

SAICO PRODUCTS • NEW HOPE, MINNESOTA
 REVISION BY PART NUMBER 6552

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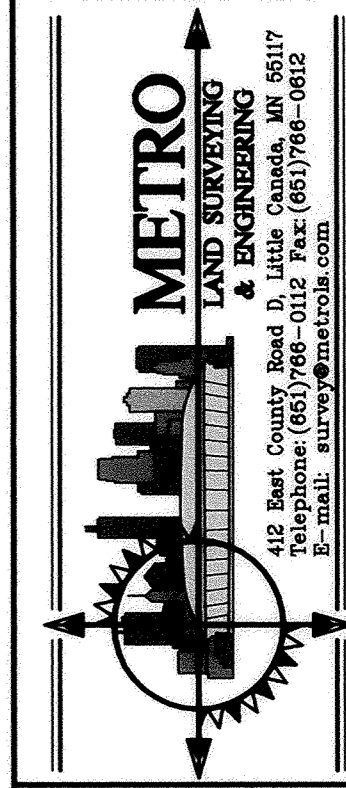
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DATE 5/12/03
 SCALE NA
 PROJECT R0101.001
 CHECKED
 APPROVED

WATERMAIN DETAILS
HILLSIDE ESTATES 9TH ADDITION

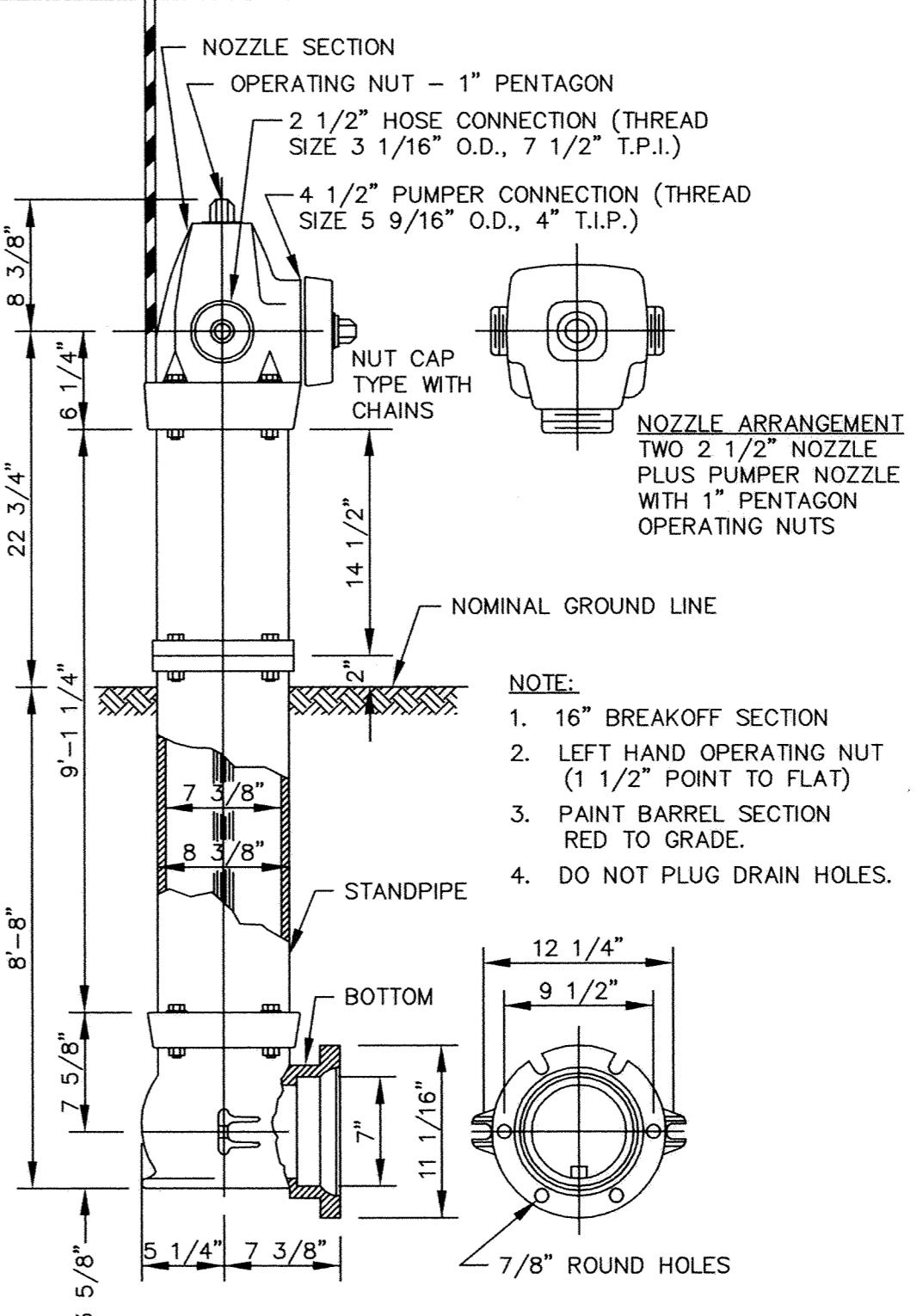
OWNER/DEVELOPER
RIVERSIDE COMPANES
 19230 EVANS STREET, SUITE 115
 ELK RIVER, MINNESOTA
 PHONE: 763-241-1801



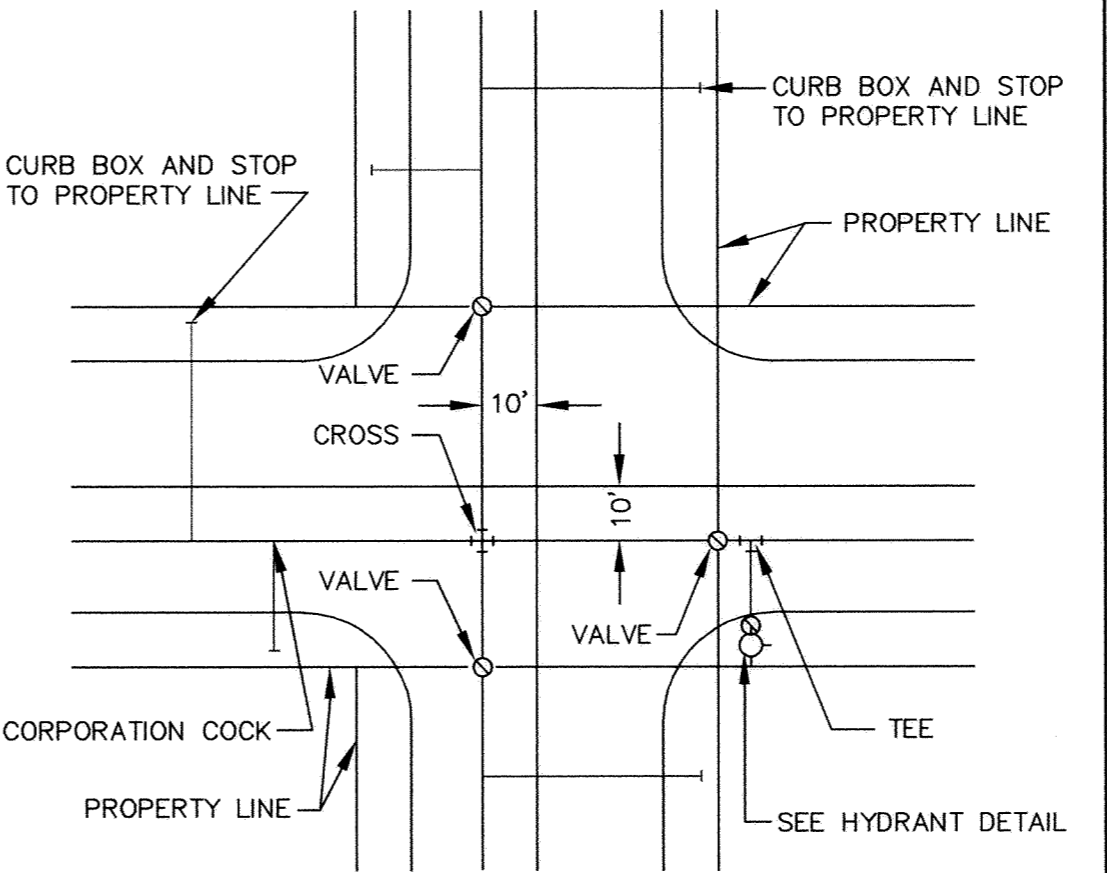
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 JOYCE L. JOHNSON
 DATE 3/21/05 LICENSE NO. 11546

DATE	REVISIONS	BY
6/23/03	PER CITY REVIEW	PK

D2

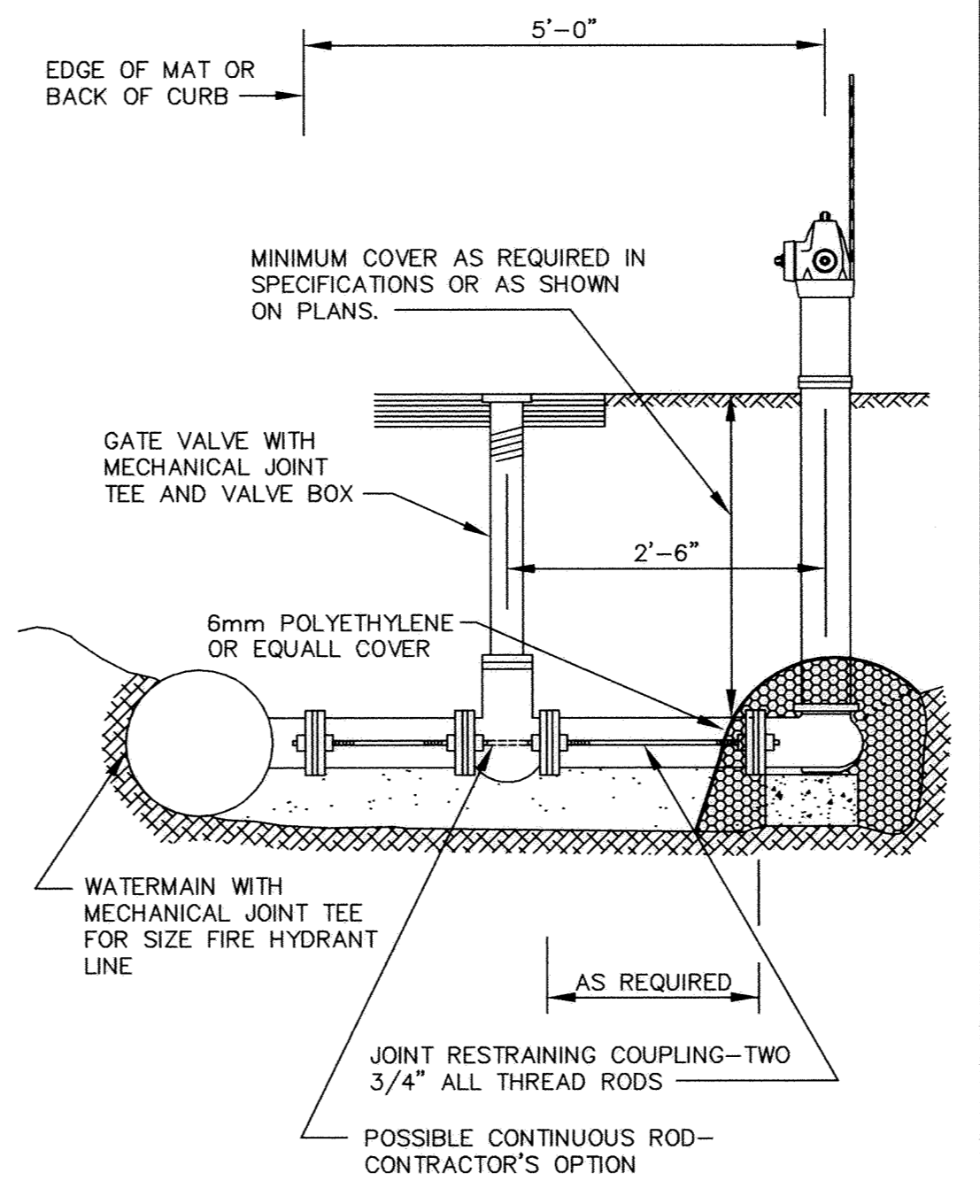


NOTE: HYDRANT LOCATING DEVICES REQUIRED - F. & I. "HYDRAFINDER" AS MANUFACTURED BY RODON CORPORATION (OR APPROVED EQUAL). LENGTH = 5FT., W/FLAT STEEL MOUNTING BRACKET AND THE "MIL SPEC" SPRING MOUNT. INCIDENTAL TO HYDRANT INSTALLATION.

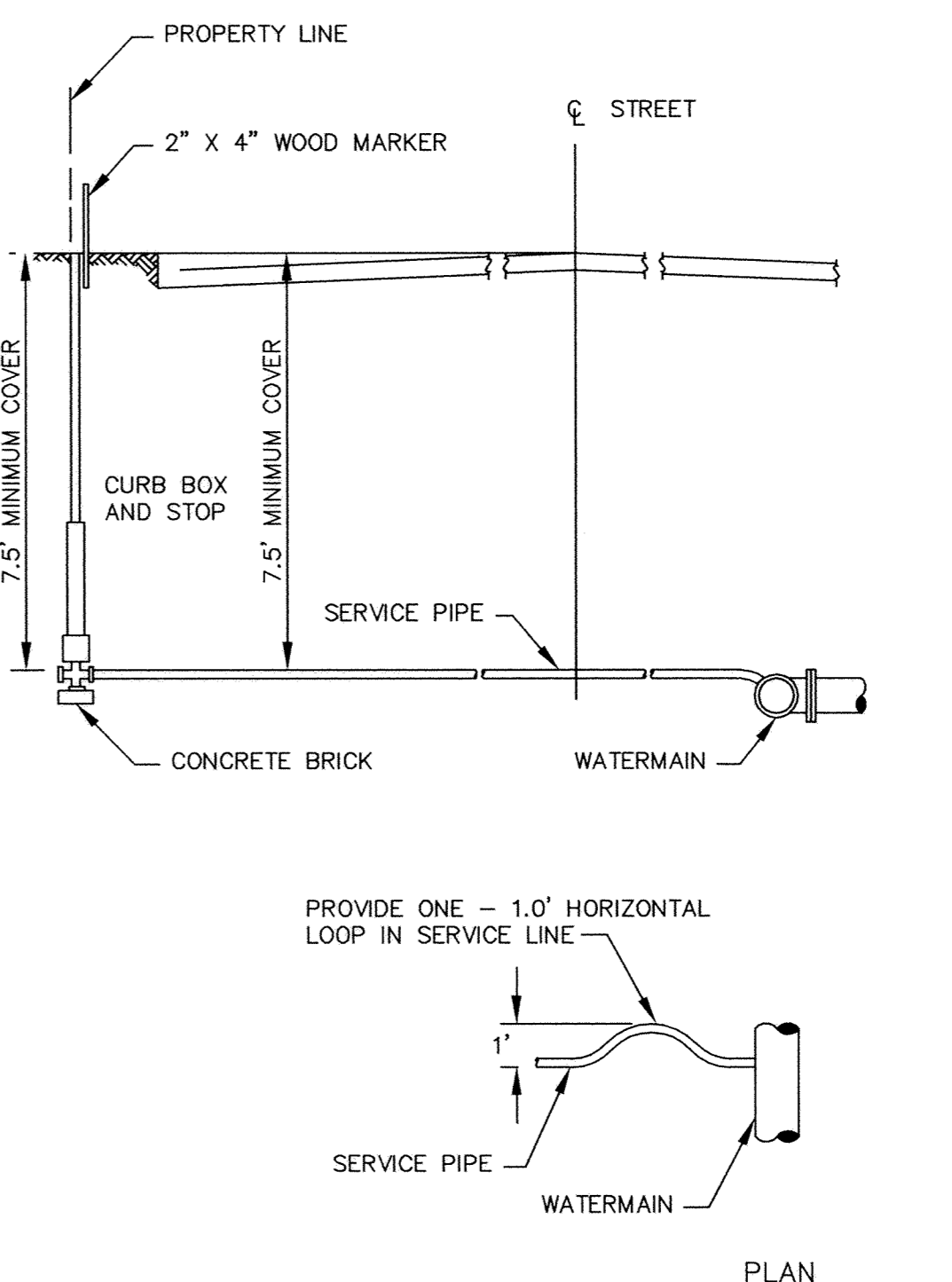


TYPICAL WATER LAYOUT

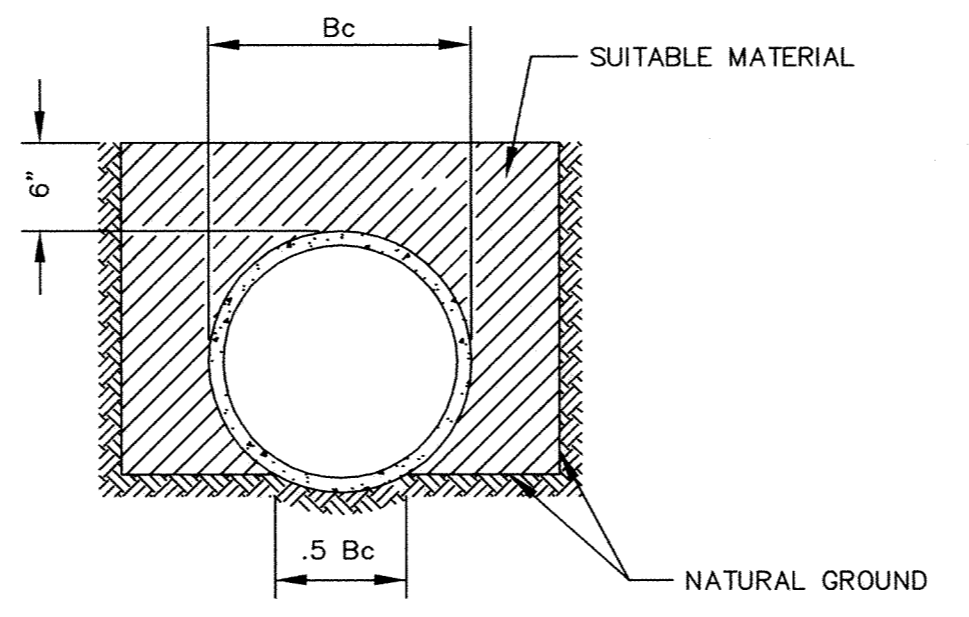
PACER HYDRANT DETAIL



NOTE: HYDRANT LEADS SHALL BE RODDED FROM MAIN LINE TO HYDRANT UNLESS SPECIFIED OTHERWISE.



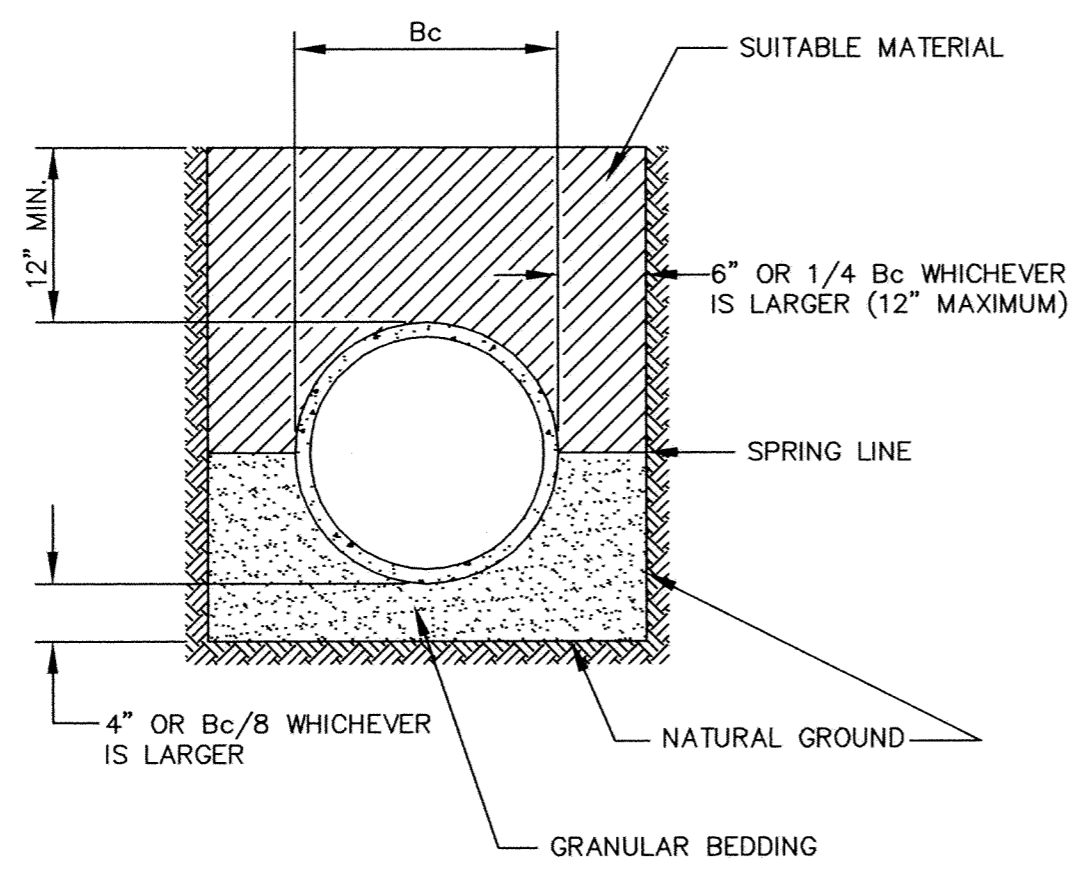
TYPICAL SERVICE DETAIL



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\"/>

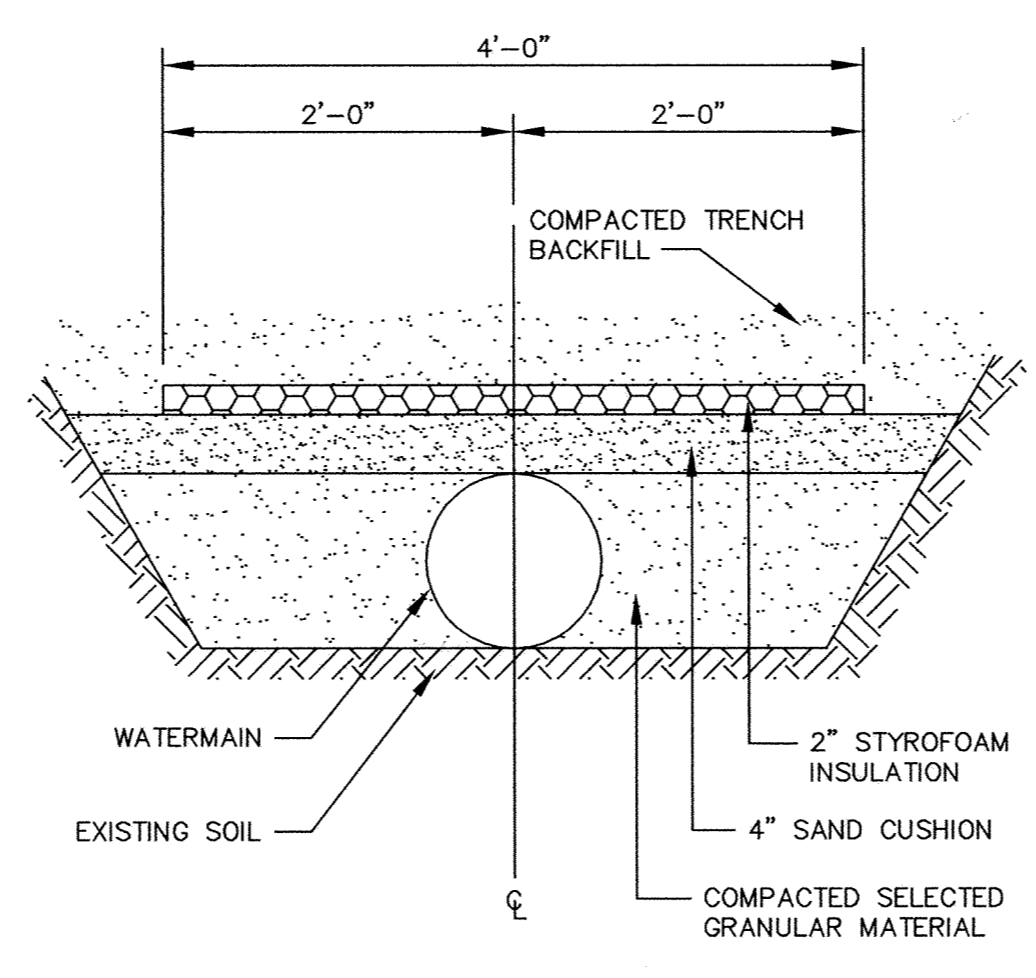
NOTE: ALL COSTS OF EXCAVATION BELOW GRADE AND PLACEMENT OF GRANULAR BEDDING SHALL BE INCLUDED IN THE BID PRICES FOR PIPE ITEMS.

CLASS C PIPE BEDDING

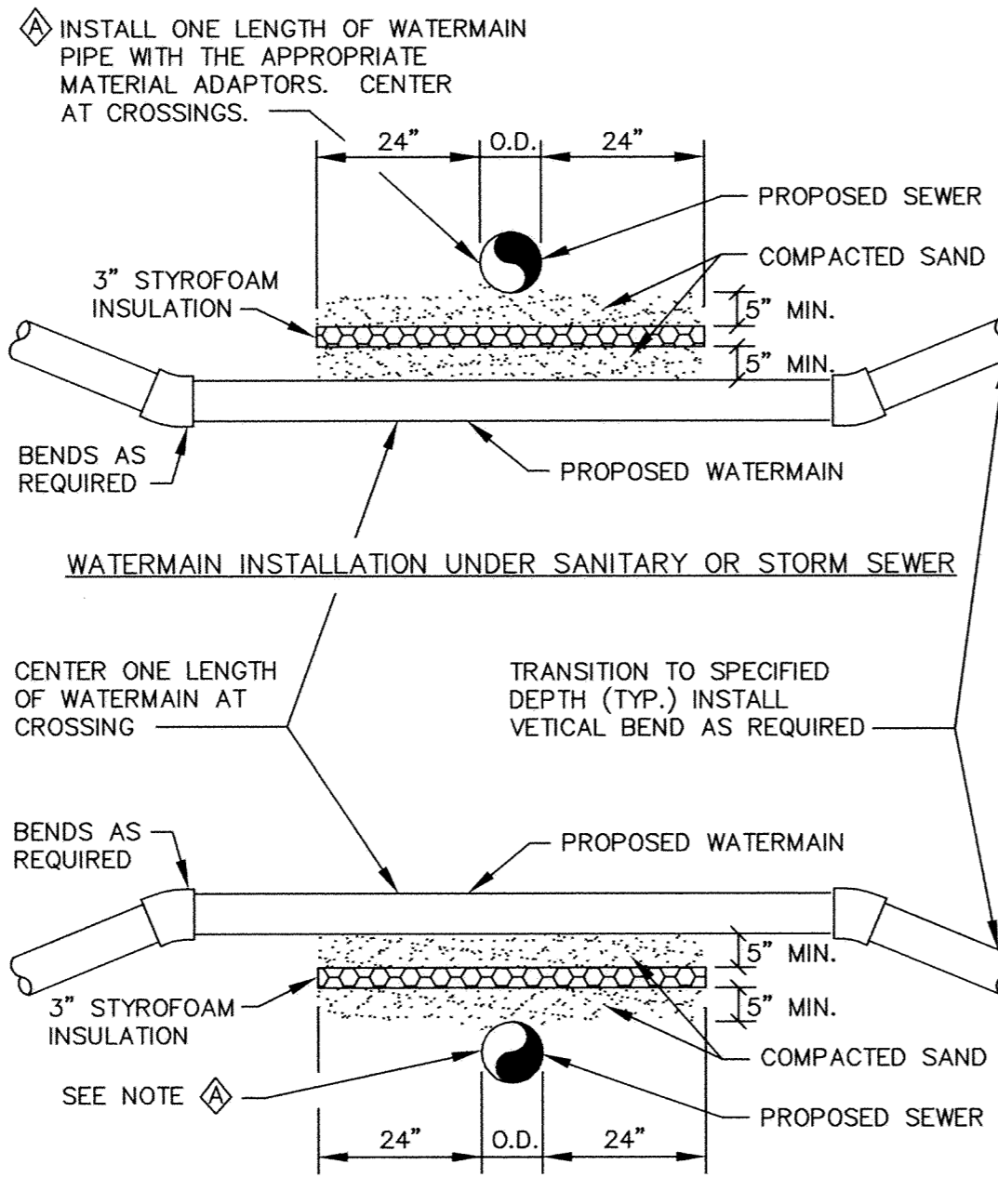


NOTE: ALL COSTS OF EXCAVATION BELOW GRADE AND PLACEMENT OF GRANULAR BEDDING SHALL BE INCLUDED IN THE BID PRICES FOR PIPE ITEMS.

CLASS B PIPE BEDDING

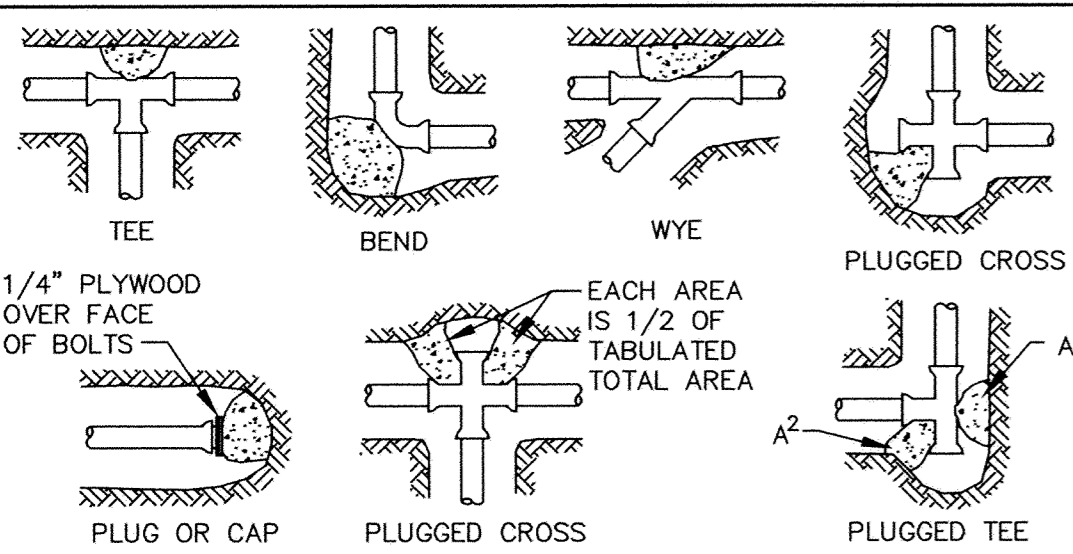


PIPE INSULATION DETAIL



NOTES:
 1. WHEN WATERMAIN AND SANITARY SEWER CROSSINGS HAVE LESS THAN 18\"/>

WATERMAIN CROSSING



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 ¹	A ²			
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