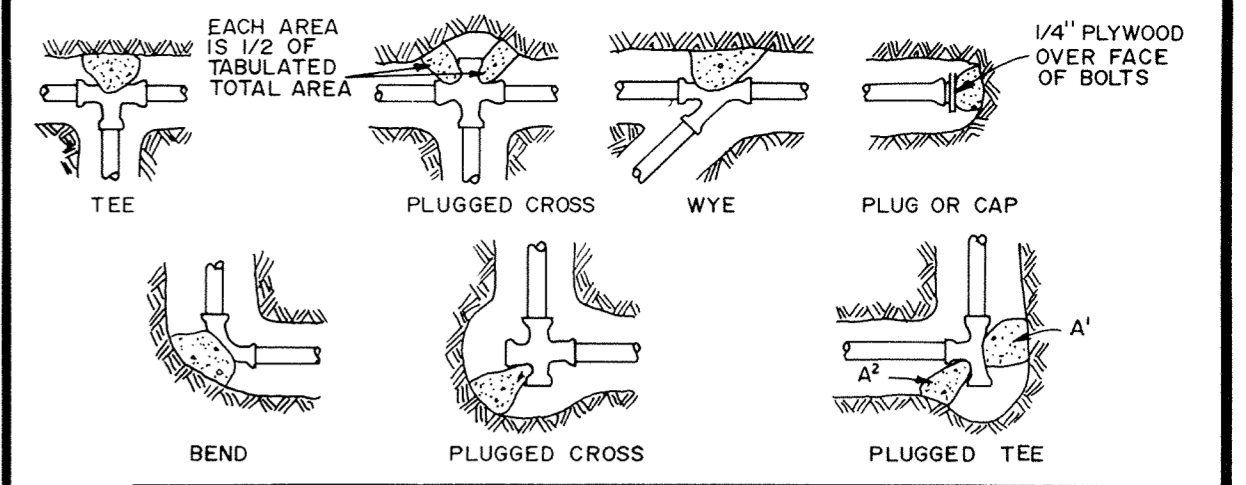


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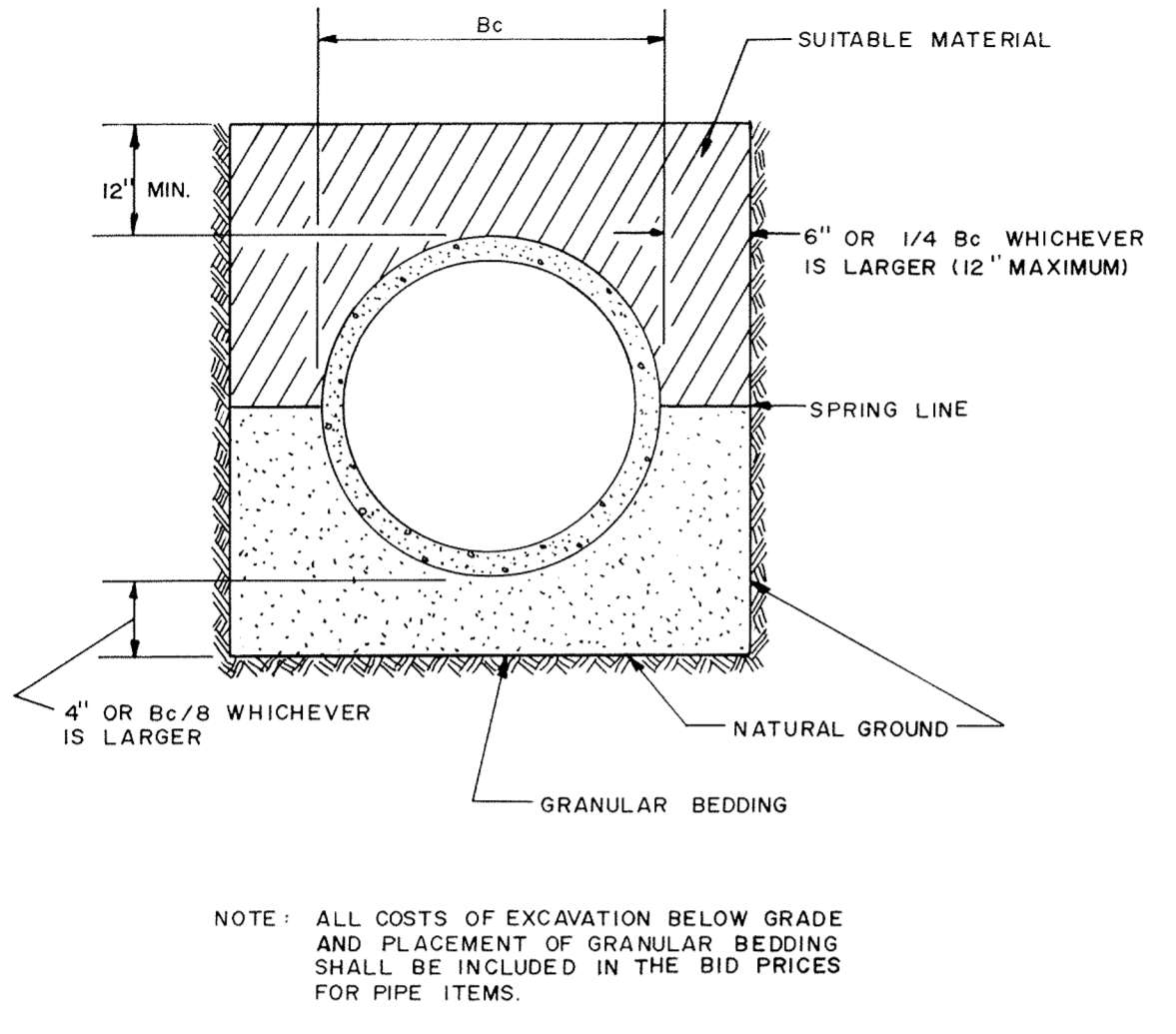
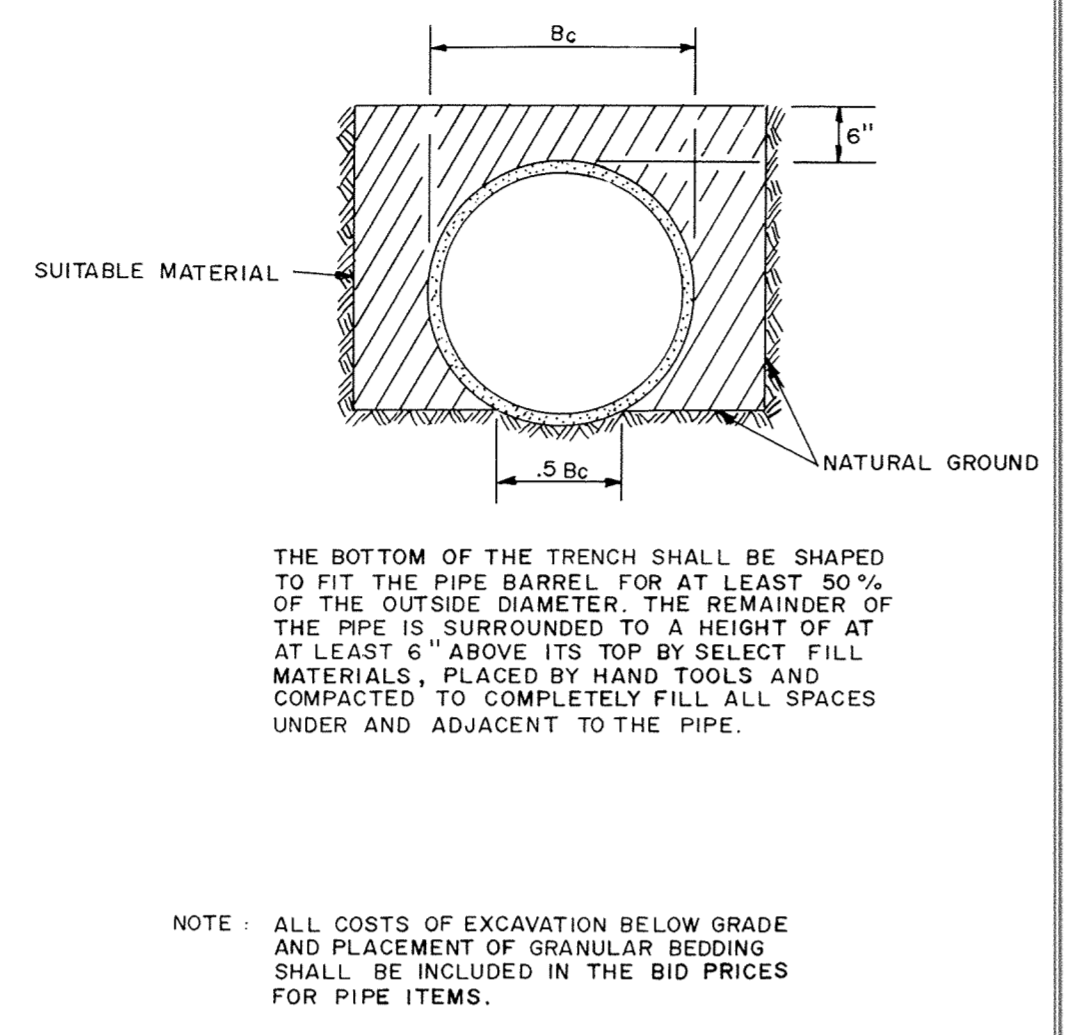
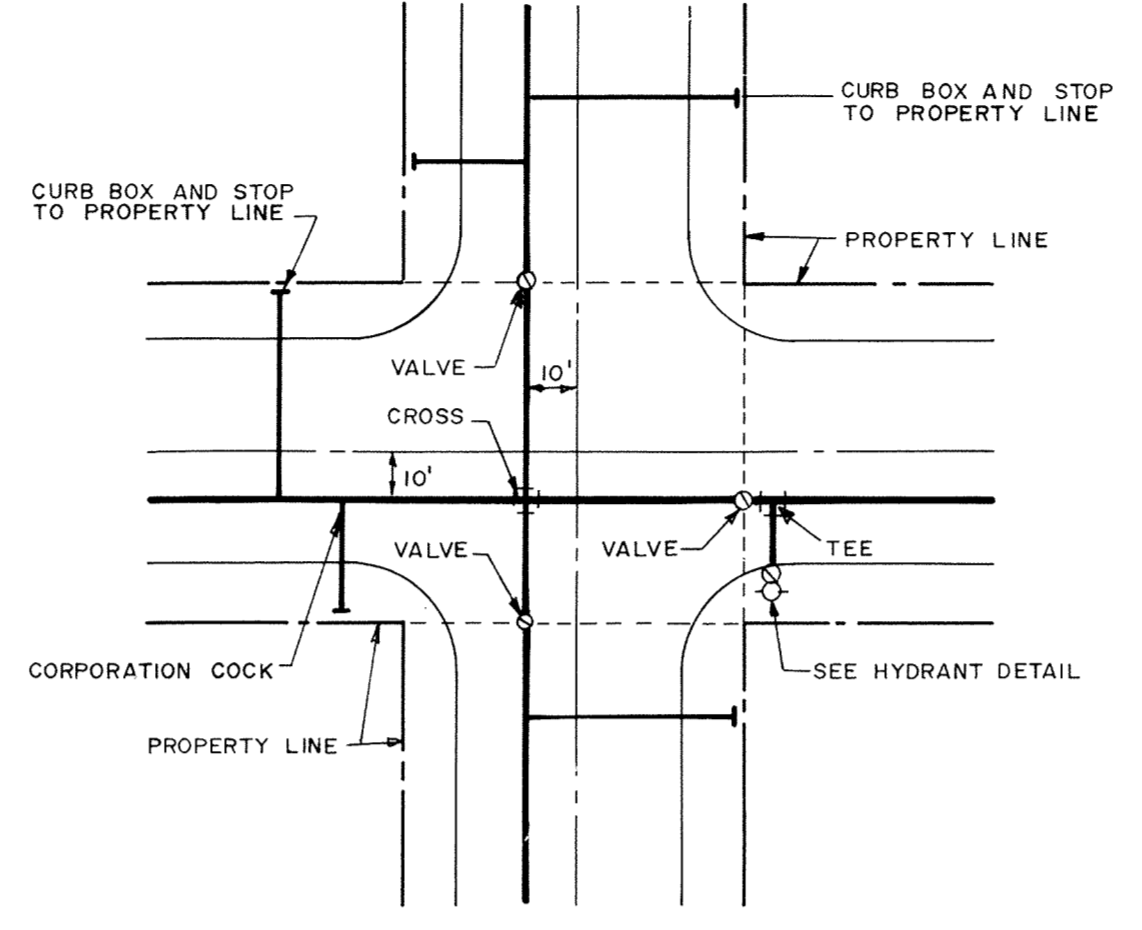
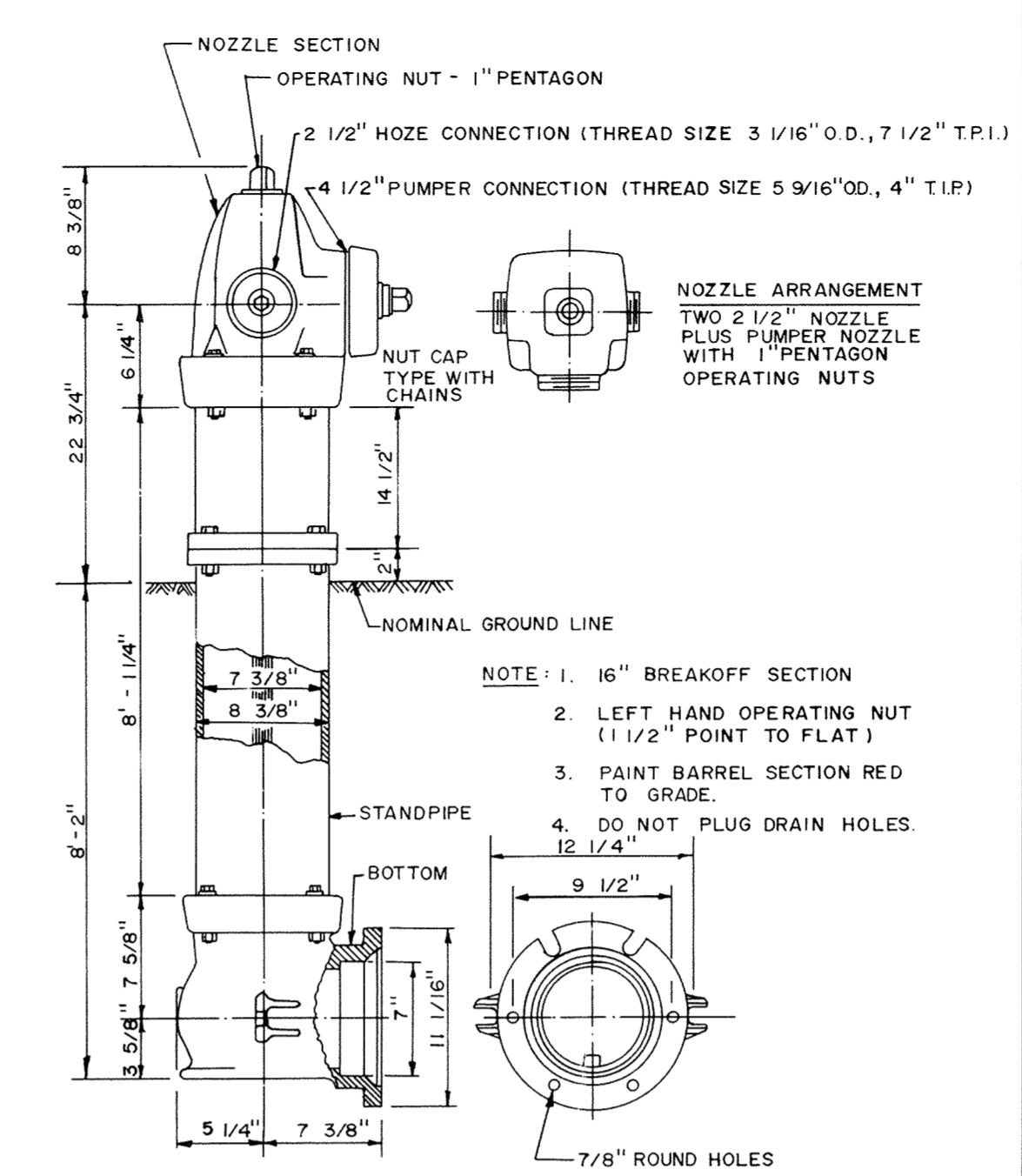
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NOMINAL FITTING SIZE, INCHES	TEE, WYE, PLUG OR CAP	90° BEND, PLUGGED CROSS	TEE PLUGGED ON RUN	45° BEND	22 1/2° BEND	11 1/4° BEND
4	1.0	1.4	1.9	1.4	1.0	—
6	2.1	3.0	4.3	3.0	1.6	1.0
8	3.8	5.3	7.6	5.4	2.9	1.5
10	5.9	8.4	11.8	8.4	4.6	2.6
12	8.5	12.0	17.0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



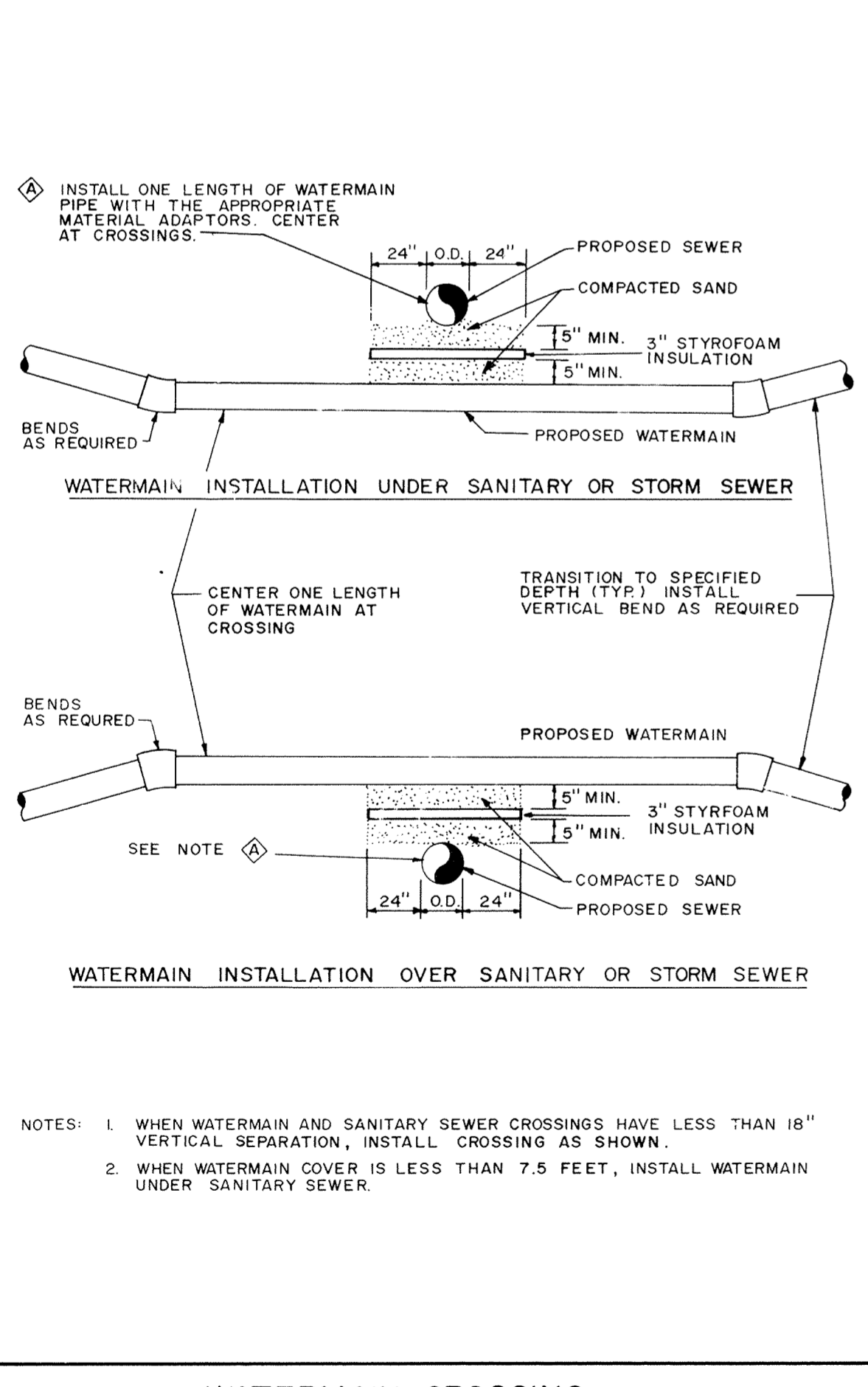
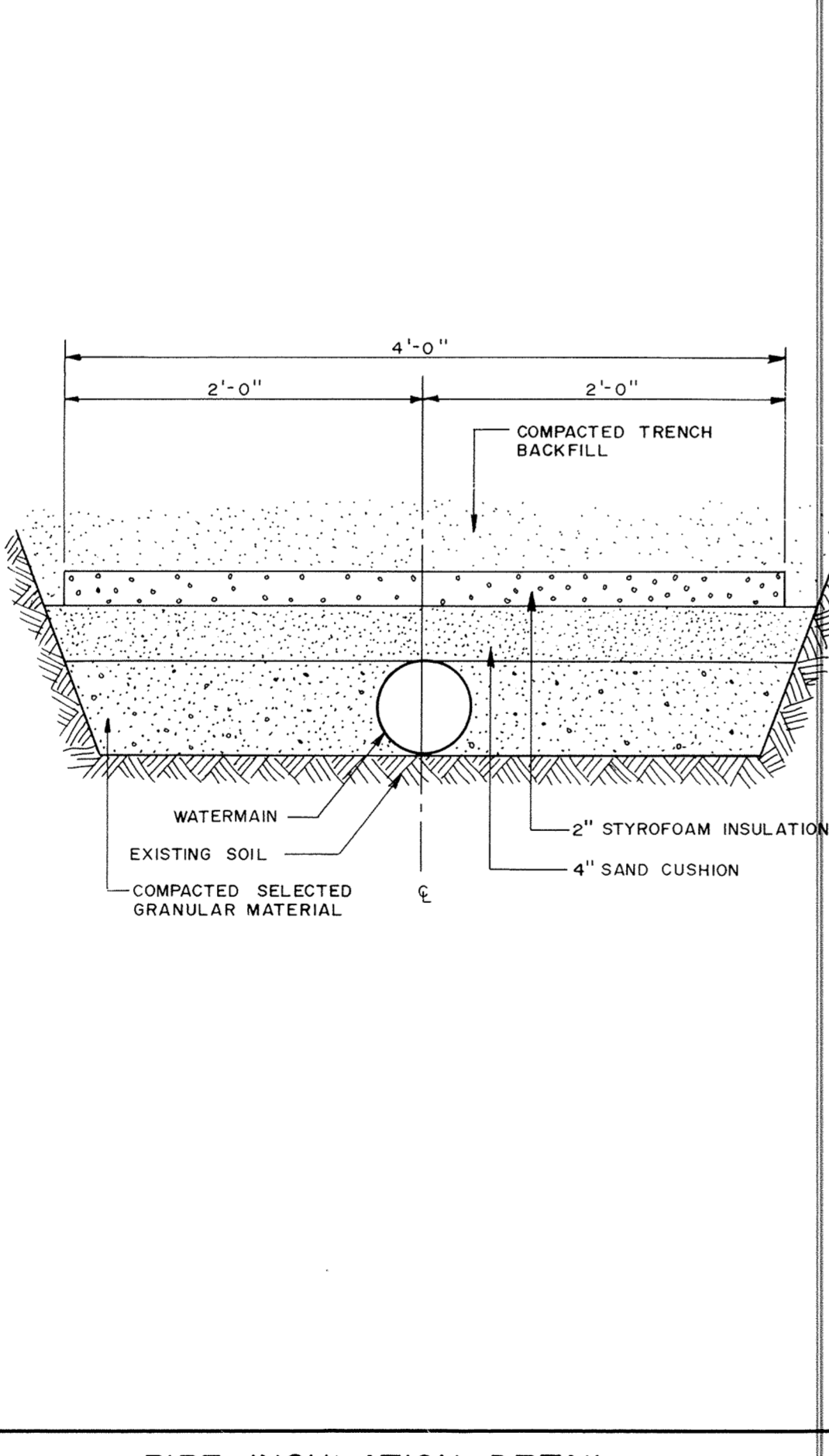
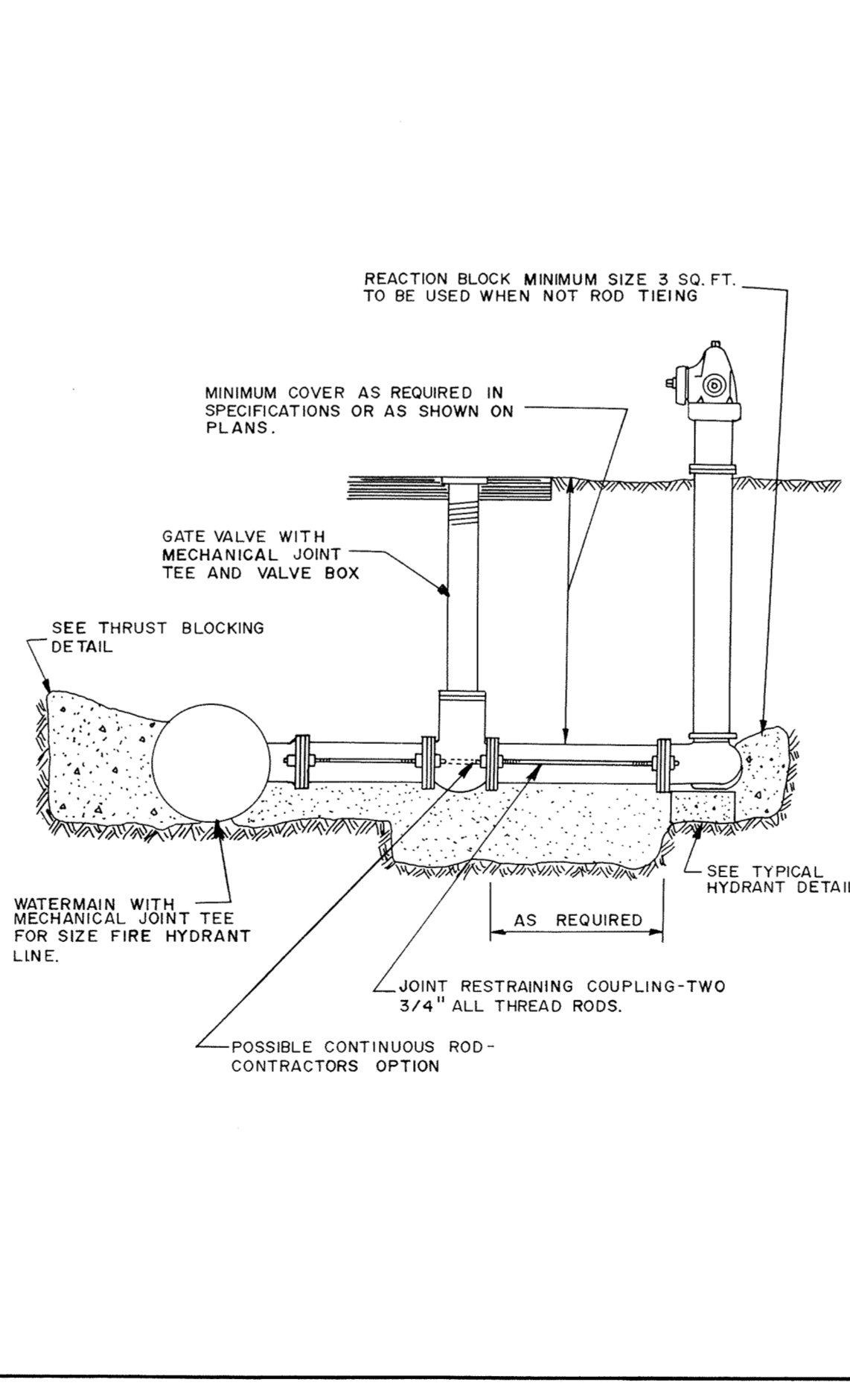
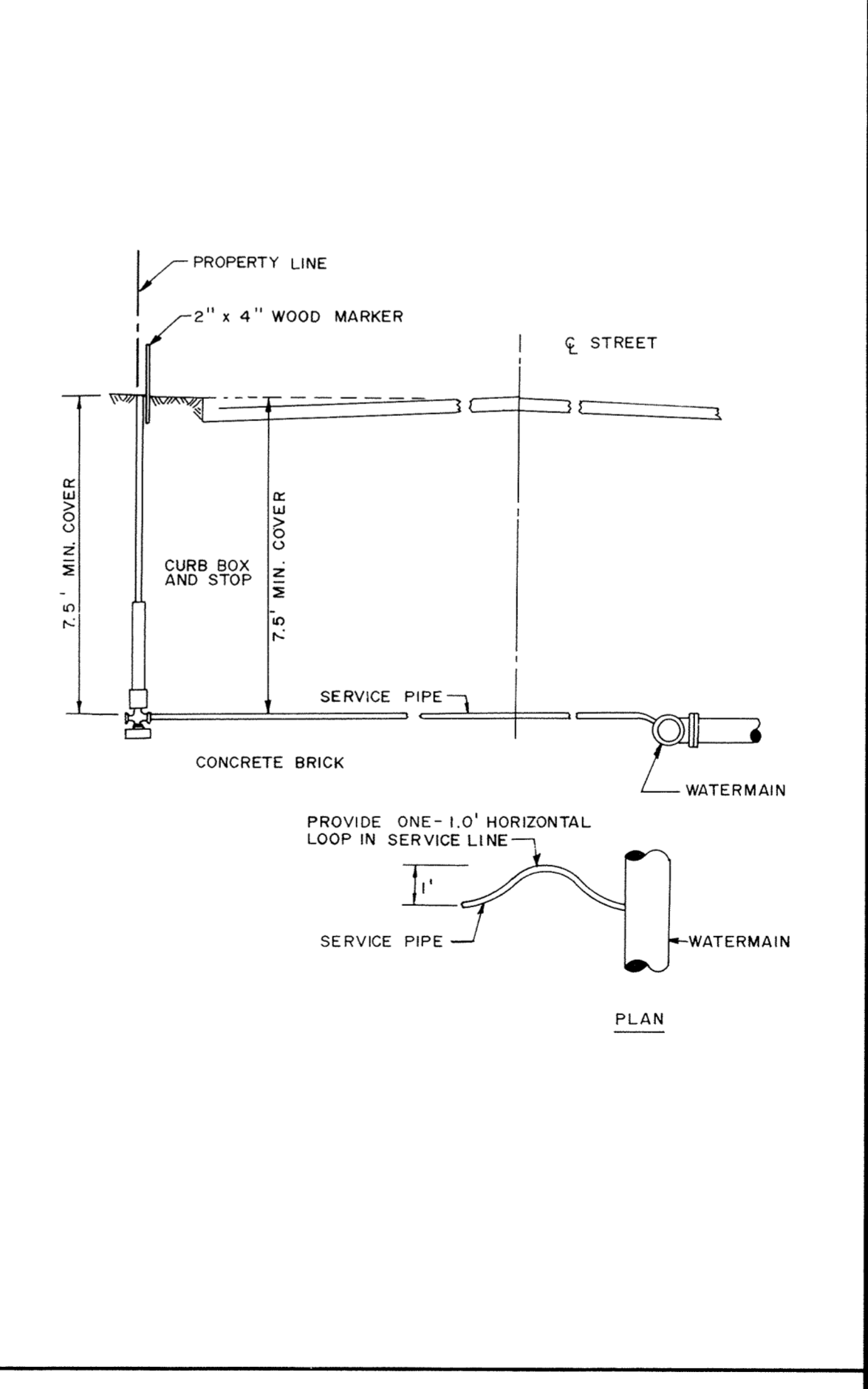
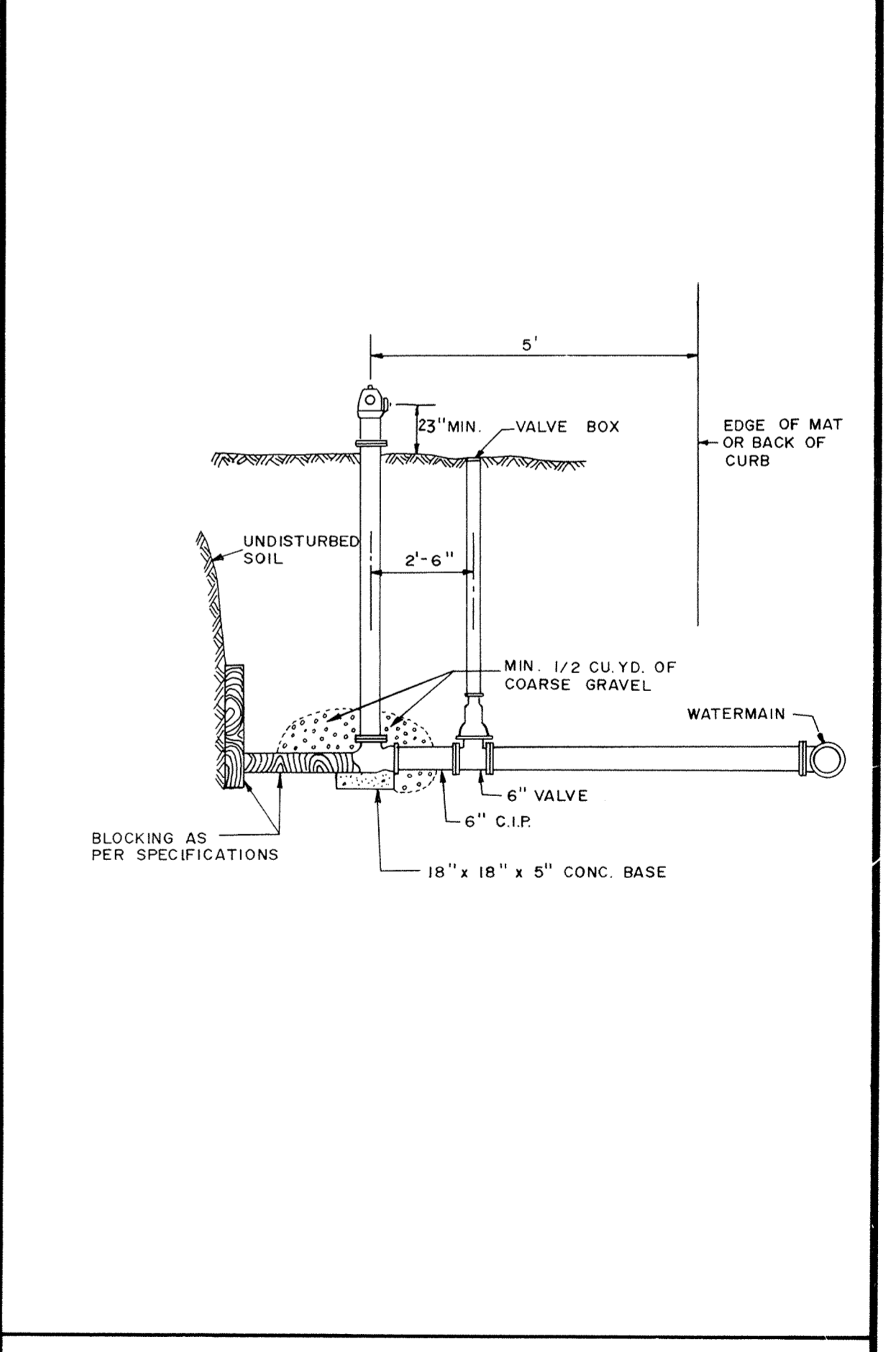
THRUST BLOCKING DETAIL

PACER HYDRANT DETAIL

TYPICAL WATER LAYOUT

CLASS C PIPE BEDDING

CLASS B PIPE BEDDING



TYPICAL HYDRANT DETAIL

TYPICAL SERVICE DETAIL

RODDING DETAIL

PIPE INSULATION DETAIL

WATERMAIN CROSSING

DATE	DESCRIPTION	DESIGNED
		CHECKED
		DRAWN
		GRAPHIC SCALE
		0 HORIZ. NONE
		0 VERT.

MSA CONSULTING ENGINEERS
 Maier Stewart & Associates Inc.
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CITY OF ELK RIVER
 WATERMAIN DETAILS