

SEWER SYSTEM SPECIFICATIONS
FOR
BRADFORD STATE HIGHWAY GARAGE

Wtrans Standard Specifications for Construction

All Materials and installations to be in conformance with Wtrans Standard Specifications for Construction, 2001 except the items listed below. Installation shall be executed in an workman like manner;

Materials

Alarm Unit
Level Switch and Alarm for Oil/Water Separator Applications. The alarm switch shall provide relay contact closure when probe tip, which is submerged in water, separates from the alarm. The alarm shall be energized by a capacitor around the active tip of the Probe. The electronics shall be acknowledged by a device which shall be energized at the 240 VAC duty cycle. The alarm shall be indicated by a device. Unit shall be controlled by 220 VAC 60 Hz; relay shall be DPDT, 5 amp @ 240 VAC duty cycle. Accuracy of unit shall be +/- 2mm oil. Housing shall be explosion proof, epoxy coated cast aluminum. Unit shall be ARDAY 011/Water Separator Level Alarm Switch Model 9820-QWS or approved equal.

4" Gate Valve
Resilient Wedge Valve shall be completely manufactured of lightweight, high-strength ductile iron with a wall thickness which meets or exceeds the requirements of AWWA C-153. Wedge shall be constructed of ductile iron, fully encapsulated in synthetic rubber per AWWA C-515 with Dair in slides affixed to the wedge. Stem shall be sealed by at least three "O" ringst stem seals above the thrust collar shall be replaceable with valve fully open and while subjected to full rated working pressure. Waterway shall be smooth and shall have no depression or cavities in seat area where foreign material can lodge and prevent closure or sealing. Valve body and bonnet shall be fusion bonded epoxy coated, inside and out per AWWA C-550. All exterior nuts and bolts shall be 3/8" minimum diameter and shall be Type 18-8 stainless steel as a standard. Full ten (10) year money back warranty shall be standard. Gate Valve shall be 4" Resilient Wedge Valve AWC-2500 MU x MU rated to 250 working pressure or approved equal.

PVC Flange Adapter
Flange adapters for PVC pipe shall be made of ASTM A536 Grade 65-45-12 ductile iron. Drilling shall be done in accordance with ANSI B16.1-125 lb. For cast or ductile iron flanges and ANSI B16.5-150 lb. for steel flanges. Flanges shall meet all test requirements of AWWA C-900, ASTM D2241, ASTM D1599 and ASTM D2992. The dual seal gasket shall be provided with the PVC flange adapter.

D.1. Flange Adapter
Flange adapters for PVC pipe shall be made of ASTM A536 Grade 65-45-12 ductile iron. Drilling shall be done in accordance with ANSI B16.1-125 lb. For cast or ductile iron flanges and ANSI B16.5-150 lb. for steel flanges. Flanges shall meet all test requirements of AWWA C-100/A21.10. The MU type gasket shall be provided with the flange adapter.

Reducing 45° Wye
Flange fitting shall be ductile iron in accordance with ANSI/AWWA C110/A21.10 and 125# ANSI B16.1 faced and drilled. Fitting interior shall be cement lined and seal coated. The outside coating shall be bituminous coating.

Pipe
Pipe shall be 4" PVC pressure pipe Class 160 (SOR 26) conforming to steel pipe O.D.'s Pipe shall conform to ASTM D2241 for SDR 21, SDR 26 and SDR 32.5. Pressure compound shall conform to ASTM D1784 and rubber gaskets shall conform to ASTM D1863 and F477. Pipe shall be 20' or less in length. Pipe shall be 2" PVC Schedule 80 conduit pipe manufactured to NEMA TC-2 Federal Specifications, WC 1094A and UL 651 specifications.

Valve Box
Valve boxes shall be cast iron, two-piece, sliding type with a top flange and a minimum inside shaft diameter of 5 3/4". Boxes shall have the word "SEWER" clearly cast into cover. Valve box manufacturer shall be ISO-9002 certified. Contractor to provide appropriate service box rod for valve.

Gravity Sewer Joints & Fittings

Joints shall be assembled such that bell ends of the pipe are facing up slope and spigot ends are correspondingly facing down slope.

Utility Conduit

Utilities shall be installed in conduit as indicated on the plans or a minimum 1 1/2" diameter SCH 80 PVC electrical conduit for Cable TV, electrical or telephone. Electric service shall be installed in conduit as indicated on the plans or a minimum diameter SCH 80 PVC electrical conduit. Joints shall be push-on solvent welded type and shall be installed when buried with marker tape installed 6" directly above the top of the conduit. Conduit shall be terminated as indicated on the plans and shall be capped with an acceptable manufactured cap. Conduit shall be installed with wire of gage specified by NEC.

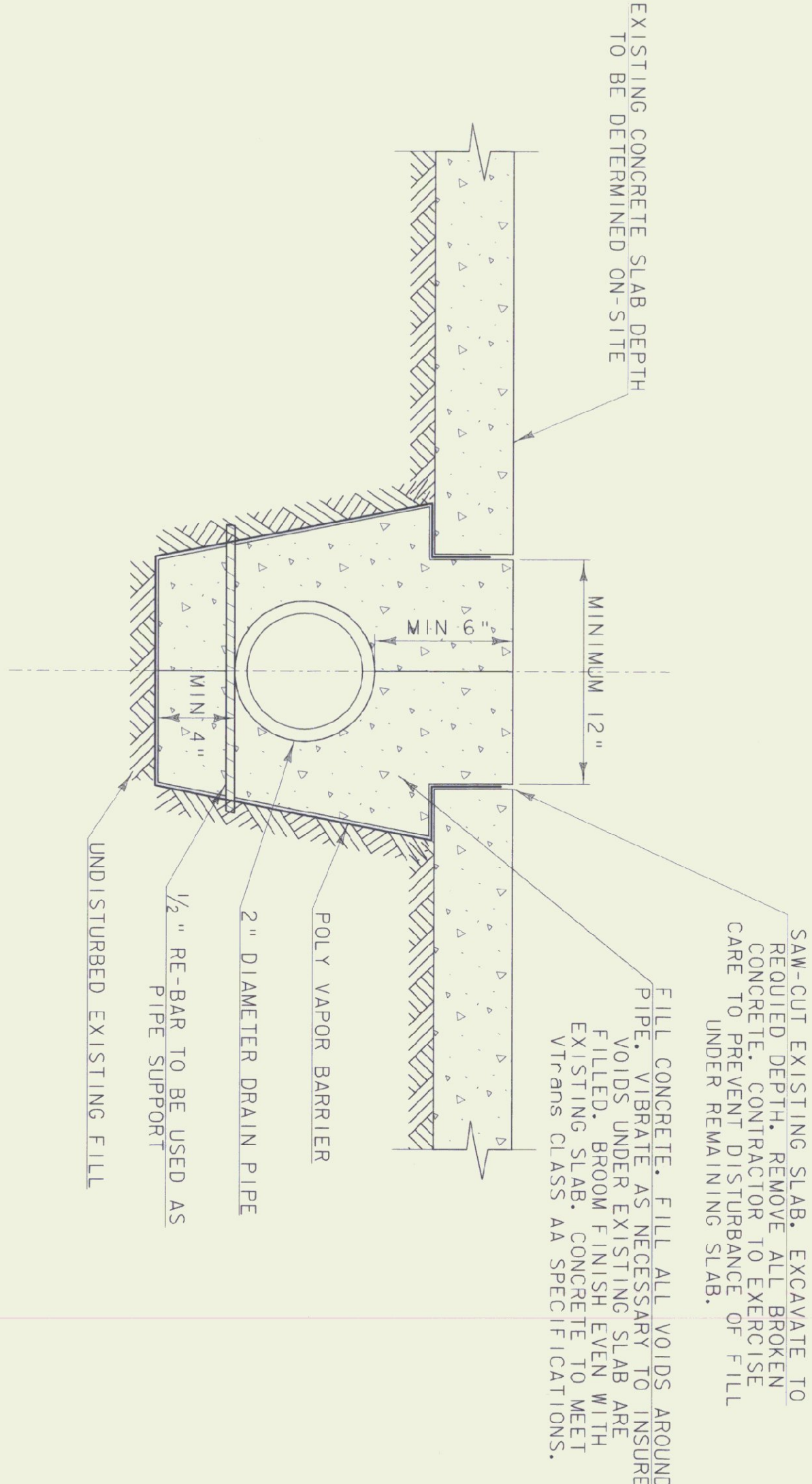
Rigid Styrofoam Insulation
Shall be 2 inch thick "Blue Board" with tongue and groove edges manufactured by Dow Industries or equivalent..

Cast-In-Place Grout Chamber
Grout chamber shall be cast into existing concrete slab. Saw cut existing slab and dowel and grout reinforcing steel as indicated on the Detail. Existing concrete drainage trough in garage shall be ground or otherwise shaped to appropriate grade to provide positive drainage into new grout chamber.

Capping of Existing Pipes
Existing sewer and drainage pipes shall be capped with cast-in-place concrete or other suitable means.

Testing

Once the entire sewer system has been installed it shall be pressure tested by the Contractor. The gravity and Force Main shall be tested in accordance with E.P.A. Small Scale Wastewater Treatment and Disposal Rules, 1996, Chapter I, Appendix I-A, Section I-A-02 and Section I-A-04 respectively.



PIPE UNDER EXISTING SLAB SECTION

ALL DETAILS NOT TO SCALE



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PROJECT NAME: BRADFORD STATE HIGHWAY GARAGE	
PROJECT NUMBER: 00-0174	
FILE NAME: 00-0174.dgn	PLOT DATE: 04/22/2002
PROJECT LEADER: CJH	DRAWN BY: PCJ
DESIGNED BY: JMS	CHECKED BY: JMS
OLD REFERENCE NO.: 00-0174	SHEET 5 OF 5