

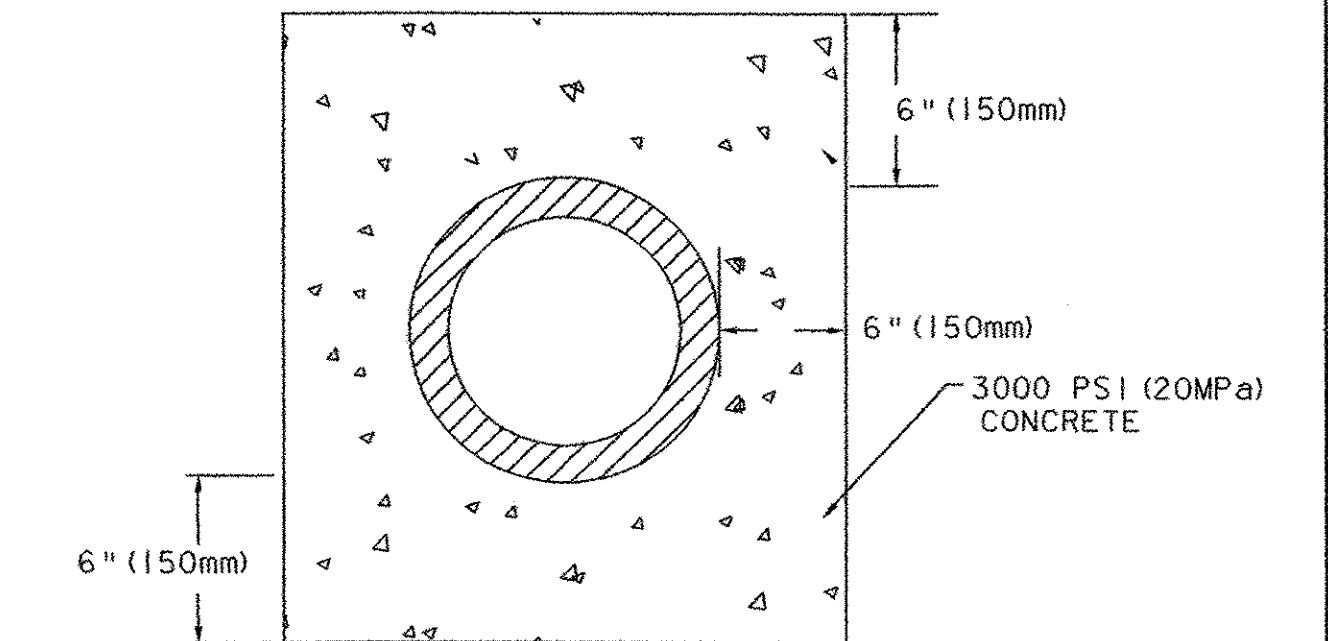
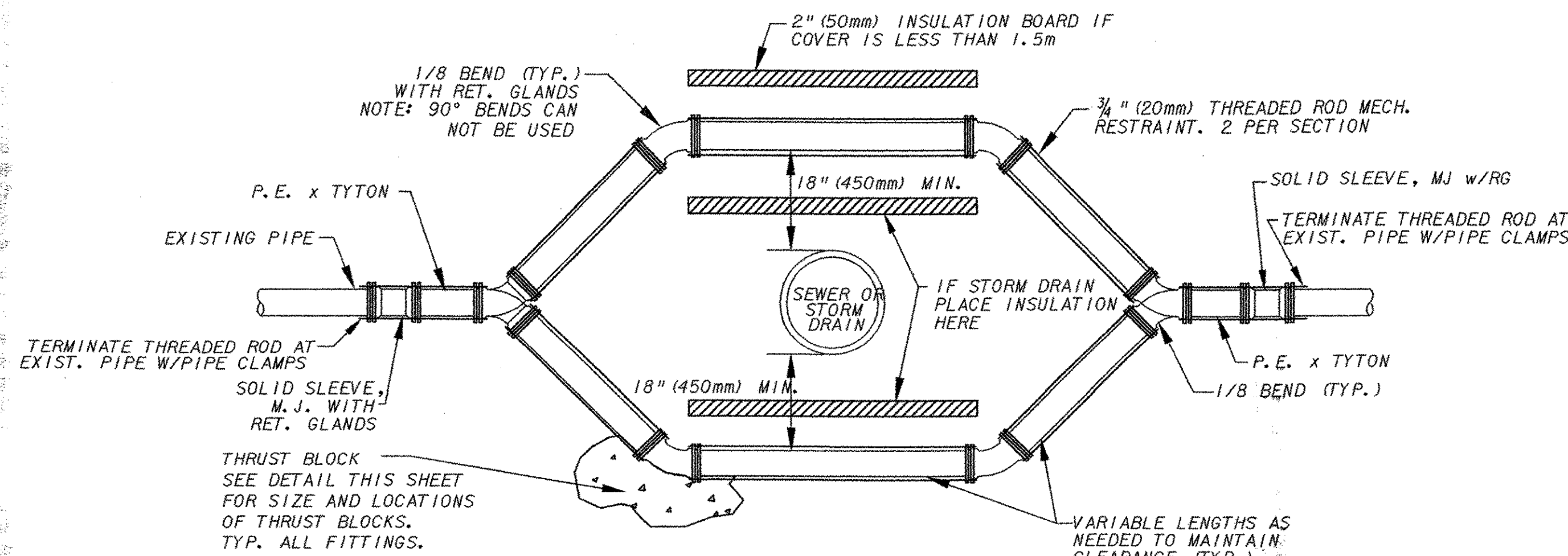
**THRUST BLOCK SCHEDULE**  
SQUARE FEET(METERS) OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL

REACTION TYPE	PIPE SIZE															
	4" 100mm	6" 150mm	8" 200mm	10" 250mm	12" 300mm	14" 350mm	16" 400mm	18" 450mm	20" 500mm	24" 600mm	30" 750mm	36" 900mm				
A	0.89 (0.083)	2.19 (0.203)	3.92 (0.364)	5.57 (0.517)	8.62 (0.801)	10.91 (1.014)	15.41 (1.432)	18.02 (1.674)	24.06 (2.235)	34.64 (3.218)	53.83 (5.001)	77.39 (7.190)				
B	0.65 (0.060)	1.55 (0.144)	2.76 (0.256)	4.19 (0.389)	6.09 (0.566)	8.37 (0.778)	10.89 (1.012)	13.87 (1.289)	17.01 (1.580)	24.49 (2.275)	38.06 (3.536)	54.72 (5.084)				
C	0.48 (0.045)	1.19 (0.111)	2.12 (0.197)	3.01 (0.280)	4.66 (0.433)	6.91 (0.644)	9.71 (0.902)	13.02 (1.210)	18.75 (1.742)	29.13 (2.706)	41.88 (3.891)					
D	0.25 (0.023)	0.60 (0.056)	1.08 (0.100)	1.54 (0.143)	2.37 (0.220)	3.01 (0.280)	4.25 (0.395)	4.97 (0.462)	6.64 (0.617)	9.56 (0.888)	14.85 (1.380)	21.35 (1.983)				
E	0.13 (0.012)	0.30 (0.028)	0.54 (0.050)	0.77 (0.072)	1.19 (0.111)	1.52 (0.141)	2.12 (0.205)	2.51 (0.233)	3.33 (0.309)	4.79 (0.445)	7.45 (0.692)	10.71 (0.995)				

Other test pressures for the above reactions: TEST PRESSURE TO BE 200 PSI(1380 kN/m<sup>2</sup>) MIN. AT LOW END OF THE TEST SECTION. SQUARE FEET(METERS) OF CONCRETE THRUST BLOCKING FOR OTHER TEST PRESSURES IS DIRECTLY PROPORTIONAL TO THE ABOVE TABLE. FOR INSTANCE, AT 200 PSI(1380 kN/m<sup>2</sup>) TEST PRESSURE FOR ABOVE NUMBERS DOUBLE.

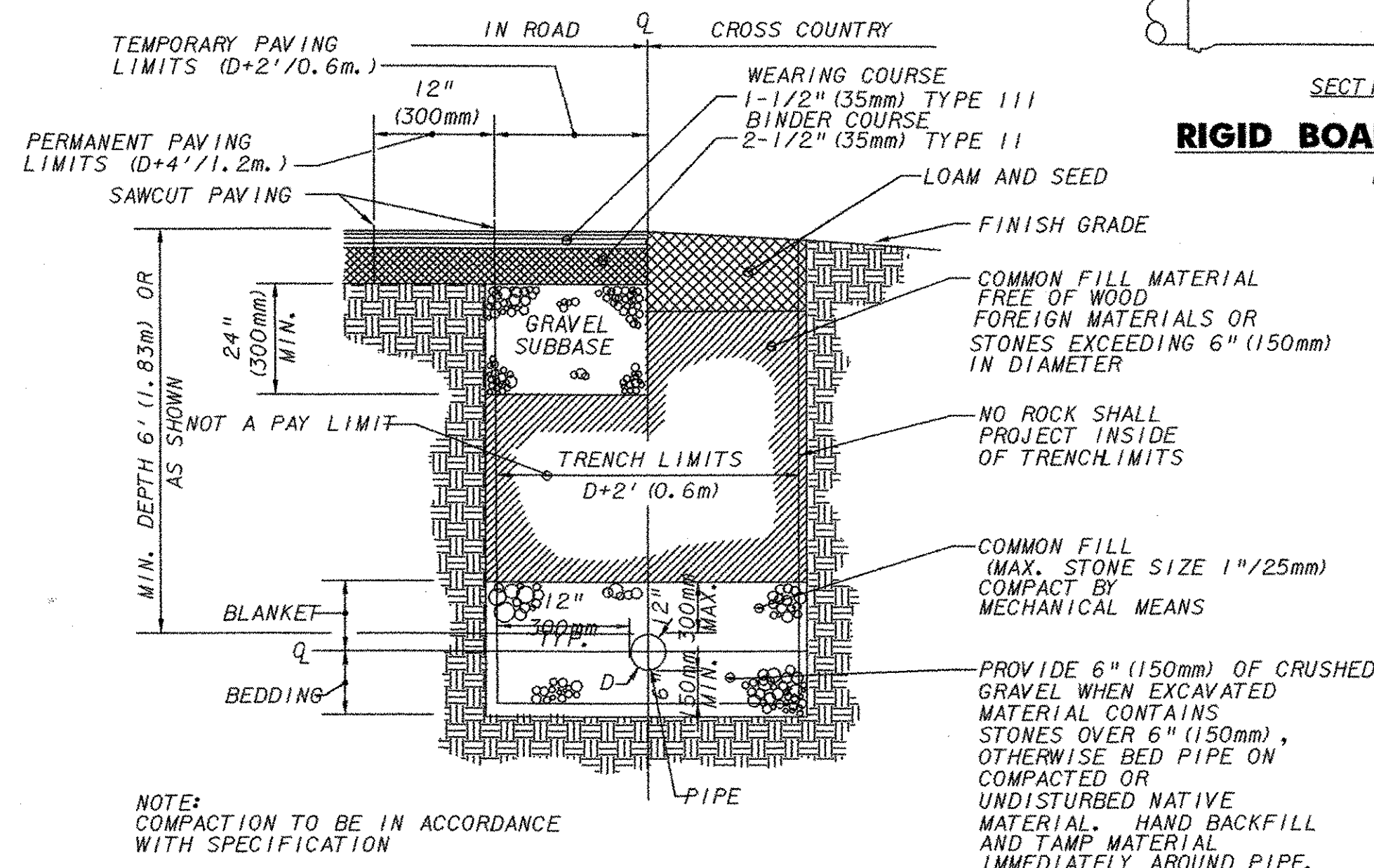
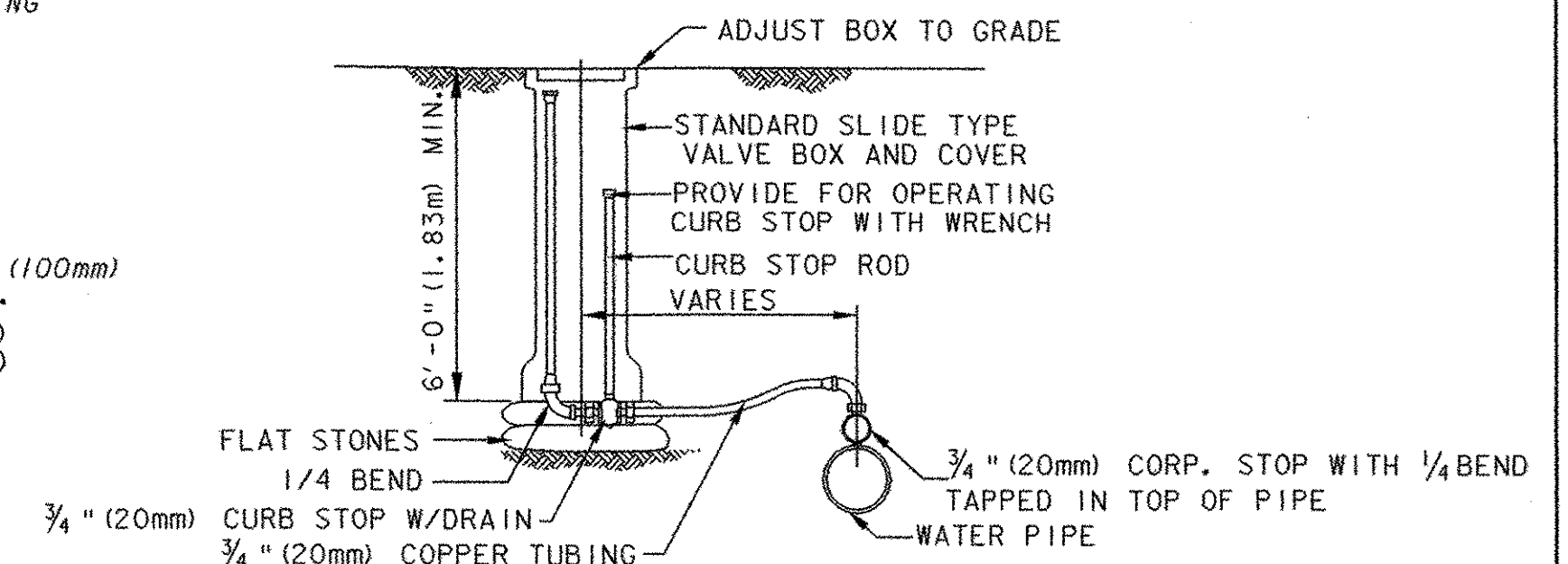
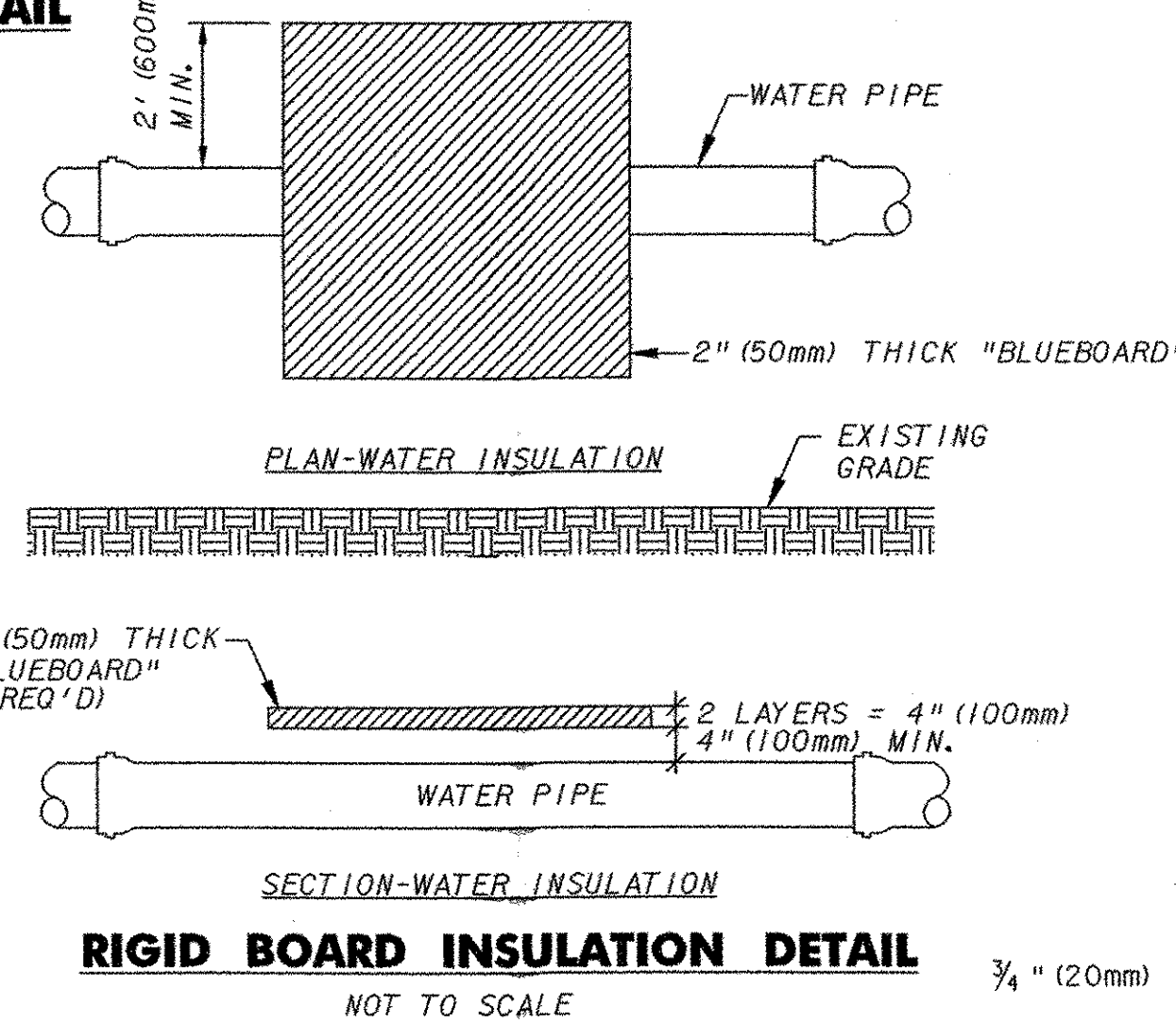
**NOTES:**

- POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL. WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
- ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
- PLACE CONCRETE PATIO BLOCKS IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCK.
- REQUIREMENTS OF THE ABOVE TABLE PRESUME MINIMUM SOIL BEARING OF 1 TON PER SF(96 KN PER SQUARE METER), AND MAY BE VARIED BY THE ENGINEER TO MEET OTHER CONDITIONS ENCOUNTERED.
- MEGA-LUG RETAINER GLANDS ARE REQUIRED FOR ALL MECHANICAL JOINTS. THESE GLANDS DO NOT REDUCE THE REQUIREMENTS FOR THRUST RESTRAINT.
- ALL FITTINGS SHALL BE WRAPPED IN POLYETHYLENE OR BUILDING PAPER PRIOR TO INSTALLATION OF CONCRETE RESTRAINT.
- THREADED ROD SHALL BE ANSI A242 F550 PIPE RESTRAINT NUTS TO MATCH AWWA C11. THREADED RODS AND NUTS TO BE FIELD COATED WITH BITUMINOUS PAINT.
- THRUST RESTRAINT IS REQUIRED FOR ALL TEES, BENDS, REDUCERS, CAPS, PLUGS, OR CROSSES.
- INSTALL LIFT HOOKS INTO THRUST BLOCKS AT END CAPS AND PLUGS.

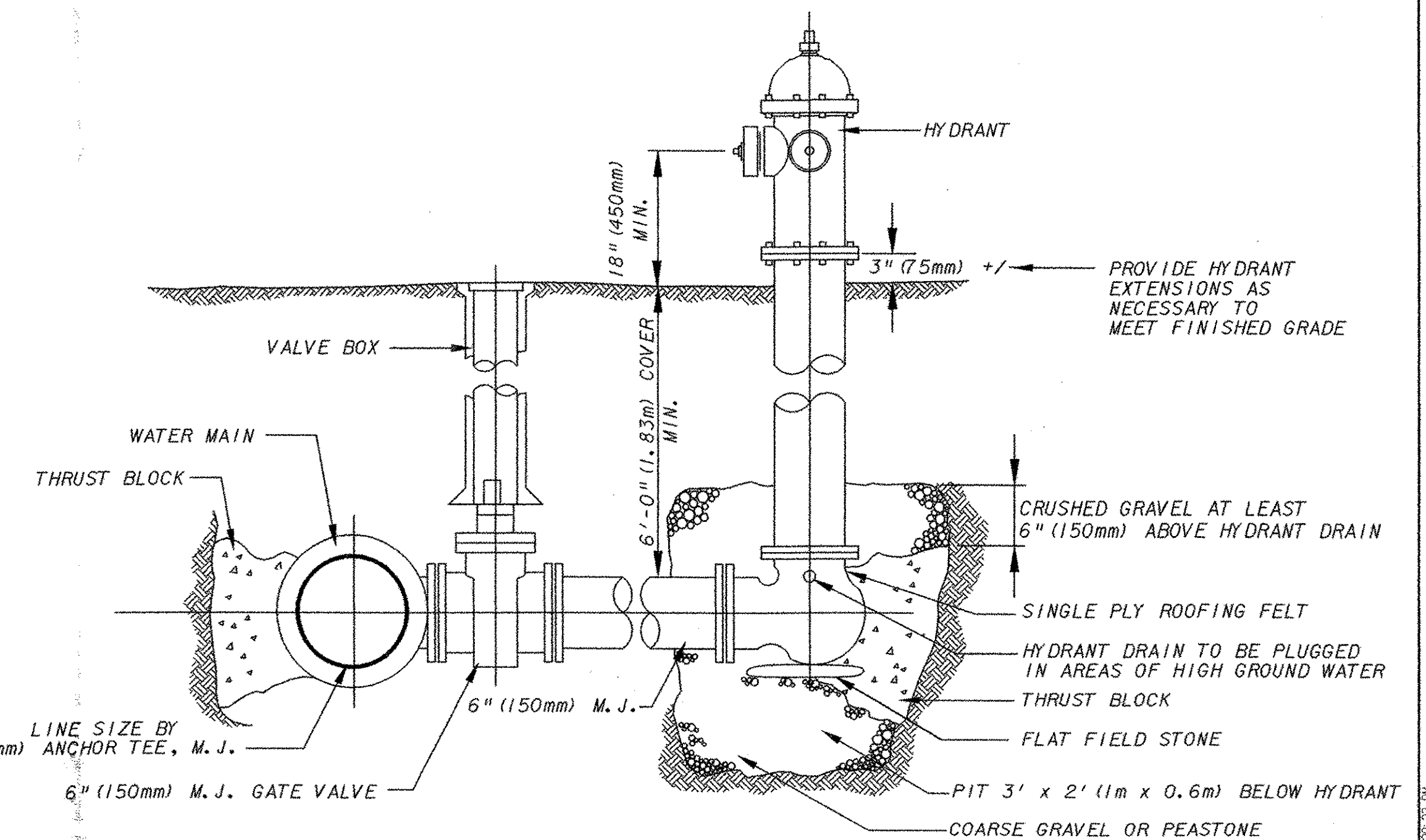
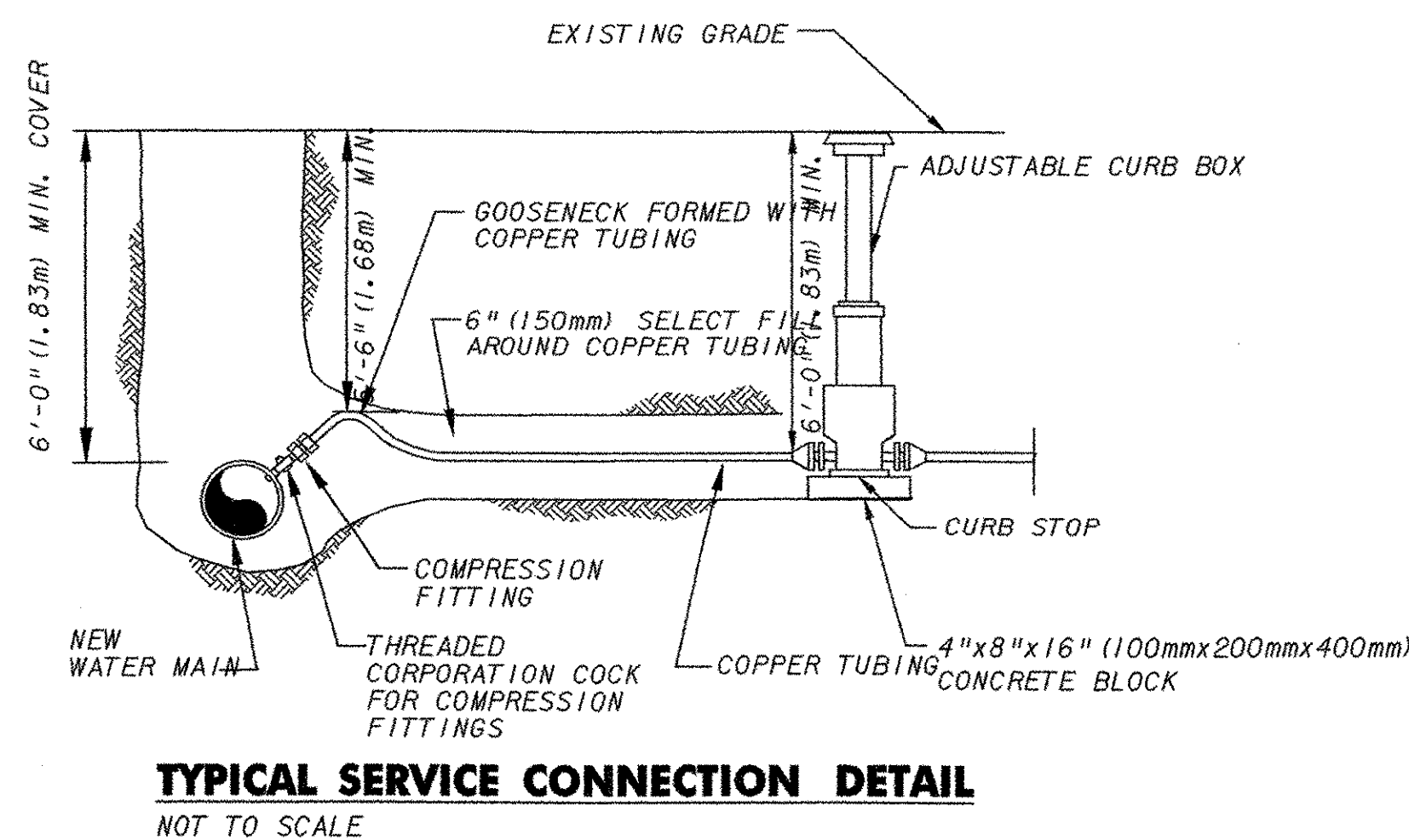


NOTE: CONCRETE ENCASEMENT OF WATER MAINS WILL BE REQUIRED WHERE THEY CROSS SEWERS AND STORM DRAINS, AND WHERE 18" (450mm) VERTICAL SEPARATION CAN NOT BE MAINTAINED

**SECTION - WATER MAIN RELOCATION DETAIL**  
NOT TO SCALE



**TYPICAL DUCTILE IRON TRENCH DETAIL**  
NOT TO SCALE



**HYDRANT ASSEMBLY DETAIL**  
NOT TO SCALE



PROJECT NAME: WATERBURY  
PROJECT NUMBER: BRO 1446(26)

FILE NAME: ...62-Water Details.pft PLOT DATE: 01/28/2004  
PROJECT LEADER: A.T. RICE DRAWN BY: B.L. BAKER  
DESIGNED BY: A.T. RICE CHECKED BY: A.T. RICE