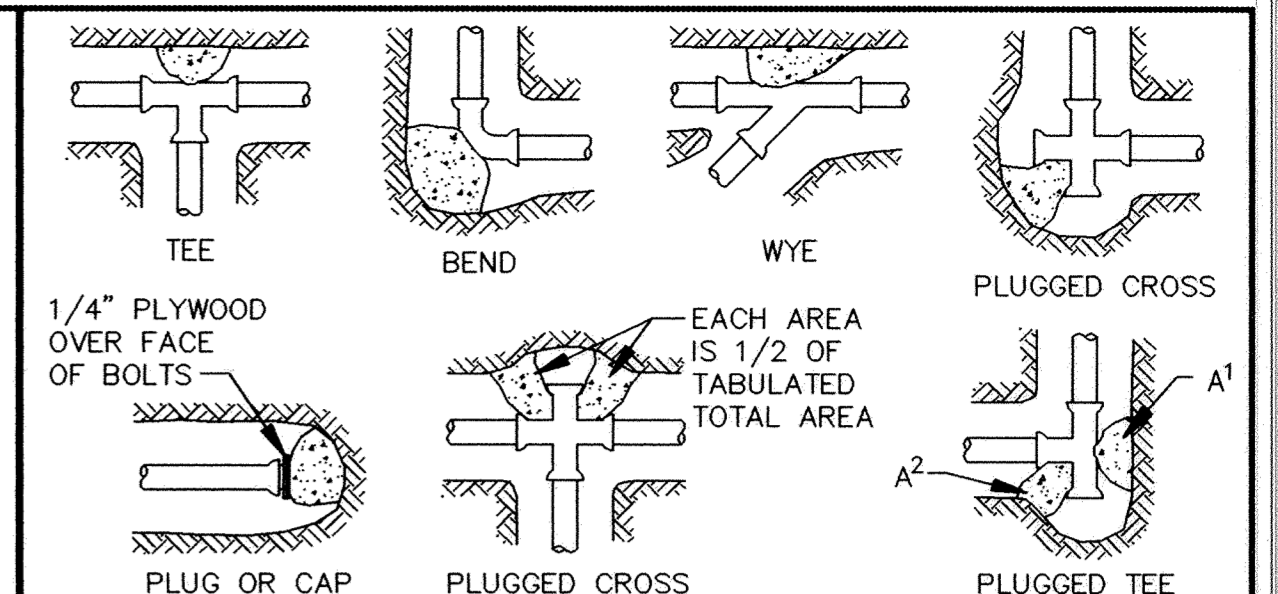


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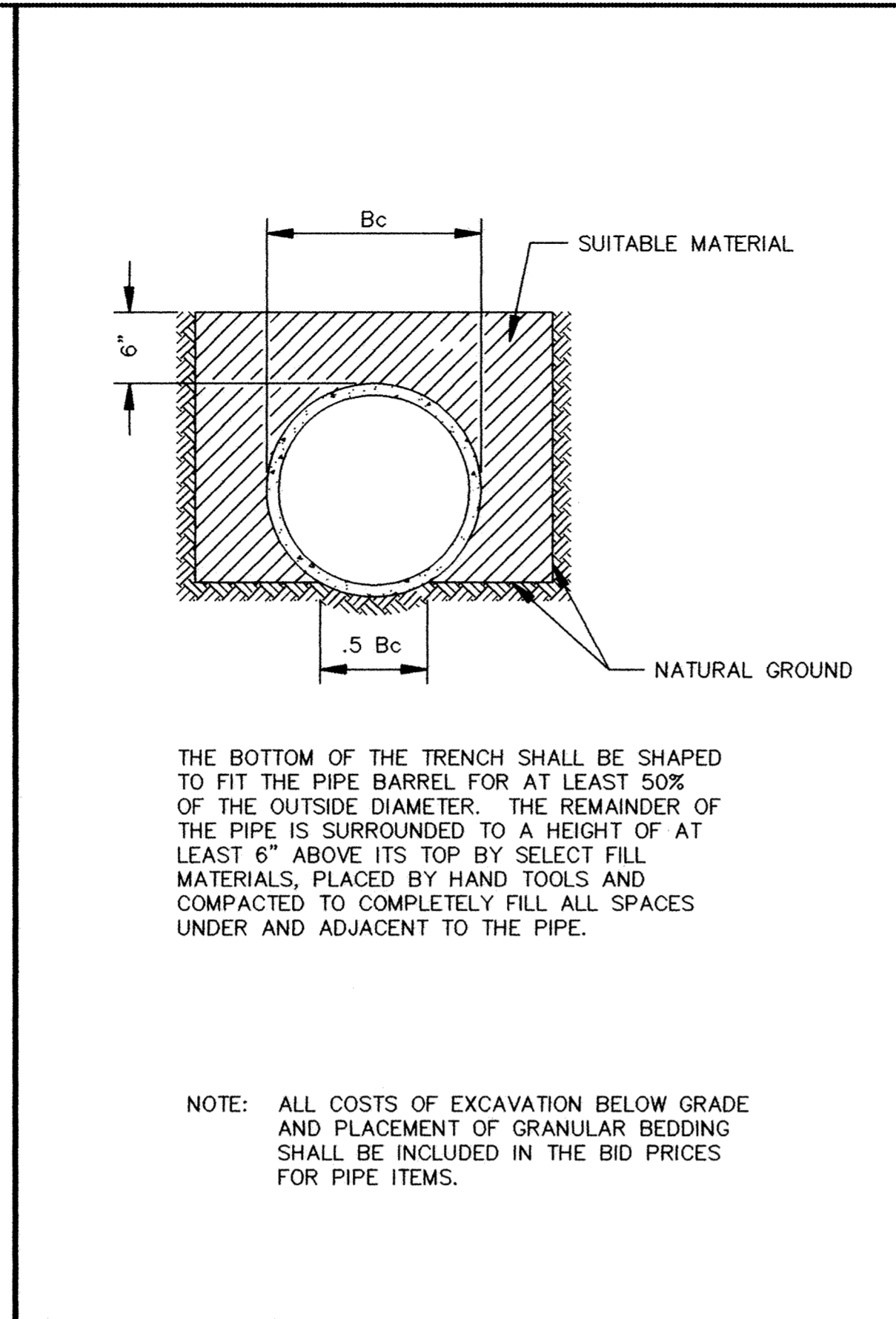
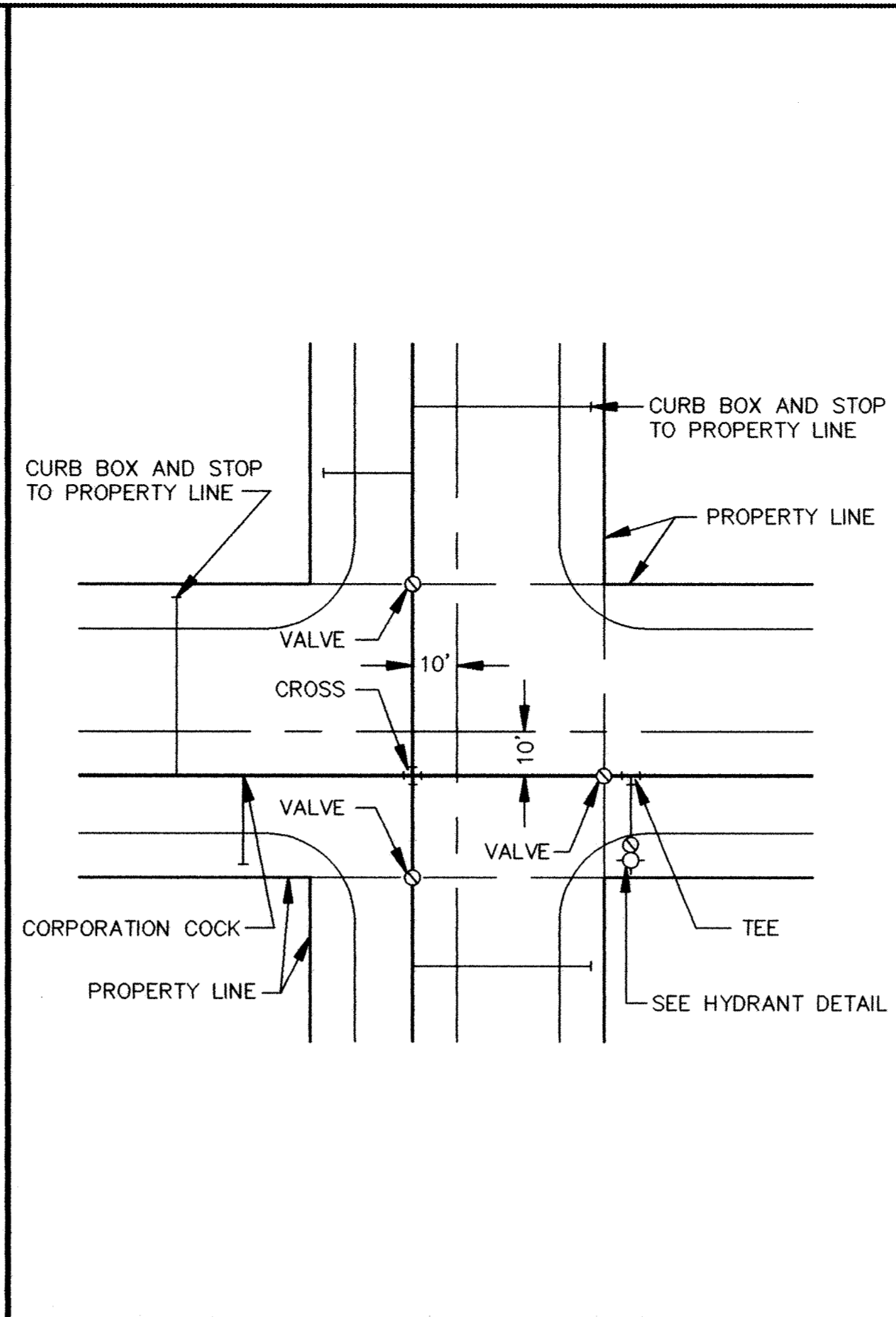
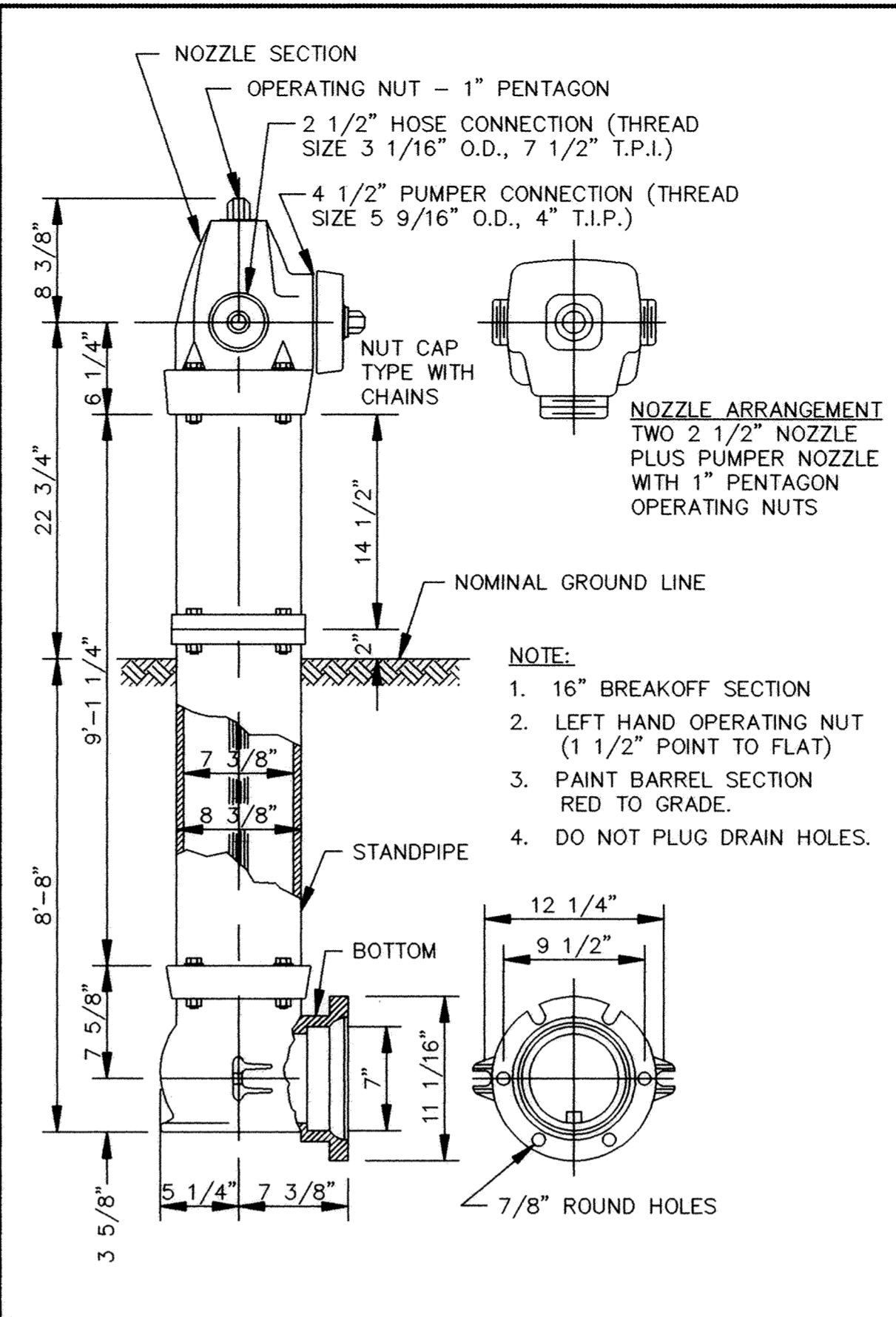
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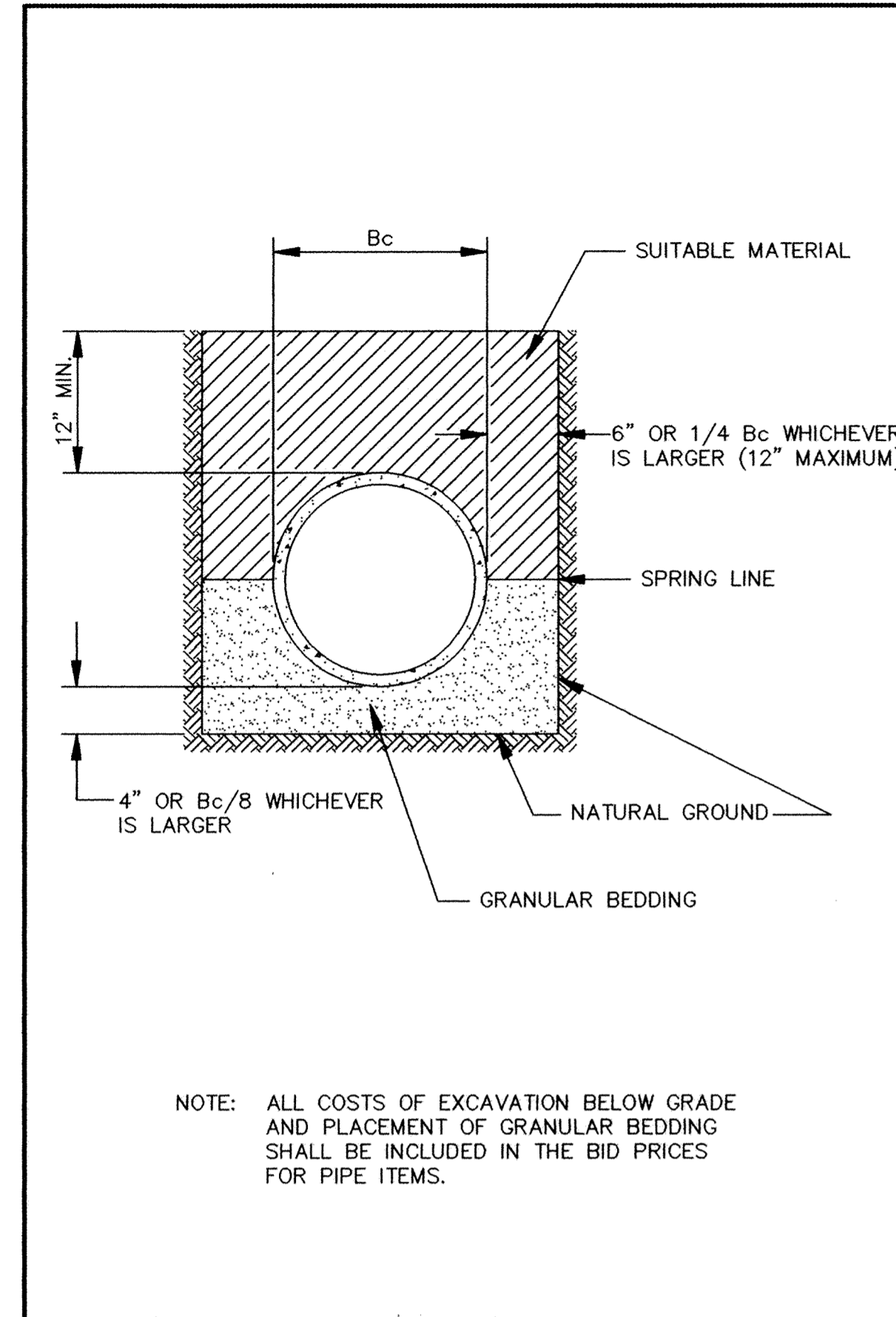


NOMINAL FITTING SIZE (INCHES)	TEE, WYE, PLUG OR CAP	90° BEND, PLUGGED CROSS	TEE PLUGGED ON RUN	45° BEND	22 1/2° BEND	11 1/4° BEND
4	1.0	1.4	1.9	1.4	1.0	---
6	2.1	3.0	4.3	3.0	1.6	1.0
8	3.8	5.3	7.6	5.4	2.9	1.5
10	5.9	8.4	11.8	8.4	4.6	2.6
12	8.5	12.0	17.0	12.0	6.6	3.4
14	11.5	16.3	23.0	16.3	8.9	4.6
16	15.0	21.3	30.0	21.3	11.6	6.0
18	19.0	27.0	38.0	27.0	14.6	7.6
20	23.5	33.3	47.0	33.3	18.1	9.4
24	34.0	48.0	68.0	48.0	26.2	13.6

- NOTE:
1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
 2. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
 3. IF NOT SHOWN ON PLANS, REQUIRED BEARING AREAS AT FITTING SHALL BE AS INDICATED ABOVE, ADJUSTED IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) AND ALLOWABLE SOIL BEARING STRESS(ES).
 4. BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN IN THIS STANDARD DETAIL.
 5. ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 P.S.I. AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION: BEARING AREA = (TEST PRESSURE/150) X (2000/SOIL BEARING STRESS) X (TABLE VALUE).

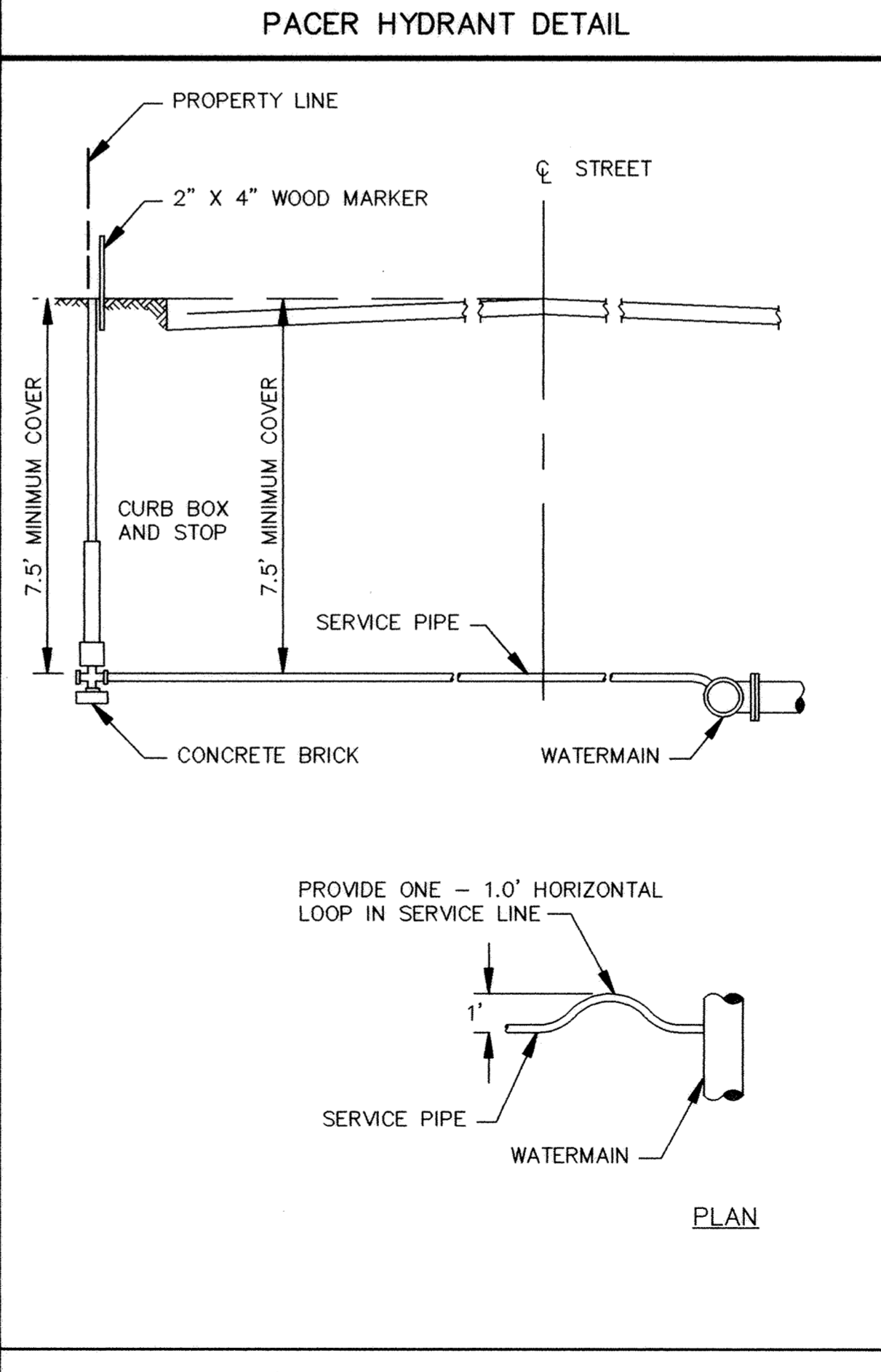


THE BOTTOM OF THE TRENCH SHALL BE SHAPED TO FIT THE PIPE BARREL FOR AT LEAST 50% OF THE OUTSIDE DIAMETER. THE REMAINDER OF THE PIPE IS SURROUNDED TO A HEIGHT OF AT LEAST 6\"/>

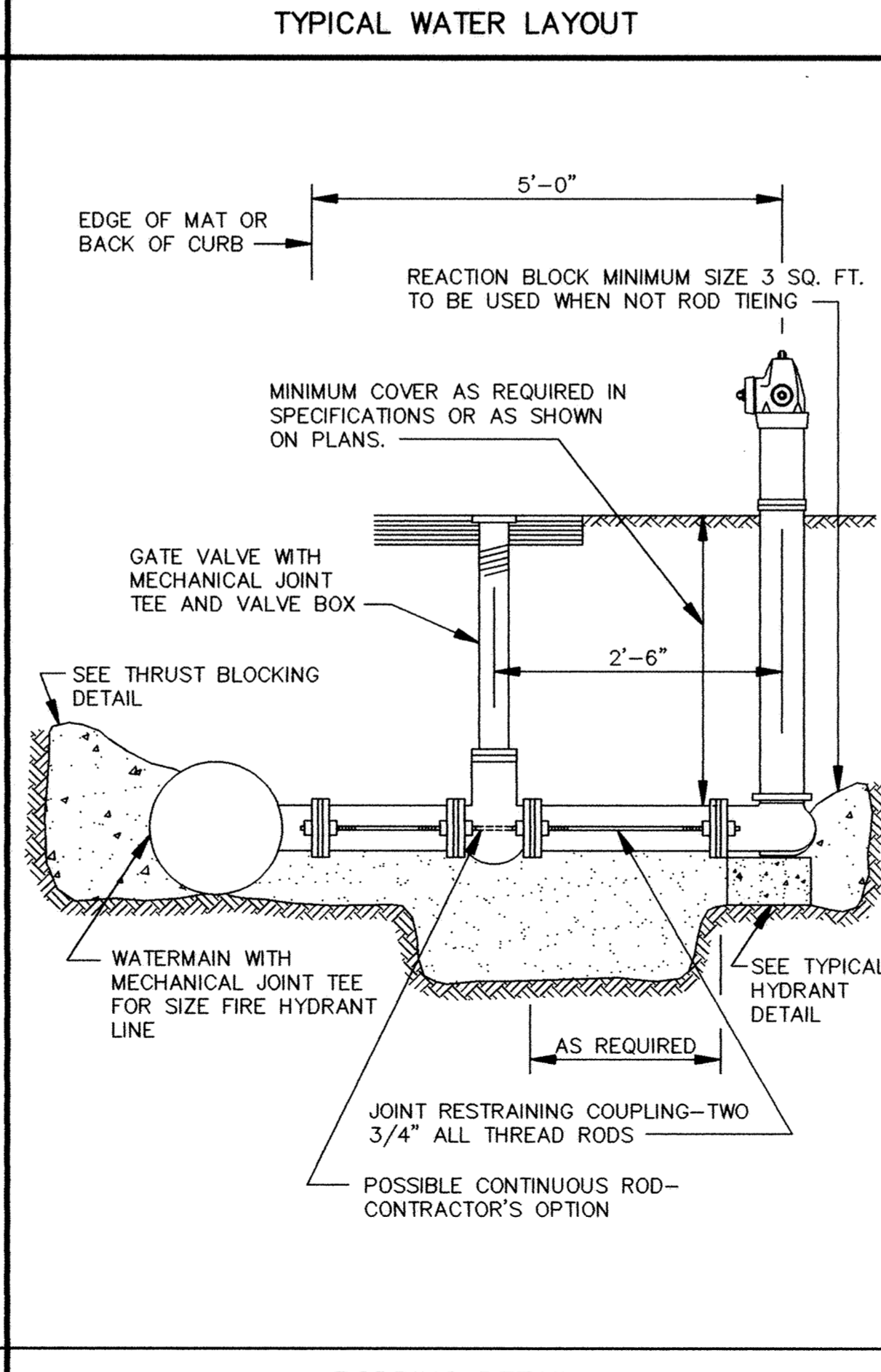


NOTE: ALL COSTS OF EXCAVATION BELOW GRADE AND PLACEMENT OF GRANULAR BEDDING SHALL BE INCLUDED IN THE BID PRICES FOR PIPE ITEMS.

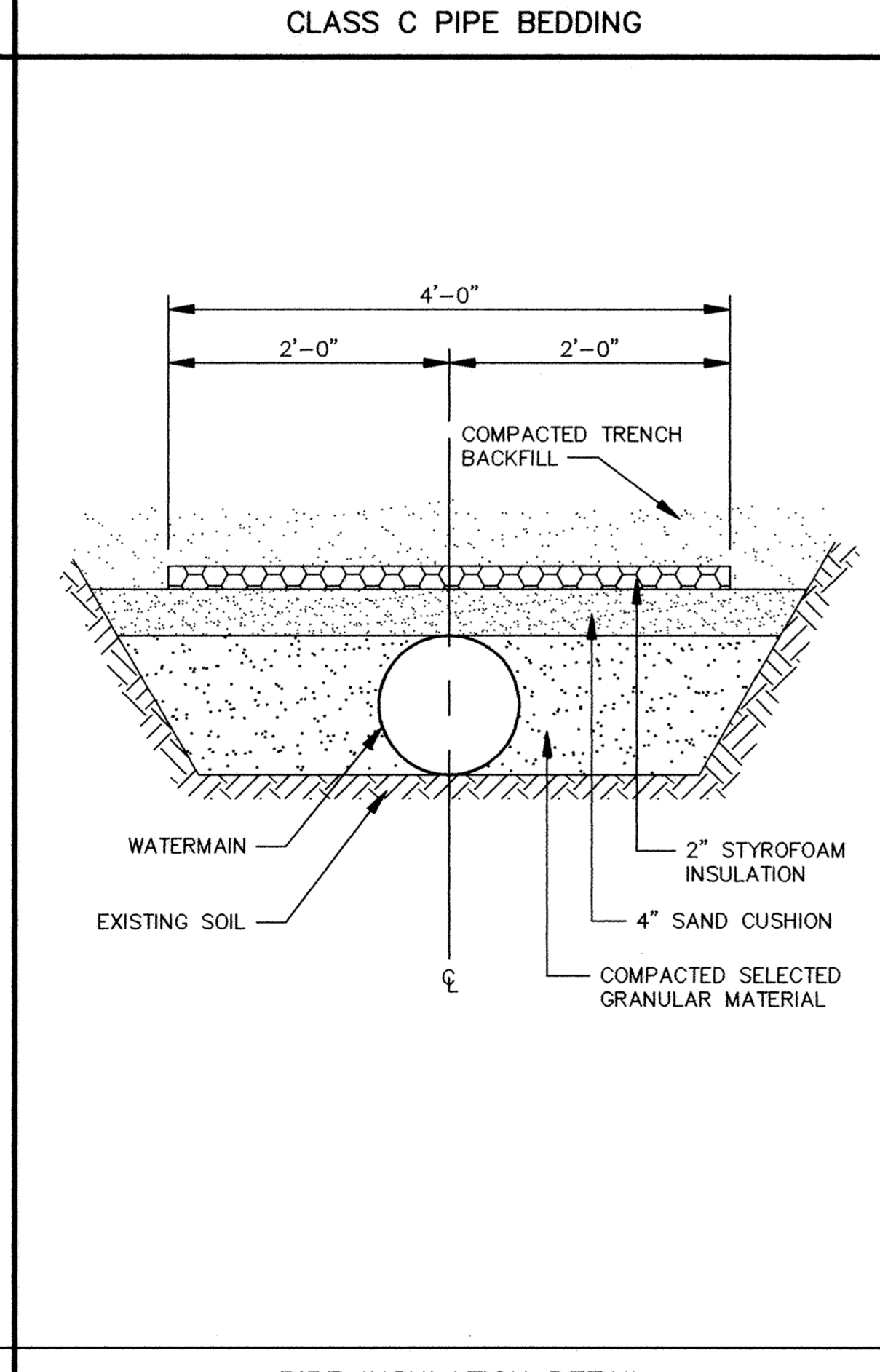
THRUST BLOCKING DETAIL



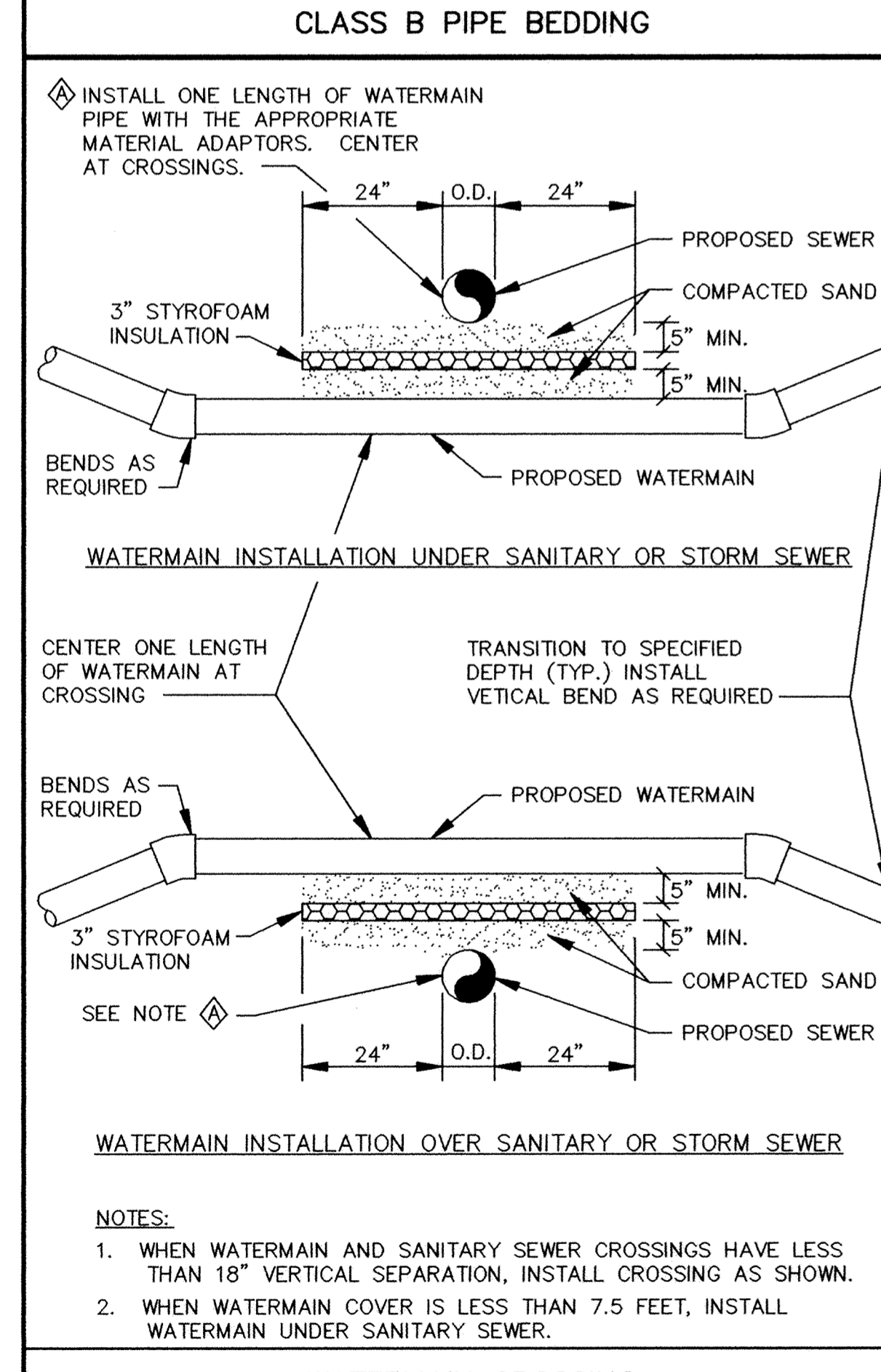
TYPICAL SERVICE DETAIL



RODDING DETAIL



PIPE INSULATION DETAIL



WATERMAIN CROSSING

RECORD PLAN
JUNE 1994

CITY OF ELK RIVER
MEADOWVALE HEIGHTS—TRUNK UTILITY EXTENSION
WATERMAIN DETAILS

DATE AUGUST 1993 SHEET 11 OF 12 SHEETS PROJECT NO. 230-171

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Maier Stewart & Associates Inc.
1959 SLOAN PLACE (612) 774-6021 ST. PAUL, MINNESOTA 55117
9800 SHELARD PARKWAY (612) 546-0432 MINNEAPOLIS, MINNESOTA 55441

DATE 8/13/93 REG. NO. 19130

REVISIONS	DATE	DESCRIPTION	DESIGNED	CHECKED	DRAWN

GRAPHIC SCALE
0 HORIZ.
0 VERT.