

SHOP DRAWING REVIEW

REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

REJECTED REVISE AND RESUBMIT FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES, AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

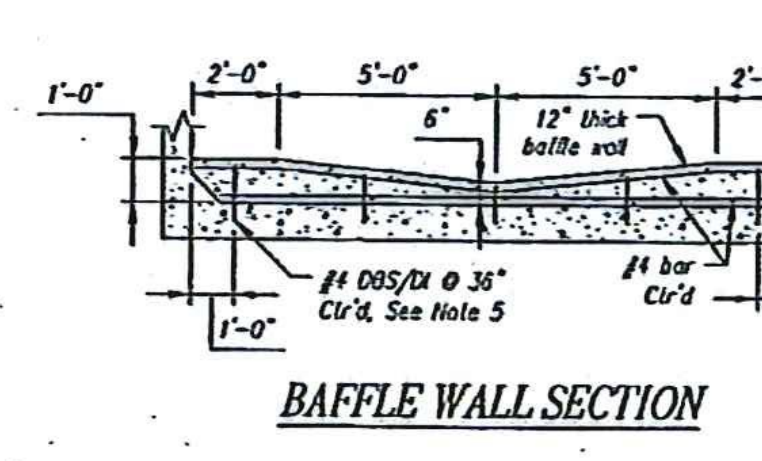
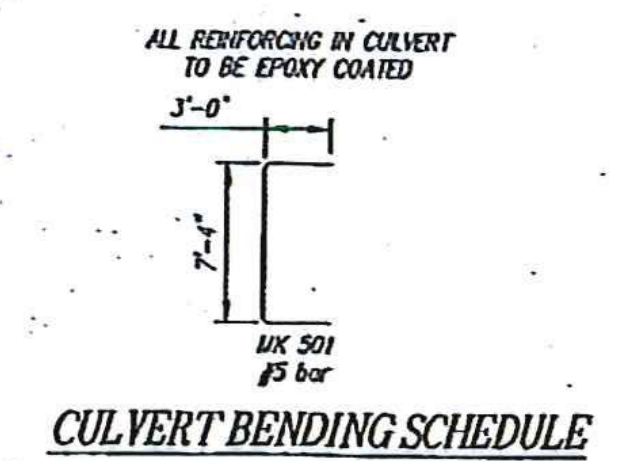
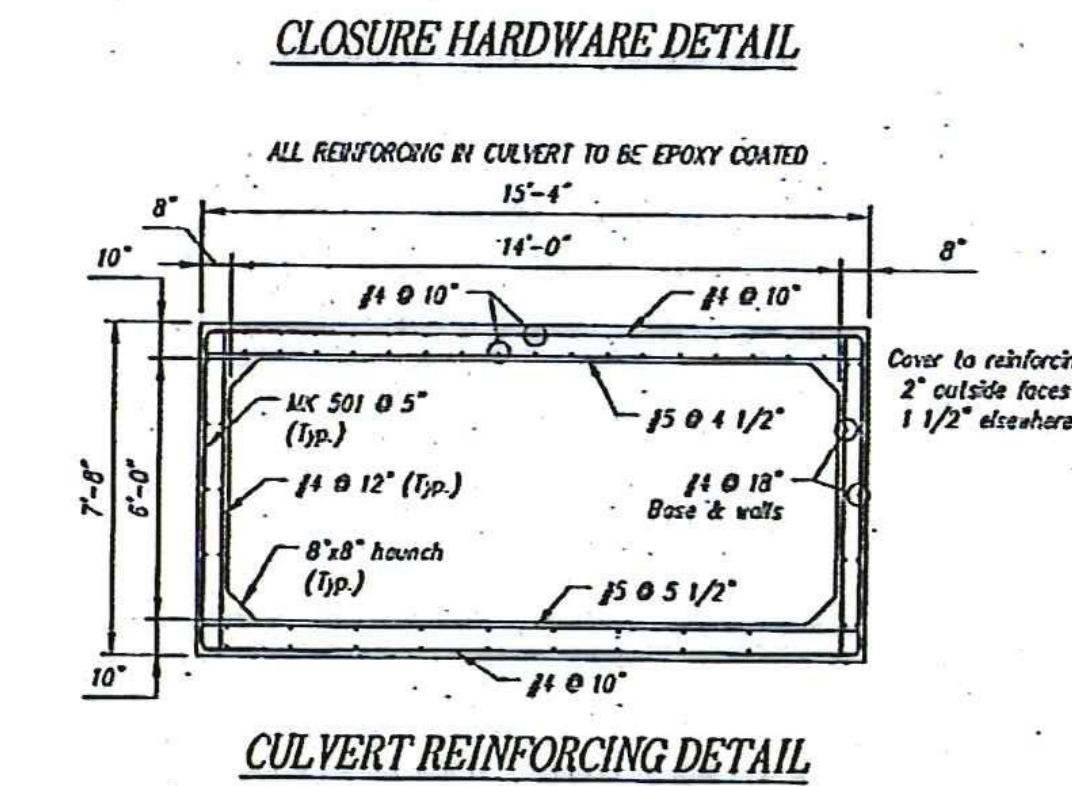
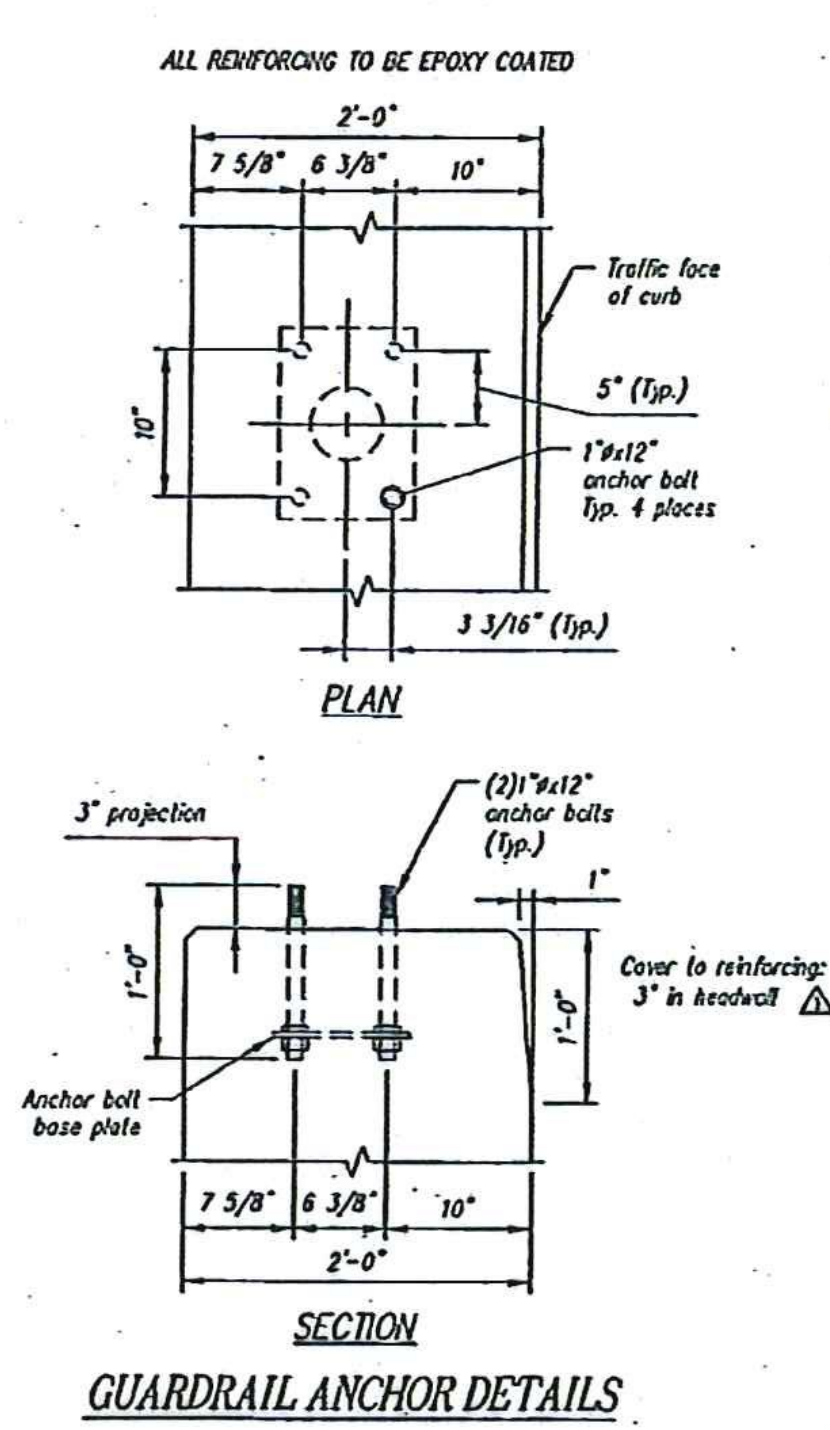
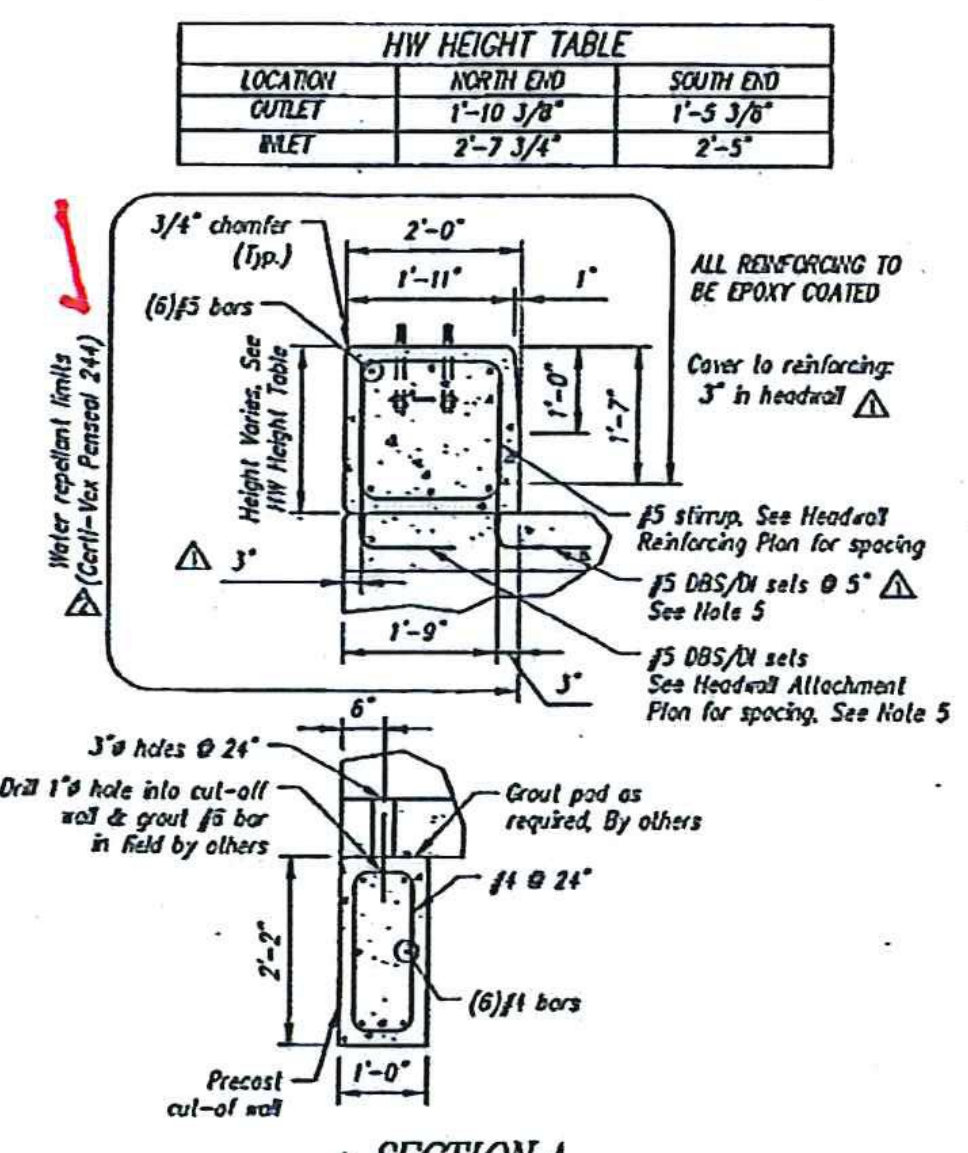
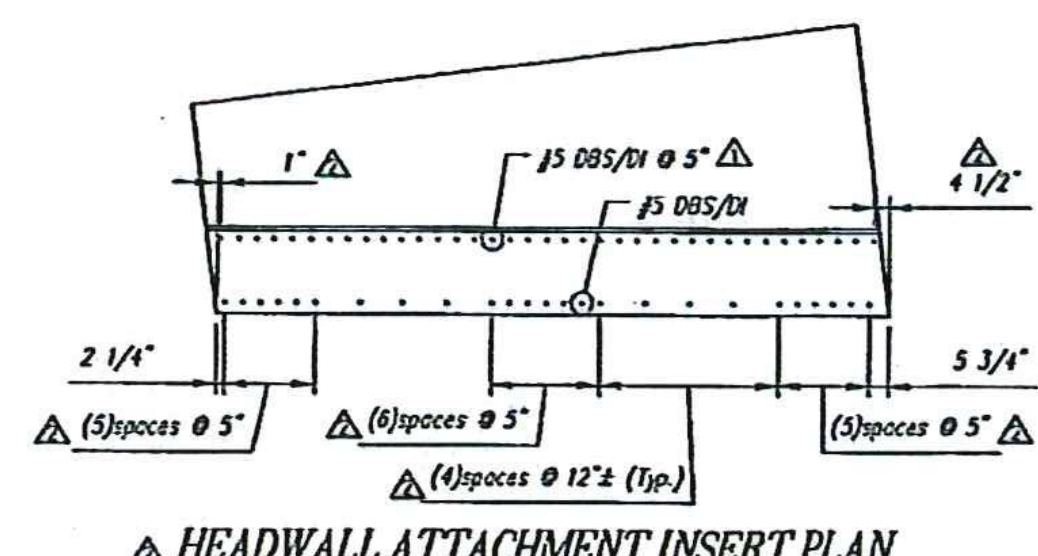
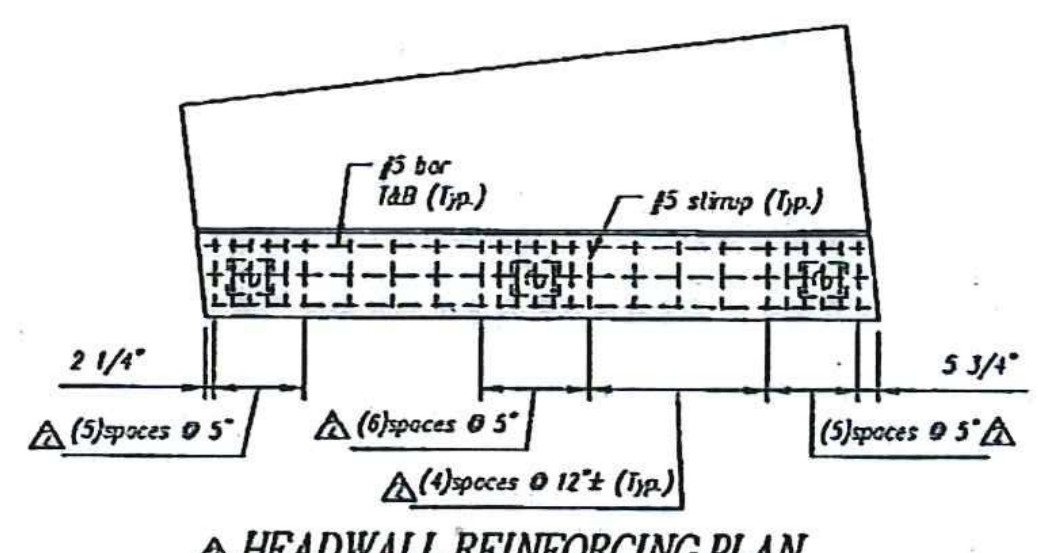
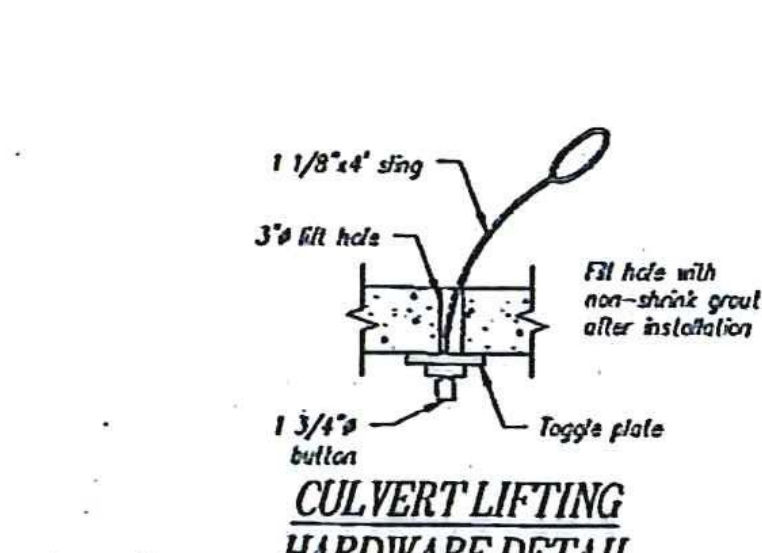
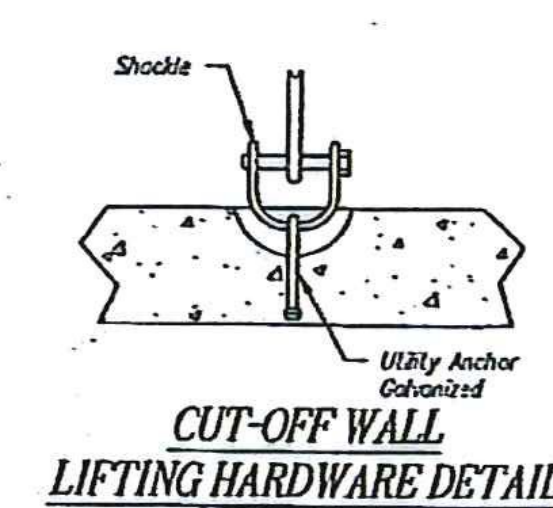
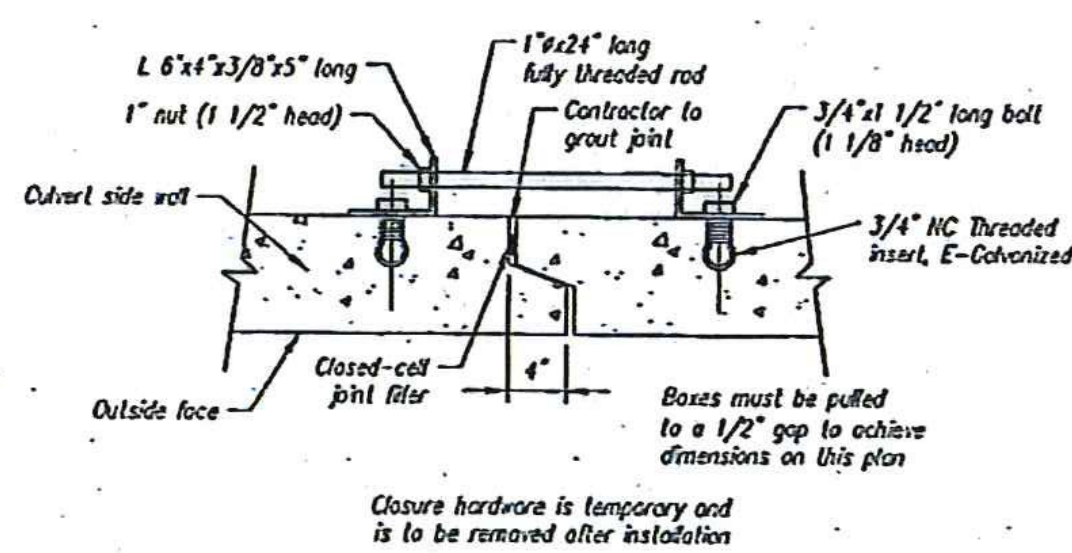
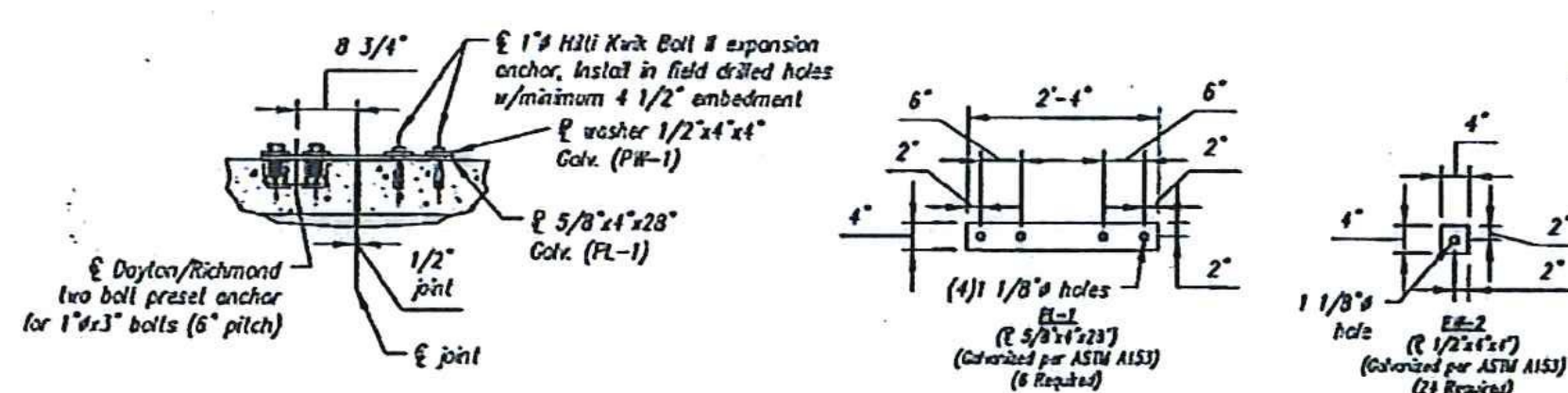
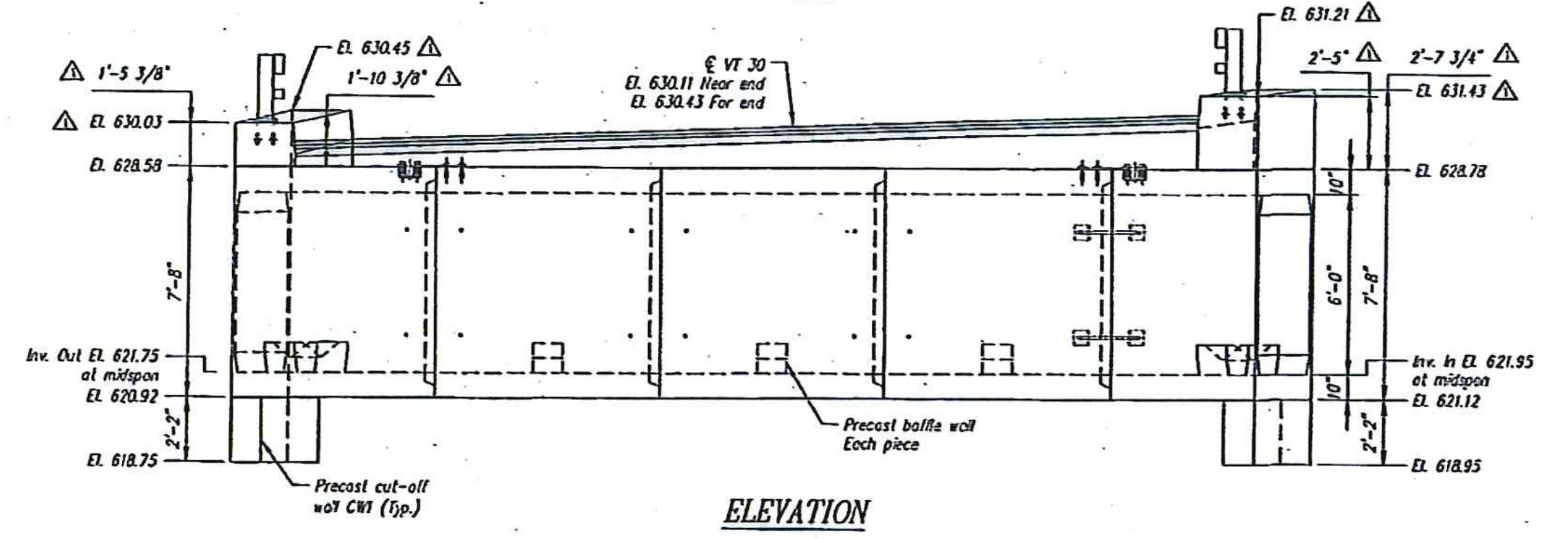
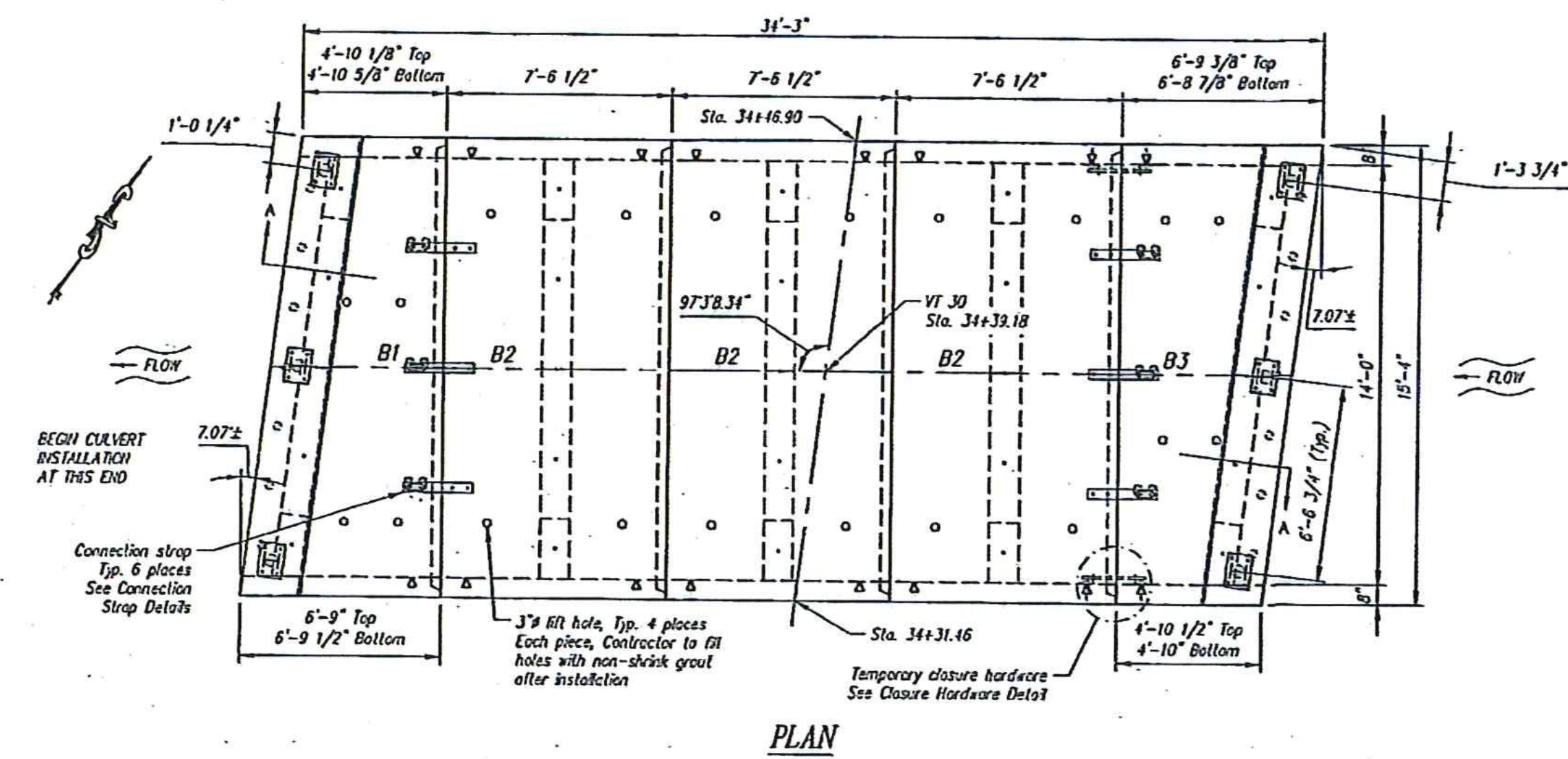
Vanasse Hangen Brustlin, Inc.
 7056 US Route 7
 North Ferrisburgh, VT 05473
 802.425.7788

Job Number: **HUBBARDTON ER STP 0161(27)**
 Reviewed By: **S. FARNSWORTH**
 Date: **10-2-2012**

- GENERAL NOTES:**
- Reference Standards:
 AASHTO "LRFD Bridge Design Specifications"
 ASTM C1433
 - Design Parameters:
 Live load: HL-93
 Earth cover: 0 to 2'
 Concrete: Design strength $f'_c = 5000$ psi (Culvert)
 Design strength $f'_c = 4000$ psi (Cut-off walls)
 Unit weight = 150 pcf
 Reinforcing: ASTM A775 (rebar), grade 60, epoxy
 Unit weight = 140 pcf
 Soil: Minimum lateral pressure coefficient .25
 Maximum lateral pressure coefficient .50
 Cover to reinforcing: 3" headwalls
 2" outside faces of culvert
 1 1/2" elsewhere u.n.a.
 - Dimensions include a joint creep. Actual culvert piece length is 1/2" shorter than shown (i.e. B2 = 7'-6").
 - No dampproofing or waterproofing supplied by CSI. Membrane waterproofing supplied and installed by others.
 - DBS are Dowel Bar Splicers and DI are Dowel Ins. Both are supplied by CSI.
 - Headwall attachments design for TL-4 impact load.
 - Water repellent by CSI on all exposed faces of culvert and headwalls to 1' below grade and inside culvert ends. Water repellent to be Vexcon Certi-Vex Penscol 244.

MARK	QTY	LENGTH	WDS	WEIGHT
B1	1	5.79	9.51	19.27 TONS
B2	3	7.50	9.98	20.21 TONS
B3	1	5.81	10.83	21.93 TONS
CW1	21	15.45	1.24	2.51 TONS

ISOMETRIC VIEW LOOKING UPSTREAM



Contractor to verify that all information shown on drawings has been thoroughly checked, compares with the contract documents and is adequate to meet the field conditions. Some dimensions and details may differ slightly from contract drawings to accommodate the manufacturing or design process. Approval of this drawing indicates that any deviation from the contract documents has been reviewed and found to be acceptable. Production will not commence until receipt of signed, approved shop drawings.



Rev.	Date	DESCRIPTION	By
5			
4			
3			
2	10/02/12	Revised Silane Siloxane to Certi-Vex Penscol 244; Miscellaneous revisions	MS
1	09/26/2012	per VHB mark up change hw elev, change hw loading to TL-4, misc	CMV

This drawing is based upon information provided from the following documents and/or sources:

Engineer: Vanasse Hangen Brustlin, Inc.
 Project No: S7478.01
 Drawings: Proposed Improvement Bridge Project
 Sheets 1 through 70 of 70 sheets
 Specifications: Special Provisions and Supplemental Specifications
 Hubbardton ER STP 0161 (26) & ER STP 0161 (27)
 Other Sources:

CSI
 Concrete Systems Inc.
 9 Commercial St., Hudson, NH 03051
 Phone 603-889-4103
 Fax 603-889-2117

STATE AGENCY
VTtrans
 PROJECT NO. 09/14/2012
 DRAWING NO. 09/14/2012

HUBBARDTON ER STP 0161(26)
 BRIDGE NO. 98

J.A. McDONALD, INC.
 PROPOSED IMPROVEMENT BRIDGE PROJECT
 HUBBARDTON, VT

BRIDGE NO. 96 LAYOUT AND DETAILS
 C21377-LO2

Quantity: 1 Project No: ER STP 0161(27) SHEET 1B OF 1B