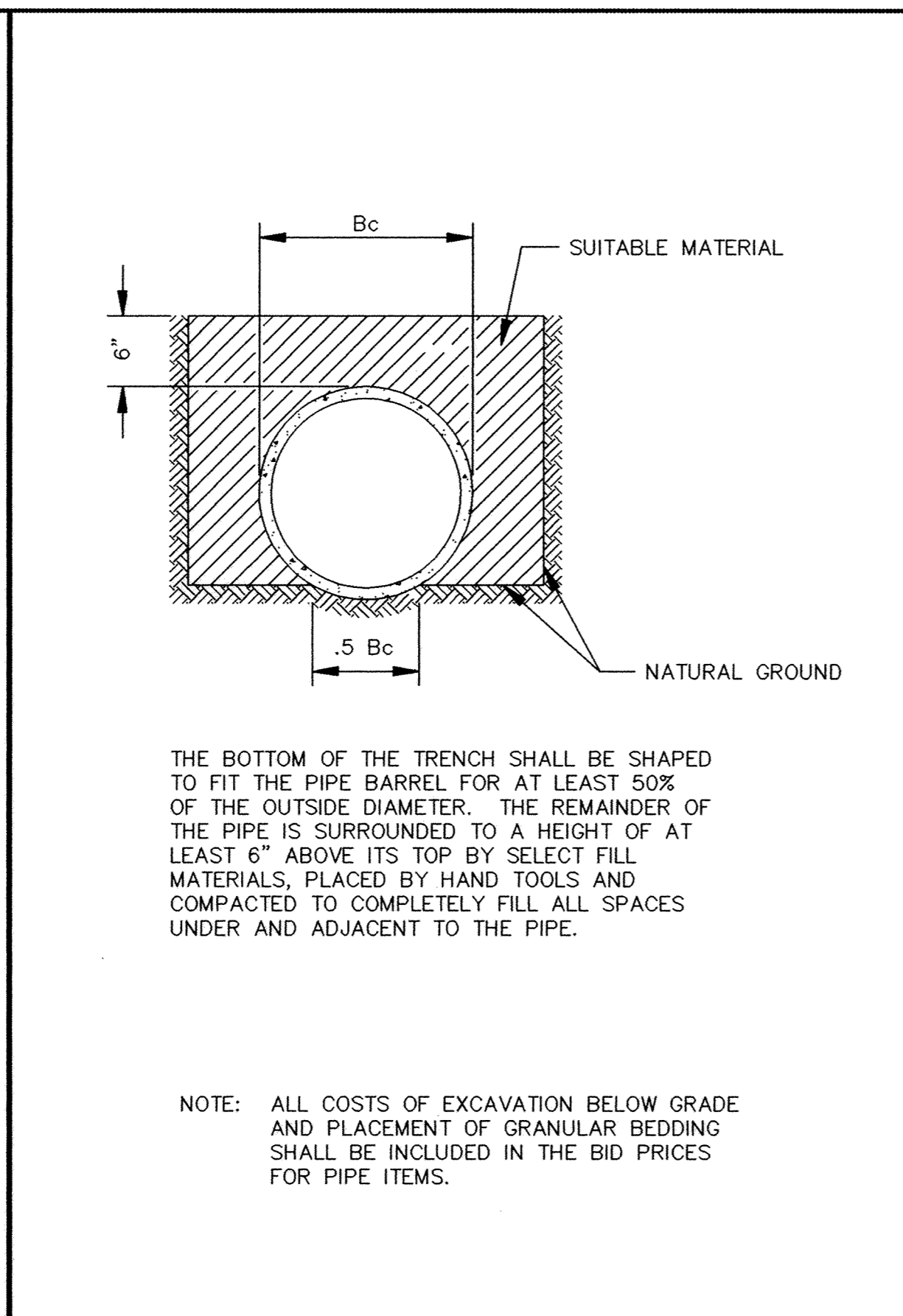
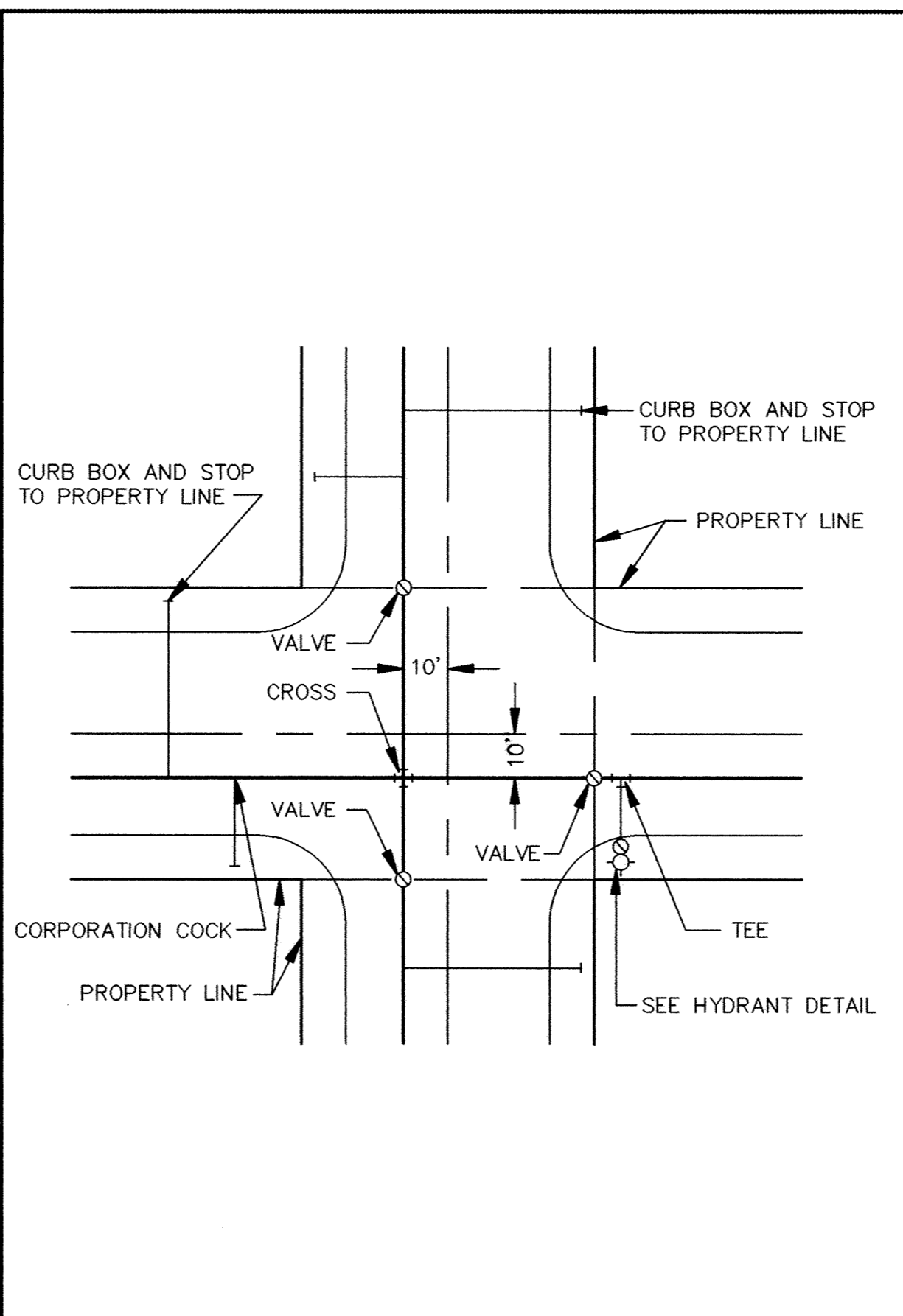


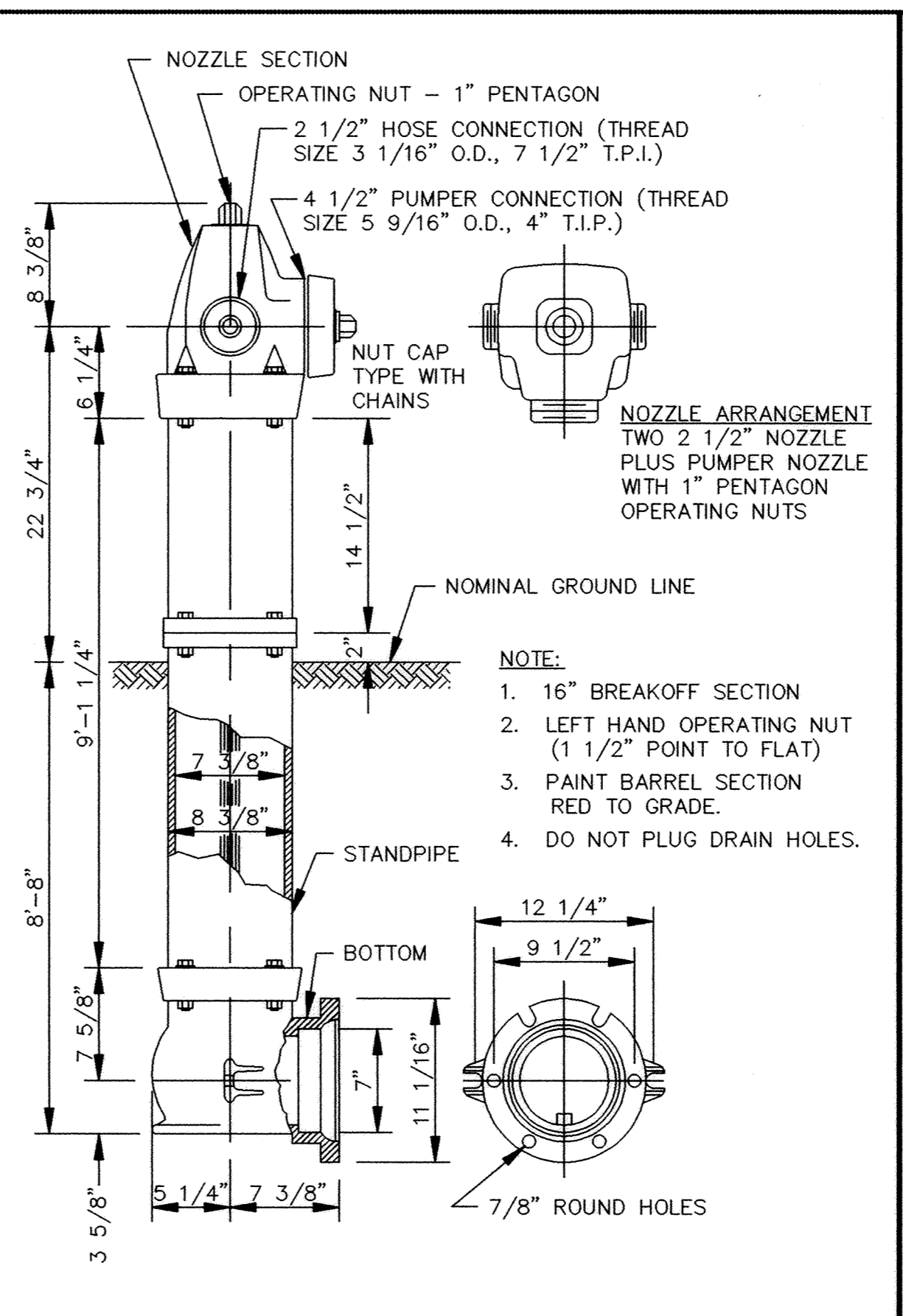
CLASS B PIPE BEDDING



CLASS C PIPE BEDDING



TYPICAL WATER LAYOUT

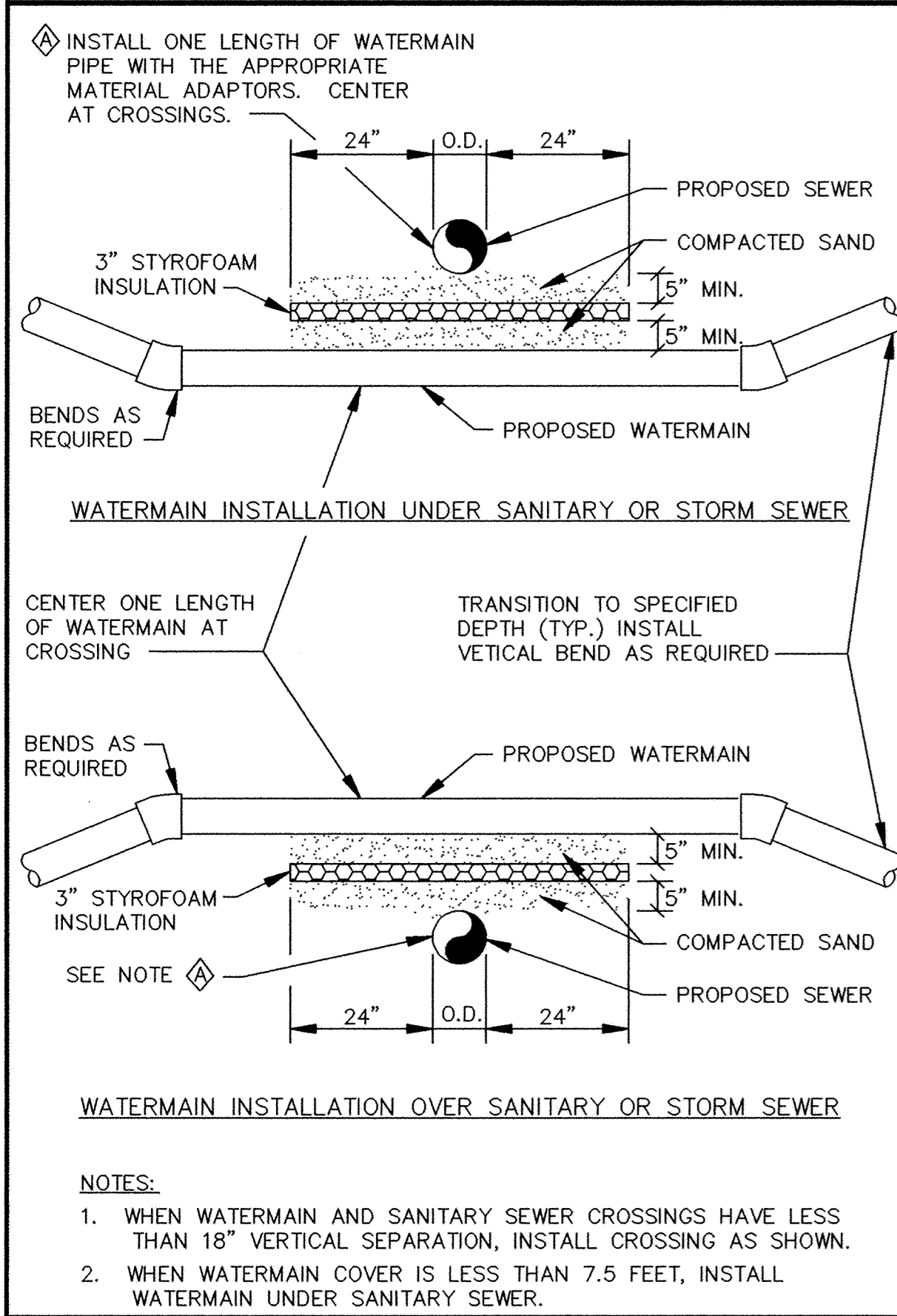


PACER HYDRANT DETAIL

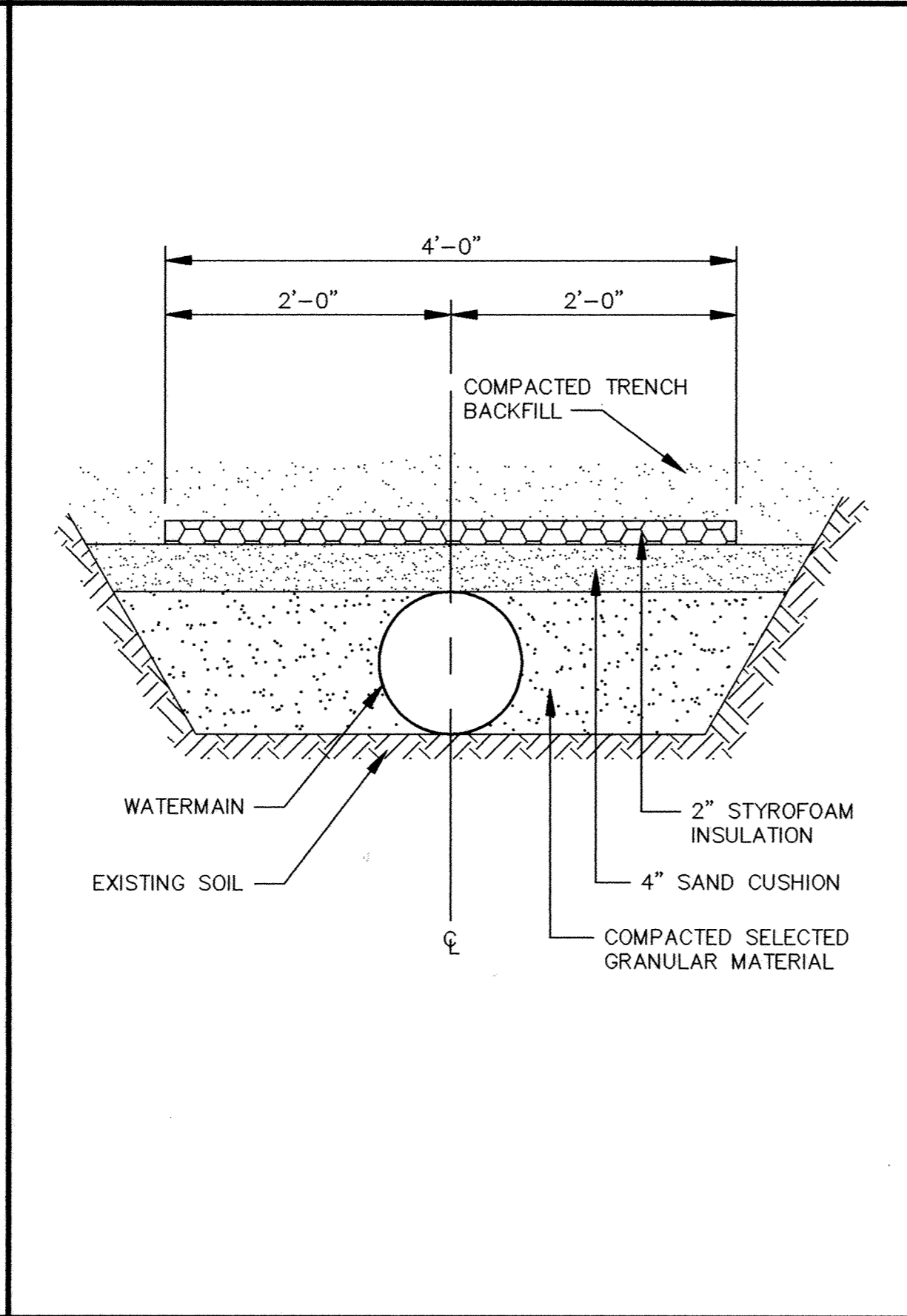
NOMINAL FITTING SIZE (INCHES)	TEE, WYE, PLUG OR CAP	90° BEND, PLUGGED CROSS	TEE PLUGGED ON RUN	45° BEND	22 1/2° BEND	11 1/4° BEND
4	1.0	1.4	1.9 1.4	1.0	---	---
6	2.1	3.0	4.3 3.0	1.6	1.0	---
8	3.8	5.3	7.6 5.4	2.9	1.5	1.0
10	5.9	8.4	11.8 8.4	4.6	2.6	1.2
12	8.5	12.0	17.0 12.0	6.6	3.4	1.7
14	11.5	16.3	23.0 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:  
 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).

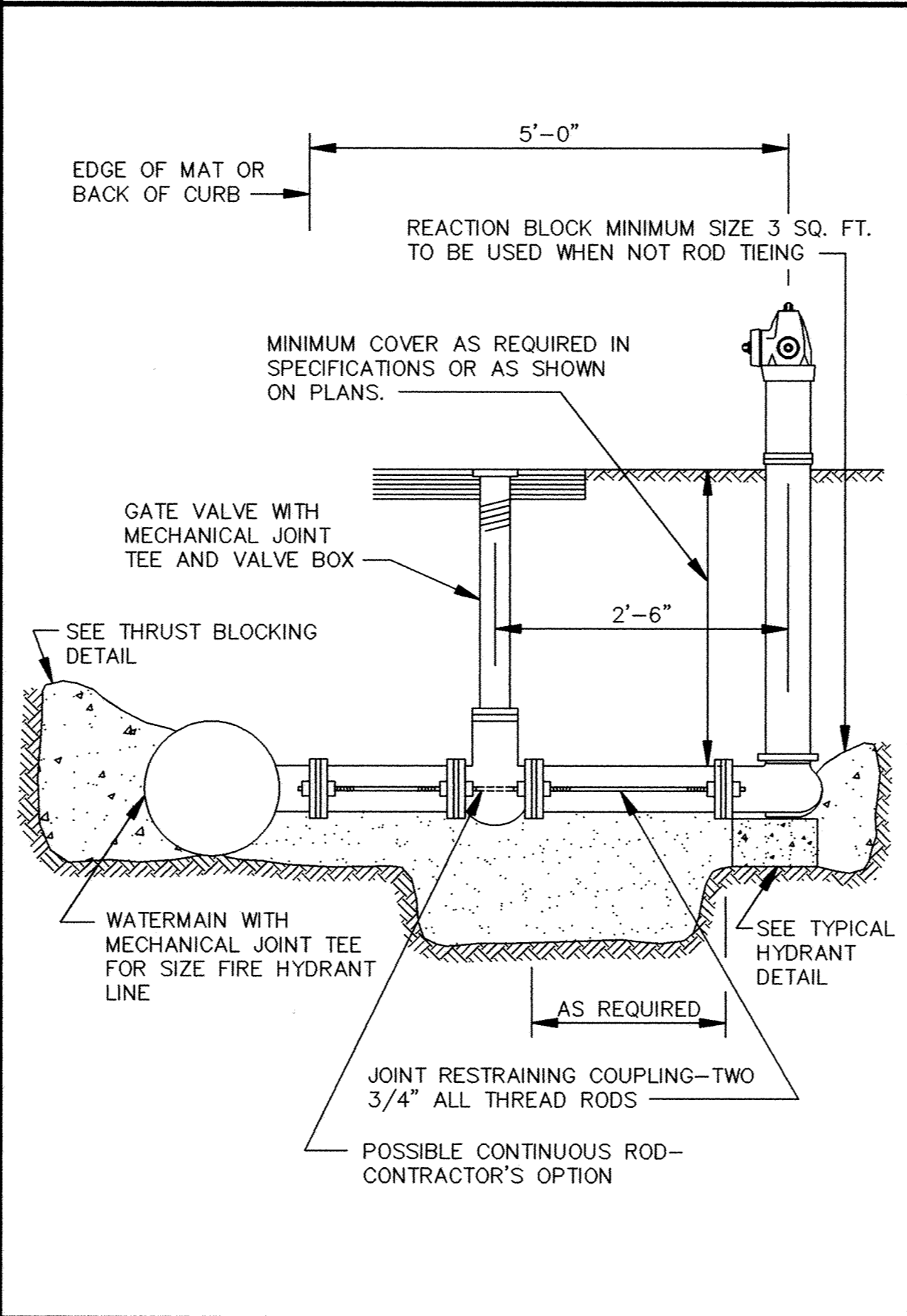
THRUST BLOCKING DETAIL



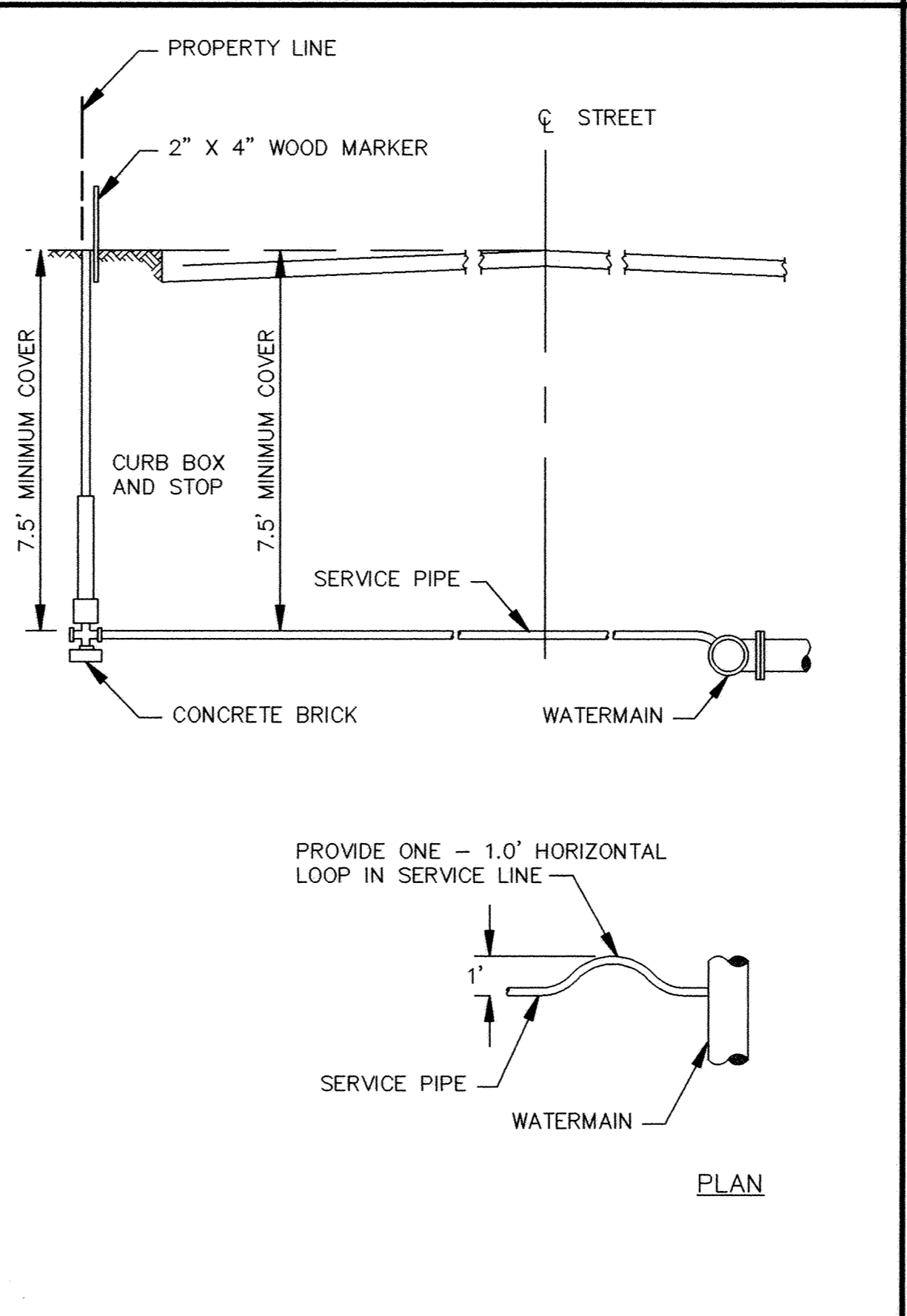
WATERMAIN CROSSING



PIPE INSULATION DETAIL



RODDING DETAIL



TYPICAL SERVICE DETAIL

**RECORD PLAN**  
AUGUST 1994

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.

*Luigi Maier*  
 DATE 10/8/93 REG. NO. 15316

**Maier Stewart & Associates Inc.**  
 CONSULTING ENGINEERS

1326 ENERGY PARK DRIVE (612) 644-4389 ST. PAUL, MINNESOTA 55108  
 9800 SHELARD PARKWAY (612) 546-0432 MINNEAPOLIS, MINNESOTA 55441

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**CITY OF ELK RIVER**  
**STORMWATER SYSTEM IMPROVEMENTS**  
**WATERMAIN DETAILS**

DATE OCT. 1993 SHEET 5 OF 7 SHEETS PROJECT NO. 230-195

DRAWING NUMBER DEERF3 94 5

SAICO PRODUCTS - A NEW HOPE, MINNESOTA  
 REPRODUCED BY SAICO NUMBER 00000