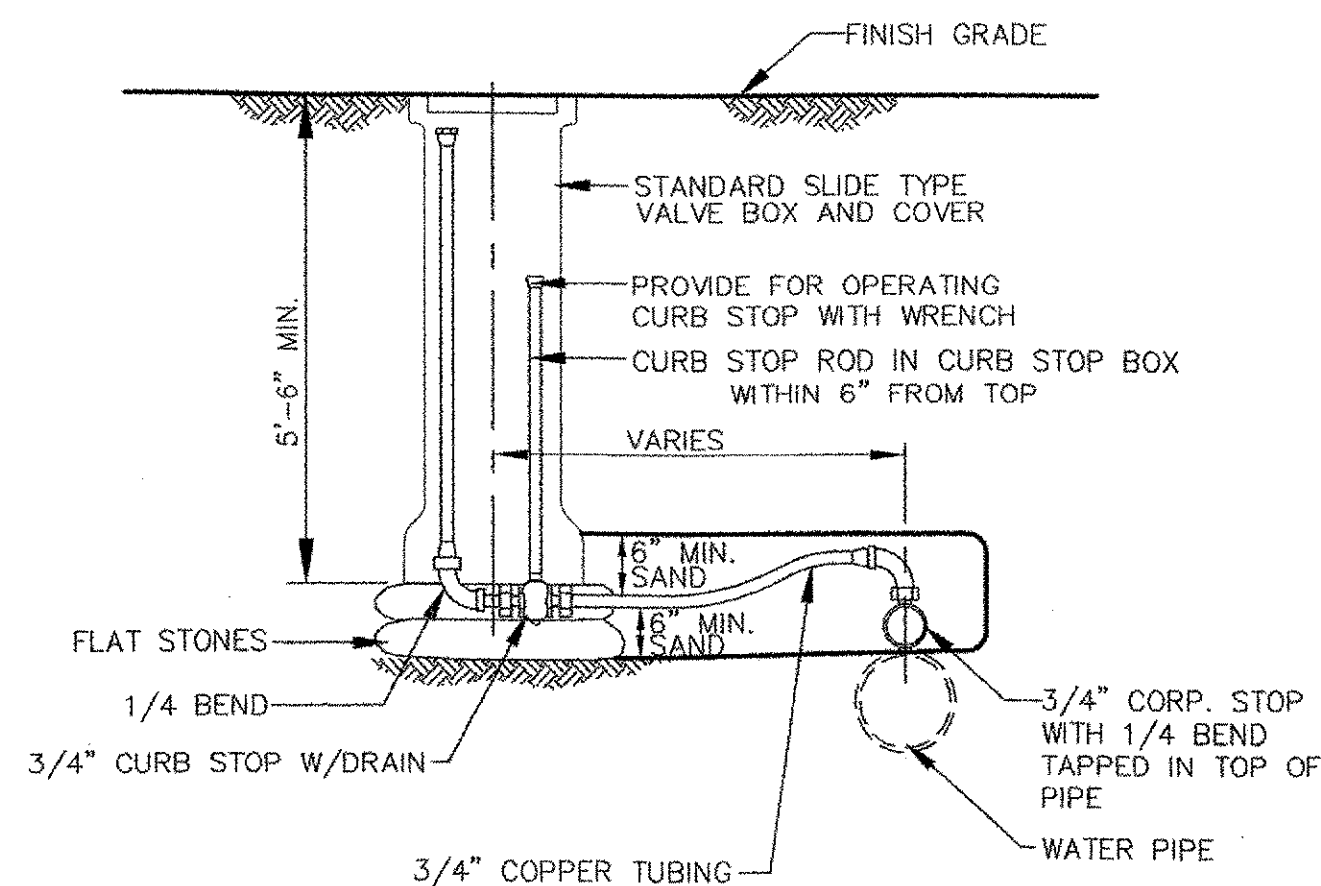


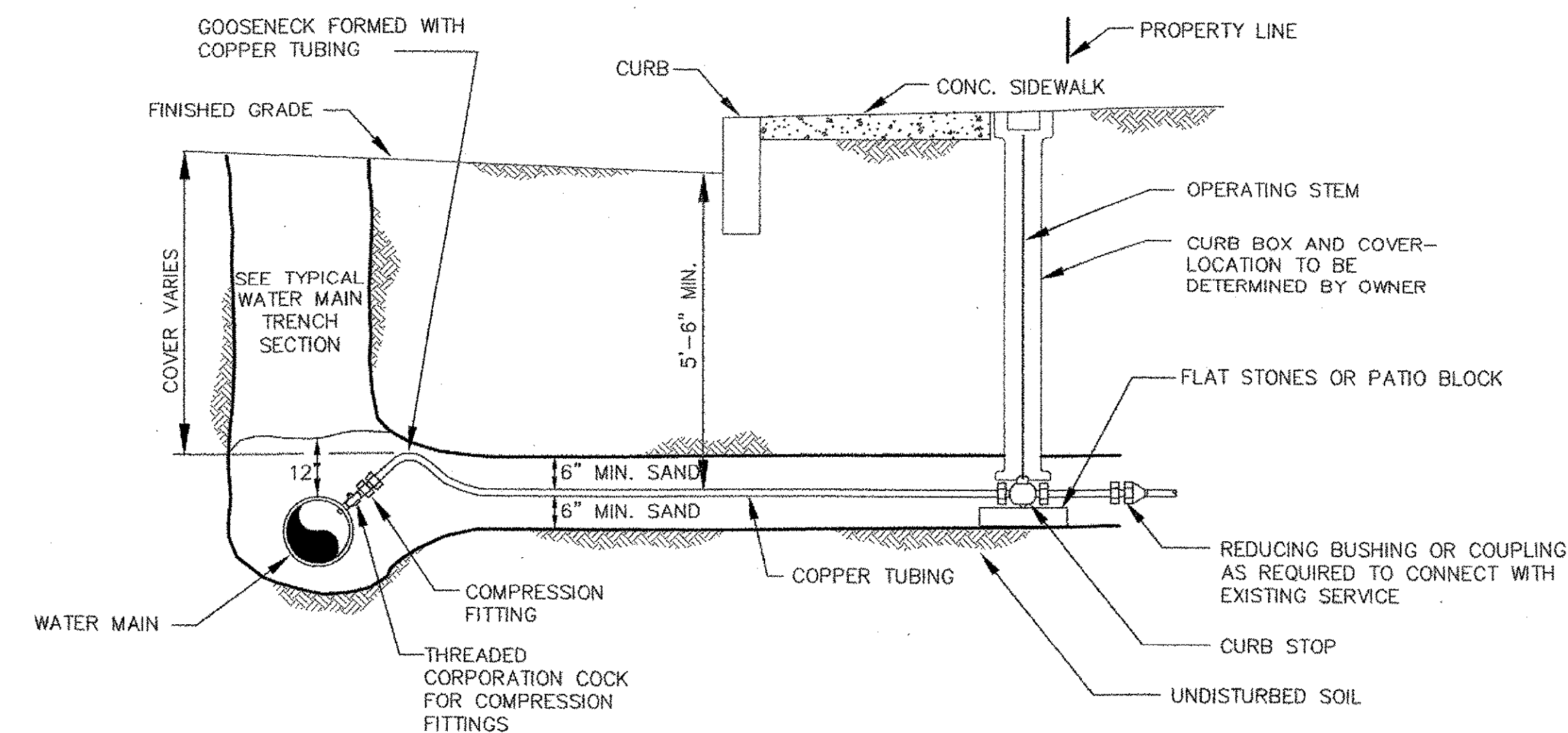
**THRUST BLOCK DETAILS**  
NOT TO SCALE

THRUST BLOCK SCHEDULE													
SQUARE FEET OF CONCRETE THRUST													
BLOCKING BEARING ON UNDISTURBED MATERIAL													
REACTION TYPE	PIPE SIZE												
	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	48"
(A)	1.71	2.49	4.29	6.45	9.12	12.26	15.85	19.91	24.43	34.85	53.62	76.81	135.12
(B)	1.21	3.53	6.06	9.12	12.70	17.33	22.42	28.16	34.55	49.29	75.83	108.62	191.09
(C)	0.92	0.95	3.28	4.94	6.98	9.38	12.13	15.24	18.70	26.68	41.04	58.78	103.42
(D)	0.47	0.97	1.67	2.52	3.56	4.78	6.19	7.77	9.53	13.60	20.92	29.97	52.72
(E)	0.24	0.49	0.84	1.26	1.79	2.40	3.41	3.90	4.79	6.83	10.51	15.06	26.49

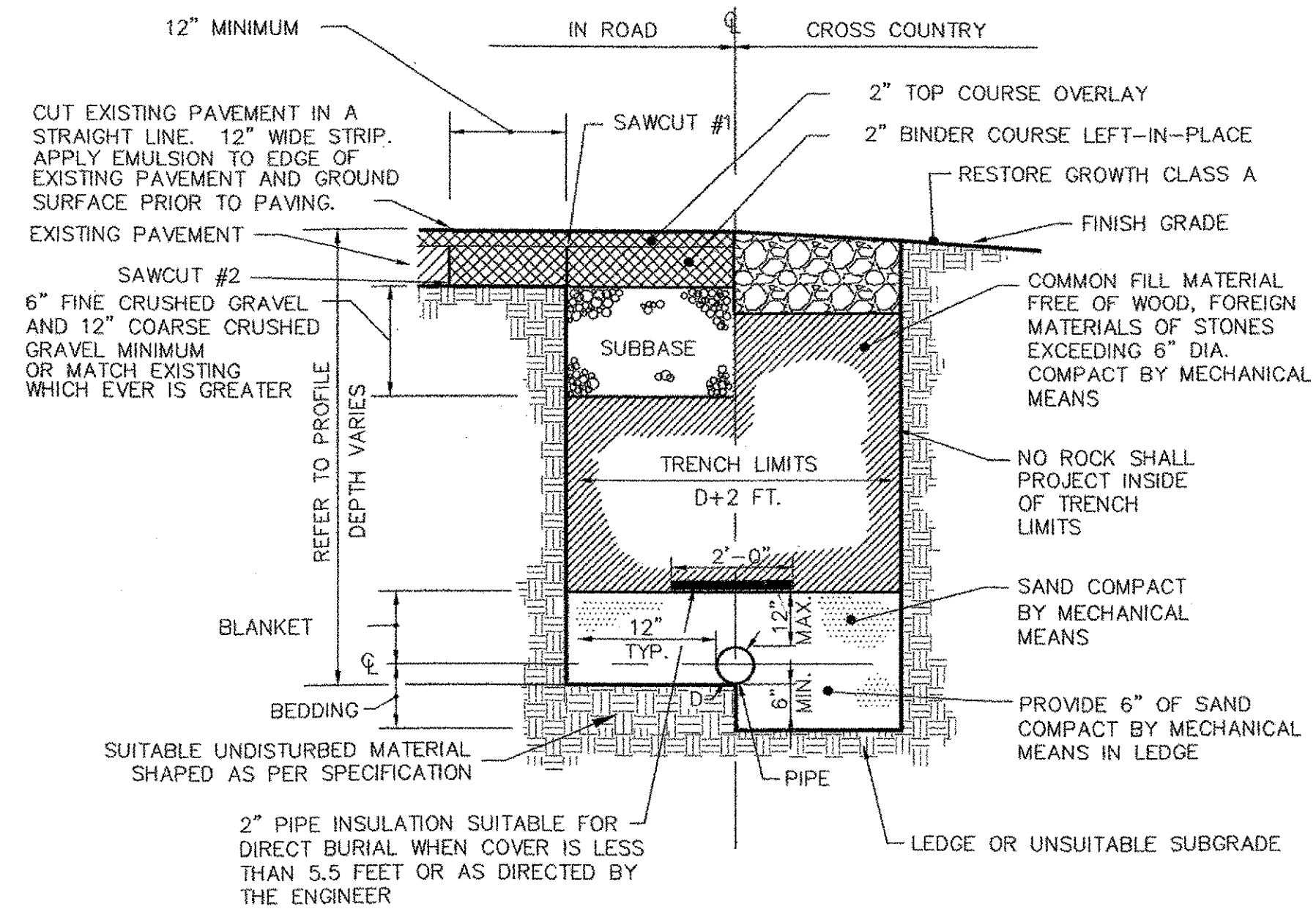
- NOTES:**
- POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL. WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
  - ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
  - PLACE CONCRETE PATIO BLOCKS IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCK.
  - REQUIREMENTS OF THE ABOVE TABLE PRESUME MINIMUM SOIL BEARING OF 1 TON PER SQUARE FOOT, 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 F50 PIPE RESTRAINT NUTS TO MATCH AWWA C111. 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.
  - THRUST BLOCK AREA IS BASED ON SILT SOILS WITH A BEARING STRENGTH OF 1500 LBS/SF AND A SAFETY FACTOR OF 1.5.



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

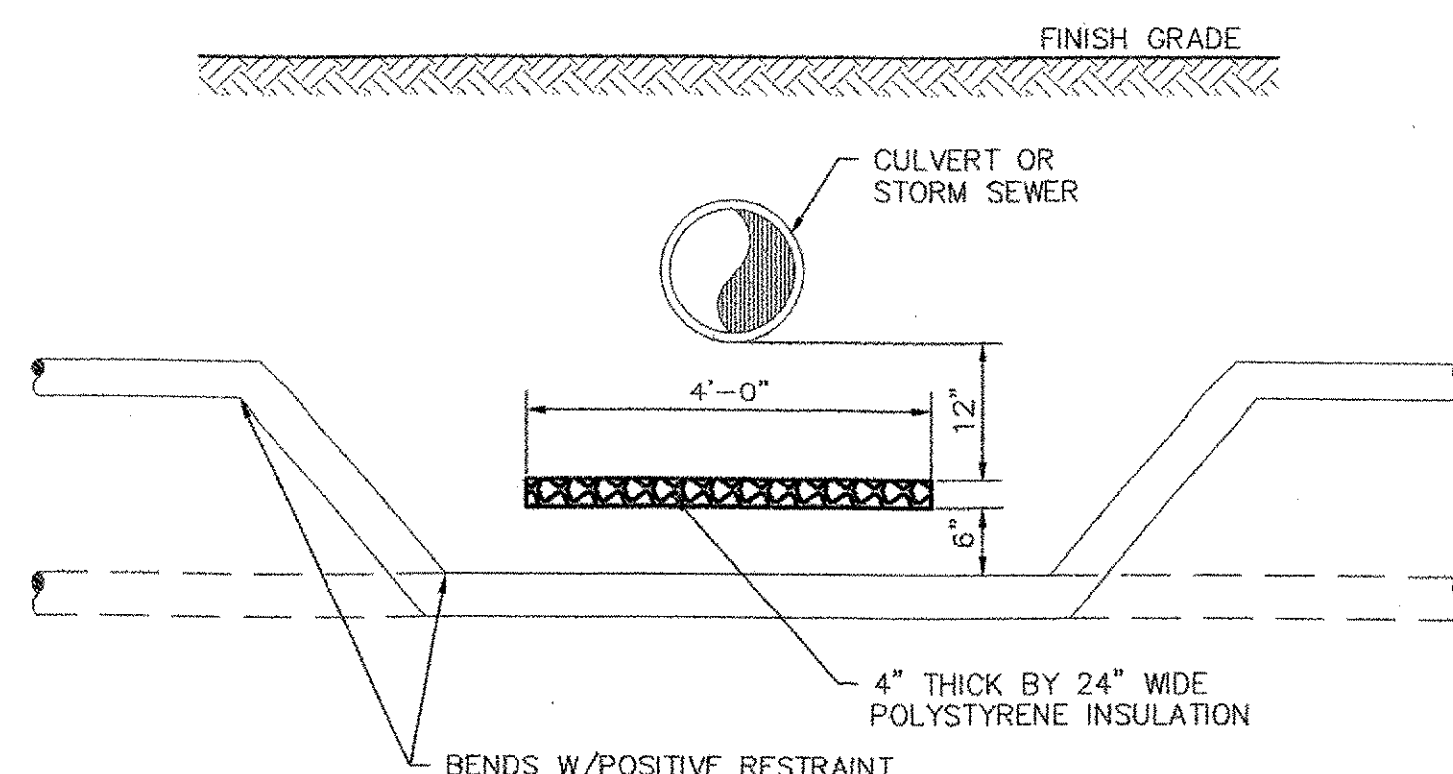


**TYPICAL SERVICE CONNECTION DETAIL**  
NOT TO SCALE

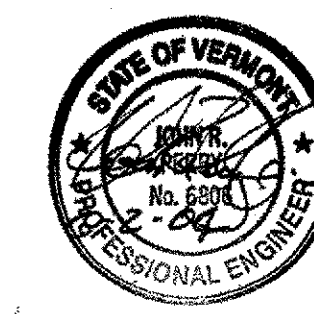


**TYPICAL TRENCH SECTION**  
NOT TO SCALE

**NOTE:**  
WHERE PIPE IS INSTALLED IN GRAVEL SHOULDER OR IN GRAVELED ROAD, GRAVEL SUB BASE SHALL BE 18" THICK FOR THE WIDTH OF THE TRENCH.



**WATERLINE/CULVERT CROSSING**  
NOT TO SCALE



**FOR WATER LINE CONSTRUCTION ONLY**



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**PROJECT NAME: GRANITE ST. BRIDGE, BARRE CITY, VT**  
**PROJECT NUMBER: 413025**  
**DRAWING NAME: GENERAL DETAILS** PLOT DATE: 16-MAR-2004  
**PROJECT LEADER: J. PERRY** DRAWN BY: E. EMMONS  
**DESIGNED BY: J. PERRY** CHECKED BY: R. DUFRESNE  
**FILE NAME: 413025C5-DT** SHEET 5 OF 5