

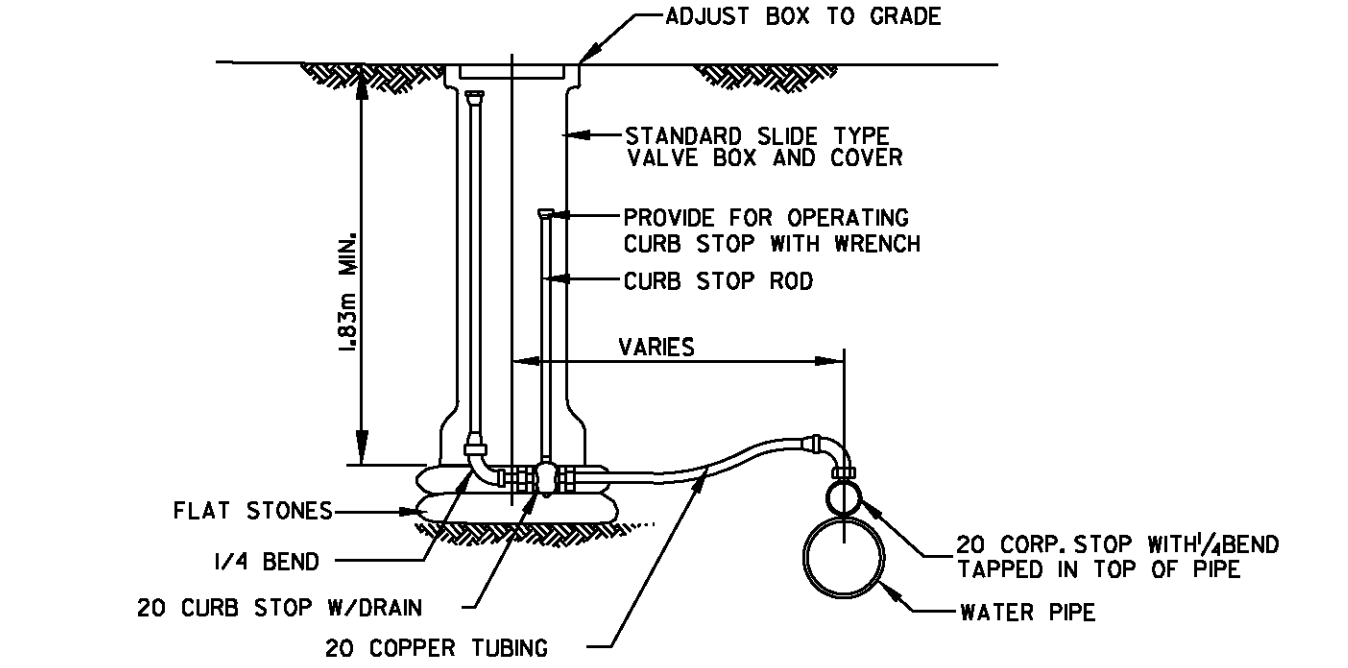
THRUST BLOCK DETAILS
NOT TO SCALE

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

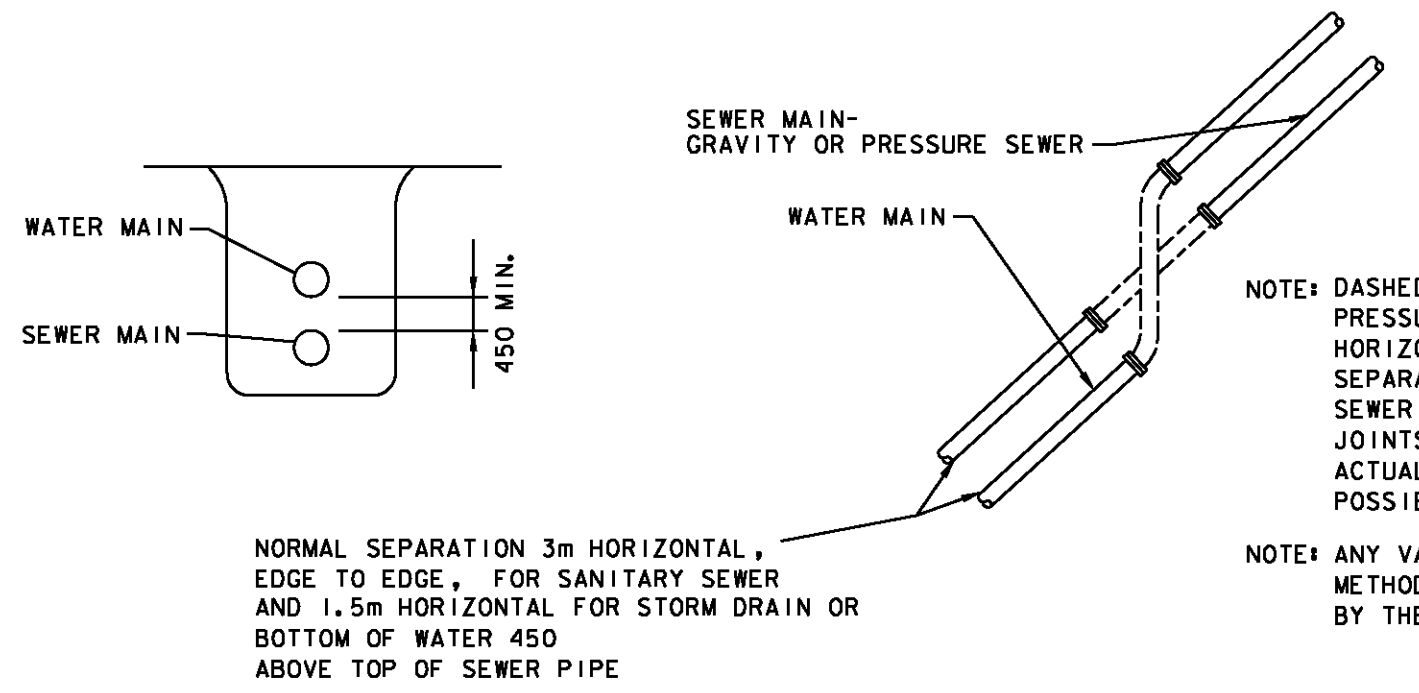
REACTION TYPE	PIPE SIZE											
	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm	500mm	600mm	750mm	900mm
(A)	0.25	0.305	0.546	0.776	1.202	1.521	2.148	2.511	3.353	4.827	7.502	10.785
(B)	0.090	0.144	0.384	0.584	0.849	1.167	1.518	1.934	2.370	3.413	5.304	7.626
(C)	0.068	0.167	0.296	0.420	0.650	0.824	1.163	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/m² 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 ANSIA242 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.



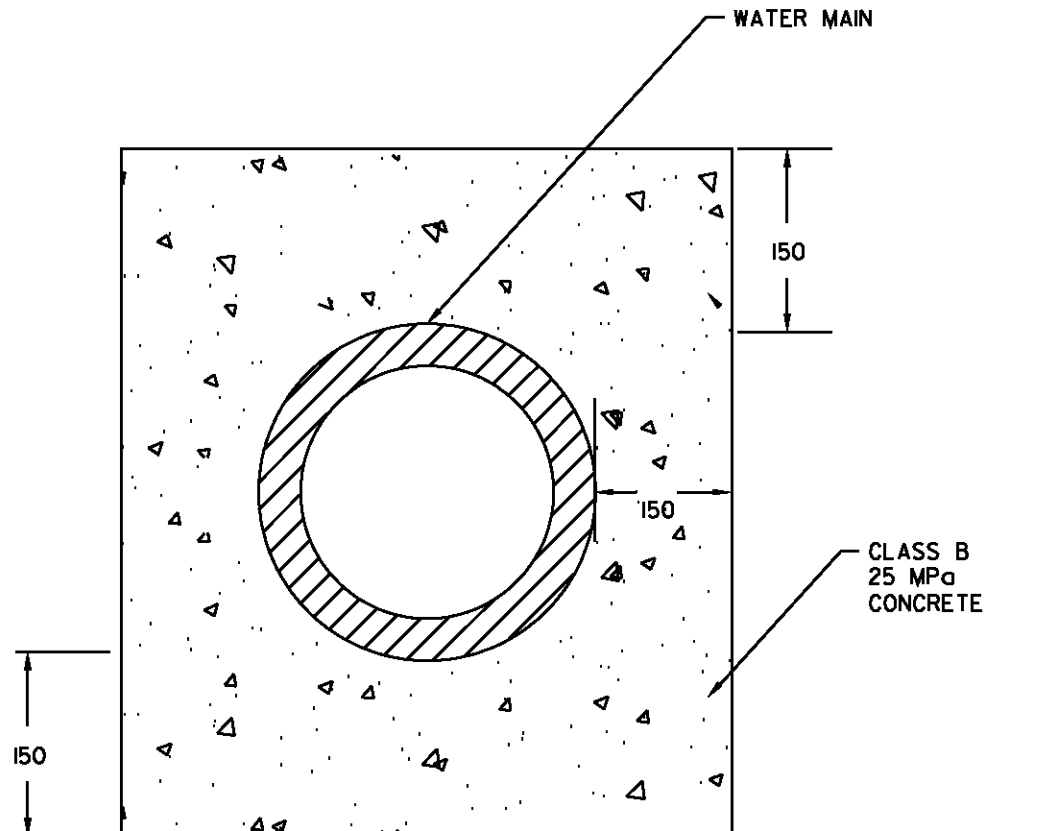
TYPICAL INSTALLATION-TRAVEL WAY FOR AIR VENT OR CHLORINATION INJECTION
NOT TO SCALE



CROSSING DETAIL
NOT TO SCALE

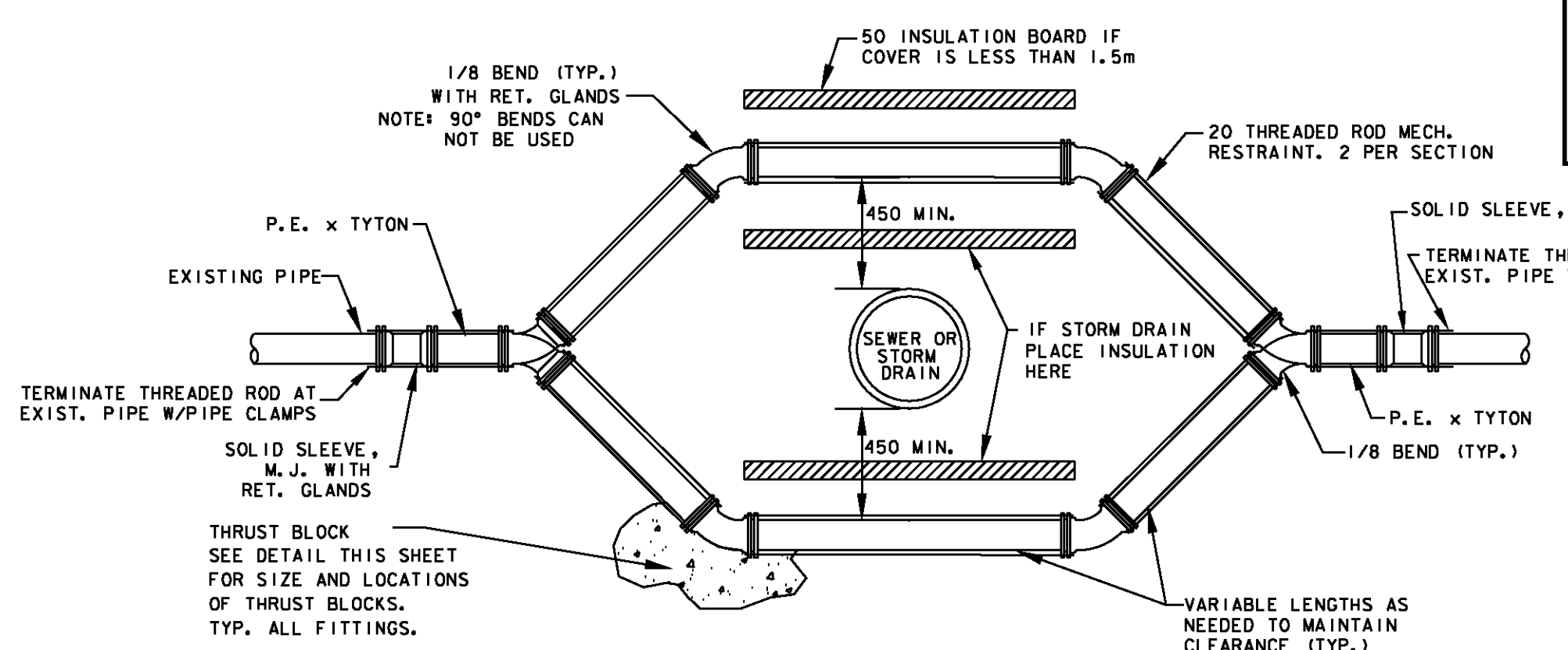
NOTE: DASHED PIPE SECTIONS SHALL BE PRESSURE TYPE PIPE UNTIL 3 M HORIZONTAL OR 450 VERTICAL SEPARATION WITH WATER MAIN ABOVE SEWER IS MAINTAINED. PIPE JOINTS SHALL BE AS FAR FROM ACTUAL CROSSING POINT AS POSSIBLE.

NOTE: ANY VARIATION FROM THIS METHOD MUST BE APPROVED BY THE ENGINEER

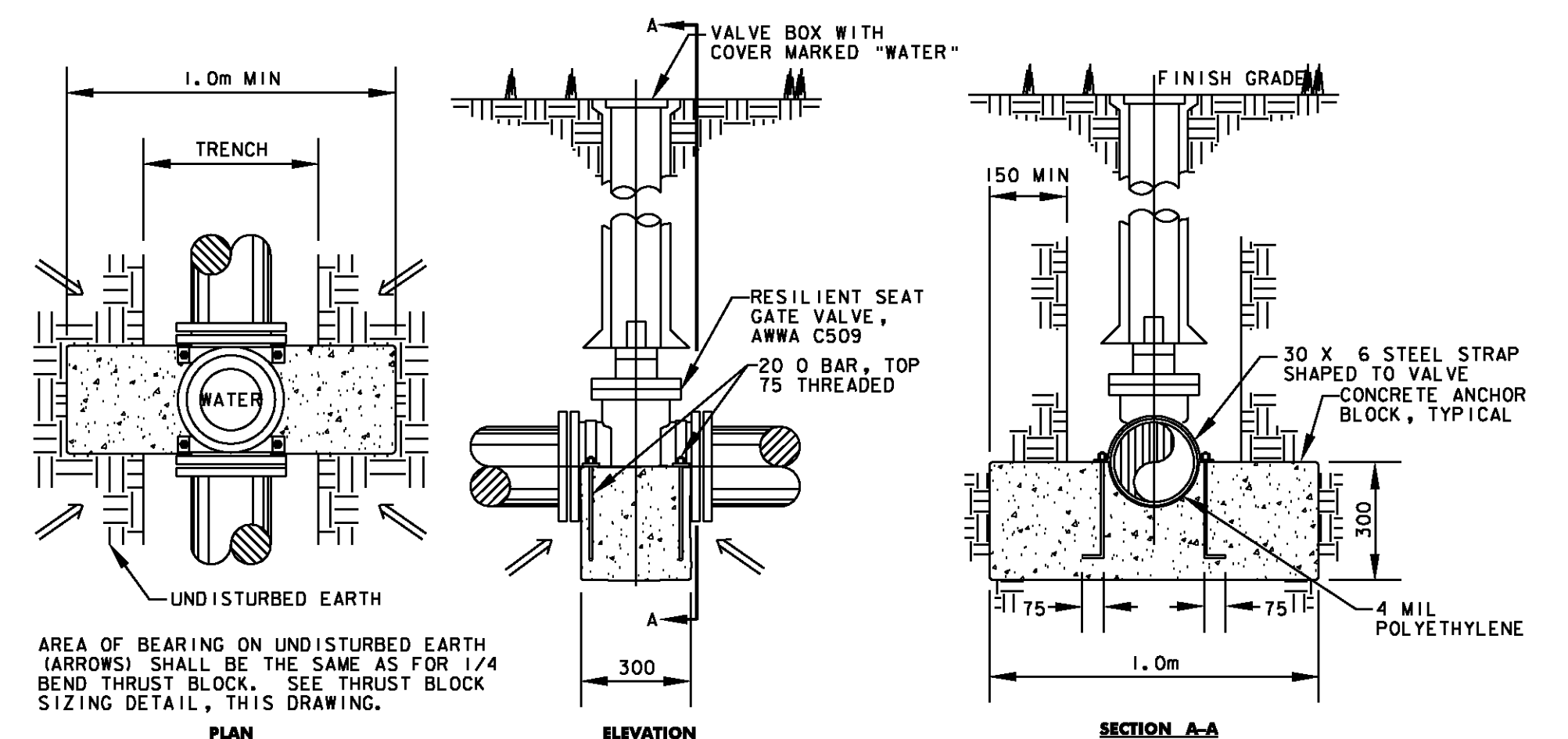


CONCRETE ENCASEMENT TYPICAL PIPE PROTECTION DETAIL
NOT TO SCALE

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

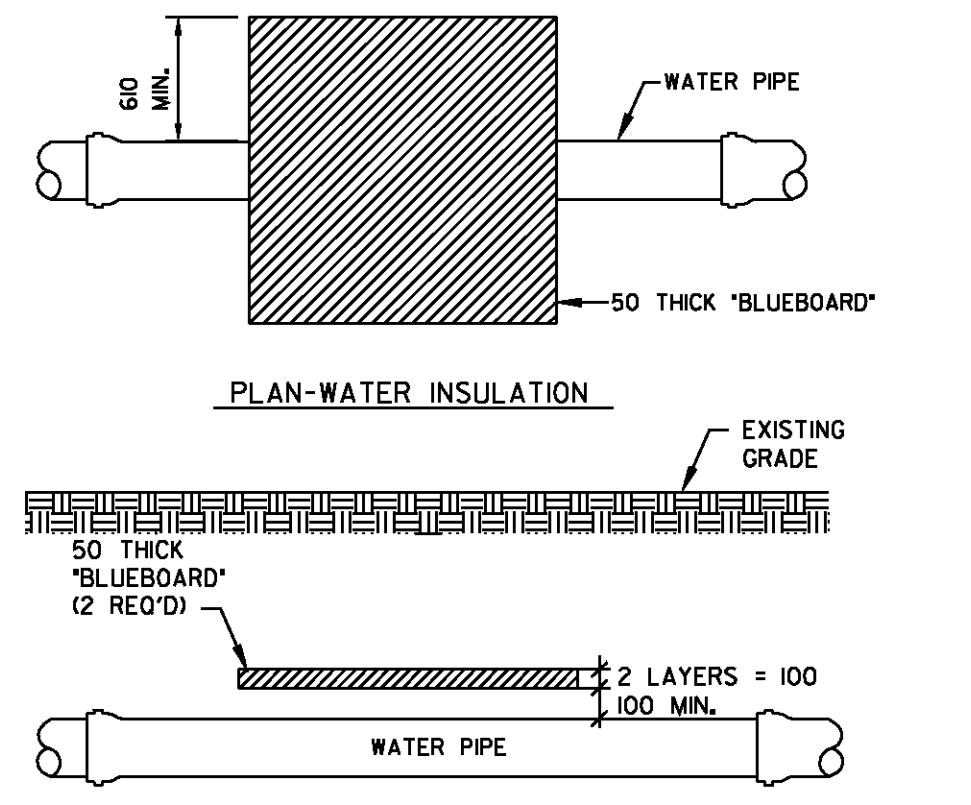


SECTION - WATER MAIN RELOCATION DETAIL
NOT TO SCALE

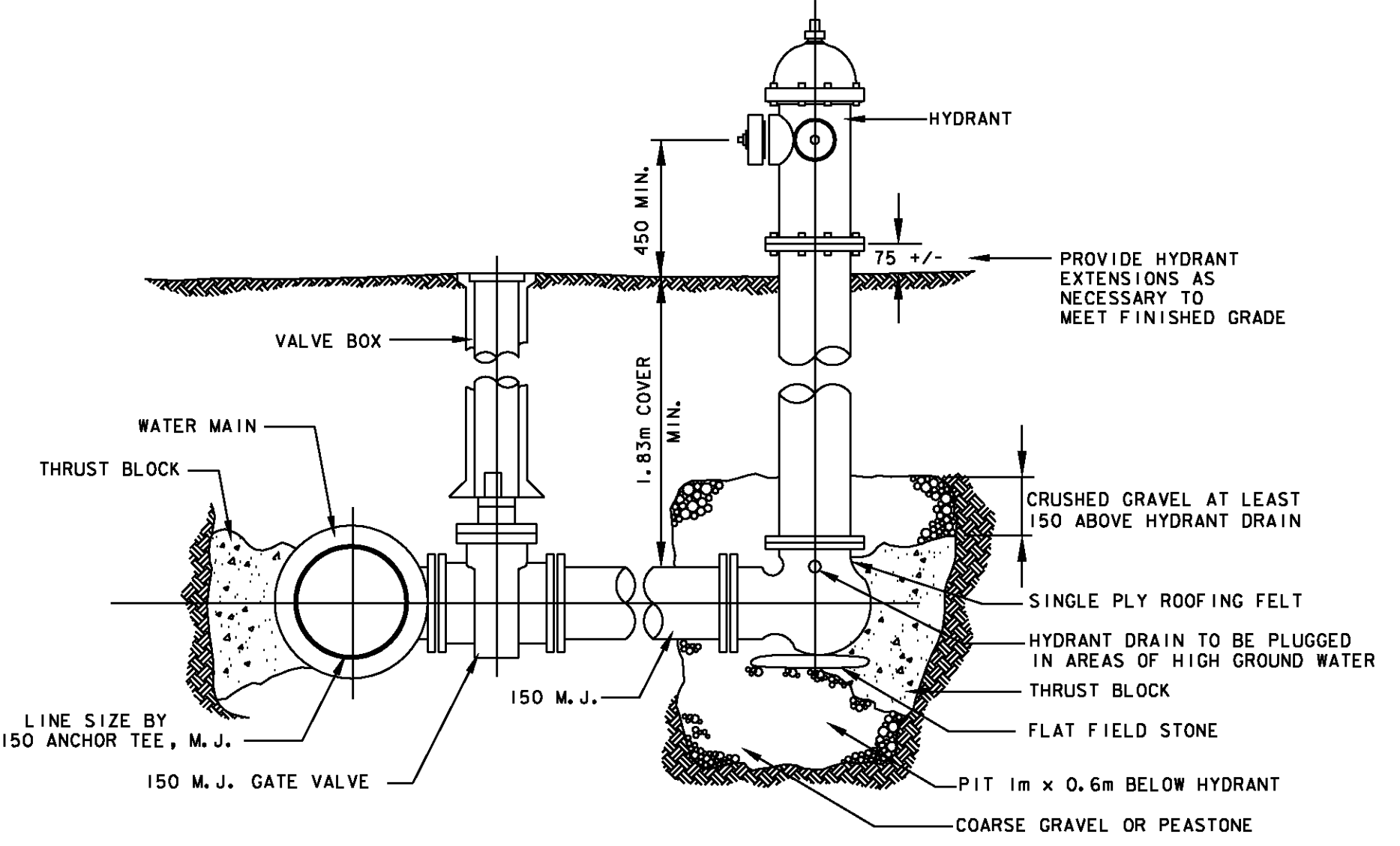


GATE VALVE ANCHOR DETAILS
NOT TO SCALE

NOTE: GATE VALVES SHALL BE WATEROUS SERIES 500, OPEN RIGHT.



RIGID BOARD INSULATION DETAIL
NOT TO SCALE



HYDRANT ASSEMBLY DETAIL
NOT TO SCALE

NOTE: HYDRANTS SHALL BE WATEROUS WB-67 OR KENNEDY GUARDIAN, OPEN RIGHT

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

VERMONT AGENCY OF TRANSPORTATION



PROJECT NAME: BENNINGTON
PROJECT NUMBER: AC NH 019-(153)
FILE NAME: ...\\plot_files\zd307c3det.utl.ptf PLOT DATE: 5/16/2011
DESIGN SUPERVISOR: GREG EDWARDS DRAWN BY: STANTEC
DESIGNED BY: MARC FOISY CHECKED BY: GARY SANTY
UTILITY DETAILS U-07 SHEET 161 OF 577