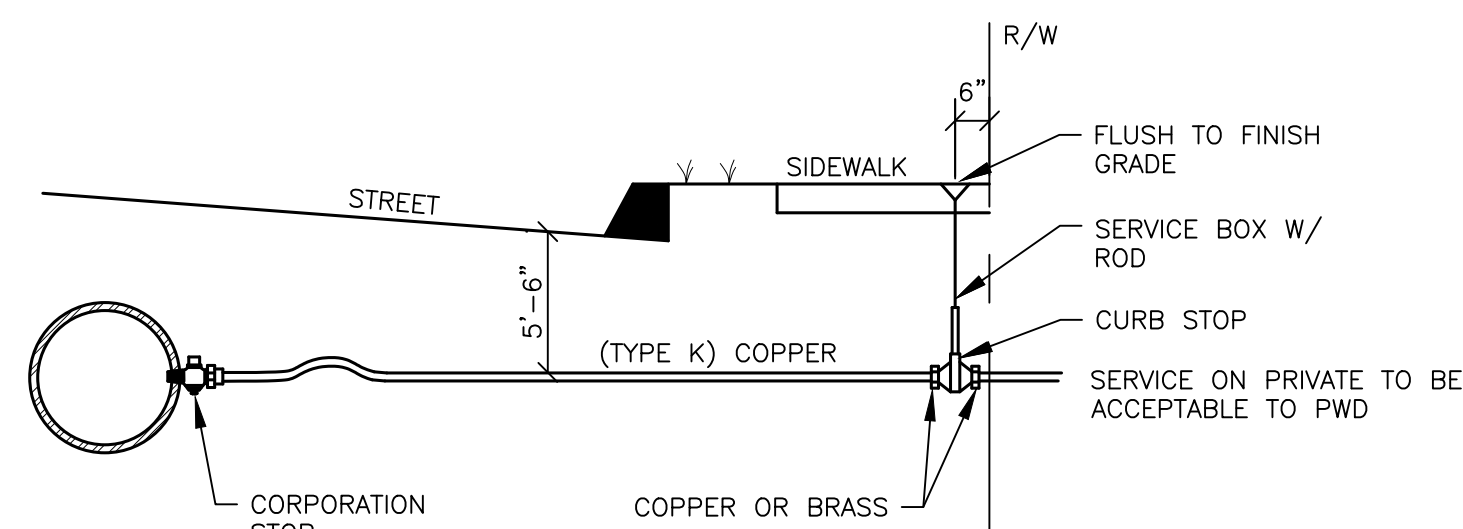
JOB NO.:
DATE: 10/01/2007
SCALE: AS NOTED
SHEET: 1 OF 2



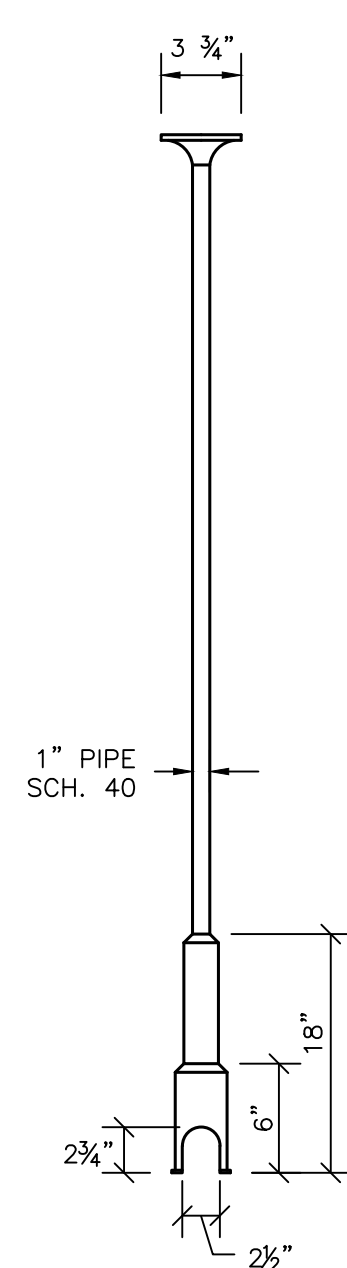
SERVICE TAP
(3/4" AND 1" C.C. THREAD)



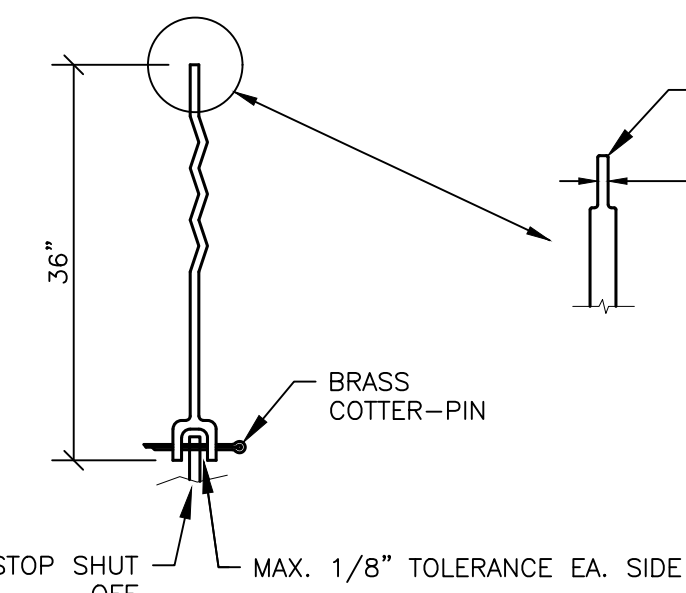
SERVICE SADDLE
(1-1/2" AND 2" C.C. THREAD)



TYPICAL SERVICE CONNECTION



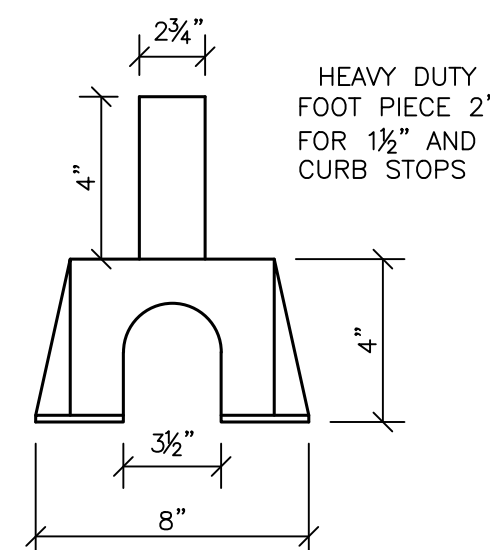
SERVICE BOX



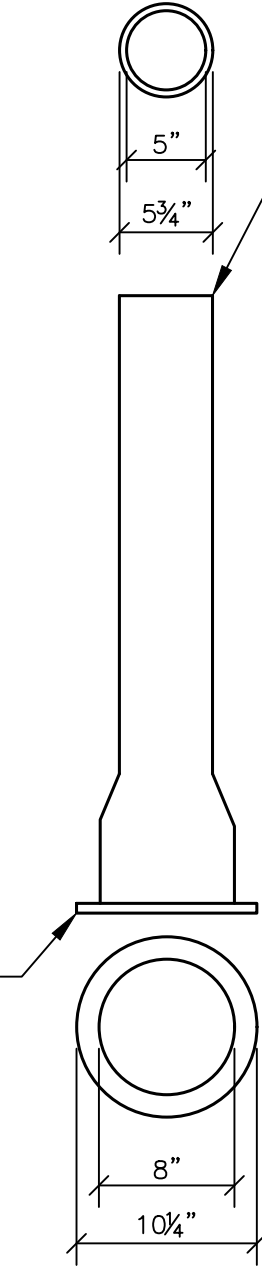
SERVICE ROD



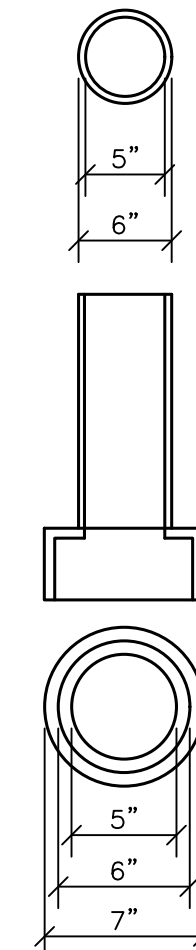
COVER



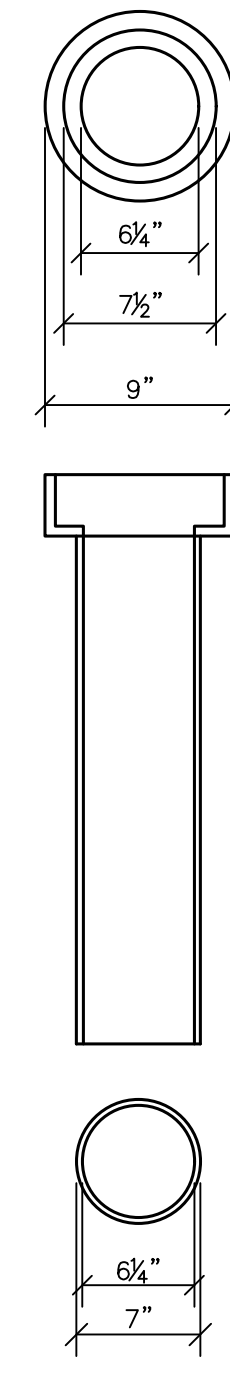
FOOT PIECE



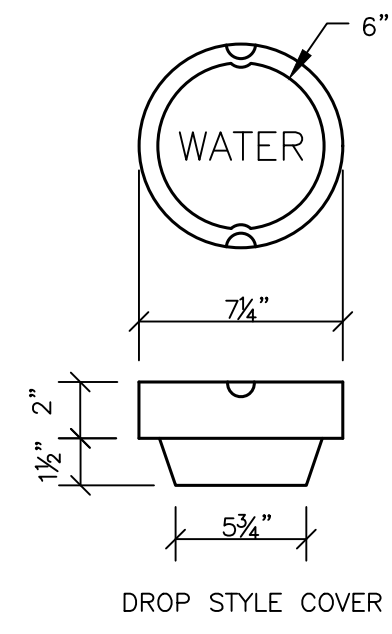
BASE SECTION NO. 645



INTERMEDIATE SECTION NO.58



TOP SECTION NO.56

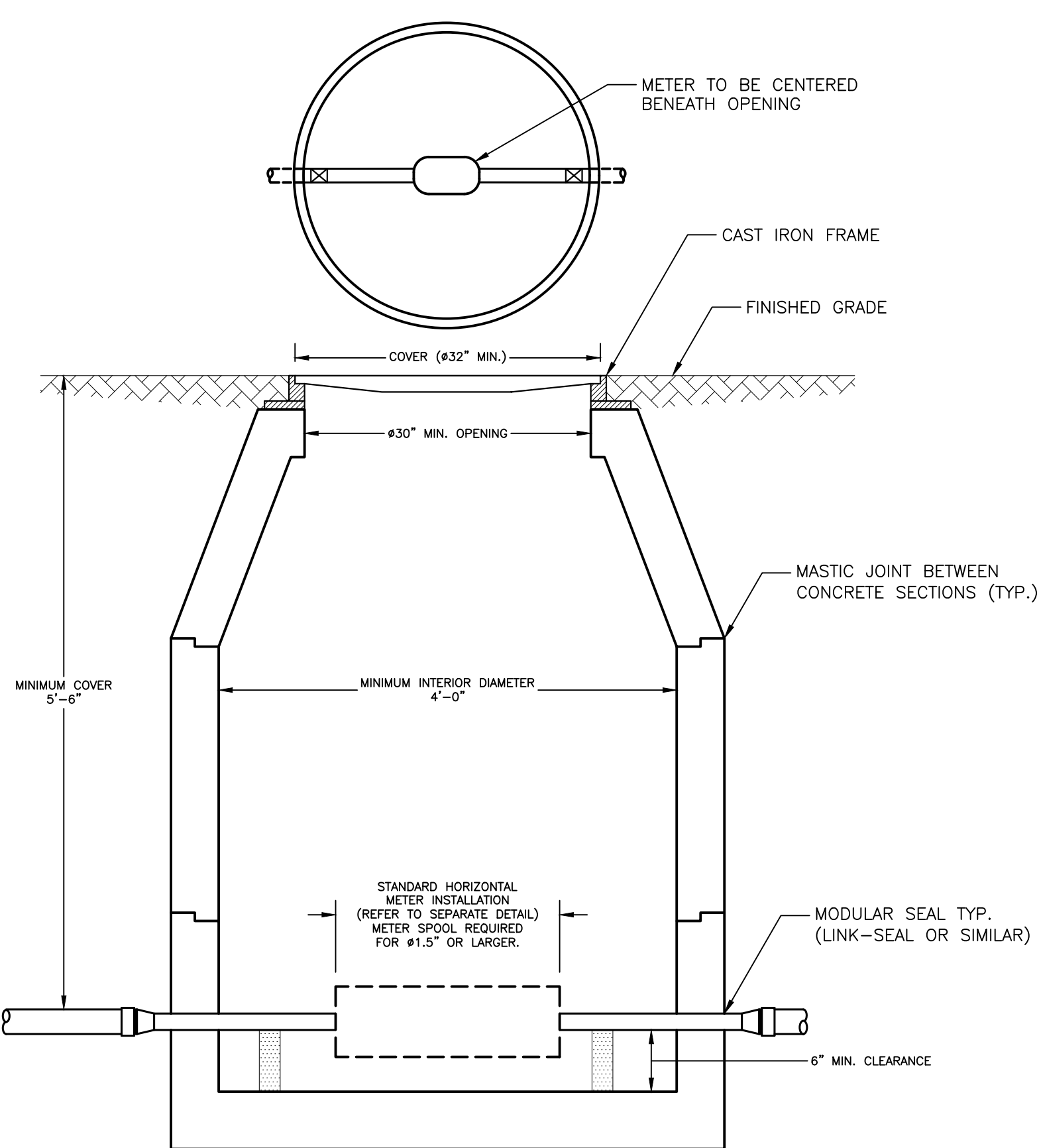


DROP STYLE COVER

(NUMBERS ARE FOR 5 1/4" BUFFALO VALVE BOXES)
(BASE SECTION MAY BE USED AS INTERMEDIATE SECTION)

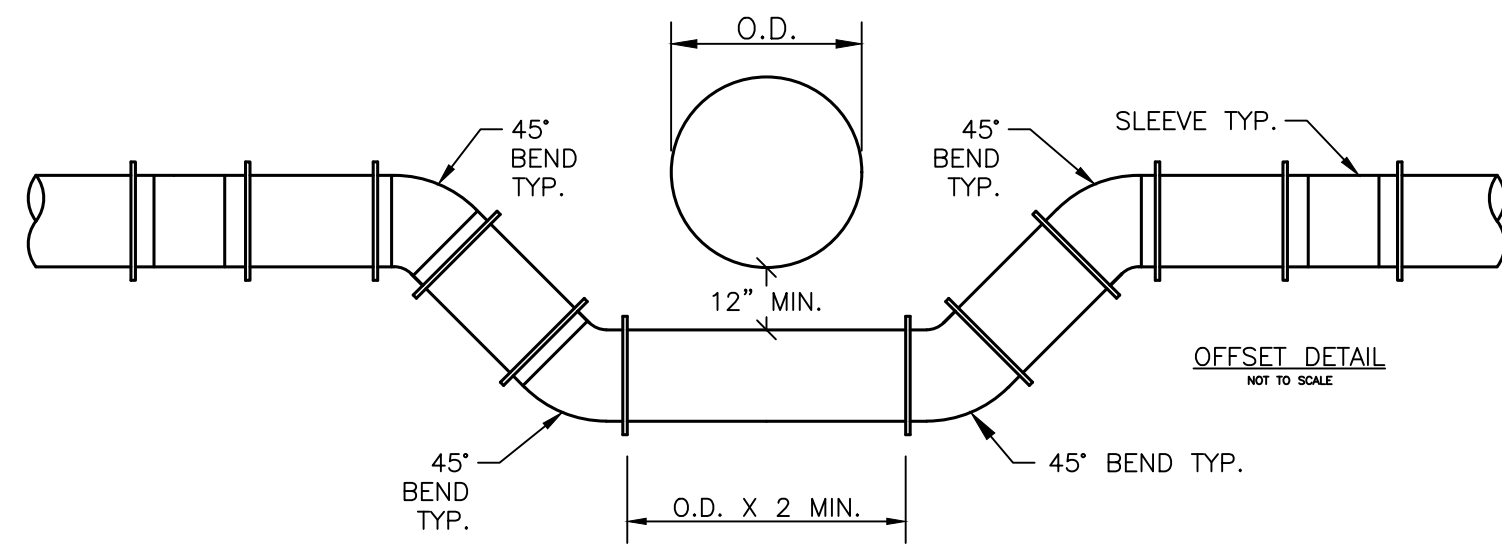
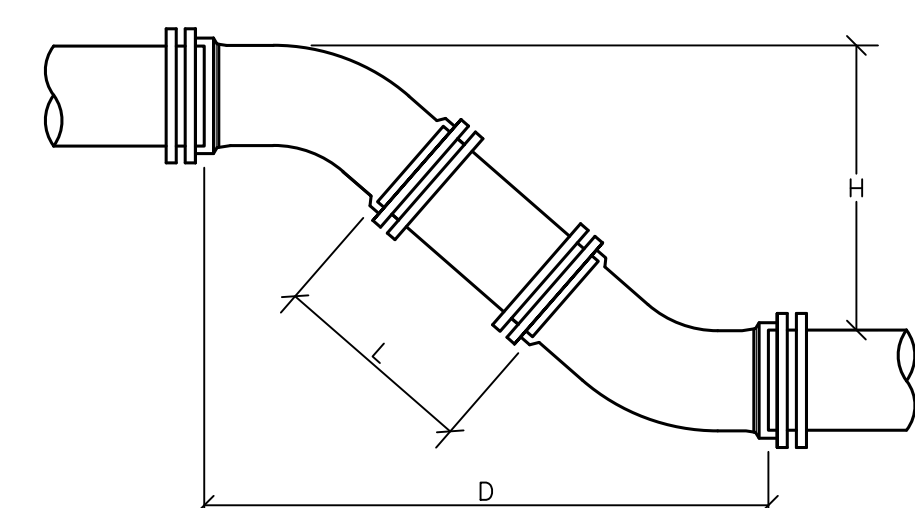
VALVE BOX & COVER

NOTE: ANY EXTENSION OF SERVICE BOX REQUIRES:
1. 1" FEMALE IRON PIPE COUPLING
2. 1" THREADED PIPE (THIS IS TO BE A NON-WELDED, TWO PIECE ARRANGEMENT. SLIP ON ADAPTERS ARE NOT PERMISSIBLE.)



TYPICAL METER PIT - 5/8" TO 2" METER

- METER PIT AND COVER**
- SPECIAL APPROVAL BY PWD IS REQUIRED, PRIOR TO CONSTRUCTION, FOR ALL PROPOSED METER PIT INSTALLATIONS.
 - TESTABLE BACKFLOW PREVENTION DEVICES MAY NOT BE INSTALLED WITHIN SMALL METER PITS.
 - METER PIT SHALL BE LOCATED ON PRIVATE PROPERTY BETWEEN 10' AND 20' FROM THE PROPERTY LINE UNLESS OTHERWISE APPROVED BY PWD.
 - THE METER PIT SHALL BE MADE OF PRECAST CONCRETE OF SUFFICIENT SIZE TO PROVIDE 5.5' MINIMUM GROUND COVER FROM FINISHED GRADE TO THE TOP OF THE SERVICE PIPE.
 - ALL SEAMS BETWEEN CONCRETE SECTIONS SHALL BE SEALED WITH MASTIC JOINT. ALL OPENINGS IN THE CONCRETE FOR SERVICE PIPING SHALL BE SEALED WITH A MODULAR SEAL (LINK-SEAL OR SIMILAR).
 - METER PIT INTERIOR MUST BE AT LEAST 48" IN DIAMETER. THE OPENING MUST BE AT LEAST 30" IN DIAMETER, WITH A CAST IRON FRAME. THE COVER SHALL BE CAST IRON OR STEEL, 32" MINIMUM IN DIAMETER, AND BE EITHER PERMANENTLY LABELED "WATER" OR HAVE NO LABEL. STEEL PLATE MATERIAL SHALL BE COATED WITH A RUST INHIBITOR PAINT.
 - WALL-MOUNTED LADDER RUNGS ARE NOT TO BE INSTALLED WITHIN METER PIT.
 - ALL PIPING INSIDE AND EXTENDING THROUGH THE METER PIT WILL BE MADE OF COPPER, WITH A MINIMUM OF 6" CLEARANCE FROM THE METER PIT FLOOR. USE BLOCKING AS NEEDED TO SUPPORT THE PIPE.
 - CUSTOMER SHALL ENSURE THE METER PIT AND COVER ARE PROPERLY RATED FOR TRAFFIC FLOW, IF APPLICABLE.
- METER INSTALLATION**
- ONLY PWD PERSONNEL ARE AUTHORIZED TO INSTALL WATER METERS. PWD PERSONNEL ARE ADDITIONALLY AUTHORIZED TO OPERATE METER VALVES AS NEEDED FOR INSTALLATION AND MAINTENANCE.
 - PWD WILL SUPPLY THE WATER METER. ALL OTHER FITTINGS, INCLUDING A METER RESITTER FOR 1" OR SMALLER METERS, SHALL BE SUPPLIED AND INSTALLED BY CUSTOMER.
 - FOR 1.5" AND 2" METERS, CUSTOMER WILL INSTALL A FLANGED METER SPOOL PIECE, SUPPLIED BY PWD AT NO ADDITIONAL CHARGE, PRIOR TO METER SET. THE METER SPOOL WILL BE MADE AVAILABLE FOR CUSTOMER PICKUP AT PWD CUSTOMER SERVICE, 225 DOUGLASS STREET, PORTLAND DURING NORMAL BUSINESS HOURS.
 - CUSTOMER WILL INSTALL TWO BALL VALVES AT LEAST 24" APART FOR METER INSTALLATION, ALLOWING FOR THE WATER METER TO BE CENTERED UNDER THE METER PIT OPENING. THE BALL VALVES SHALL BE SOLDERED IN PLACE.



NOTE: DIMENSIONS APPLICABLE FOR SIGMA COMPACT BENDS. FOR TYLER COMPACT BENDS, ADD 1/2" TO "D" DIMENSION AND SUBTRACT 1/2" FROM "L" DIMENSION. FOR OTHER FITTINGS REFER TO MANUFACTURER'S RECOMMENDATIONS.

H	6" PIPE		8" PIPE		12" PIPE	
	D	L	D	L	D	L
12"	1' 6-1/2"	0' 10-1/2"	1' 7-1/2"	0' 9-1/2"	1' 11-1/2"	0' 8-1/2"
13"	1' 7-1/2"	0' 11-7/8"	1' 8-1/2"	0' 10-7/8"	2' 0-1/2"	0' 8-7/8"
14"	1' 8-1/2"	1' 1-5/16"	1' 9-1/2"	1' 0-5/16"	2' 1-1/2"	0' 8-5/16"
15"	1' 9-1/2"	1' 2-11/16"	1' 10-1/2"	1' 1-11/16"	2' 2-1/2"	0' 9-11/16"
16"	1' 10-1/2"	1' 4-1/8"	1' 11-1/2"	1' 3-1/8"	2' 3-1/2"	0' 11-1/8"
17"	1' 11-1/2"	1' 5-9/16"	2' 0-1/2"	1' 4-9/16"	2' 4-1/2"	1' 0-9/16"
18"	2' 0-1/2"	1' 6-15/16"	2' 1-1/2"	1' 5-15/16"	2' 5-1/2"	1' 1-15/16"
19"	2' 1-1/2"	1' 8-3/8"	2' 2-1/2"	1' 7-3/8"	2' 6-1/2"	1' 3-3/8"
20"	2' 2-1/2"	1' 9-13/16"	2' 3-1/2"	1' 8-13/16"	2' 7-1/2"	1' 4-13/16"
21"	2' 3-1/2"	1' 11-3/16"	2' 4-1/2"	1' 10-3/16"	2' 8-1/2"	1' 6-3/16"
22"	2' 4-1/2"	2' 0-5/8"	2' 5-1/2"	1' 11-5/8"	2' 9-1/2"	1' 7-5/8"
23"	2' 5-1/2"	2' 2"	2' 6-1/2"	2' 1"	2' 10-1/2"	1' 9"
24"	2' 6-1/2"	2' 3-7/16"	2' 7-1/2"	2' 2-7/16"	2' 11-1/2"	1' 10-7/16"
25"	2' 7-1/2"	2' 4-7/8"	2' 8-1/2"	2' 3-7/8"	3' 0-1/2"	1' 11-7/8"
26"	2' 8-1/2"	2' 6-1/4"	2' 9-1/2"	2' 5-1/4"	3' 1-1/2"	2' 1-1/4"
27"	2' 9-1/2"	2' 7-11/16"	2' 10-1/2"	2' 6-11/16"	3' 2-1/2"	2' 2-11/16"
28"	2' 10-1/2"	2' 9-1/8"	2' 11-1/2"	2' 8-1/8"	3' 3-1/2"	2' 4-1/8"
29"	2' 11-1/2"	2' 10-1/2"	3' 0-1/2"	2' 9-1/2"	3' 4-1/2"	2' 5-1/2"
30"	3' 0-1/2"	2' 11-15/16"	3' 1-1/2"	2' 10-15/16"	3' 5-1/2"	2' 6-15/16"
31"	3' 1-1/2"	3' 1-5/16"	3' 2-1/2"	3' 0-5/16"	3' 6-1/2"	2' 8-5/16"
32"	3' 2-1/2"	3' 2-3/4"	3' 3-1/2"	3' 1-3/4"	3' 7-1/2"	2' 9-3/4"
33"	3' 3-1/2"	3' 4-3/16"	3' 4-1/2"	3' 3-3/16"	3' 8-1/2"	2' 11-3/16"
34"	3' 4-1/2"	3' 5-9/16"	3' 5-1/2"	3' 4-9/16"	3' 9-1/2"	3' 0-9/16"
35"	3' 5-1/2"	3' 7"	3' 6-1/2"	3' 6"	3' 10-1/2"	3' 2"
36"	3' 6-1/2"	3' 8-7/16"	3' 7-1/2"	3' 7-7/16"	3' 11-1/2"	3' 3-7/16"
37"	3' 7-1/2"	3' 9-13/16"	3' 8-1/2"	3' 8-13/16"	4' 0-1/2"	3' 4-13/16"
38"	3' 8-1/2"	3' 11-1/4"	3' 9-1/2"	3' 10-1/4"	4' 1-1/2"	3' 6-1/4"
39"	3' 9-1/2"	4' 0-11/16"	3' 10-1/2"	3' 11-1/16"	4' 2-1/2"	3' 7-11/16"
40"	3' 10-1/2"	4' 2-1/16"	3' 11-1/2"	4' 1-1/16"	4' 3-1/2"	3' 8-1/16"
41"	3' 11-1/2"	4' 3-1/2"	4' 0-1/2"	4' 2-1/2"	4' 4-1/2"	3' 10-1/2"
42"	4' 0-1/2"	4' 4-7/8"	4' 1-1/2"	4' 3-7/8"	4' 5-1/2"	3' 11-7/8"
43"	4' 1-1/2"	4' 6-5/16"	4' 2-1/2"	4' 5-5/16"	4' 6-1/2"	4' 1-5/16"
44"	4' 2-1/2"	4' 7-3/4"	4' 3-1/2"	4' 6-3/4"	4' 7-1/2"	4' 2-3/4"
45"	4' 3-1/2"	4' 9-1/8"	4' 4-1/2"	4' 8-1/8"	4' 8-1/2"	4' 4-1/8"
46"	4' 4-1/2"	4' 10-9/16"	4' 5-1/2"	4' 9-9/16"	4' 9-1/2"	4' 5-9/16"
47"	4' 5-1/2"	4' 11-15/16"	4' 6-1/2"	4' 10-15/16"	4' 10-1/2"	4' 6-15/16"
48"	4' 6-1/2"	5' 1-3/8"	4' 7-1/2"	5' 0-3/8"	4' 11-1/2"	4' 8-3/8"
49"	4' 7-1/2"	5' 2-13/16"	4' 8-1/2"	5' 1-13/16"	5' 0-1/2"	4' 9-13/16"
50"	4' 8-1/2"	5' 4-3/16"	4' 9-1/2"	5' 3-3/16"	5' 1-1/2"	4' 11-3/16"
51"	4' 9-1/2"	5' 5-5/8"	4' 10-1/2"	5' 4-5/8"	5' 2-1/2"	5' 0-5/8"
52"	4' 10-1/2"	5' 7-1/16"	4' 11-1/2"	5' 6-1/16"	5' 3-1/2"	5' 2-1/16"
53"	4' 11-1/2"	5' 8-7/16"	5' 0-1/2"	5' 7-7/16"	5' 4-1/2"	5' 3-7/16"
54"	5' 0-1/2"	5' 9-7/8"	5' 1-1/2"	5' 8-7/8"	5' 5-1/2"	5' 4-7/8"
55"	5' 1-1/2"	5' 11-5/16"	5' 2-1/2"	5' 10-5/16"	5' 6-1/2"	5' 5-5/16"

TYPICAL MAIN OFFSET

DATE	DESCRIPTION	CHECKED BY:
12/20	VALVE BOX COVER NOTE	CSJ
12/16	MAIN OFFSET	CSJ
03/15	METER PIT DETAIL	CSJ
10/11	TYP. OFFSET & CHART	CSJ
	REVISION	

DRAWN BY: TAW/KAW
DATE: 10/01/2007