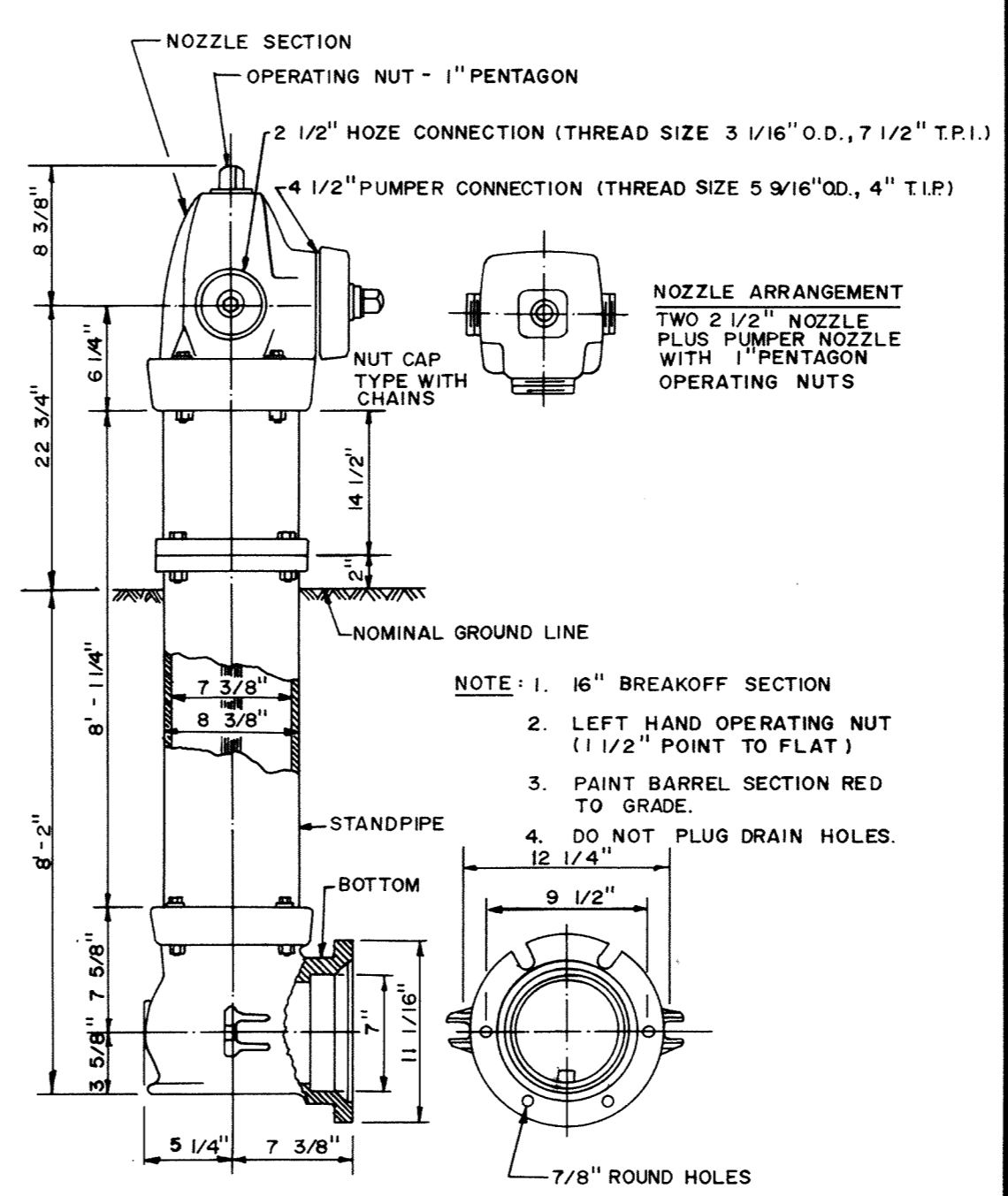
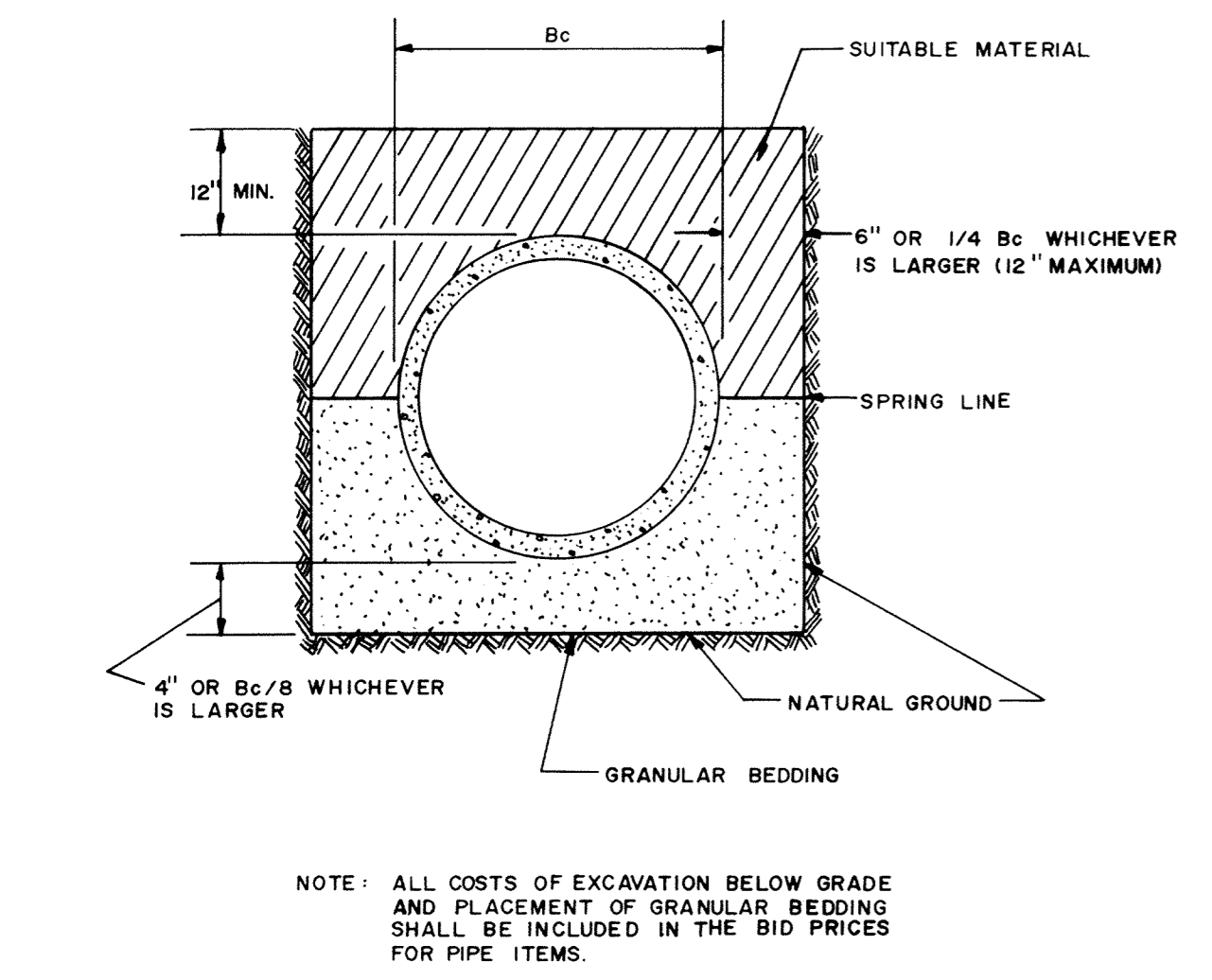
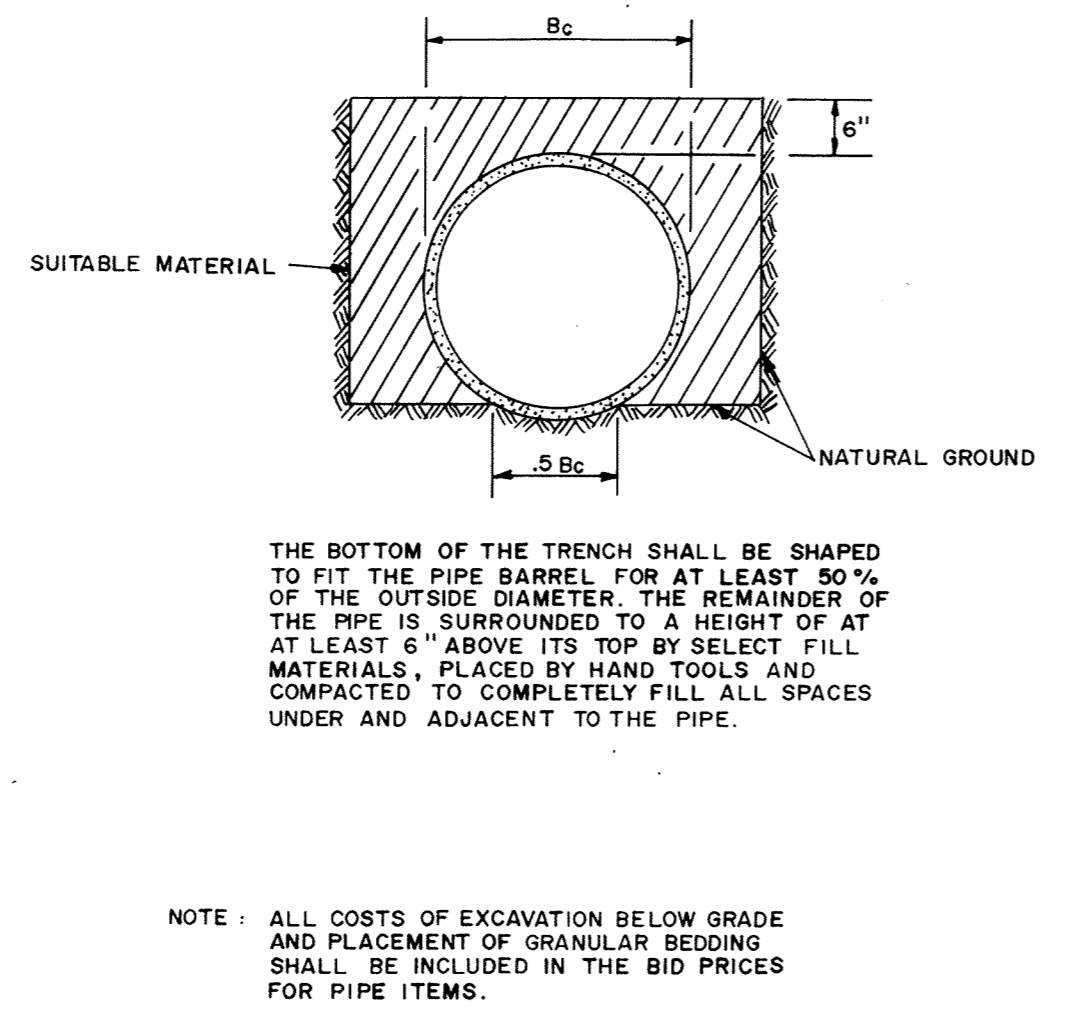
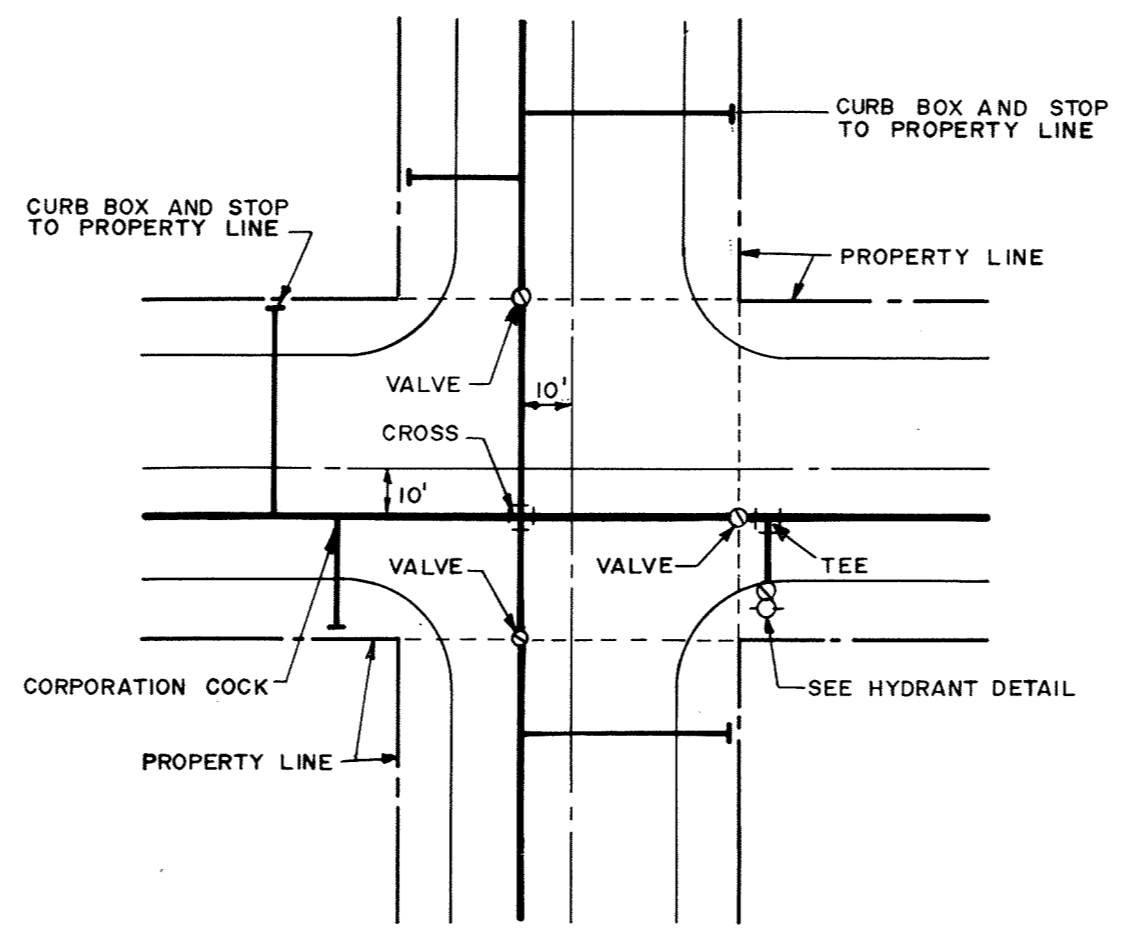


NOMINAL FITTING SIZE, INCHES	TEE, WYE, PLUG OR CAP	90° BEND, PLUGGED CROSS	TEE PLUGGED ON RUN		45° BEND	22 1/2" BEND	11 1/4" BEND
			A'	A"			
4	1.0	1.4	1.9	1.4	1.0	—	—
6	2.1	3.0	4.3	3.0	1.6	1.0	—
8	3.8	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	8.4	11.8	8.4	4.6	2.6	1.2
12	8.5	12.0	17.0	12.0	6.6	3.4	1.7
14	11.5	16.3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

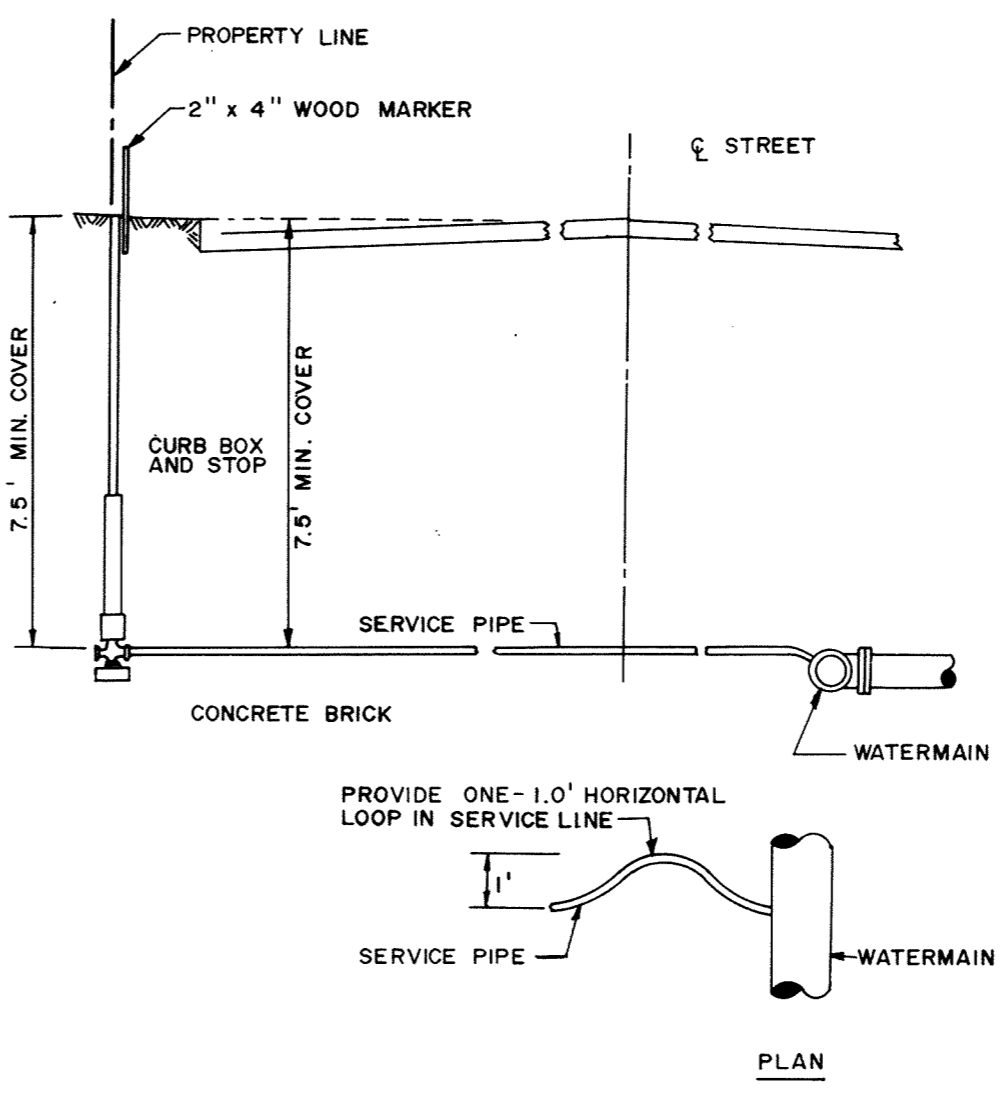
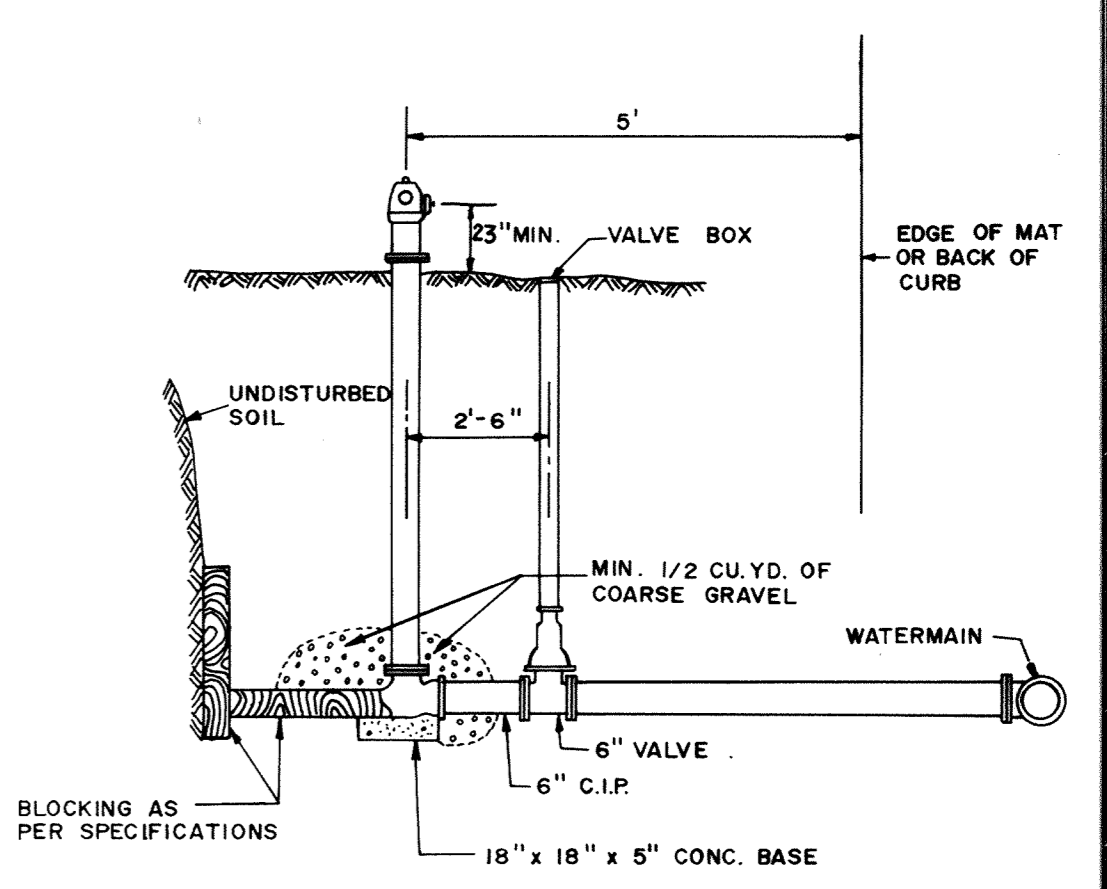
- NOTE:
- CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
 - KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
 - IF NOT SHOWN ON PLANS, REQUIRED BEARING AREAS AT FITTING SHALL BE AS INDICATED ABOVE, ADJUSTED IF NECESSARY, TO CONFORM TO THE TEST PRESSURE (S) AND ALLOWABLE SOIL BEARING STRESS (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)



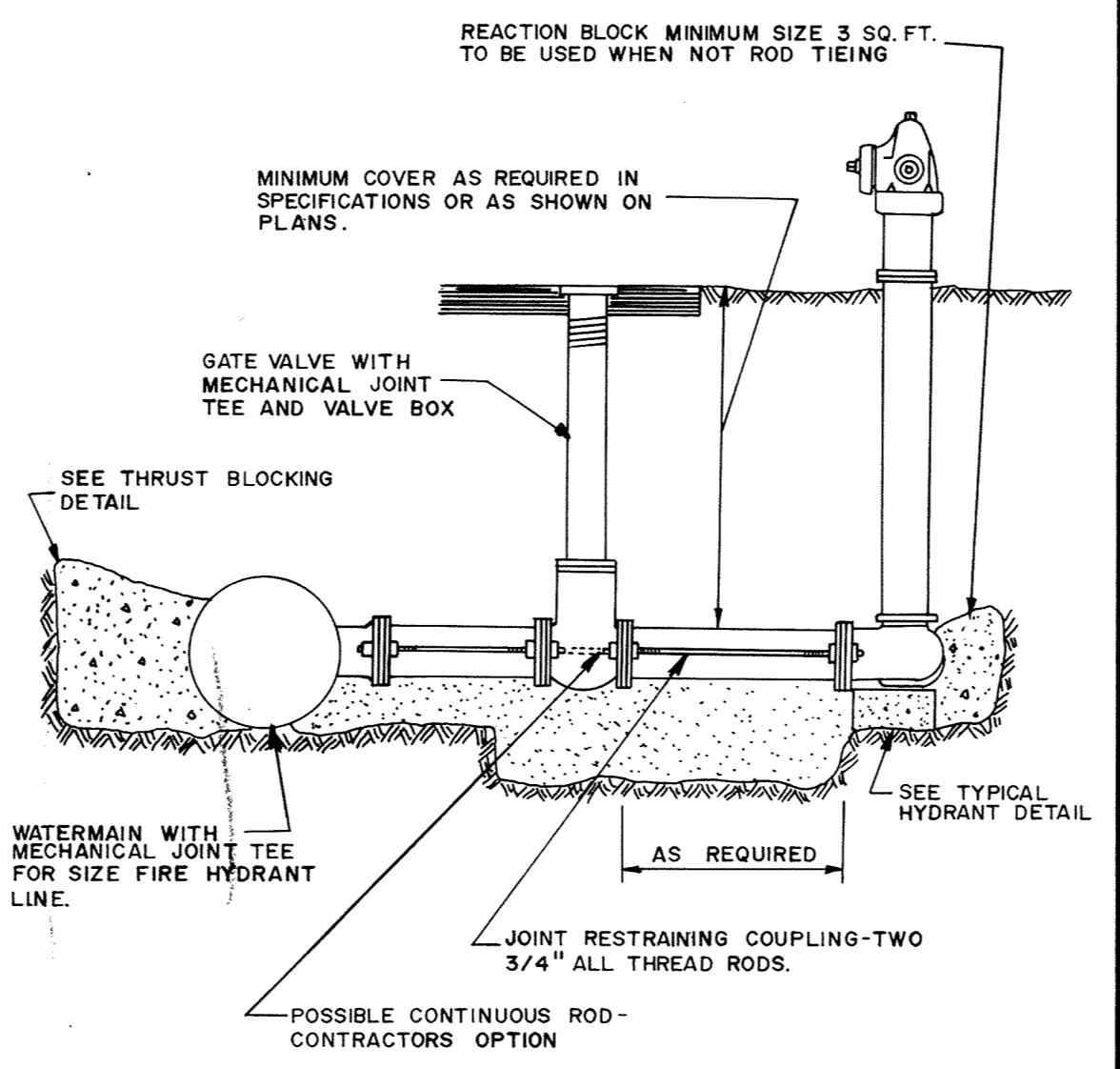
- NOTE:
- 16" BREAKOFF SECTION
 - LEFT HAND OPERATING NUT (1 1/2" POINT TO FLAT)
 - PAINT BARREL SECTION RED TO GRADE.
 - DO NOT PLUG DRAIN HOLES.



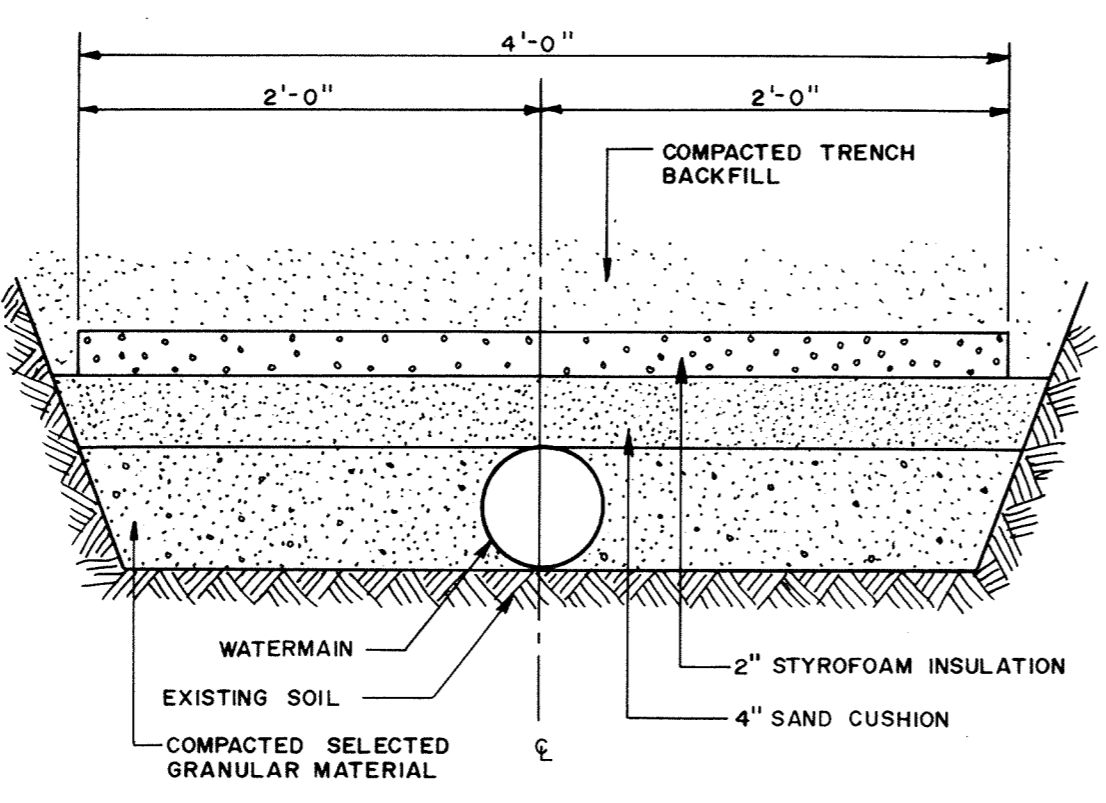
THRUST BLOCKING DETAIL



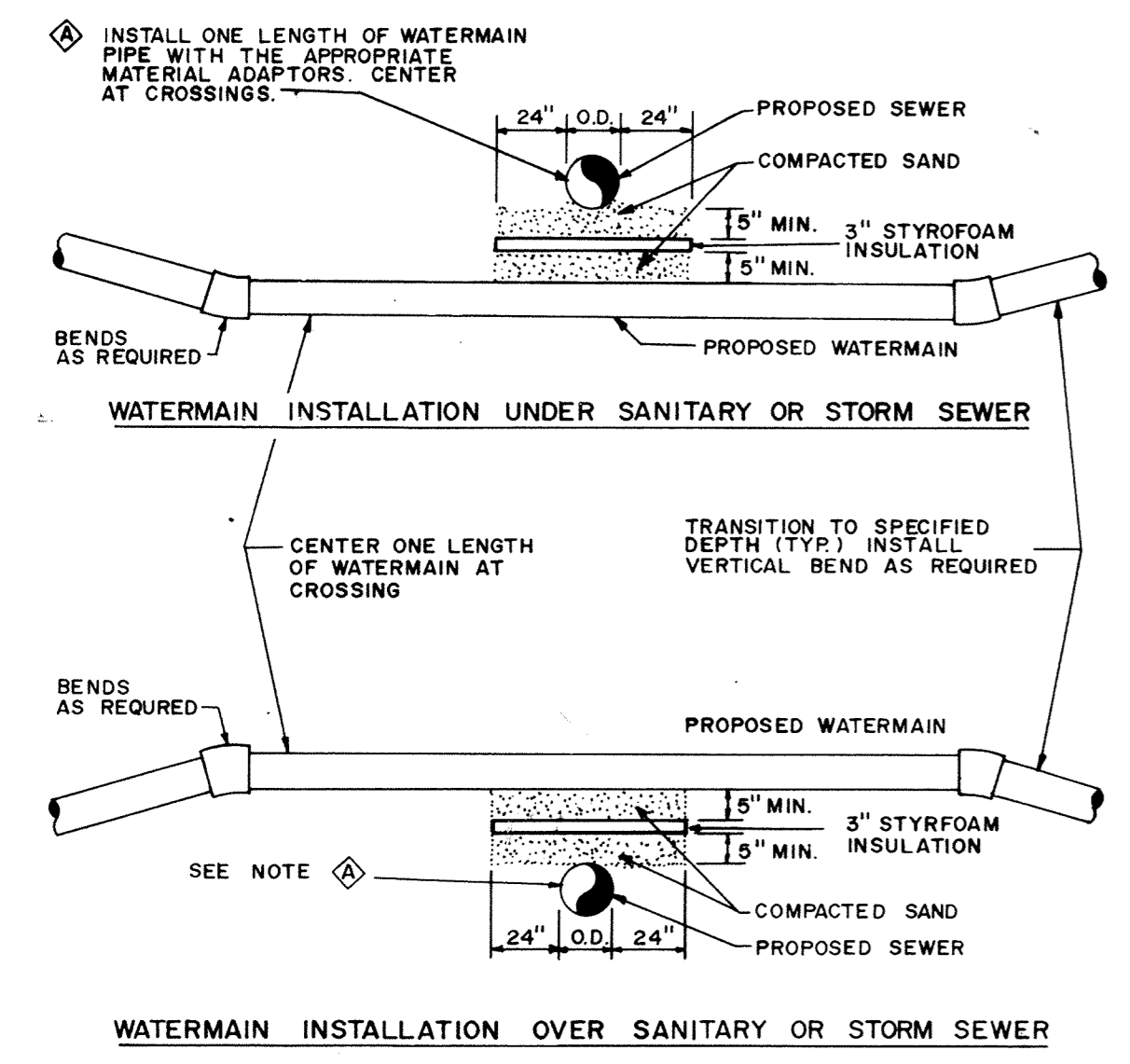
TYPICAL SERVICE DETAIL



RODDING DETAIL



PIPE INSULATION DETAIL



WATERMAIN CROSSING

RECORD PLAN APRIL 1993

MSA CONSULTING ENGINEERS
Maier Stewart & Associates Inc.
 1959 SLOAN PLACE (612) 774-6021 ST. PAUL, MINNESOTA 55117

REVISIONS	DATE	DESCRIPTION	DESIGNED	CHECKED	DRAWN

GRAPHIC SCALE
 0 HORIZ. NONE
 0 VERT.

CITY OF ELK RIVER
 ELEMENTARY SCHOOL UTILITIES
 WATERMAIN DETAILS

DATE AUG 1991 SHEET 12 OF 14 SHEETS PROJECT NO. 230-125