

ISOMETRIC VIEW LOOKING DOWNSTREAM

- GENERAL NOTES:**
- Reference Standards:
AASHTO "LRFD Bridge Design Specifications"
ASTM C1504
 - Design Parameters:
Live load: HL-93
Earth Cover: 1.5 to 2' (Road Vehicles)
None (Construction Vehicles equivalent to HS20)
Concrete:
Design strength $f_c = 5000$ psi (Culvert)
Design strength $f_c = 4000$ psi (Cut-off walls)
Unit weight = 150 pcf
Slipping strength = 2500 psi
Shipping strength per Vitrans Specifications
Reinforcing: ASTM A773 (rebar), grade 60, epoxy
Unit weight = 140 pcf
Soil:
Minimum lateral pressure coefficient .25
Maximum lateral pressure coefficient .50
Cover to reinforcing: 2" headwalls & footings
2" outside faces of culvert
1 1/2" elsewhere u.s.a.
 - Dimensions include a joint creep. Actual culvert piece length is 1/2" shorter than shown (i.e. A1 = 5'-0").
 - No dampproofing or waterproofing supplied by CSI. Membrane waterproofing supplied and installed by others.
 - DBS are Dowl Bar Splicers and DI are Dowl Irs. Both are supplied by CSI.
 - Headwall attachments designed 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 Curli-Vex Paint 244.

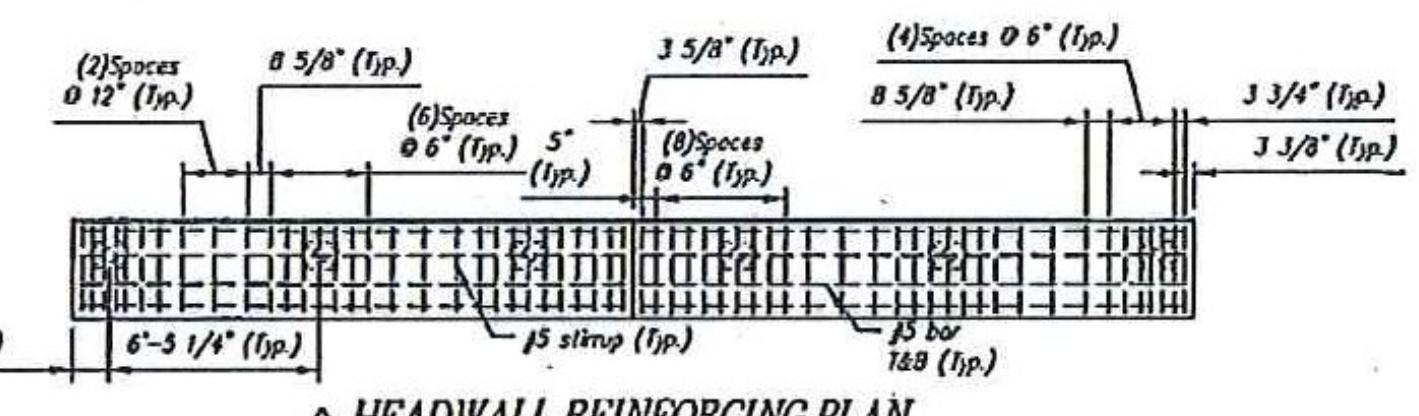
PIECE SCHEDULE (LX-FAS000SC20)

MARK	QTY	LENGTH	YDS	WEIGHT
A1	1	5.00	14.65	29.67 TONS
A2	6	5.00	15.00	30.38 TONS
A3	1	2.71	7.47	14.93 TONS
F1	2	20.48	11.80	23.90 TONS
F2	2	20.48	11.80	23.90 TONS
HWA	1	17.17	2.99	6.05 TONS
HWB	1	17.17	2.76	5.59 TONS
HWA2	1	17.17	2.24	4.54 TONS
HWB2	1	17.17	3.47	7.03 TONS

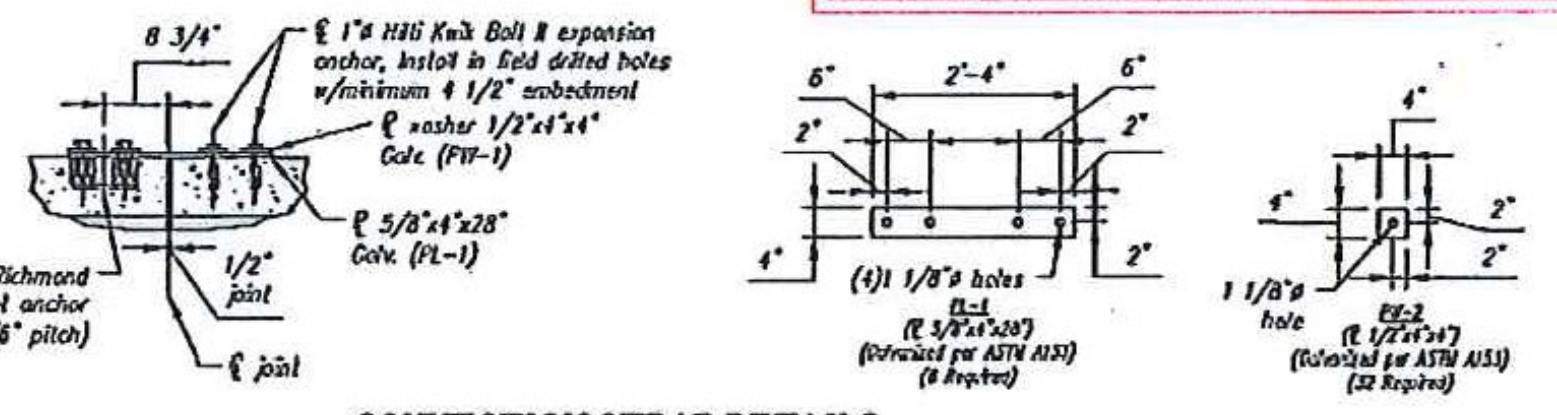
SHOP DRAWING REVIEW

REVISIONS AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED FOR THE PROJECT BY THE CONTRACTOR. THIS DRAWING IS THE PROPERTY OF THE PROJECT AND SHALL BE RETURNED TO THE PROJECT MANAGER UPON COMPLETION OF THE PROJECT. ANY CHANGES TO THIS DRAWING SHALL BE MADE BY THE PROJECT MANAGER AND APPROVED BY THE CONTRACTOR. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PROJECTS WITHOUT THE WRITTEN PERMISSION OF THE PROJECT MANAGER.

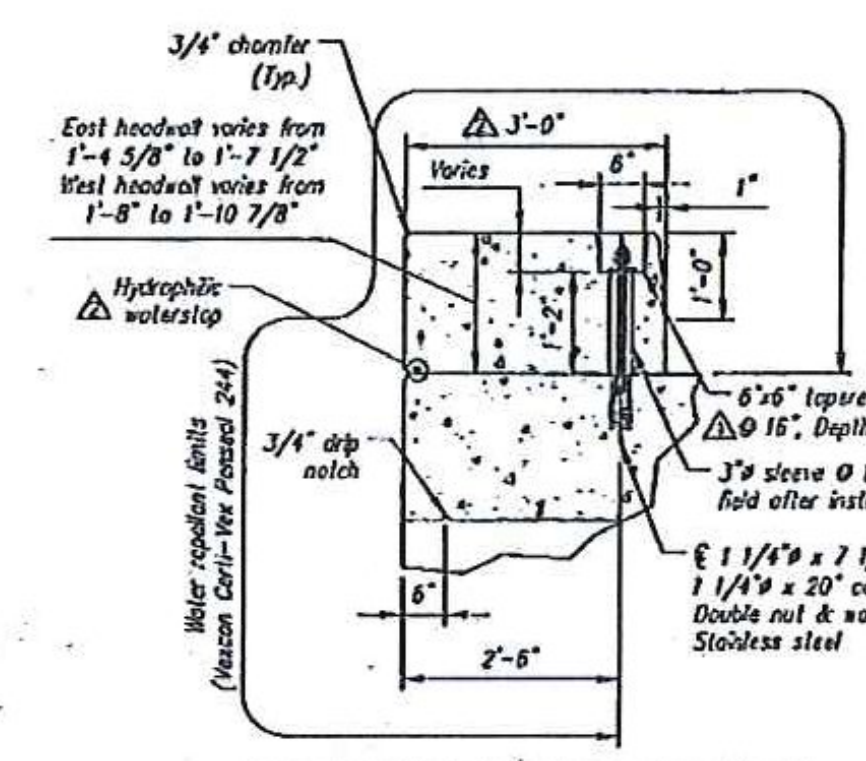
Yvanese Hengen Brustlin, Inc.
Job Number ER STP 0161(26)
Reviewed by: J. KOLANOLE
Date: 10-16-2012



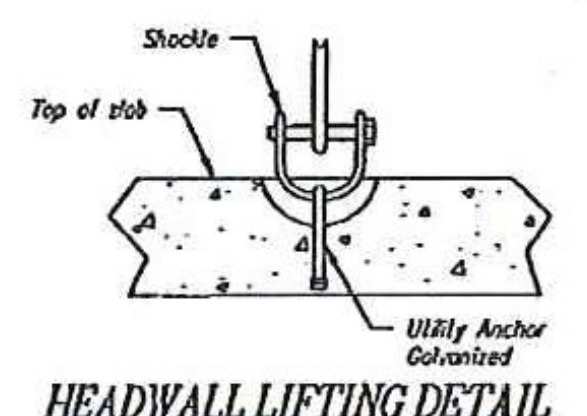
HEADWALL REINFORCING PLAN



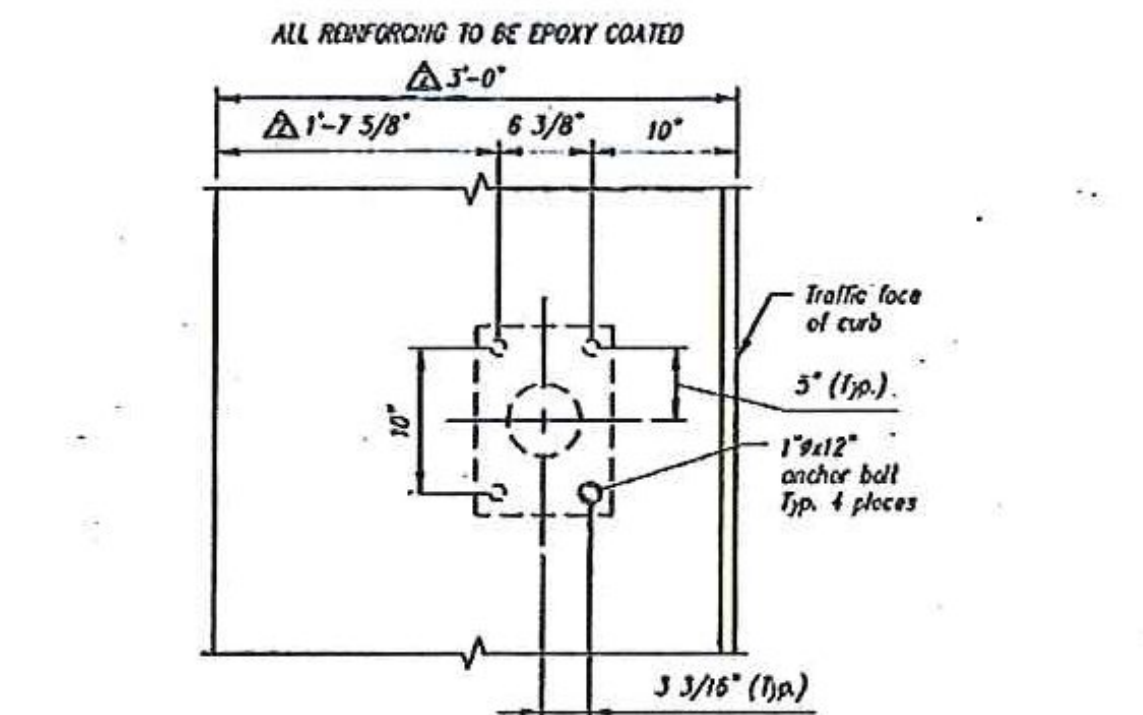
CONNECTION STRAP DETAILS



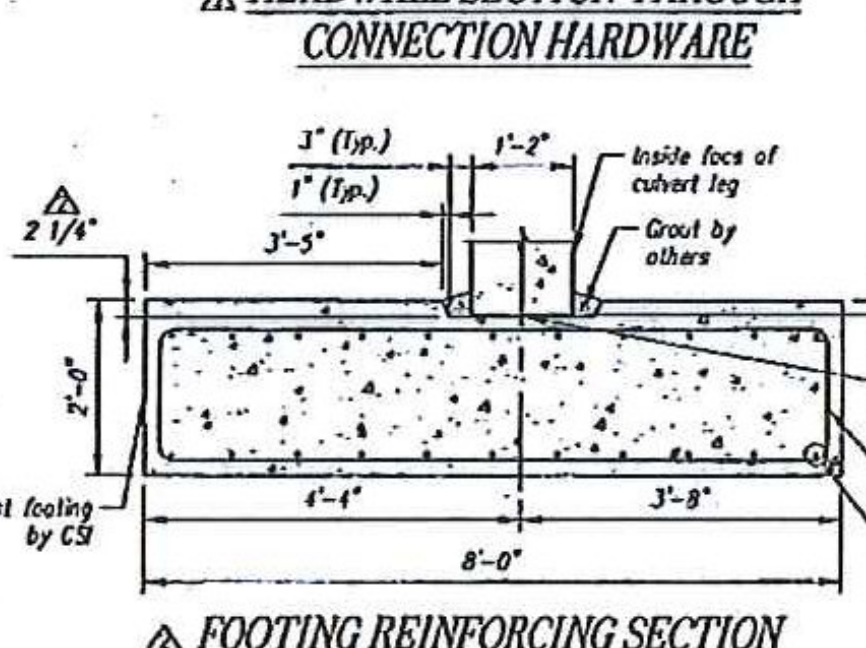
HEADWALL SECTION THROUGH CONNECTION HARDWARE



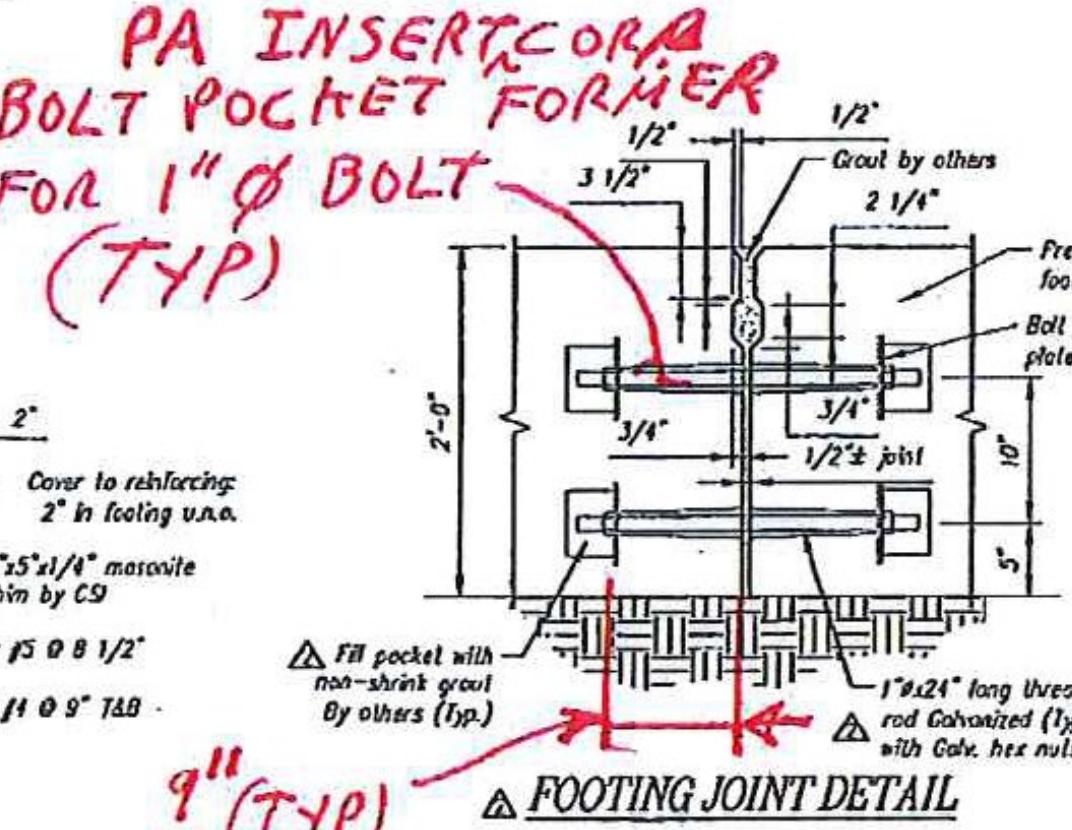
HEADWALL LIFTING DETAIL



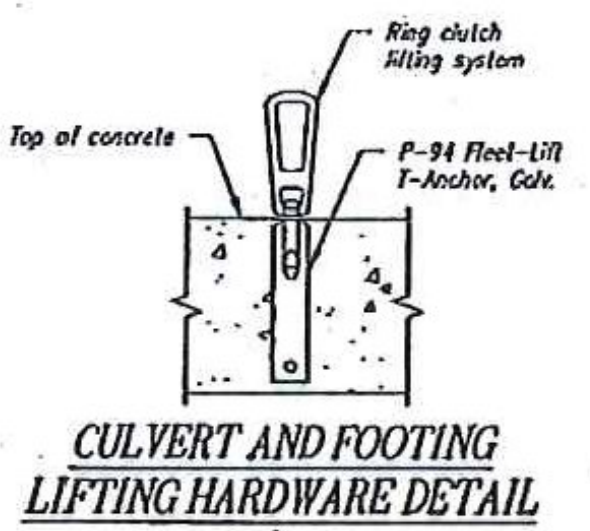
HEADWALL REINFORCING AND GUARDRAIL ANCHOR DETAILS



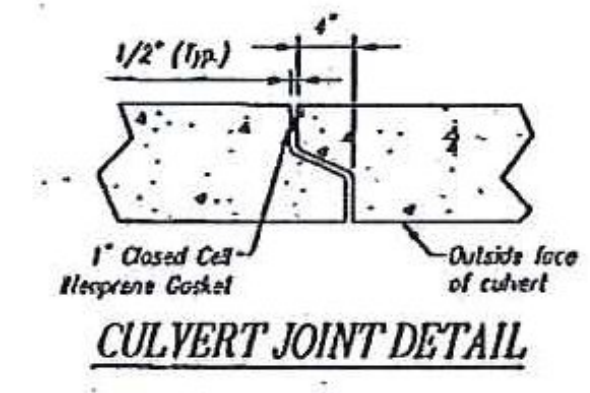
FOOTING REINFORCING SECTION



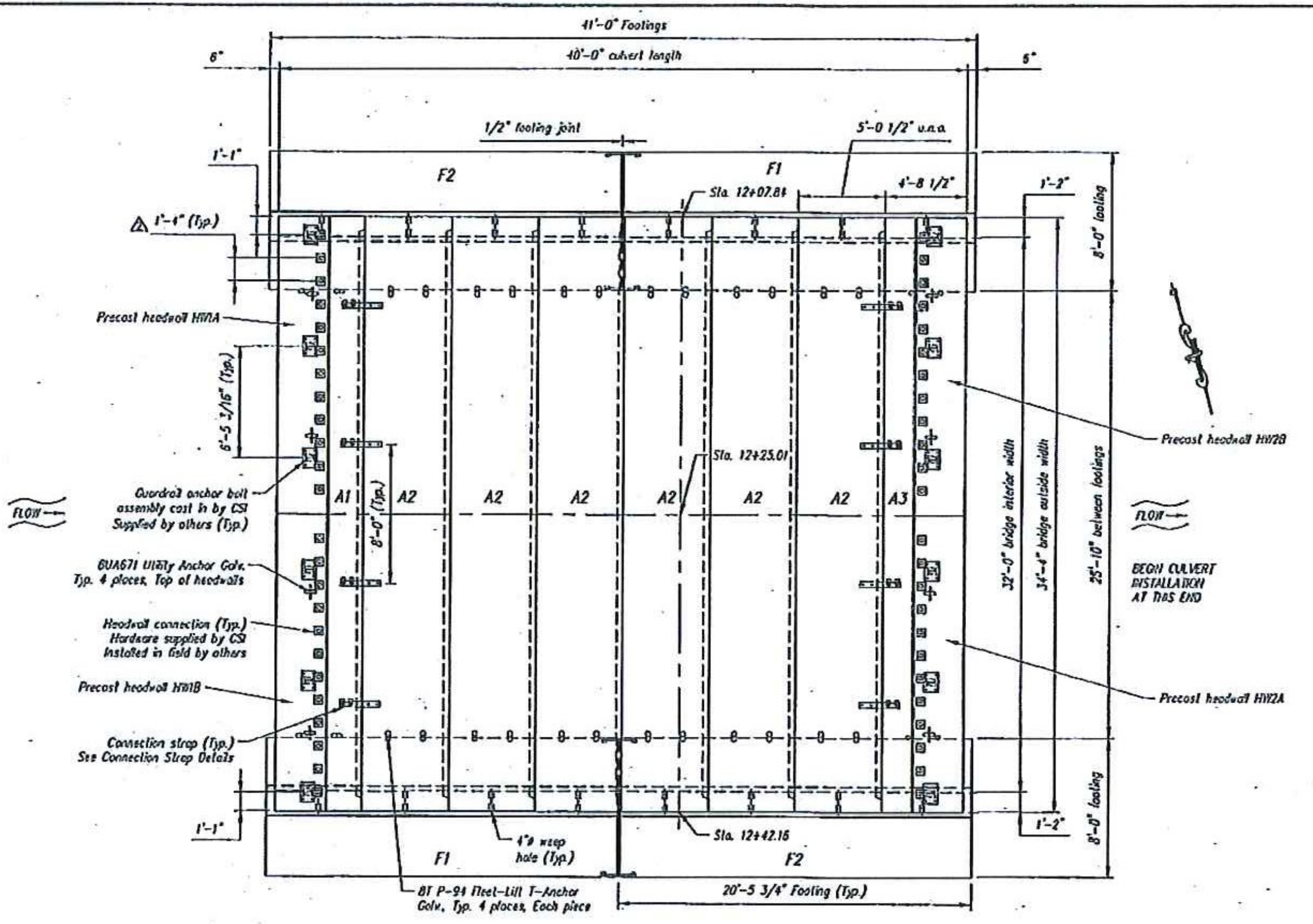
FOOTING JOINT DETAIL



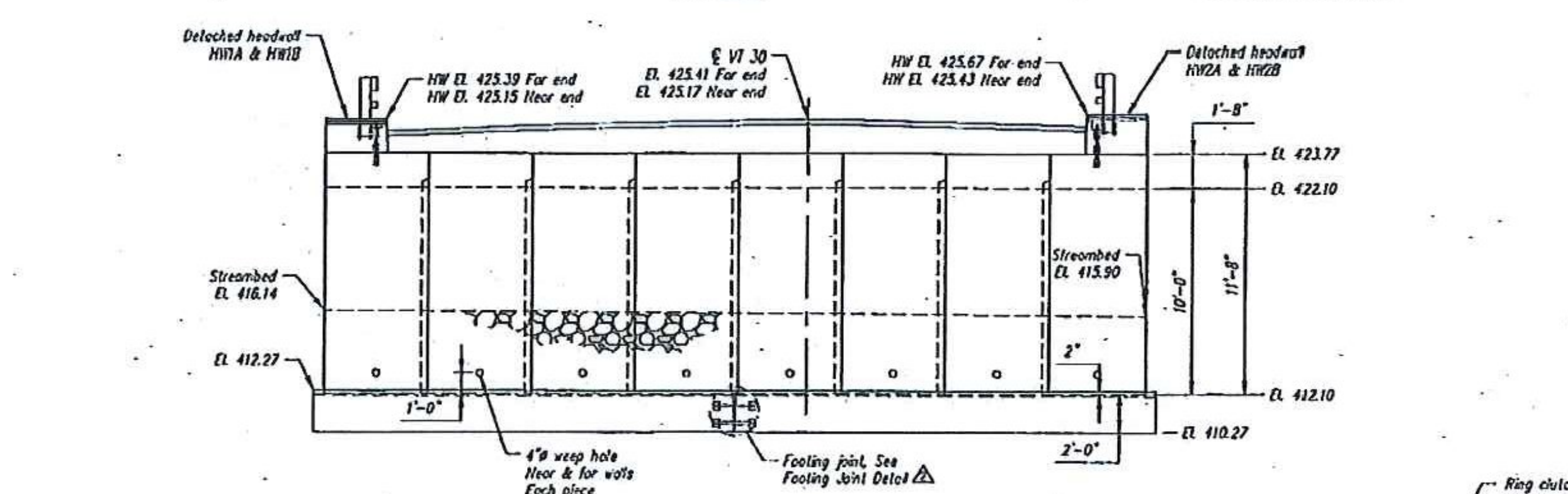
CULVERT AND FOOTING LIFTING HARDWARE DETAIL



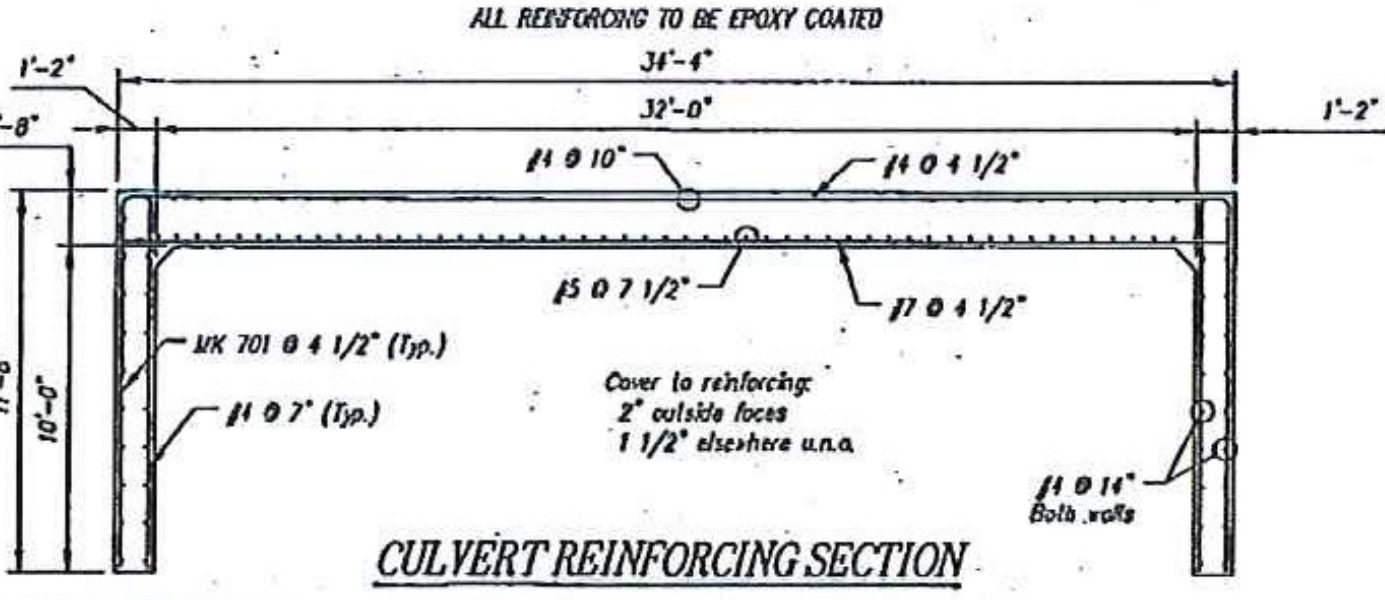
CULVERT JOINT DETAIL



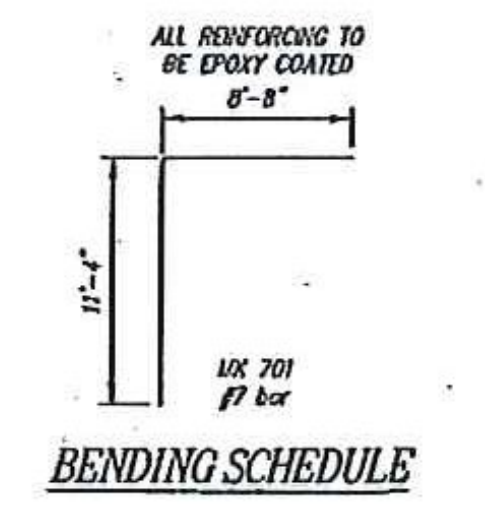
PLAN



SIDE ELEVATION



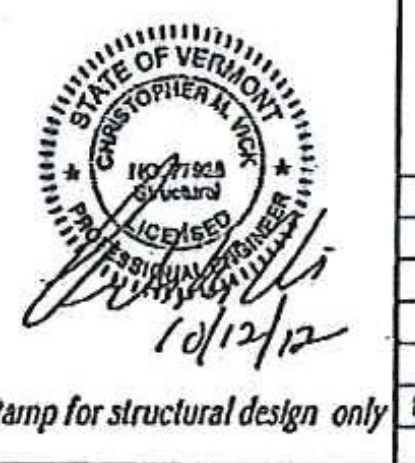
CULVERT REINFORCING SECTION



BENDING SCHEDULE

Contractor is to verify that all information shown on drawings has been thoroughly checked, complies 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.

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REVISIONS

Rev.	Date	DESCRIPTION
5		
4		
3		
2	10/12/12	Added connection hardware to footings; Miscellaneous revisions
1	09/25/2012	Revised headwall loading to TL-4

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

Engineer: Yvanese Hengen Brustlin, Inc.
Project No: 57478.01
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 603-889-1163
Fax 603-889-2417

STATE AGENCY
VTTRANS
09/14/2012
09/14/2012

HUBBARDTON ER STP 0161(26)
BRIDGE NO. 96

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

BRIDGE NO. 96 LAYOUT AND DETAILS
C21377-LO1

Quantity: 1 Project No: ER STP 0161(26) SHEET 1A OF 1A