

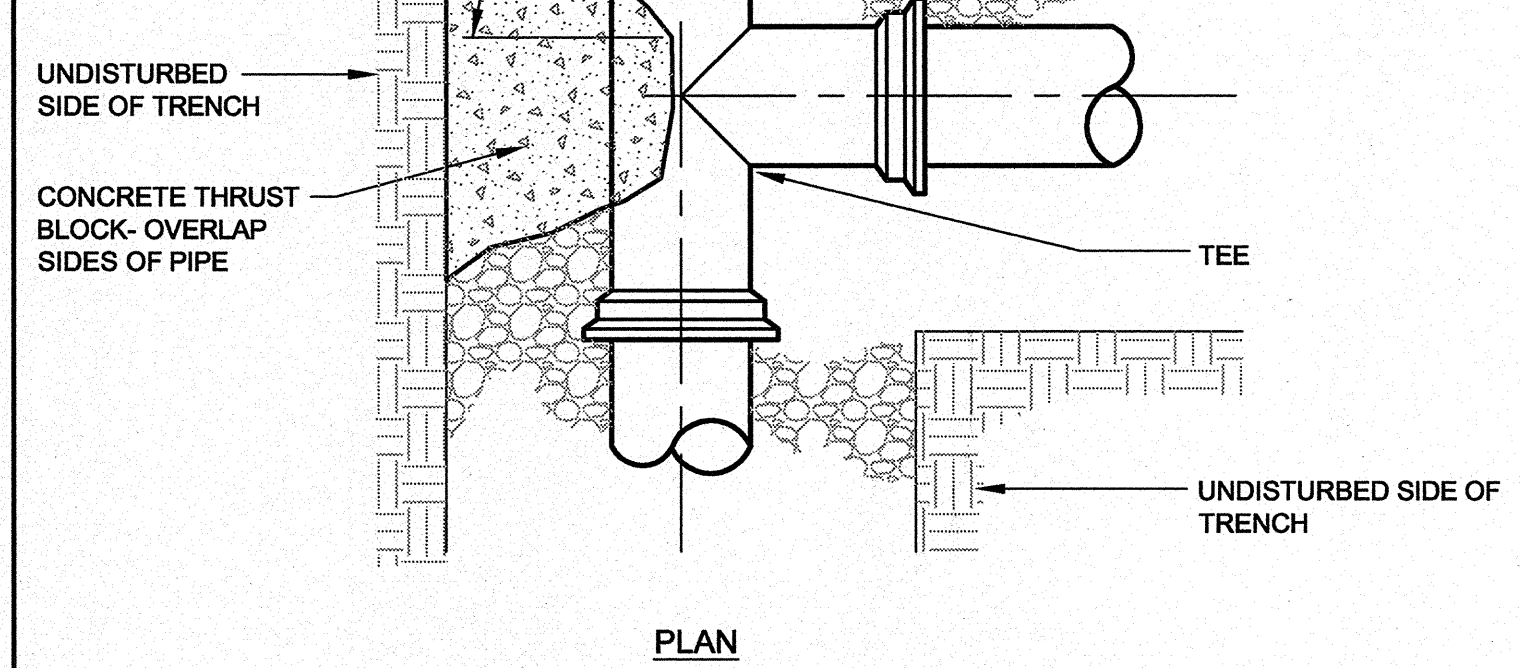
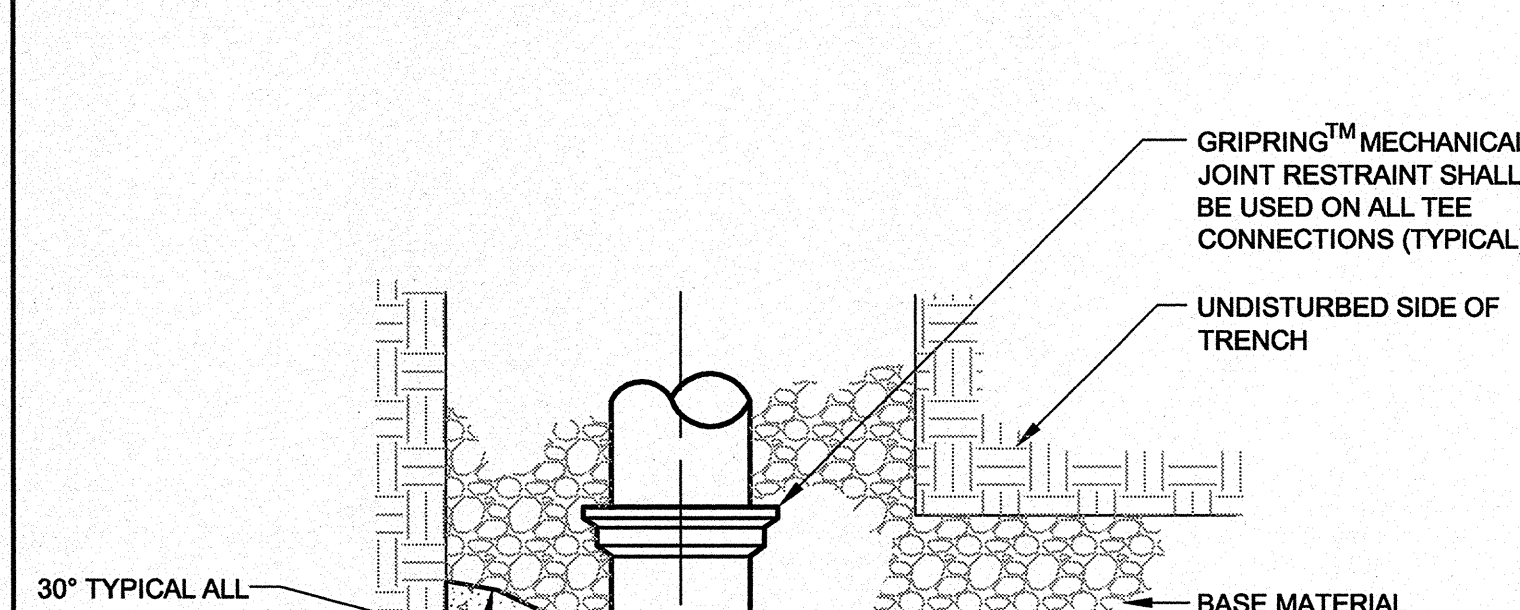
THRUST/RETAINER GLAND SCHEDULE

¼ BEND	(90°)	USE POURED-IN-PLACE THRUST BLOCK WITH GRIPRING™ MECHANICAL JOINT RESTRAINT
⅓ BEND	(45°)	THRUST BLOCK W/ GRIPRING™
⅜ BEND	(22 ½°)	THRUST BLOCK W/ GRIPRING™
½ BEND	(11 ¼°)	THRUST BLOCK W/ GRIPRING™

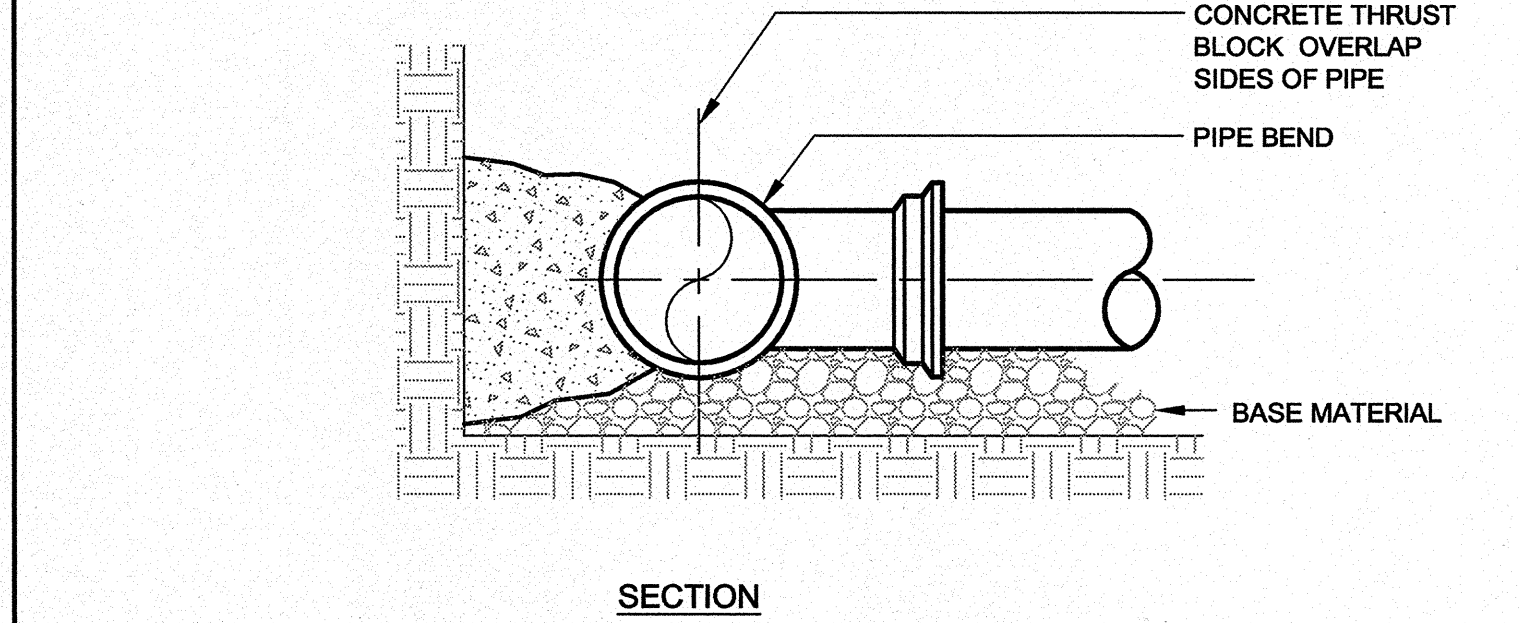
THE ABOVE SCHEDULE IS SUBJECT TO THE APPROVAL OF THE ON-SITE INSPECTOR DUE TO SOILS AND WORKING PRESSURES IN THE AREA.

- NOTES:**
1. THE PORTLAND WATER DISTRICT MAY HAVE INSPECTION FEES AND REQUIRE OBSERVATION OF ALL PIPING INSTALLATION BEFORE BURIAL. REFER TO SPECIFICATIONS.
 2. REFER TO SPECIFICATIONS FOR TESTING AND CHLORINATION REQUIREMENTS.
 3. ALL HYDRANTS AND VALVES TO BE EPOXY COATED, NUTS & BOLTS TO BE STAINLESS STEEL.
 4. SERVICE RODS FOR DOMESTIC SERVICE OR AIR VALVES TO BE STAINLESS STEEL.

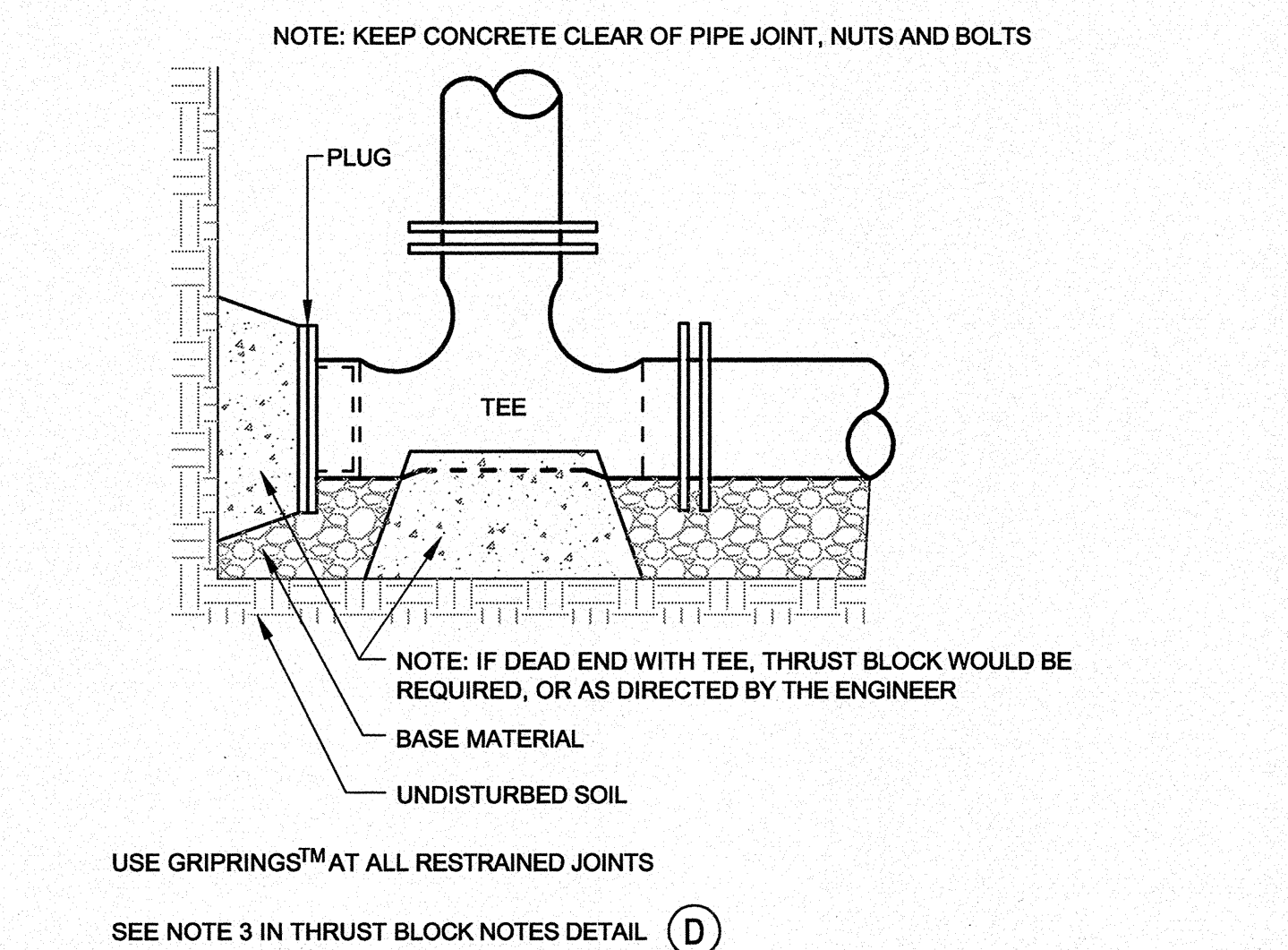
(A) TYPICAL THRUST BLOCK PLACEMENT ON BENDS DETAIL
N.T.S.



NOTE: KEEP CONCRETE CLEAR OF PIPE JOINT, NUTS AND BOLTS



(C) TYPICAL THRUST BLOCK PLACEMENT ON TEES DETAIL
N.T.S.



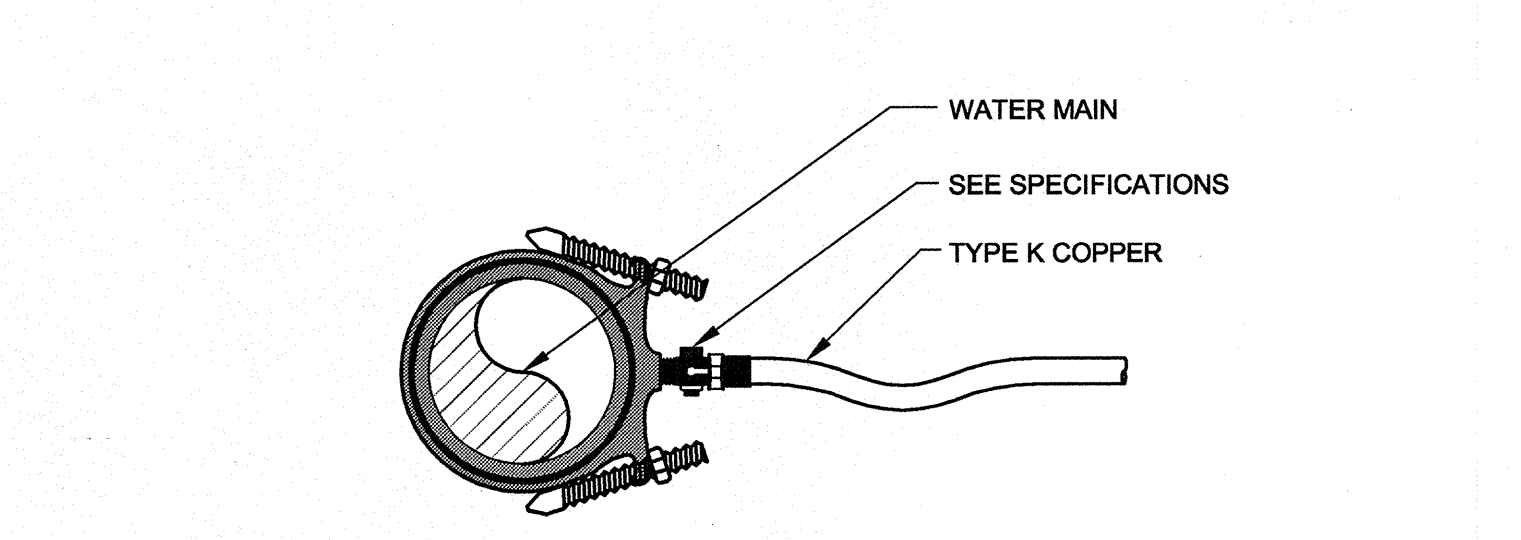
(B) STANDARD TEE BLOCKING DETAIL
N.T.S.

1. INSTALL POLY BARRIER BETWEEN PIPE AND ALL THRUST BLOCKS.
2. ANY MODIFICATION TO THRUST BLOCK SIZING OR PIPE RESTRAINT REVISIONS SHALL BE APPROVED IN WRITING BY THE ENGINEER PRIOR TO IMPLEMENTATION IN THE FIELD.
3. ANY WORK RELATING TO WATER PIPING OR DETAILS SHALL BE IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT SPECIFICATIONS.
4. ALL RESTRAINED JOINTS MUST HAVE GRIPRING™.

BEARING SURFACE REQUIRED IN SQUARE FEET

PIPE SIZE	¼ BEND	⅓ BEND	⅜ BEND	½ BEND	TEES/CAPS
6" / 8"	5.0	5.0	5.0	6.5	5.0
12"	11.5	11.5	11.5	20.0	22.0

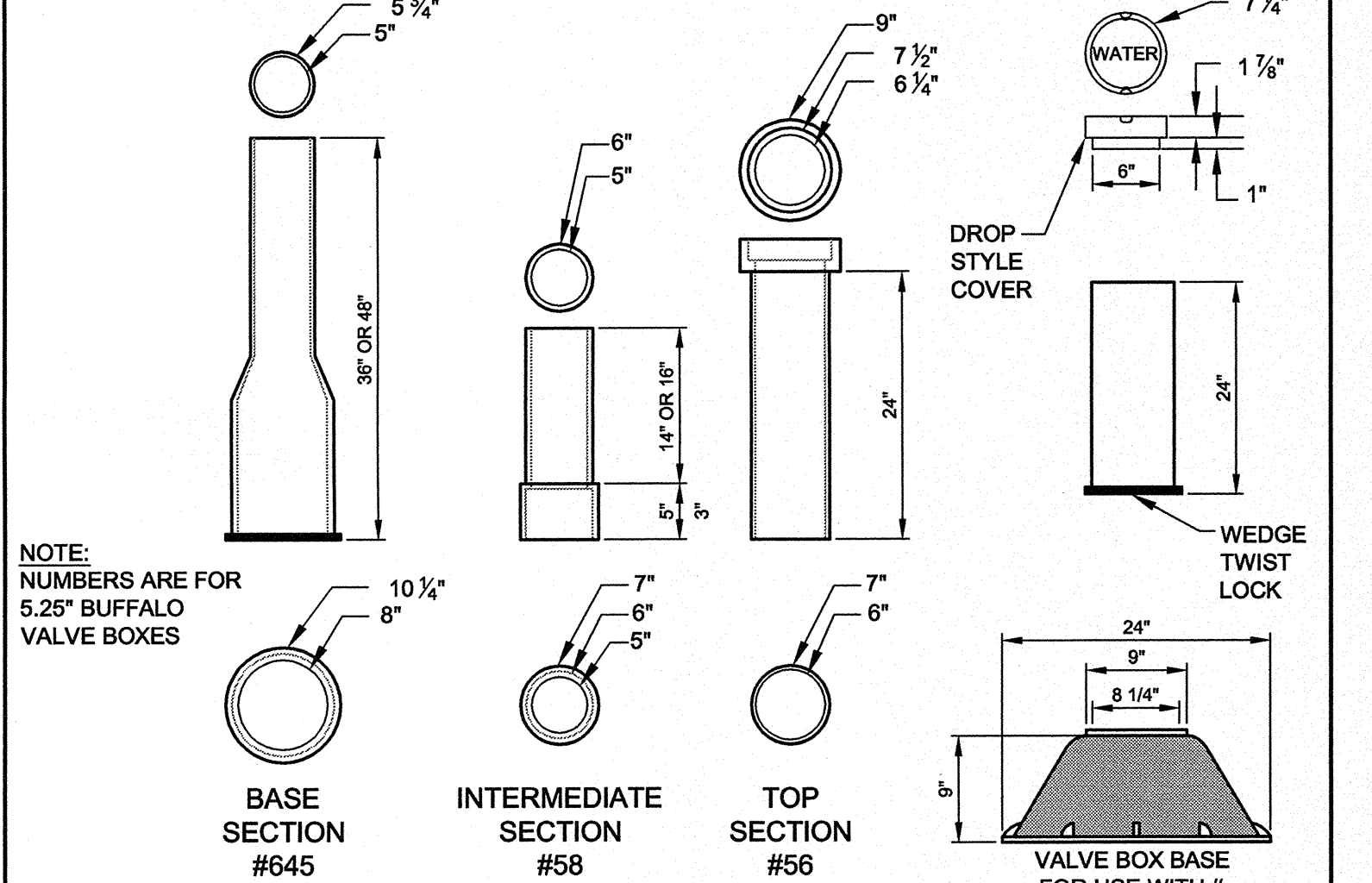
(D) THRUST BLOCK NOTES
N.T.S.



NOTE: SERVICE CONNECTIONS (DIRECT TAPS AND SERVICE CLAMPS) WILL BE INSTALLED SO THAT THE OUTLET IS AT AN ANGLE OF NOT MORE THAN 45° ABOVE THE HORIZONTAL. ALWAYS PUT A BEND OR 'GOOSENECK' IN THE SERVICE LINE PRIOR TO CONNECTING TO PROVIDE FLEXIBILITY AND 'GIVE' TO COUNTERACT THE EFFECTS OF A LOAD DUE TO SETTLEMENT OR EXPANSION AND/OR CONTRACTION.

SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL (B)

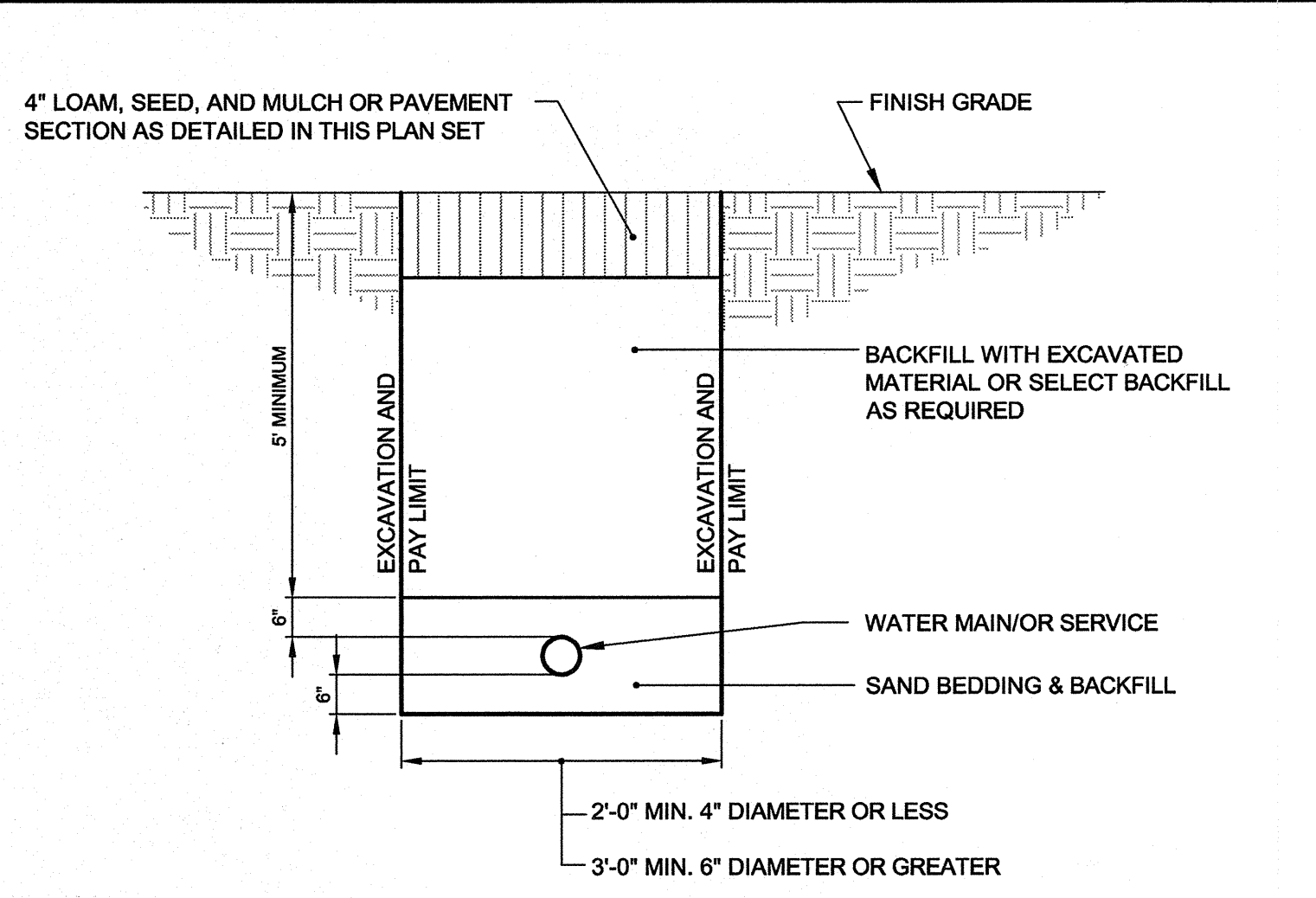
(E) WATER SERVICE DETAIL
N.T.S.



NOTE: NUMBERS ARE FOR 5.25" BUFFALO VALVE BOXES

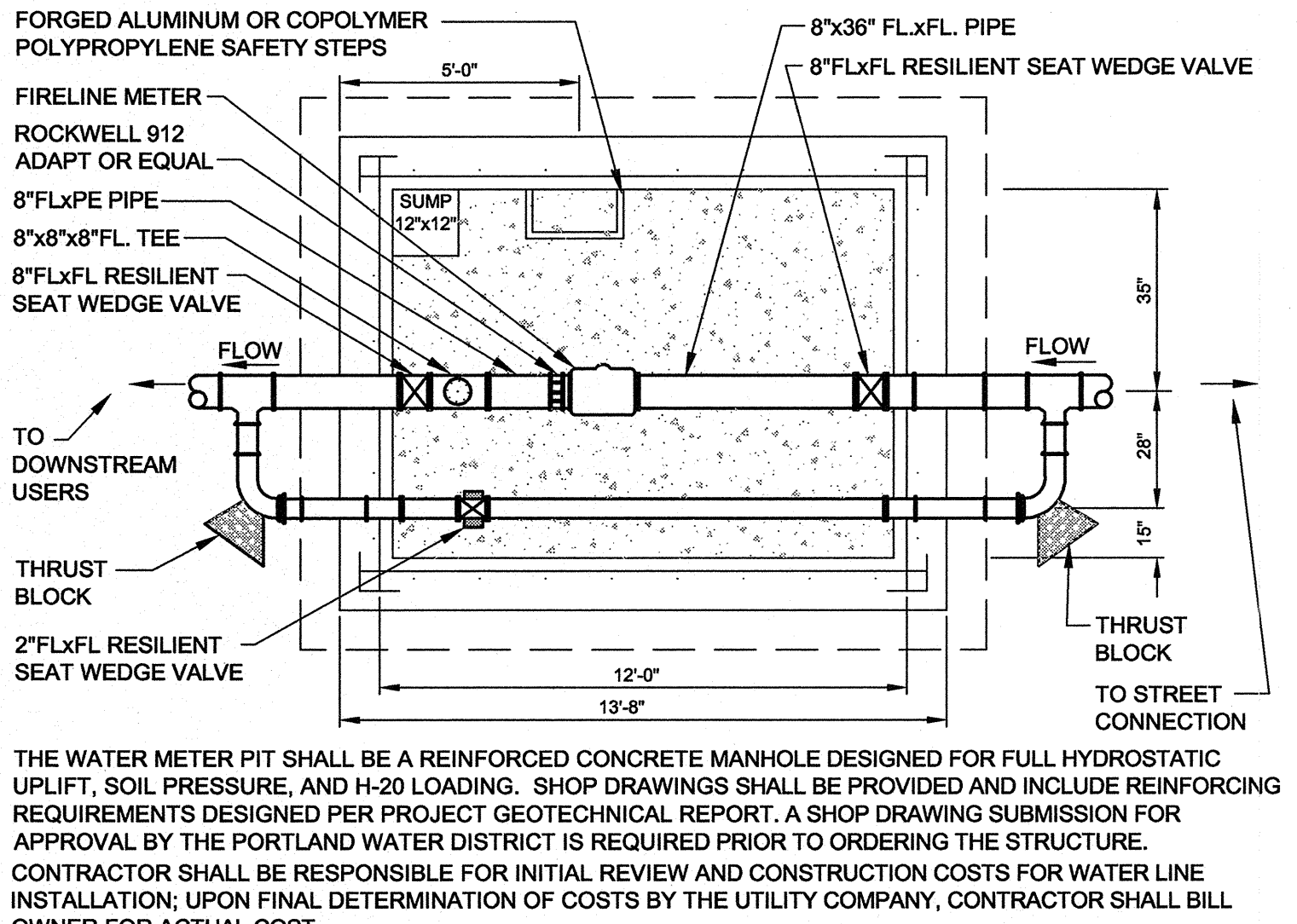
SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL (D)

(H) TYPICAL VALVE BOXES DETAIL
N.T.S.



SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL (D)

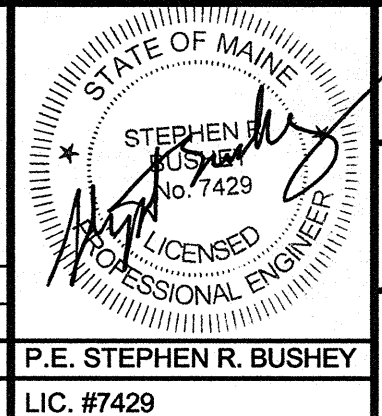
(F) WATER SERVICE TRENCH SECTION
N.T.S.



(G) WATER METER PIT DETAIL
N.T.S.

REV	DATE	DESCRIPTION
2	10.31.12	FINAL SITE PLAN APPLICATION SUBMISSION
1	08.21.12	PRELIMINARY APPLICATION TO CITY OF PORTLAND
		REVISIONS

PROJECT	CANAL LANDING
SHEET TITLE	WATER SYSTEM DETAILS
CLIENT	NEW YARD LLC 58 FORE STREET PORTLAND, ME 04101



DH DeLUCA-HOFFMAN ASSOCIATES, INC. 778 MAIN STREET, SUITE 8 SOUTH PORTLAND, ME 04106 207.775.1121 WWW.DELUCAHOFFMAN.COM	
DRAWN: LA	DATE:
DESIGNED: RJW	SCALE: -
CHECKED: SRB	JOB NO. 3091
FILE NAME: 3091-DET	
SHEET	C-8.2