

ALLOWABLE SAFE LATERAL BEARING OF SOILS IN P.S.F.

MIX & PEAT	0*
SOFT CLAY	500
SAND & GRAVEL	1,000
SAND & GRAVEL LEMENTED W/CLAY	3,000
SHALE	5,000

* USE TIE-ROD ANCHORS, WALKING JOINT FITTINGS, FLANGED FITTINGS OR TREATED TIMBER PILES W/CONC. THRUST BLOCKS

THRUSTS FOR VARIOUS FITTINGS AND TEST PRESSURES THRUST IN POUNDS)

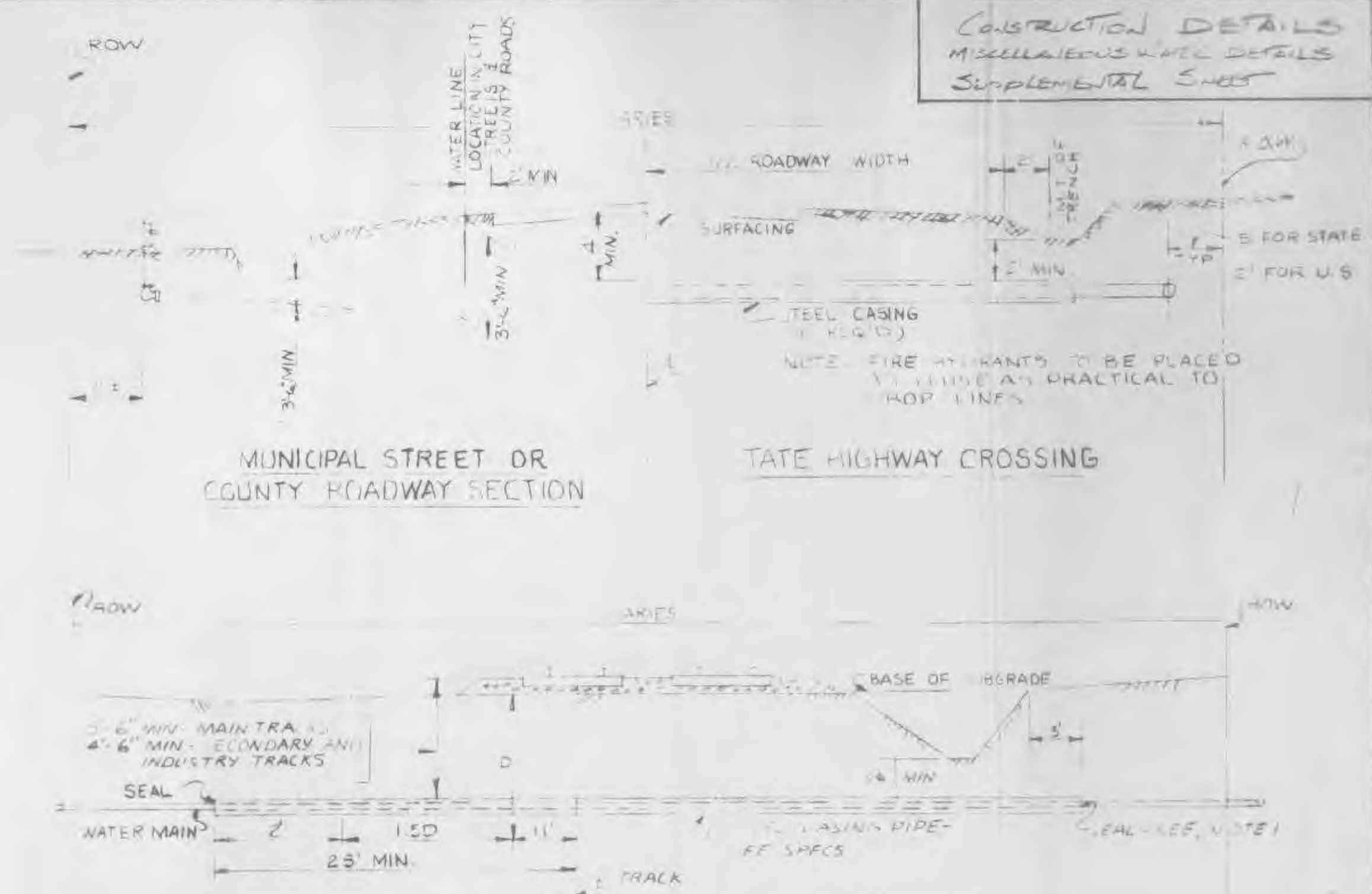
PIPE SIZE	90° BENDS			TEES & DEAD ENDS			45° BENDS			22 1/2° BENDS			1 1/4° BENDS		
	225#	150#	100#	225#	150#	100#	225#	150#	100#	225#	150#	100#	225#	150#	100#
4"	4000	3000	2000	5000	3000	1000	3000	1500	1000	1000	800	500	600	400	-
6"	9000	6000	4000	7000	4000	3000	5000	4000	2000	3000	2000	1000	1500	1000	600
8"	17000	11000	7000	11000	8000	5000	9000	6000	4000	5000	3000	2000	2000	2000	1000
10"	24000	17000	11000	18000	12000	8000	10000	7000	5000	7000	5000	3000	4000	3000	2000
12"	36000	24000	16000	25000	17000	11000	14000	10000	7000	10000	7000	5000	5000	4000	2000
14"	50000	33000	22000	36000	23000	15000	29000	19000	13000	14000	9000	6000	7000	5000	3000
16"	65000	43000	29000	45000	30000	20000	37000	25000	16000	18000	12000	8000	9000	6000	4000
18"	80000	54000	37000	57000	38000	25000	47000	32000	20000	23000	15000	10000	11000	8000	5000

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

THRUST ANCHORAGE DATA

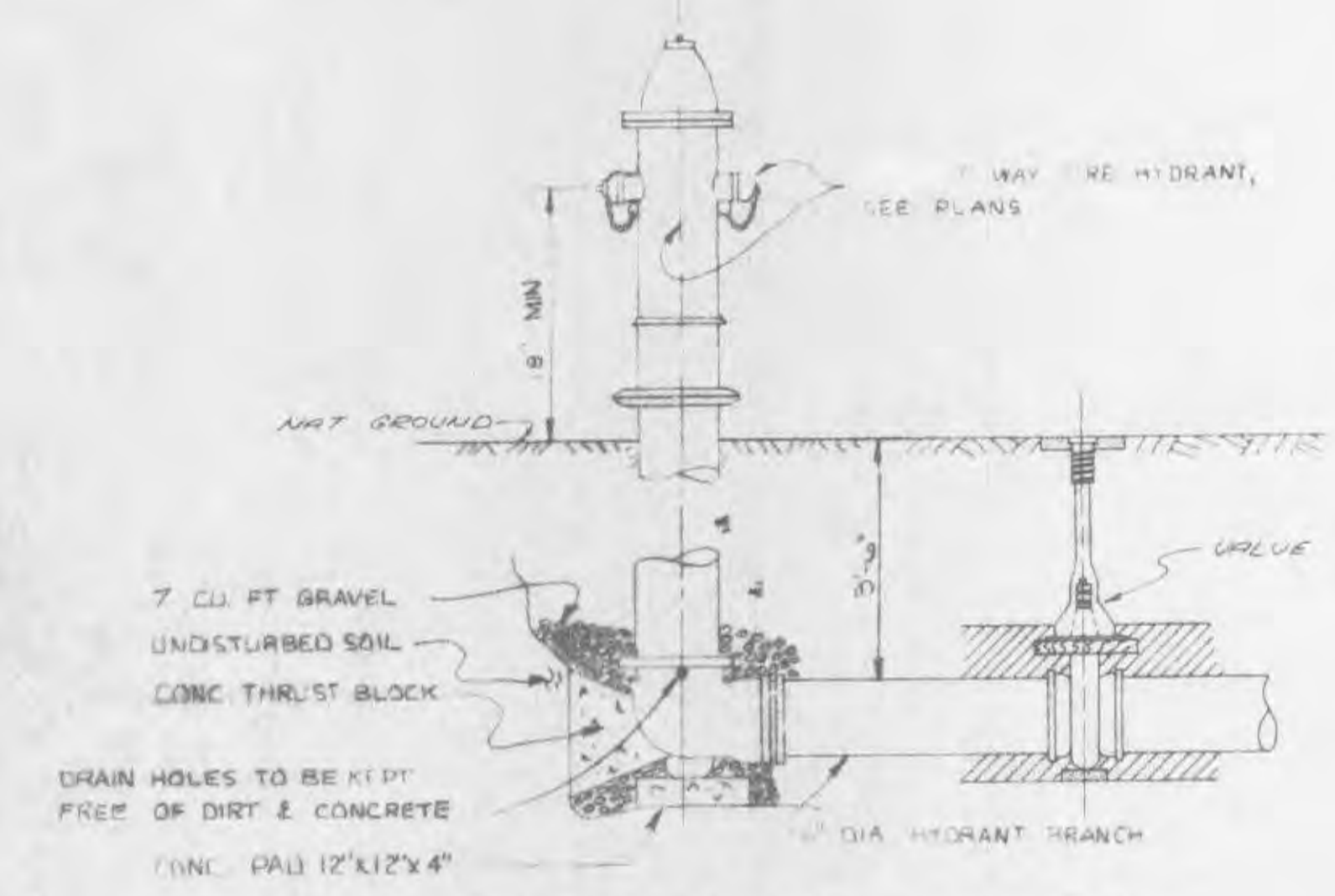
PIPE SIZE INCHES	MAXIMUM SIZE SERVICE STRAP CLAMP PERMITTED			MAXIMUM SIZE TAP PERMITTED IN CAST IRON PIPE	
	CAST IRON SIZE	ASBESTOS CEMENT SIZE	GALVANIZED SIZE	PIPE SIZE	TAP SIZE
2"	-	-	3/4"	2"	1/2"
3"	1/4"	-	1"	3"	1/2"
4"	1/2"	-	1 1/2"	4"	3/4"
6"	2"	1"	-	6"	1"
8"	3"	1 1/2"	-	8"	1 1/4"
10"	4"	2"	-	10"	1 1/2"
12"	5"	2 1/2"	-	12"	2"

MAXIMUM TAP AND SERVICE CLAMP SIZES

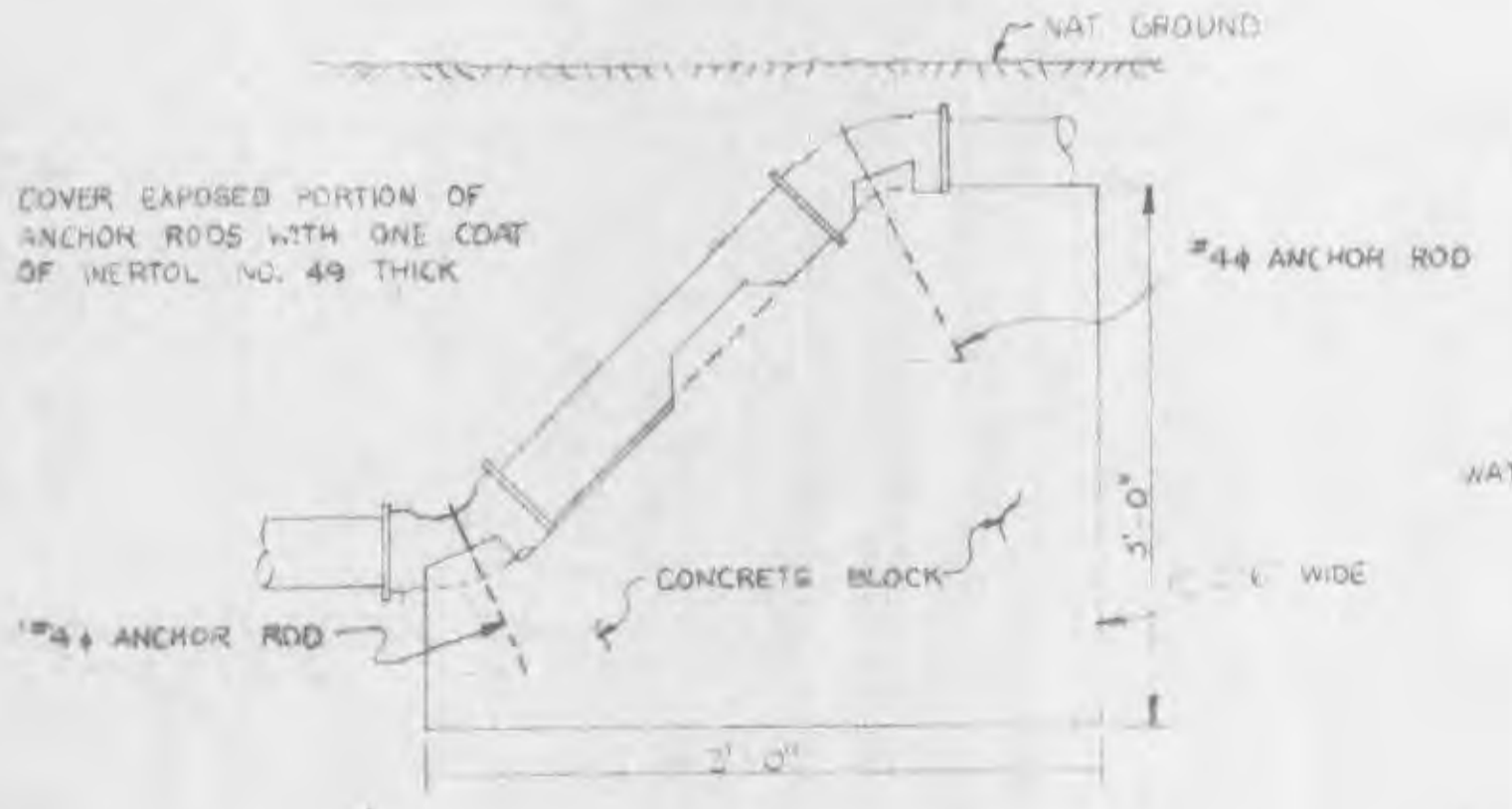


TYPICAL DETAIL OF RAILROAD CROSSING

- NOTES:
1. TAP NOT REQUIRED IF CASING ENDS ABOVE GROUND WHERE DRAINAGE IS AVAILABLE.
 2. CASING TO BE JACKED INTO BORED.
 3. INSIDE DIAM OF CASING TO BE A MIN OF 2" GREATER THAN COUPLING DIA OF CARRIER PIPE FOR 6" AND LESS DIA. CARRIER PIPES AND 4" GREATER FOR OVER 6" DIA. CARRIER PIPES.
 4. CASING TO BE COATED IF AND AS REQ'D BY APPROVING RAILROAD.
 5. FITTINGS TO BE AT 90° TO TRACK WHERE POSSIBLE.



TYPICAL DETAIL FOR FIRE HYDRANT INSTALLATION



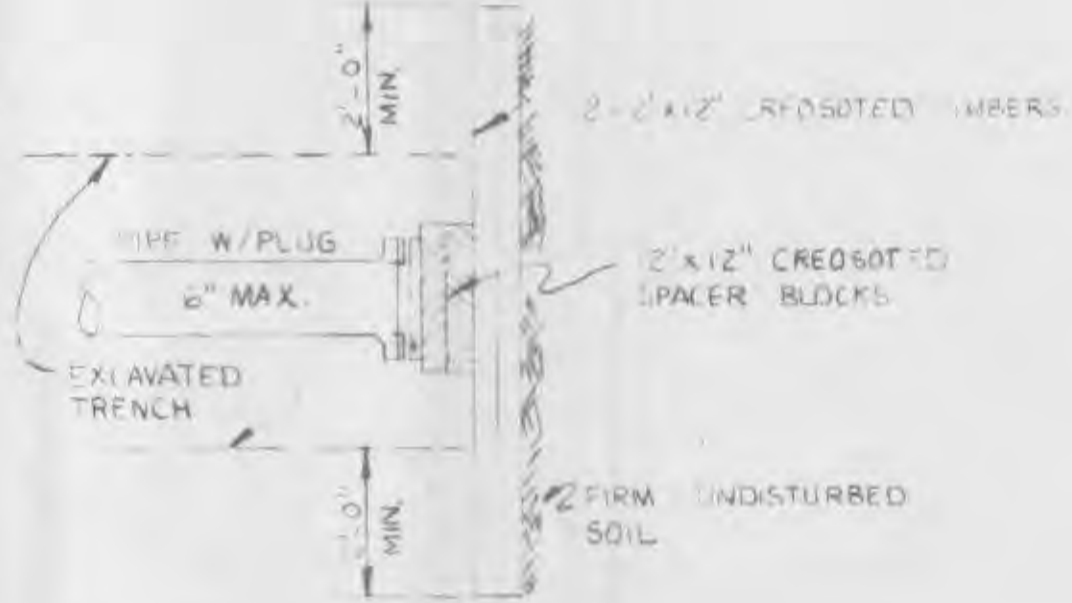
DETAIL THRUST BLOCK FOR VERTICAL OFFSETS



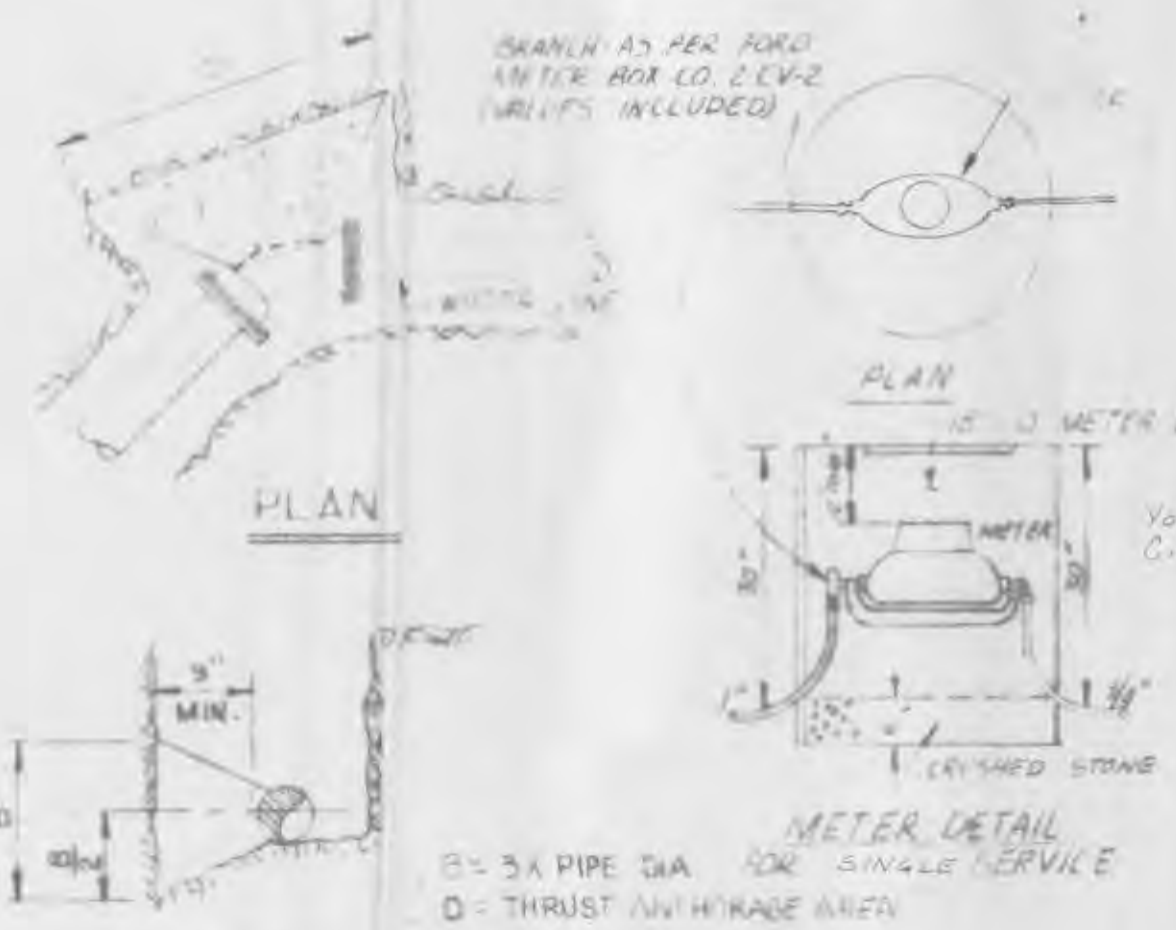
TYPICAL SERVICE ASSEMBLY

NOTE: WHEN SERVICE ASSEMBLY THE PLASTIC SERVICE TUBING (PVC) COMPRESSION COUPLINGS W/ INSERT, SHALL BE PROVIDED FOR 5/8" X 3/4" METEE 1 1/2" RIGID PVC SCHEDULE 80 W/ THREADED COUPLINGS SHALL BE PROVIDED FOR 2" AND 1 1/2" METERS.

NOTE: USE TIMBER THRUST BLOCK FOR TEMPORARY PLUG ON 6" AND LESS PIPE DIA. FOR LARGER PIPE DIA USE OTHER TYPE OF ANCHORAGE.



PLAN PLUG DETAIL



THRUST BLOCK FOR HORIZONTAL OFFSETS

- NOTE:
1. SPECIAL REQ. FOR PLUG PIPE: (A) FOR 6" AND 8" V.L. PIPE TEES & CROSSES SHALL BE MECHANICAL JOINT CAST IRON FITTINGS. (B) FOR ALL SIZES OF PVC PIPE ALL BENDS SHALL BE WOUND FROM PLASTIC BENDS. (C) FOR ALL SIZES OF PVC PIPE SCHEDULE 80 PLASTIC ADAPTORS SHALL BE PROVIDED FOR VALVED TEES, CROSSES & HYDRANTS. (D) FOR ALL SIZES OF PVC PIPE ALL JOINTS SHALL BE RUBBER RING OR COUPLINGS W/ RUBBER RINGS. (E) SOLVENT WELDING IN THE FIELD IS NOT BE PERMITTED. (F) WELDED JOINTS OR FITTINGS JOINTS OF FITTINGS WHICH ARE SOLVENT WELDED AT THE FACTORY ARE ACCEPTABLE.
 2. SPECIAL REQUIREMENTS FOR SERVICE CONNECTIONS: (A) DOUBLE STRAP SERVICE SADDLES WITH BLAKE NO. 313 OR EQUAL SHALL BE PROVIDED FOR ASBESTOS CEMENT AND PVC PIPE THAT IS 6" OR LARGER. (B) SPECIAL PLASTIC SADDLES WITH BLAKE NO. 302 OR EQUAL SHALL BE PROVIDED FOR PVC PIPE THAT IS 4" OR SMALLER. (C) SINGLE STRAP SERVICE SADDLES WITH BLAKE NO. 311 OR EQUAL SHALL BE PROVIDED FOR 1/2" TAPS ON CAST IRON PIPE THAT IS 6" OR LARGER.
 3. CONCRETE DRIVEWAYS: (A) WHERE CONCRETE DRIVEWAYS ARE MAINTAINED ON STATE MAINTAINED HIGHWAYS, TACKLING & SPRING WILL BE REQUIRED.
 4. OPTIONS: (A) ASBESTOS-CEMENT COUPLINGS MAY BE UTILIZED FOR SERVICE CONNECTIONS FOR PVC AND A.C. PIPE. (B) PLASTIC TEES W/ RUBBER RINGS MAY BE SUBSTITUTED FOR TAPPED TEES.