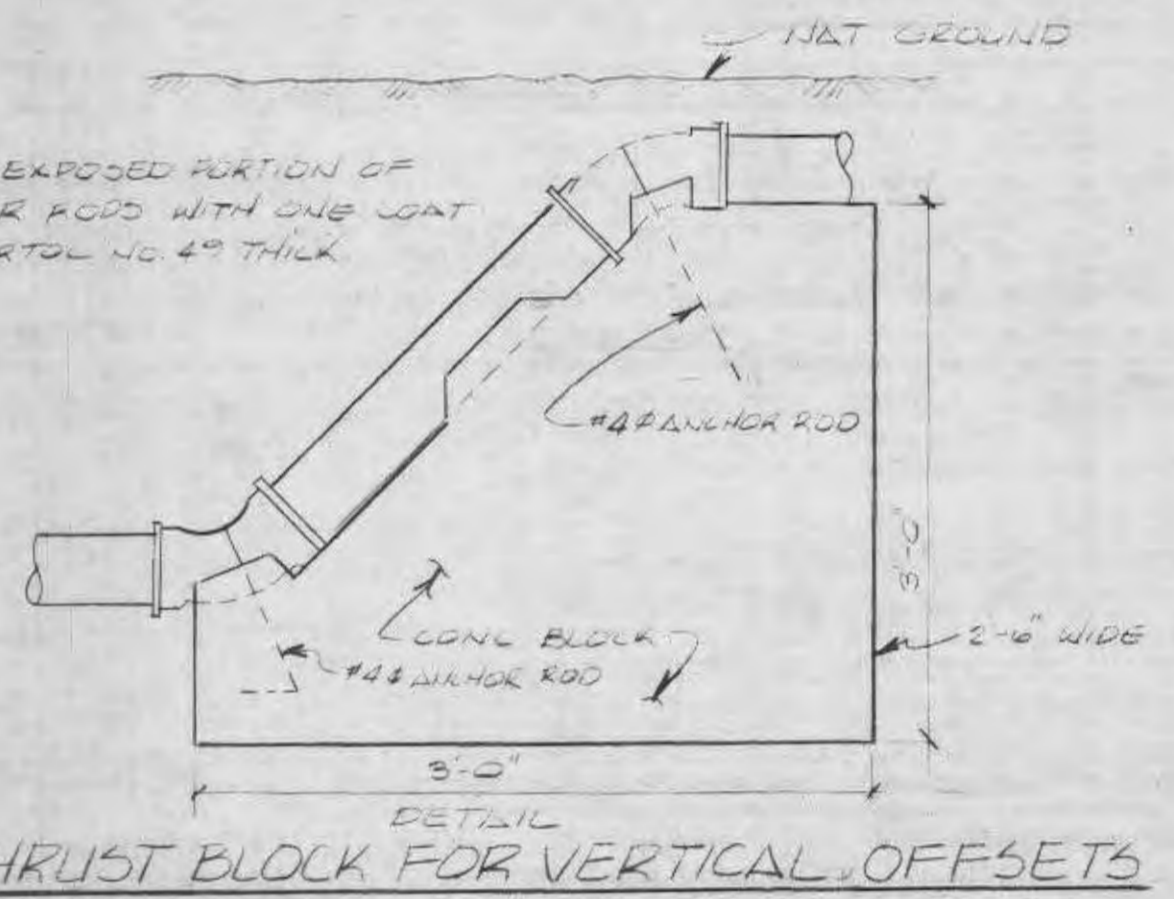
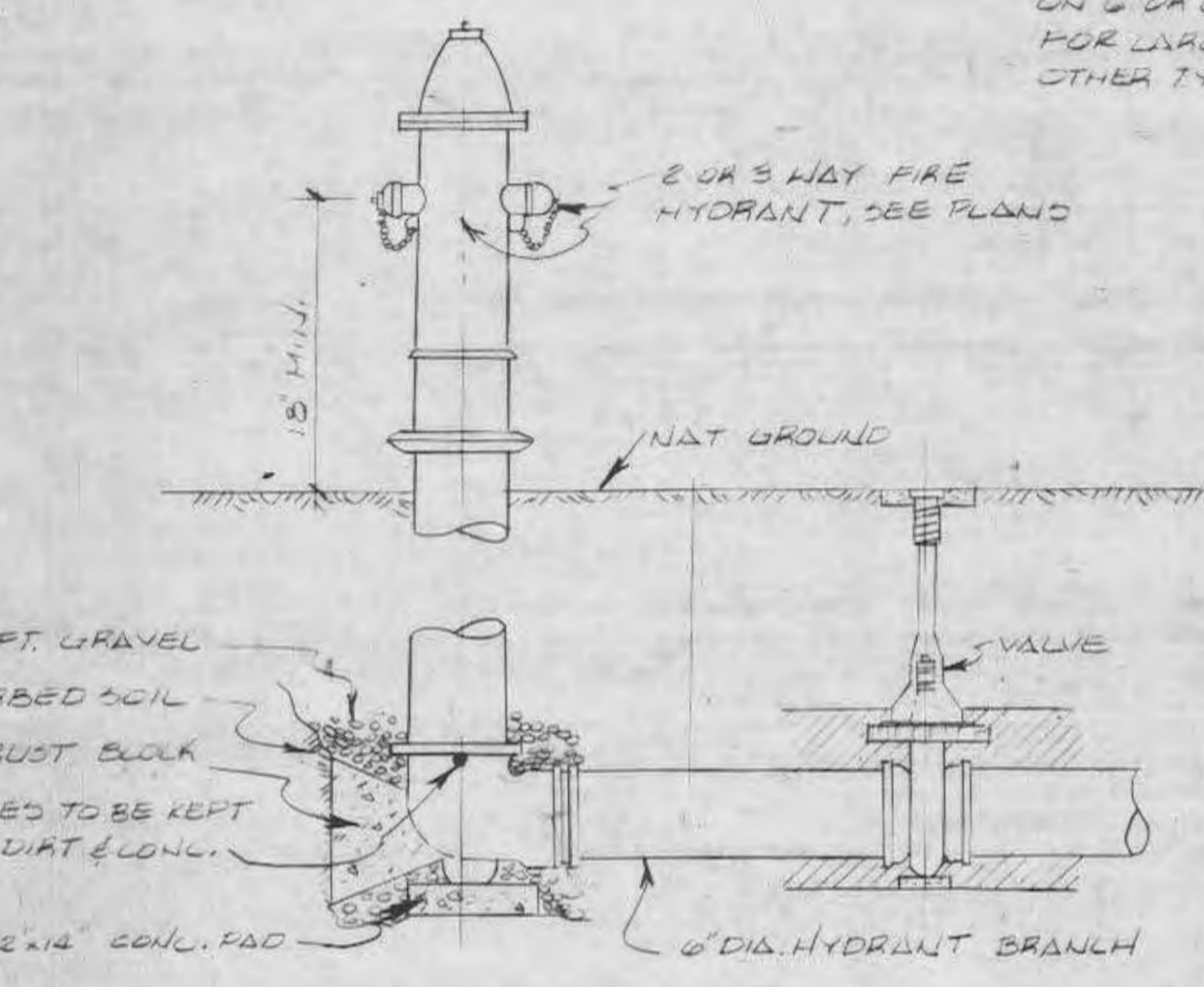


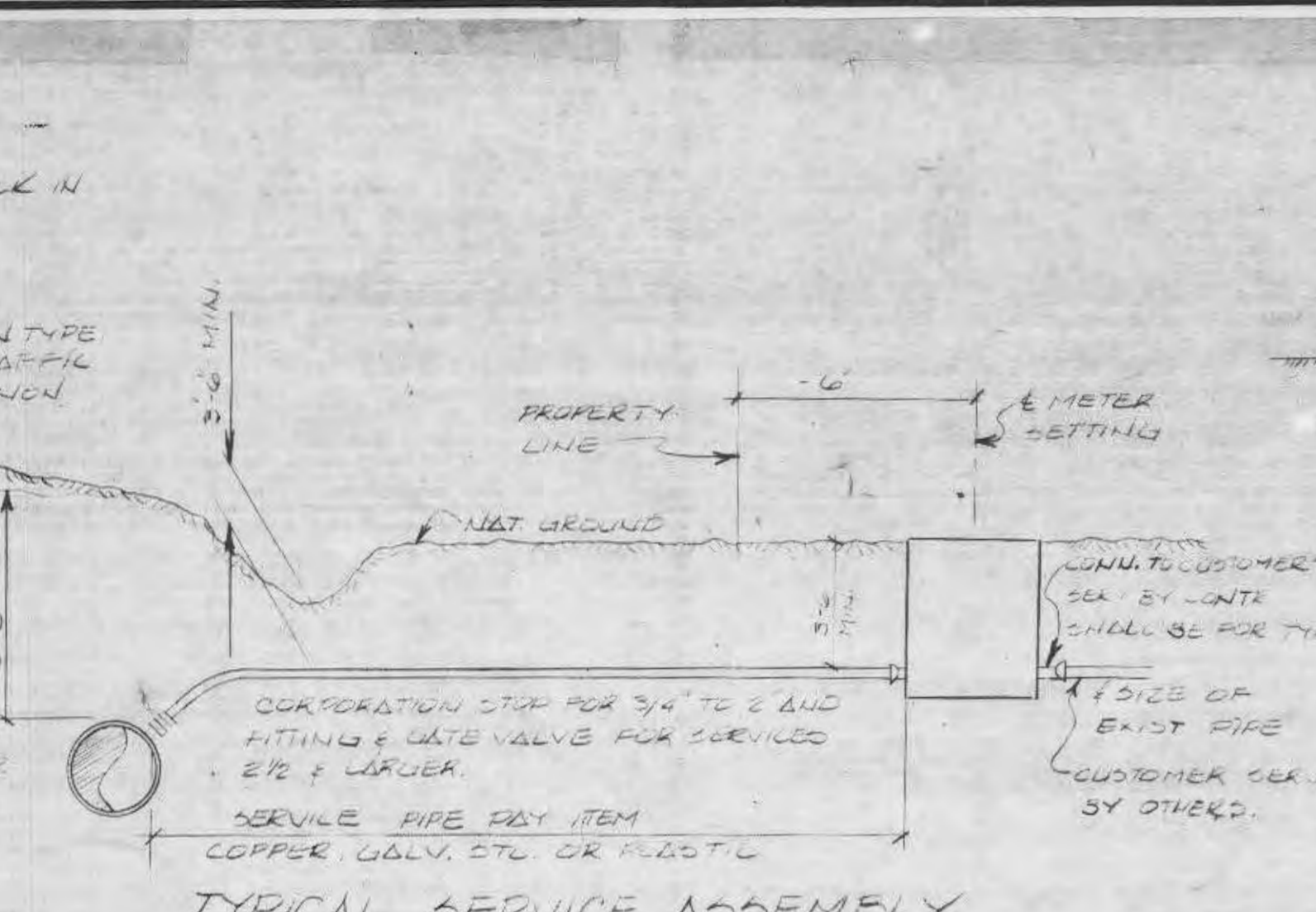
TYPICAL VALVE SETTING



THRUST BLOCK FOR VERTICAL OFFSETS

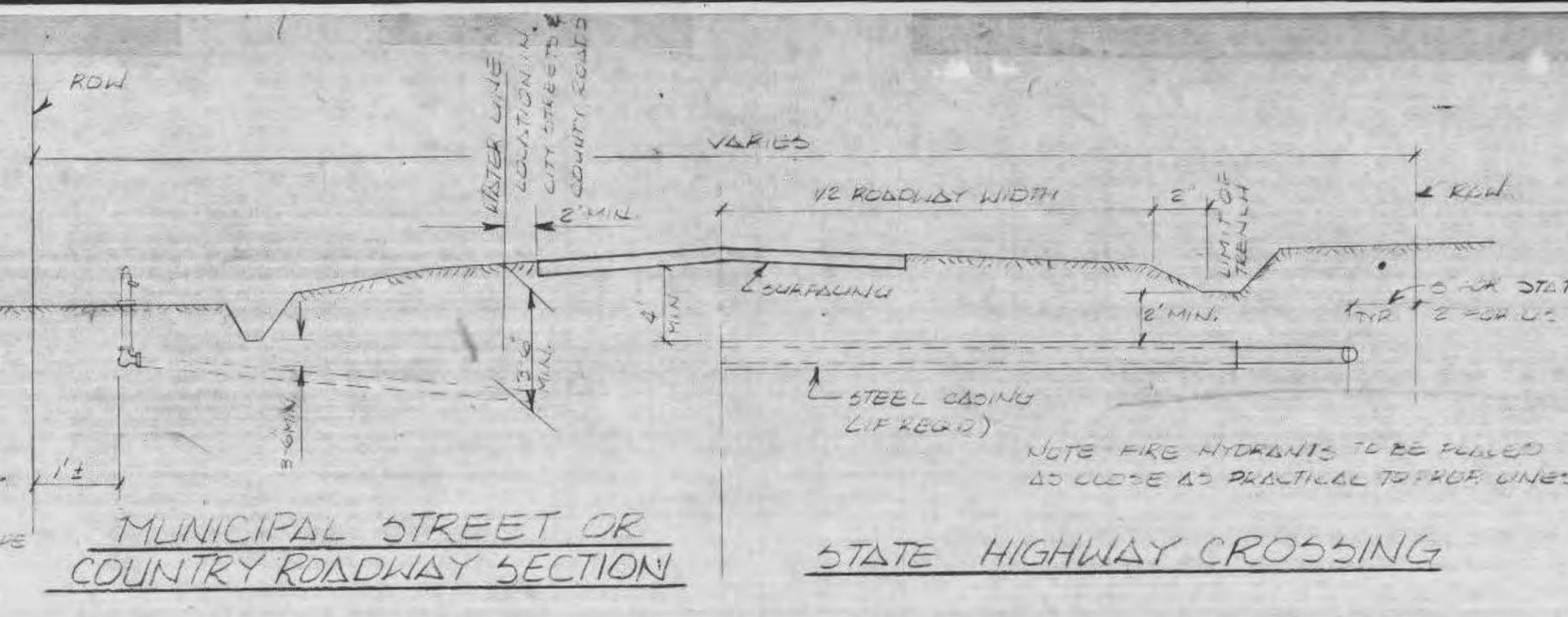


DETAIL FOR FIRE HYDRANT INSTALLATION

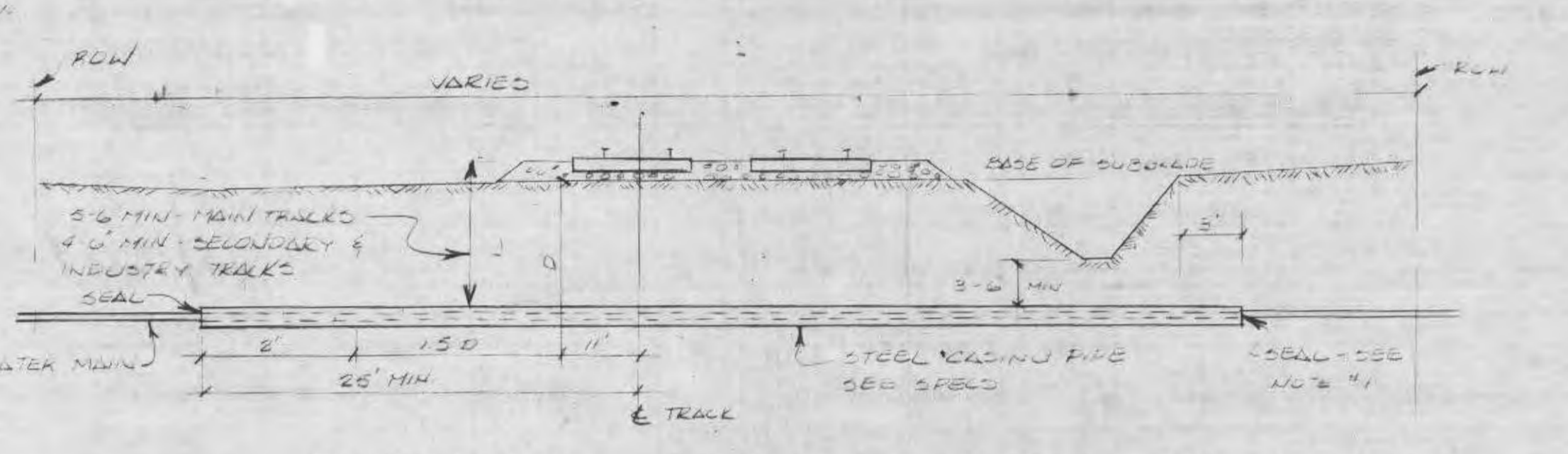


TYPICAL SERVICE ASSEMBLY

NOTE 1. 3/4\"/>



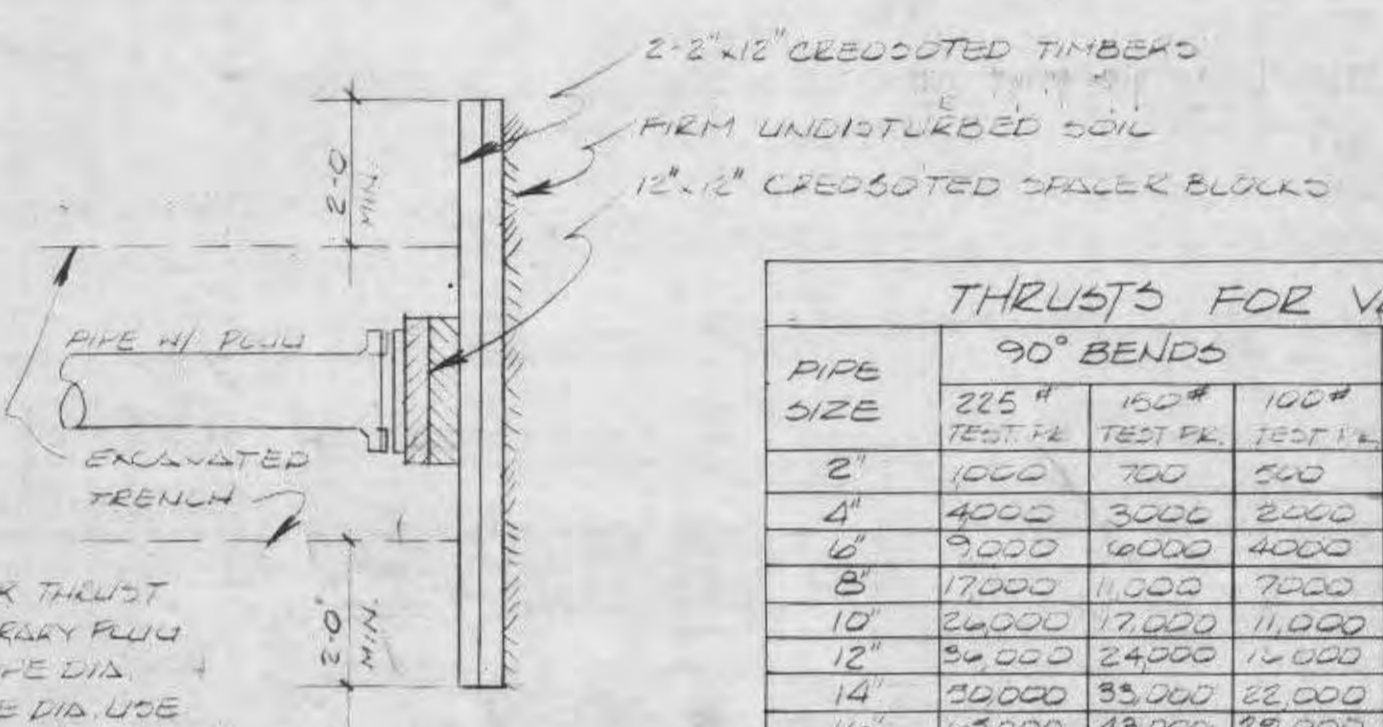
MUNICIPAL STREET OR COUNTRY ROADWAY SECTION



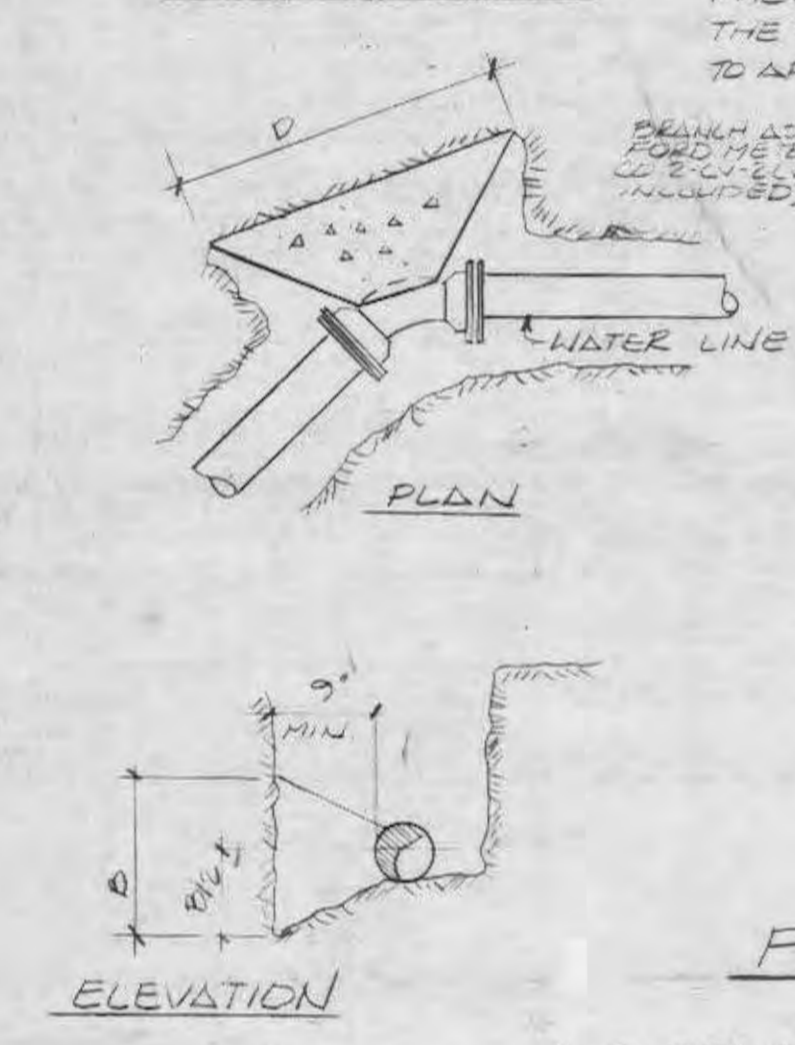
TYPICAL DETAIL OF RAILROAD CROSSING

NOTES:

1. SEAL NOT REQUIRED IF LADING ENDS ABOVE GROUND WHERE AVAILABLE.
2. CASING TO BE JACKED 180°.
3. INSIDE DIAM OF CASING TO BE 1/2\"/>



PLAN PLUG DETAIL



ELEVATION

B = 3x PIPE DIA.
O = THRUST ANCHORAGE AREA.

PIPE SIZE	90° BENDS			TEES & DEAD ENDS			45° BENDS			22 1/2° BENDS			1 1/4° BENDS		
	22 1/2\"/>														
2"	1000	700	500	800	500	-	600	400	-	300	-	-	-	-	
4"	4000	3000	2000	3000	2000	1000	3000	1500	1000	500	500	400	-	-	
6"	9000	6000	4000	7000	4000	3000	6000	3000	2000	1000	1000	800	600	400	
8"	17000	11000	7000	12000	6000	5000	10000	5000	3000	2000	1000	800	600	400	
10"	24000	17000	11000	18000	9000	8000	14000	7000	4000	3000	1500	1000	800	600	
12"	34000	24000	16000	25000	12000	11000	21000	10000	6000	4000	2000	1500	1000	800	
14"	50000	35000	22000	36000	18000	16000	29000	14000	8000	5000	3000	2000	1500	1000	
16"	65000	45000	29000	45000	23000	21000	37000	18000	10000	6000	4000	2500	1800	1200	
18"	85000	58000	37000	57000	29000	27000	47000	23000	12000	7000	5000	3000	2000	1500	

NOTE: FOR AREA OF THRUST BLOCK IN SOFT DIVIDE APPROPRIATE THRUST BY ALLOWABLE SOIL BEARING TEST PRESSURES SHALL BE AS INDICATED IN THE SPECIFICATIONS OR SPECIAL CONDITIONS UNDER PRESSION TESTING OF PIPE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING THRUST BLOCKS OR FOR VIBROCAST PIPE SIZE FITTINGS ACCORDING TO APPROPRIATE SOIL BEARING & TEST PRESSURE. COST OF THRUST ANCHORAGE SHALL BE INCLUDED IN PRICE BID FOR FITTINGS OR PIPE.

THRUST ANCHORAGE DATA

PIPE SIZE INCHED	CAST IRON	ASBESTOS CEMENT	SULPHURED
2"	1"	-	3/4"
2 1/2"	1 1/4"	-	1"
3"	1 1/2"	-	1 1/4"
4"	2"	1"	-
6"	2 1/2"	1 1/2"	-
8"	3"	2"	-
10"	3 1/2"	2 1/2"	-
12"	4"	3"	-

PIPE SIZE	TAP SIZE
2"	1/2"
3"	3/4"
4"	1"
6"	1 1/4"
8"	1 1/2"
10"	2"
12"	2 1/2"

MAXIMUM TAP AND SERVICE CLAMP SIZES

ALLOWABLE SAFE LATERAL EASING OF SOIL IN P.S.F.	
MUCK & FEAT.	0"
SOFT CLAY	500
SAND	1,000
SAND & GRAVEL	1,500
SAND & GRAVEL CEMENTED	2,000
SHALE	2,000

* USE THE ROAD ANCHORS LEAVING JOINT FITTINGS FLANGED FITTINGS OR TAPPED THREADED HUBS WITH THRUST BLOCKS.

- Notes:
1. SPECIAL REQ. FOR PLASTIC PIPE:
 - (A) FOR 6" AND 4" P.V.C. PIPE TEES & CROSSES SHALL BE MECHANICAL JOINT CAST IRON FITTINGS.
 - (B) FOR ALL SIZES OF P.V.C. PIPE, ALL BENDS SHALL BE LONG RADIUS PLASTIC BENDS OR MECHANICAL JOINT CAST IRON.
 - (C) FOR ALL SIZES OF P.V.C. PIPE, SCHEDULE 80 PLASTIC ADAPTORS SHALL BE PROVIDED FOR ALL VALVES, TEES, CROSSES & HYDRANTS.
 - (D) FOR ALL SIZES OF P.V.C. PIPE, ALL JOINTS SHALL BE RUBBER RING OR COUPLINGS W/RUBBER RINGS.
 - (E) SOLVENT WELDING IN THE FIELD WILL NOT BE PERMITTED HOWEVER, JOINTS OR FITTINGS, JOINTS OR FITTINGS WHICH ARE SOLVENT WELDED @ THE FACTORY ARE ACCEPTABLE.
 2. SPECIAL REQUIREMENTS FOR SERVICE CONNECTIONS:
 - (A) DOUBLE STRAP SERVICE SADDLES, SMITH-BLAIR NO. 313 OR EQUAL SHALL BE PROVIDED FOR ASBESTOS CEMENT AND P.V.C. PIPE THAT IS 6" OR LARGER.
 - (B) SPECIAL PLASTIC SADDLES, SMITH-BLAIR 342 OR EQUAL SHALL BE PROVIDED FOR P.V.C. PIPE THAT IS 4" OR SMALLER.
 - (C) SINGLE STRAP SERVICE SADDLES, SMITH-BLAIR 311 OR EQUAL SHALL BE PROVIDED FOR 1 1/2" TAPS ON CAST IRON PIPE THAT IS 6" OR LARGER.
 3. CONCRETE DRIVEWAYS:
 - (A) WHERE CONCRETE DRIVEWAYS ARE ENCOUNTERED ON STATE MAINTAINED HIGHWAYS, JACKING & BORING WILL BE REQUIRED.
 4. OPTIONS:
 - (A) ASBESTOS-CEMENT COUPLINGS MAY BE UTILIZED FOR SERVICE CONNECTIONS FOR P.V.C. AND A.C. PIPE.
 - (B) PLASTIC TEES W/RUBBER RINGS MAY BE SUBSTITUTED FOR TAPPED TEES.