

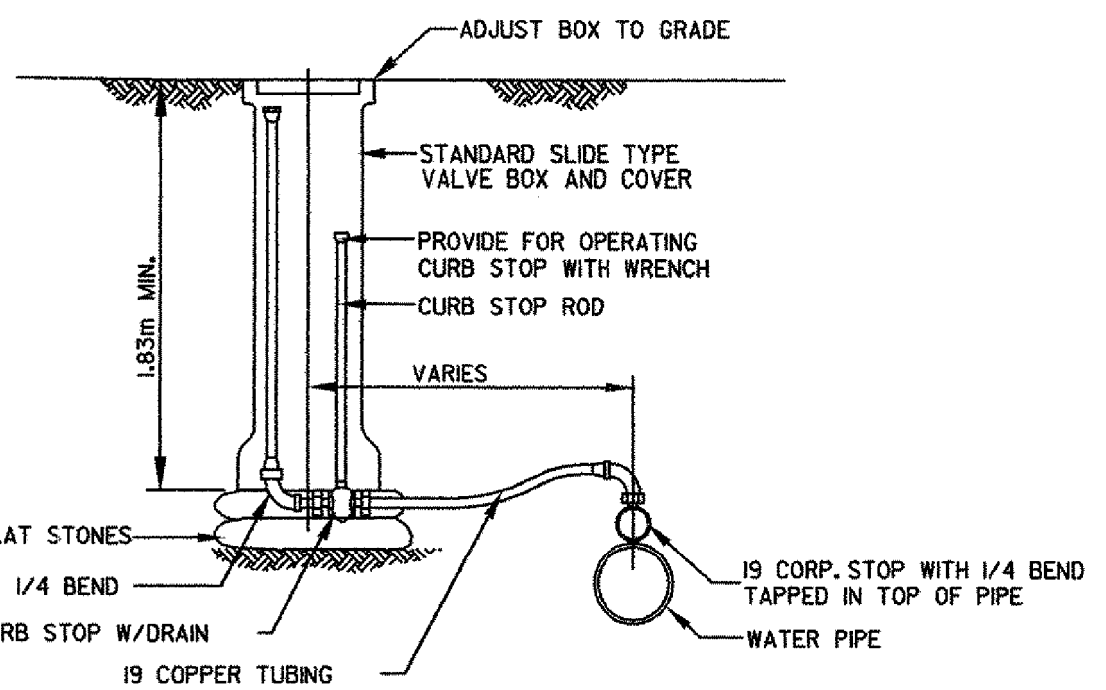
**THRUST BLOCK DETAILS**  
NOT TO SCALE

THRUST BLOCK SCHEDULE  
SQUARE METERS OF CONCRETE THRUST  
BLOCKING BEARING ON UNDISTURBED MATERIAL

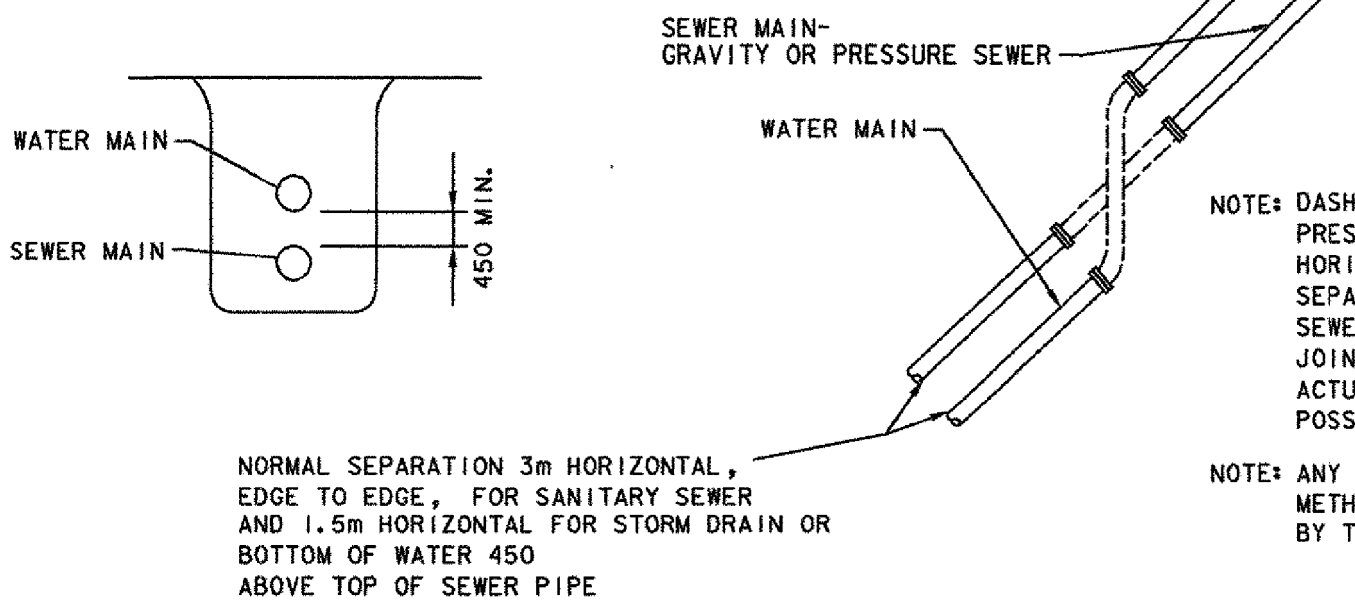
REACTION TYPE	PIPE SIZE											
	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm	500mm	600mm	750mm	900mm
A	0.125	0.305	0.546	0.776	1.202	1.521	2.148	2.511	3.353	4.827	7.502	10.785
B	0.090	0.144	0.384	0.584	0.849	1.167	1.518	1.934	2.370	3.413	5.304	7.626
C	0.068	0.167	0.236	0.420	0.650	0.824	1.163	1.353	1.815	2.613	4.059	5.837
D	0.035	0.084	0.150	0.215	0.330	0.420	0.593	0.693	0.926	1.332	2.07	2.975
E	0.018	0.042	0.075	0.108	0.167	0.212	0.308	0.350	0.464	0.668	1.038	1.493

TEST PRESSURE TO BE 1035 kN/m<sup>2</sup> MIN. AT LOW END OF THE TEST SECTION.

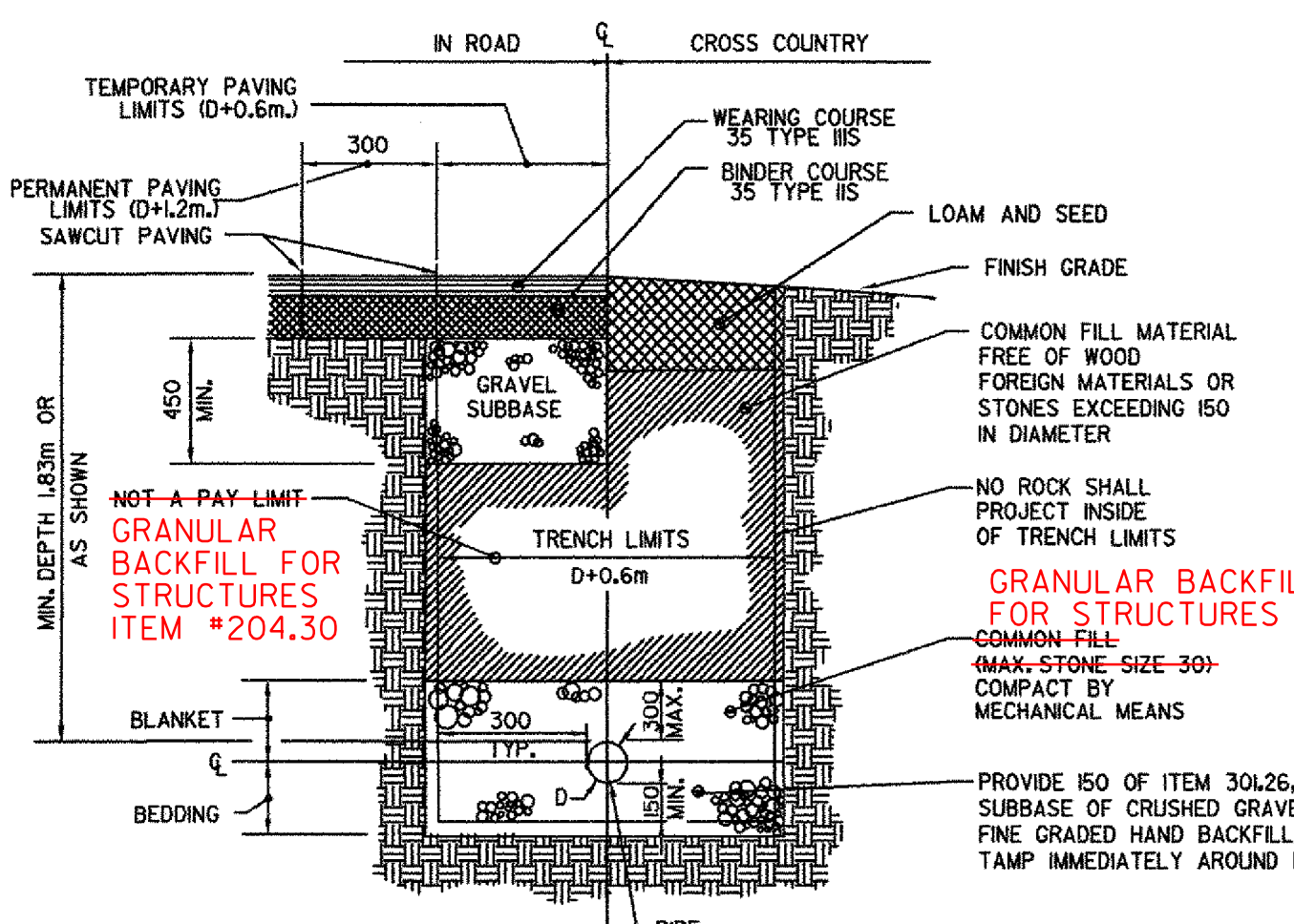
- NOTES:
- POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL. WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
  - ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
  - PLACE CONCRETE PATIO BLOCKS IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCK.
  - REQUIREMENTS OF THE ABOVE TABLE PRESUME MINIMUM SOIL BEARING OF 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.



**TYPICAL INSTALLATION-TRAVEL WAY FOR AIR VENT OR CHLORINATION INJECTION**  
NOT TO SCALE

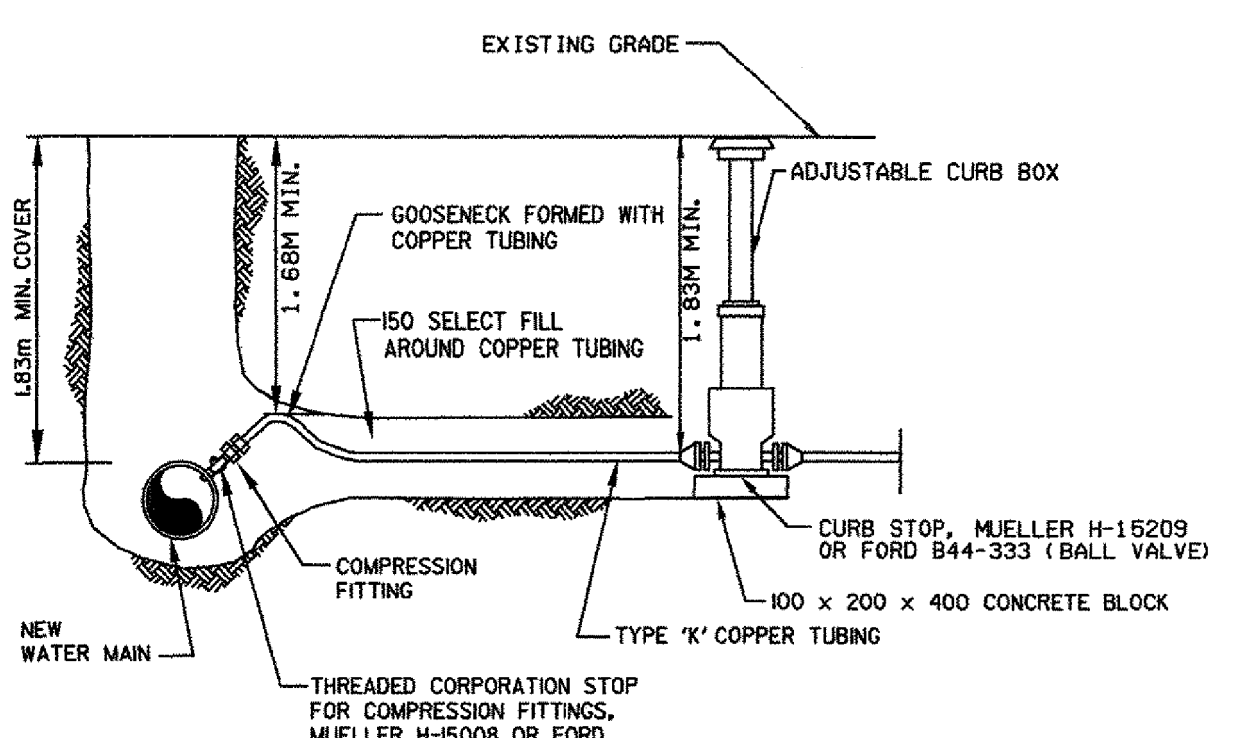


**CROSSING DETAIL**  
NOT TO SCALE



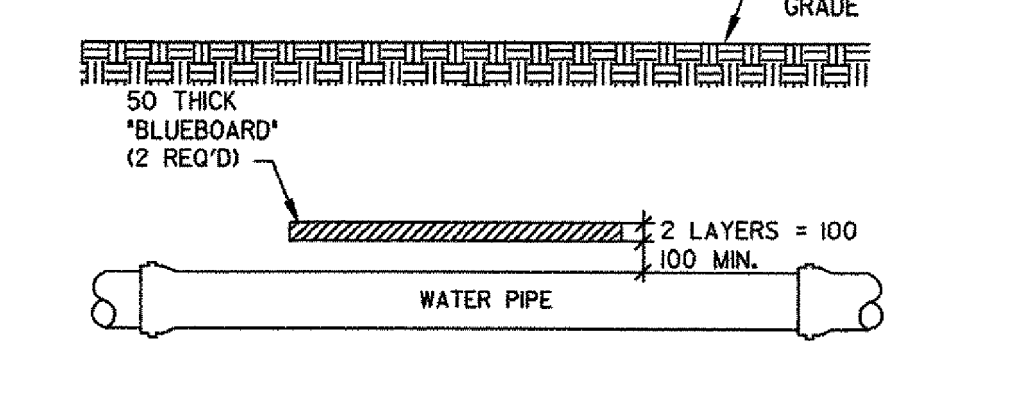
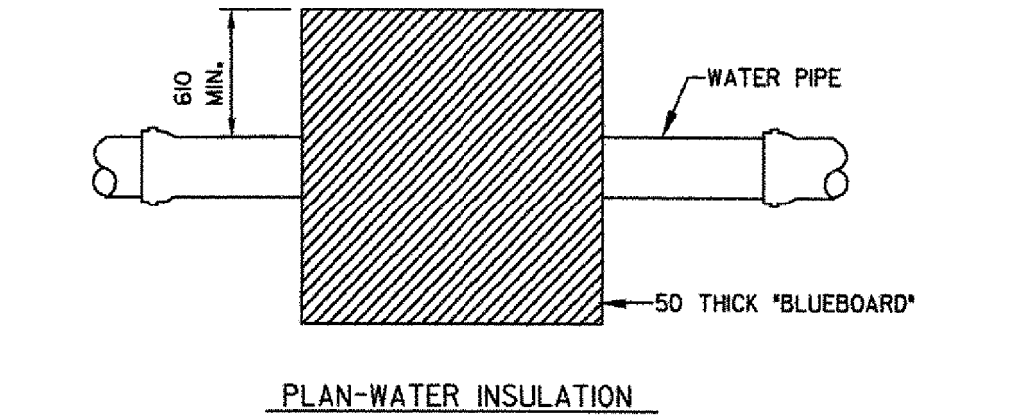
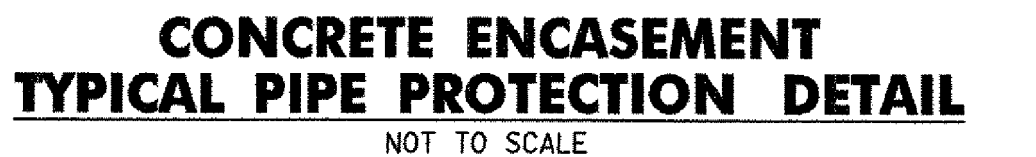
**TYPICAL WATER MAIN TRENCH DETAIL**  
NOT TO SCALE

- NOTES:
- COMPACTION TO BE IN ACCORDANCE WITH SPECIFICATION
  - WATER MAIN SHALL BE ANSI/AWWA C151/A 21.51, CLASS 52, CEMENT LINED, DUCTILE IRON PIPE, SEAL COATED INSIDE AND OUT. PUSH ON JOINTS, 3 BRASS WEDGES PER JOINT.
  - FITTINGS SHALL BE MECHANICAL JOINT TYPE DUCTILE IRON WITH MEGA-LUG RETAINER GLANDS, 2420 KPa, CEMENT LINED, CLASS 53 MINIMUM. GRIP RINGS MAY BE USED IN PLACE OF RETAINER GLANDS.

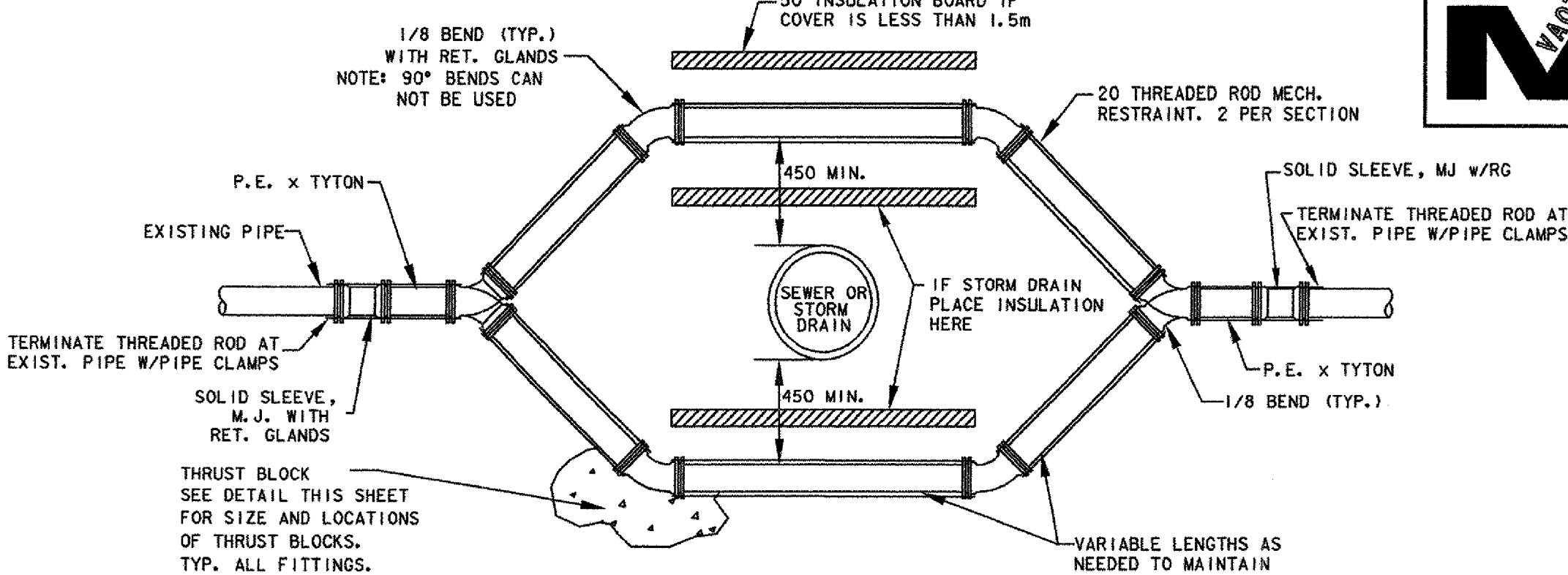


**TYPICAL SERVICE CONNECTION DETAIL**  
NOT TO SCALE

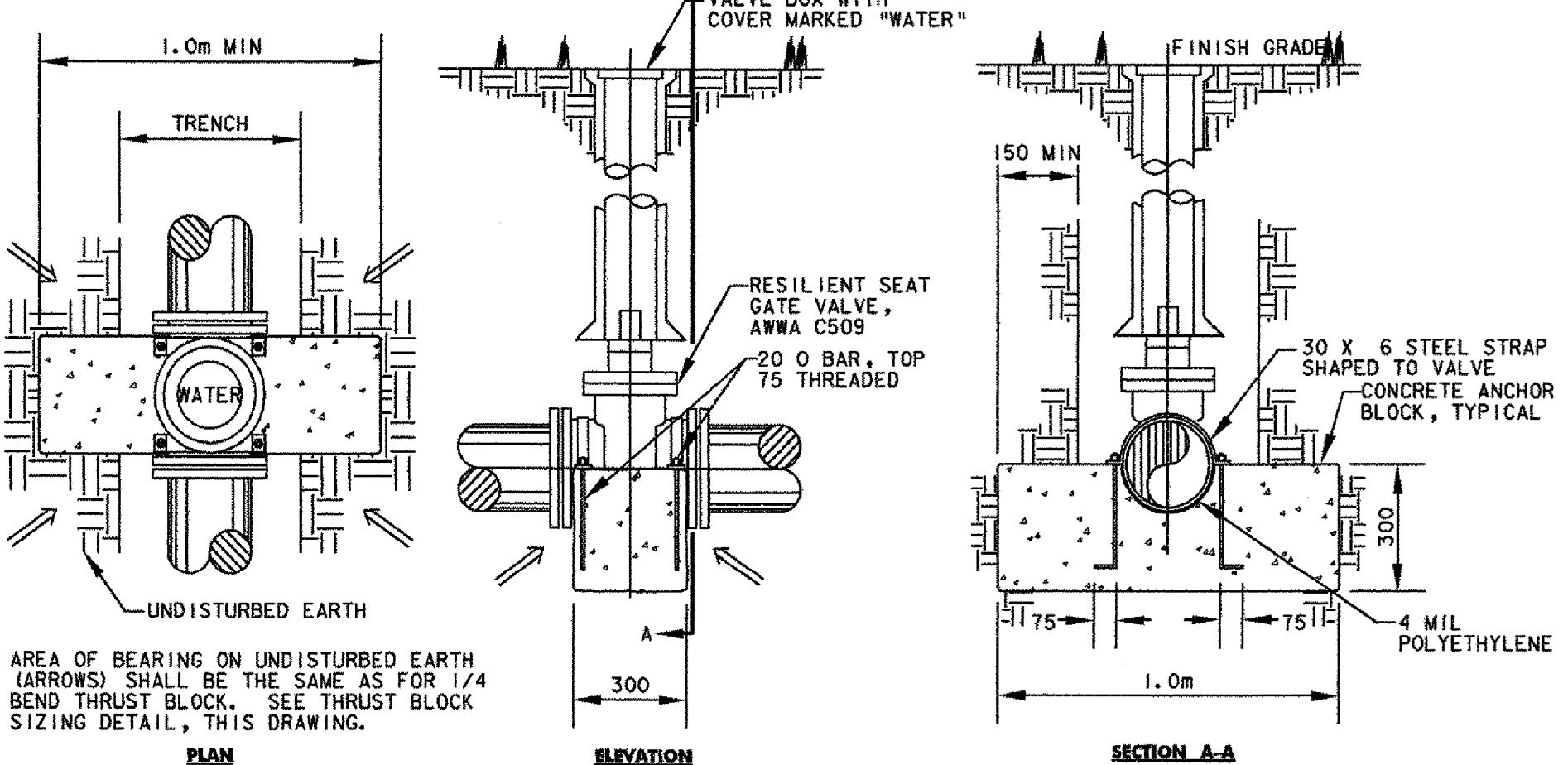
**CONCRETE ENCASEMENT TYPICAL PIPE PROTECTION DETAIL**  
NOT TO SCALE



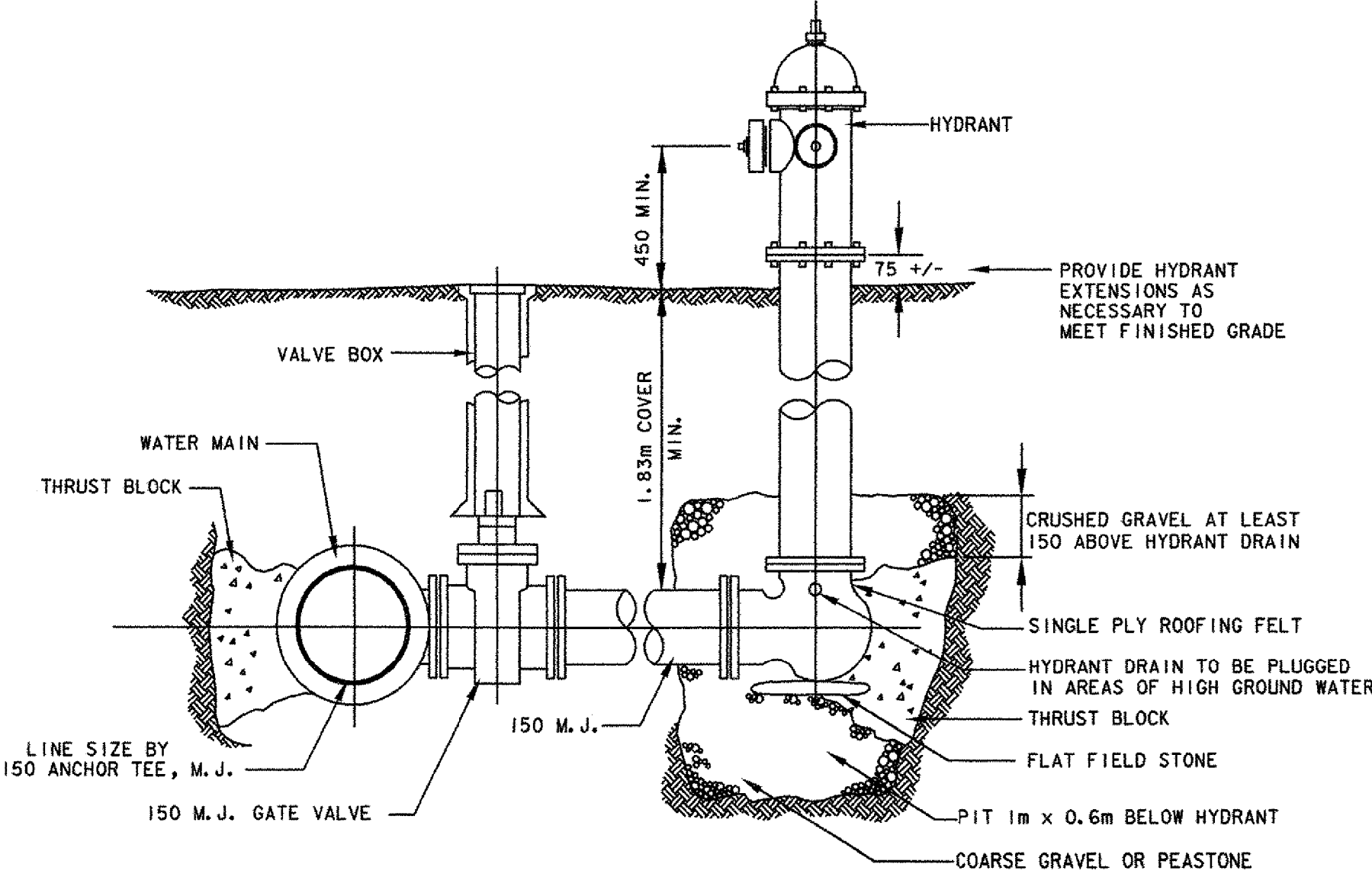
**RIGID BOARD INSULATION DETAIL**  
NOT TO SCALE



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



**GATE VALVE ANCHOR DETAILS**  
NOT TO SCALE



**HYDRANT ASSEMBLY DETAIL**  
NOT TO SCALE

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (MM) EXCEPT WHERE NOTED.

**VERMONT AGENCY OF TRANSPORTATION**



PROJECT NAME: BENNINGTON  
PROJECT NUMBER: AC NH 019-(K51)  
FILE NAME: ...plot files\zd307oldet-uti.ptf PLOT DATE: 1/30/2009  
DESIGN SUPERVISOR: GREG EDWARDS DRAWN BY: STANTEC  
DESIGNED BY: MARC FOISY CHECKED BY: GARY SANTY  
UTILITY DETAILS U-06 SHEET 162 OF 367