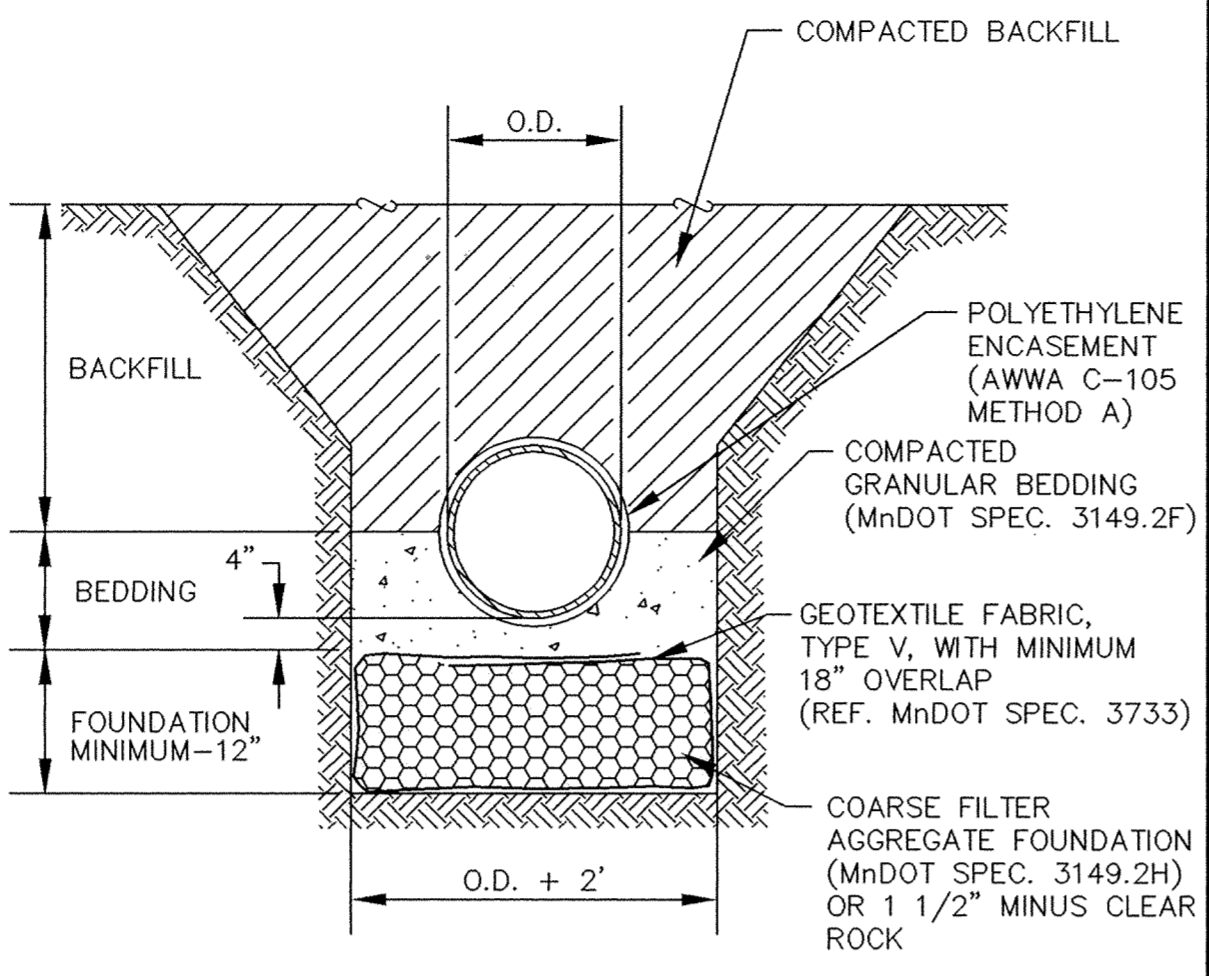


PIPE FOUNDATION AND BEDDING

ALL BACKFILL AND BEDDING OF TRENCHES SHALL BE UNIFORMLY COMPACTED TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY TO TOP OF SUBGRADE. TESTS SHALL BE TAKEN AT 500' INTERVALS OR AS DIRECTED BY THE ENGINEER.

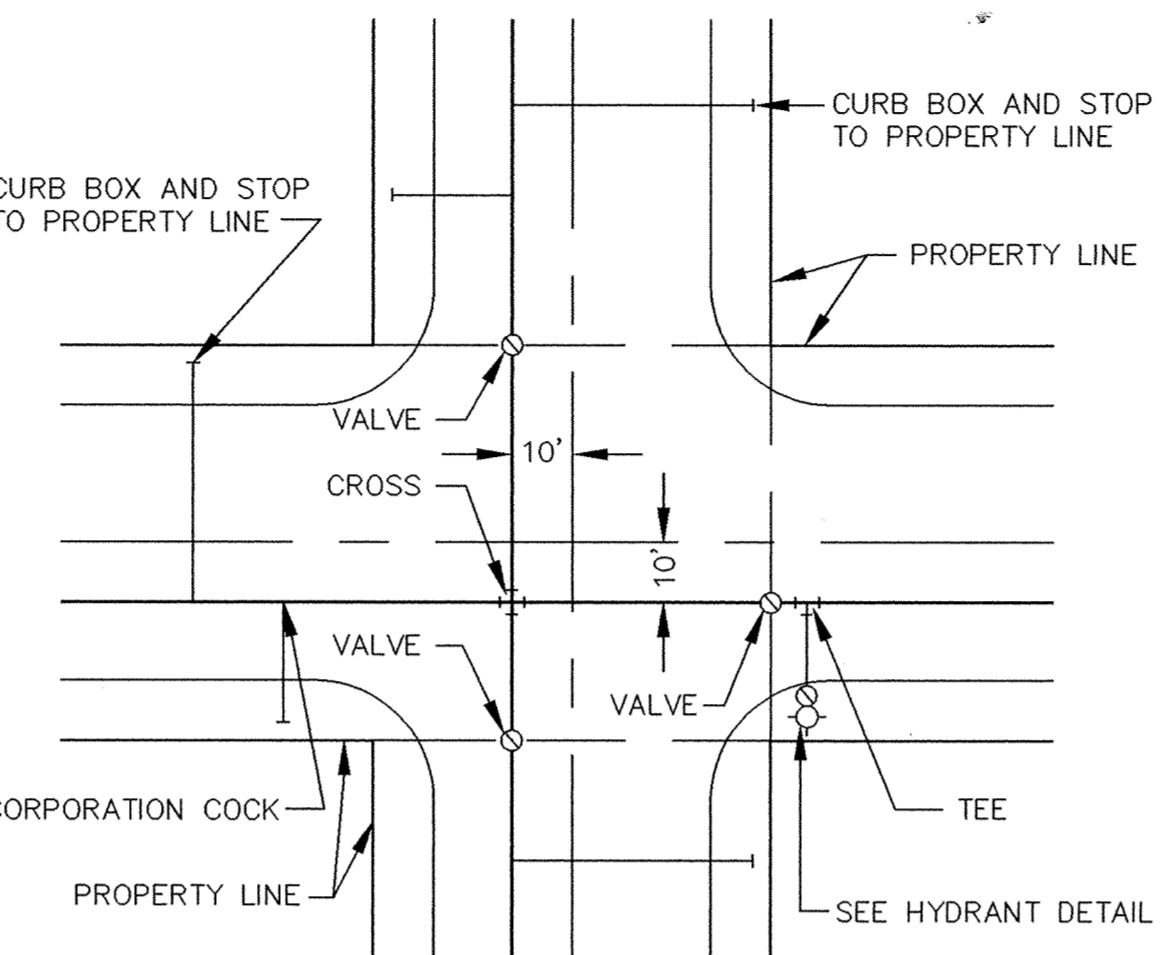
ALL EXCAVATIONS MUST COMPLY WITH THE REQUIREMENTS OF OSHA 29 CFR, PART 1926, SUBPART P, "EXCAVATION AND TRENCHES."



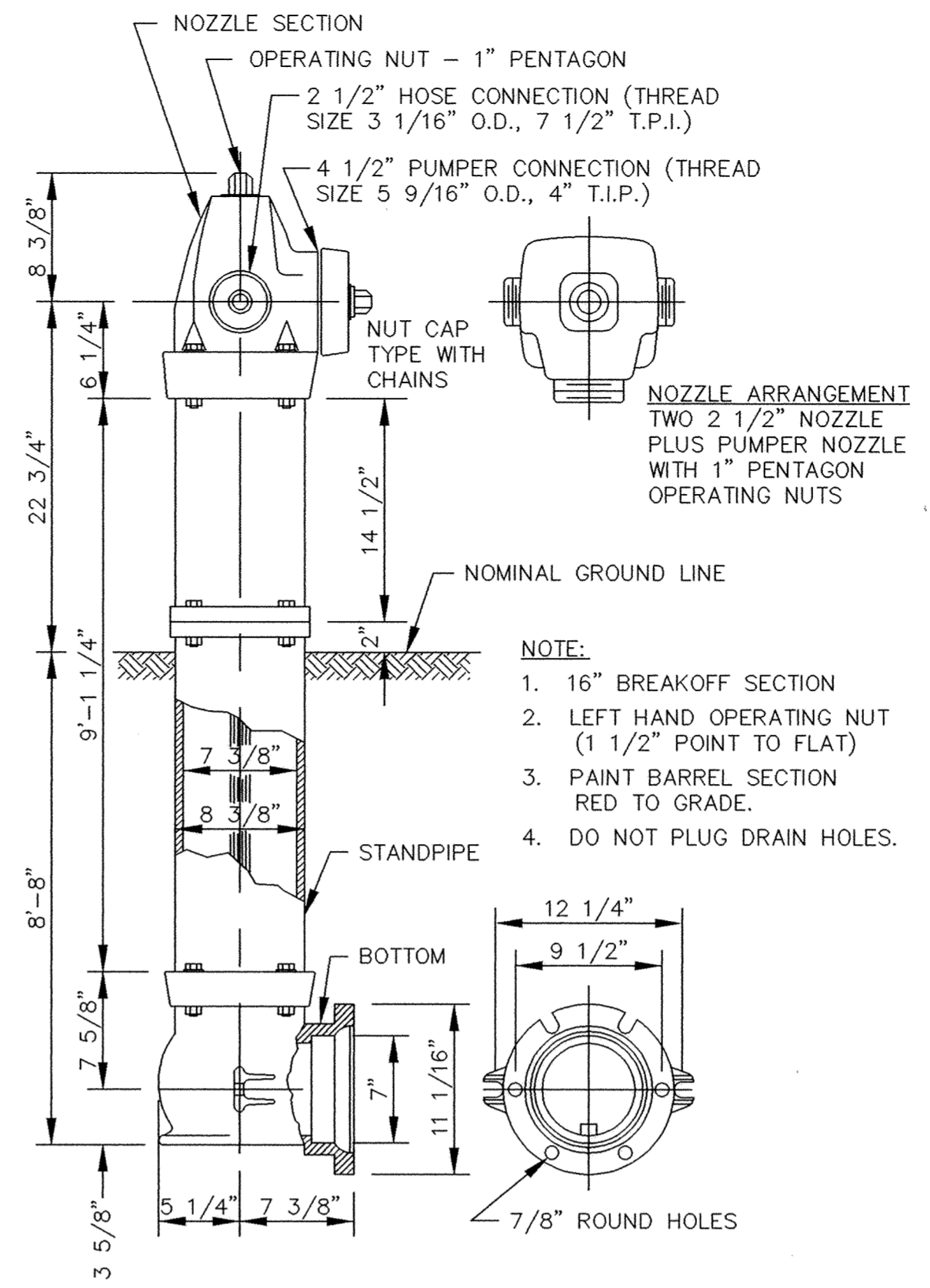
PIPE FOUNDATION AND BEDDING IN POOR SOILS

ALL BACKFILL AND BEDDING OF TRENCHES SHALL BE UNIFORMLY COMPACTED TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY TO TOP OF SUBGRADE. TESTS SHALL BE TAKEN AT 500' INTERVALS OR AS DIRECTED BY THE ENGINEER.

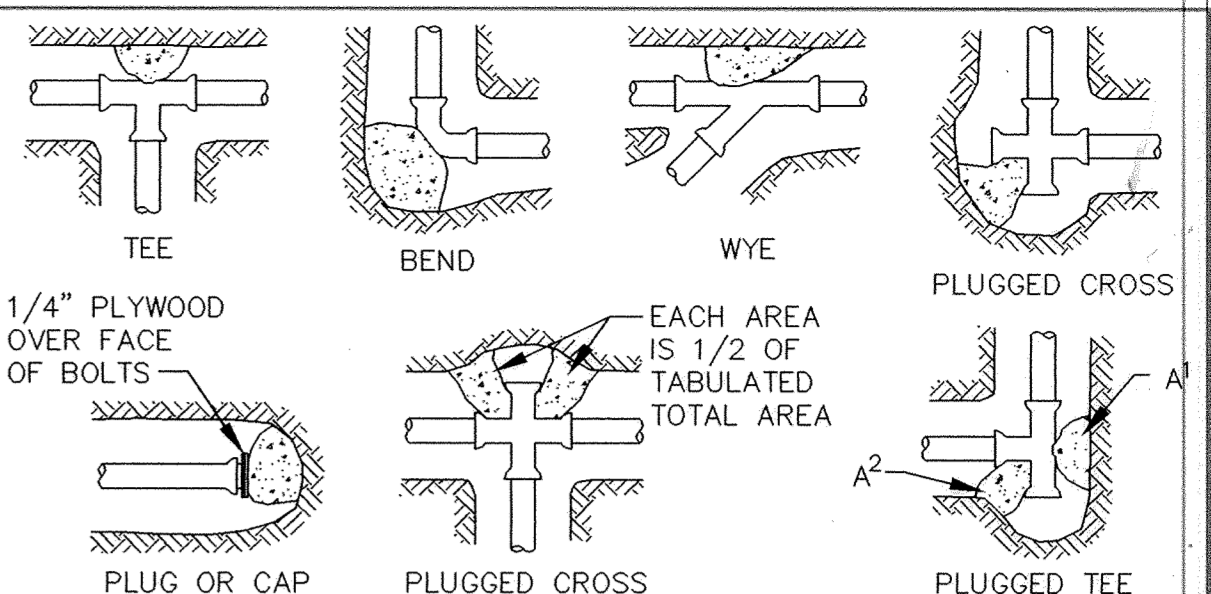
ALL EXCAVATIONS MUST COMPLY WITH THE REQUIREMENTS OF OSHA 29 CFR, PART 1926, SUBPART P, "EXCAVATION AND TRENCHES."



TYPICAL WATER LAYOUT



PACER HYDRANT DETAIL



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
			A <sup>1</sup>	A <sup>2</sup>			
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	1.0
10	5.9	8.4	11.8	8.4	4.6	2.6	1.2
12	8.5	12.0	17.0	12.0	6.6	3.4	1.7
14	11.5	16.3	23.0	16.3	8.9	4.6	2.3
16	15.0	21.3	30.0	21.3	11.6	6.0	3.0
18	19.0	27.0	38.0	27.0	14.6	7.6	3.8
20	23.5	33.3	47.0	33.3	18.1	9.4	4.7
24	34.0	48.0	68.0	48.0	26.2	13.6	6.8

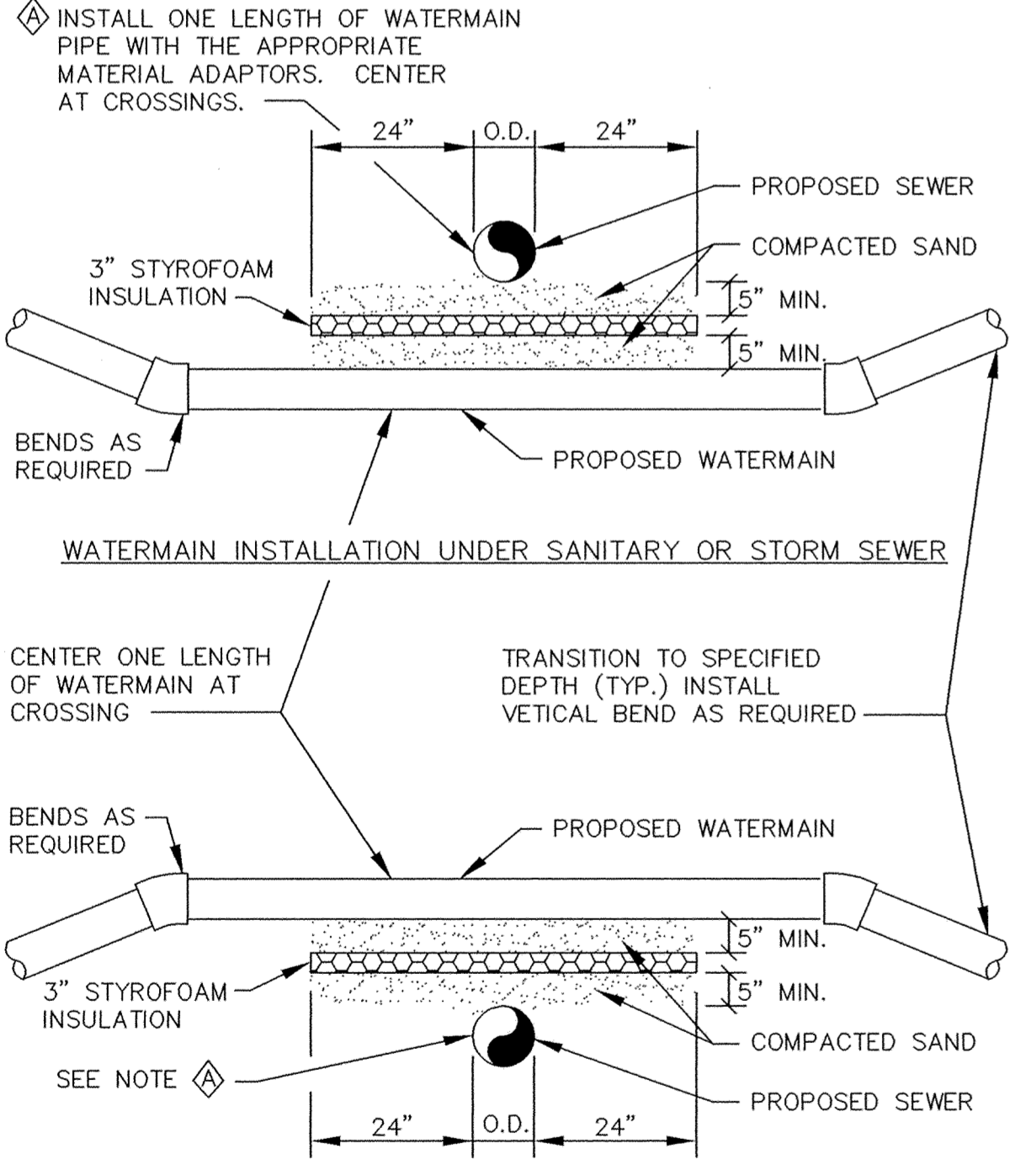
NOTE:

- 16" BREAKOFF SECTION
- LEFT HAND OPERATING NUT (1 1/2" POINT TO FLAT)
- PAINT BARREL SECTION RED TO GRADE.
- DO NOT PLUG DRAIN HOLES.

NOTE:

- CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
- KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
- 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).
- BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN IN THIS STANDARD DETAIL.
- 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).

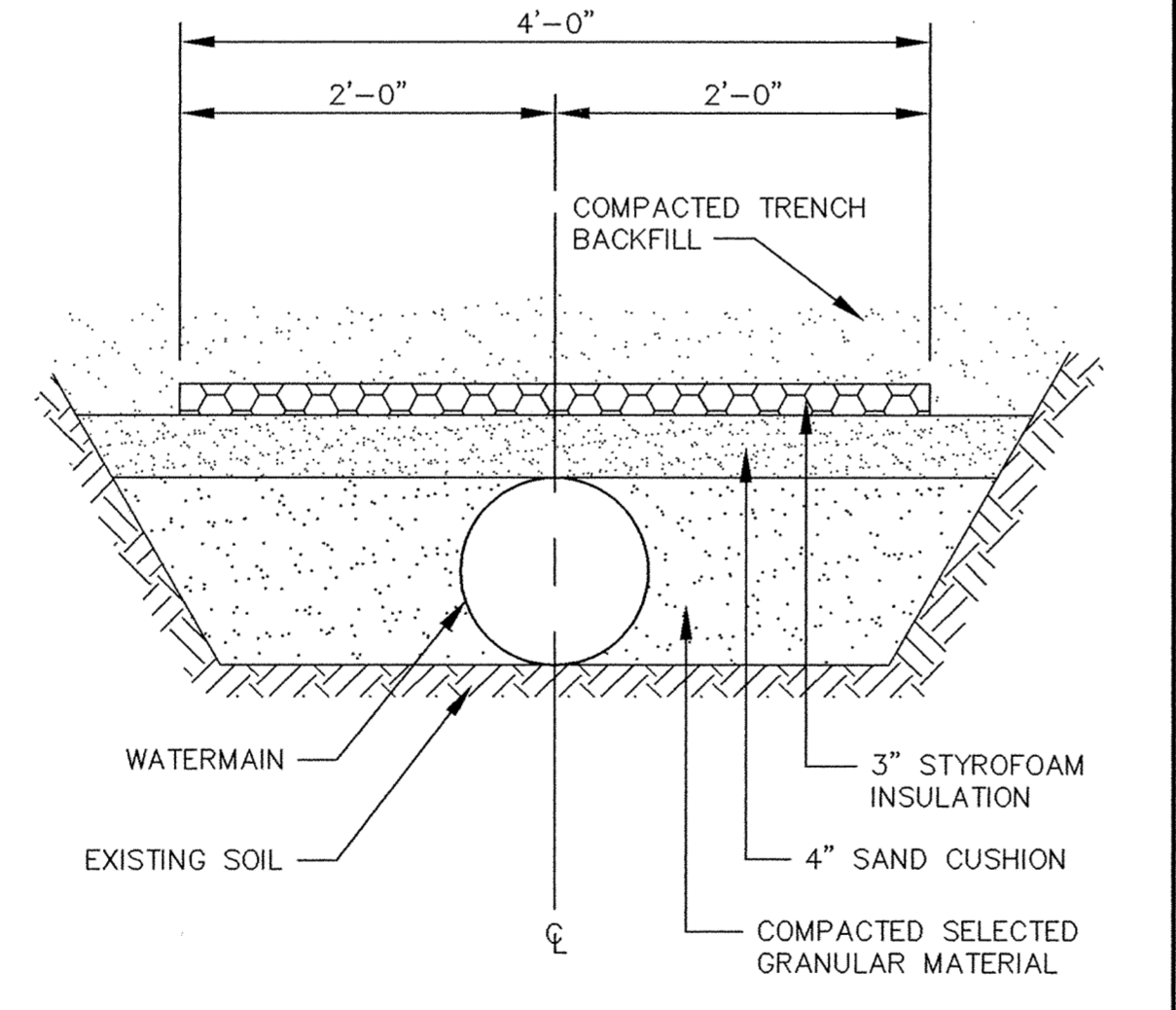
THRUST BLOCKING DETAIL



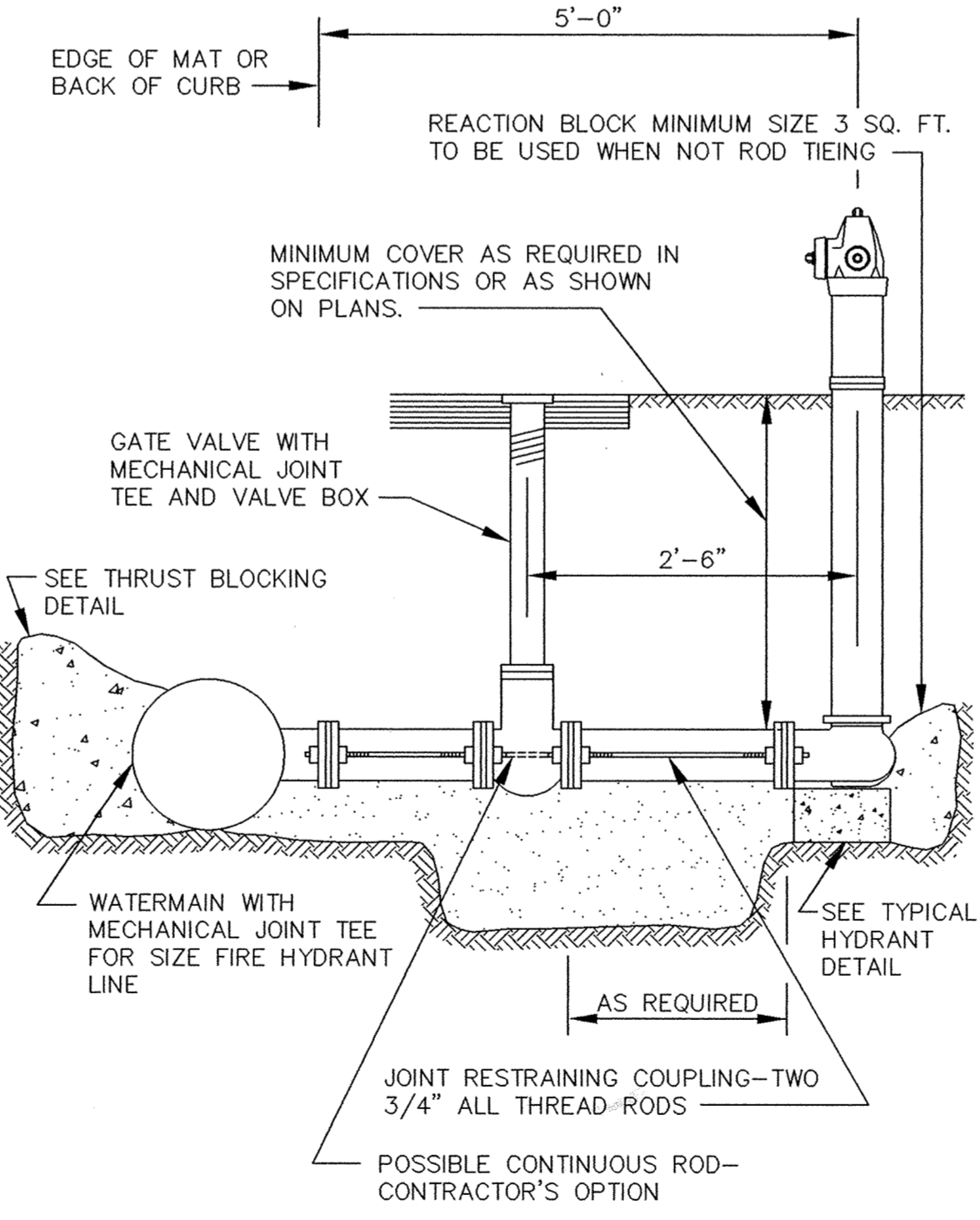
WATERMAIN CROSSING

NOTES:

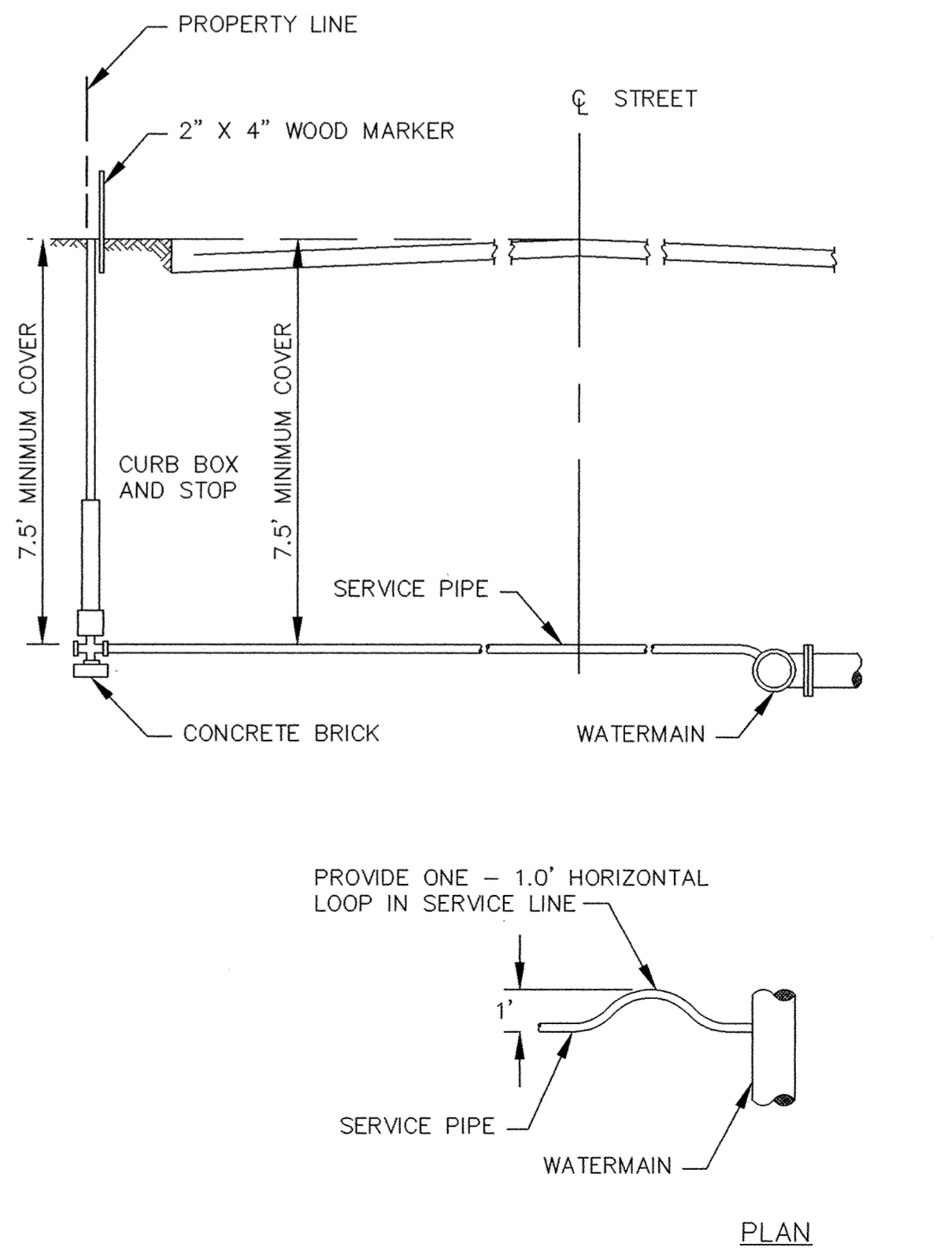
- WHEN WATERMAIN AND SANITARY SEWER CROSSINGS HAVE LESS THAN 18" VERTICAL SEPARATION, INSTALL CROSSING AS SHOWN.
- WHEN WATERMAIN COVER IS LESS THAN 7.5 FEET, INSTALL WATERMAIN UNDER SANITARY SEWER.



PIPE INSULATION DETAIL



RODDING DETAIL



TYPICAL SERVICE DETAIL

RECORD PLAN 1995

CITY OF ELK RIVER  
SCHOOL STREET, JACKSON AVENUE, FREEPORT AVENUE,  
TURN LANES, U.S. HWY NO. 10 AND U.S. HWY NO. 169  
WATERMAIN DETAILS

DATE APRIL 1994 SHEET 72 OF 74 SHEETS PROJECT NO. 230-217

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.

*Paul Bruch*  
DATE 4-29-94 REG. NO. 12929



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(612) 644-4389

9800 SHELARD PARKWAY  
MINNEAPOLIS, MINNESOTA 55441  
(612) 546-0432

DATE	DESCRIPTION	DESIGNED	CHECKED	DRAWN

GRAPHIC SCALE  
0 HORIZ. N/A  
0 VERT.