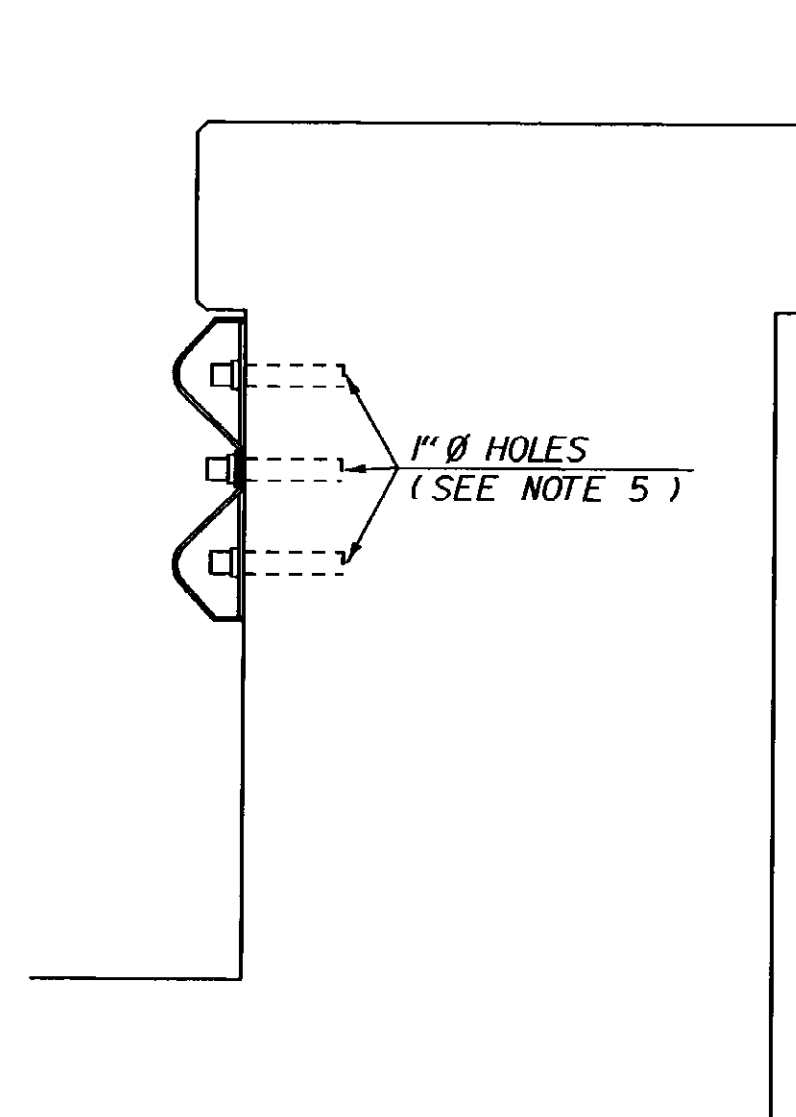
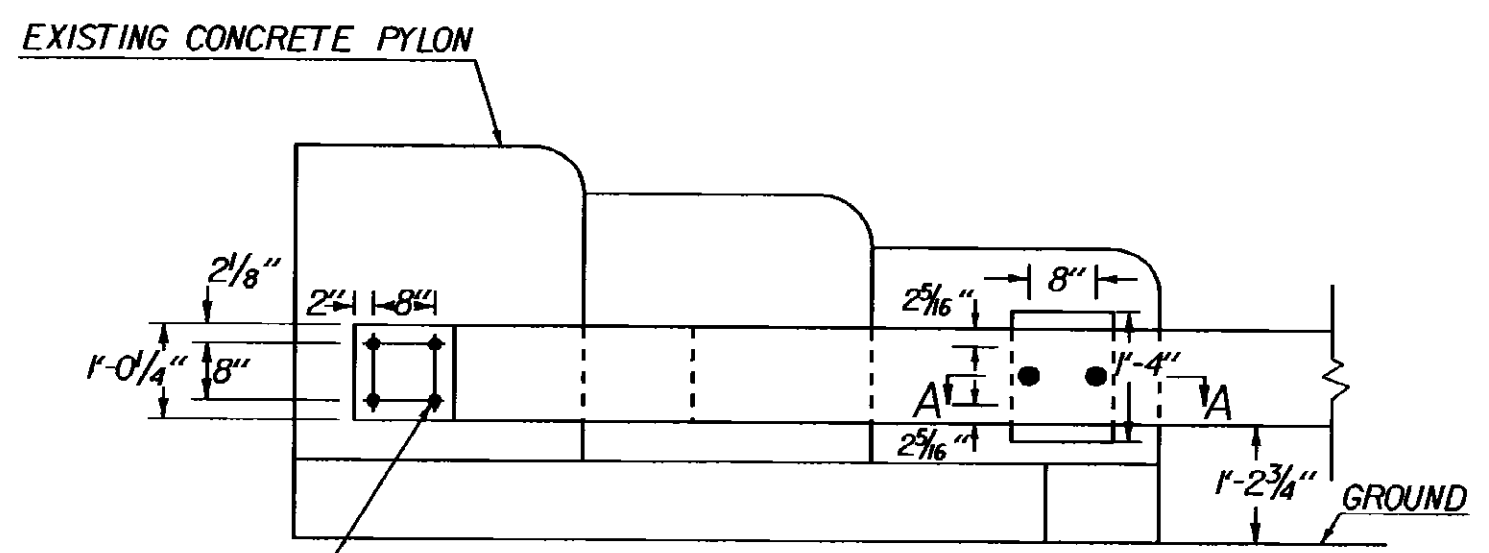
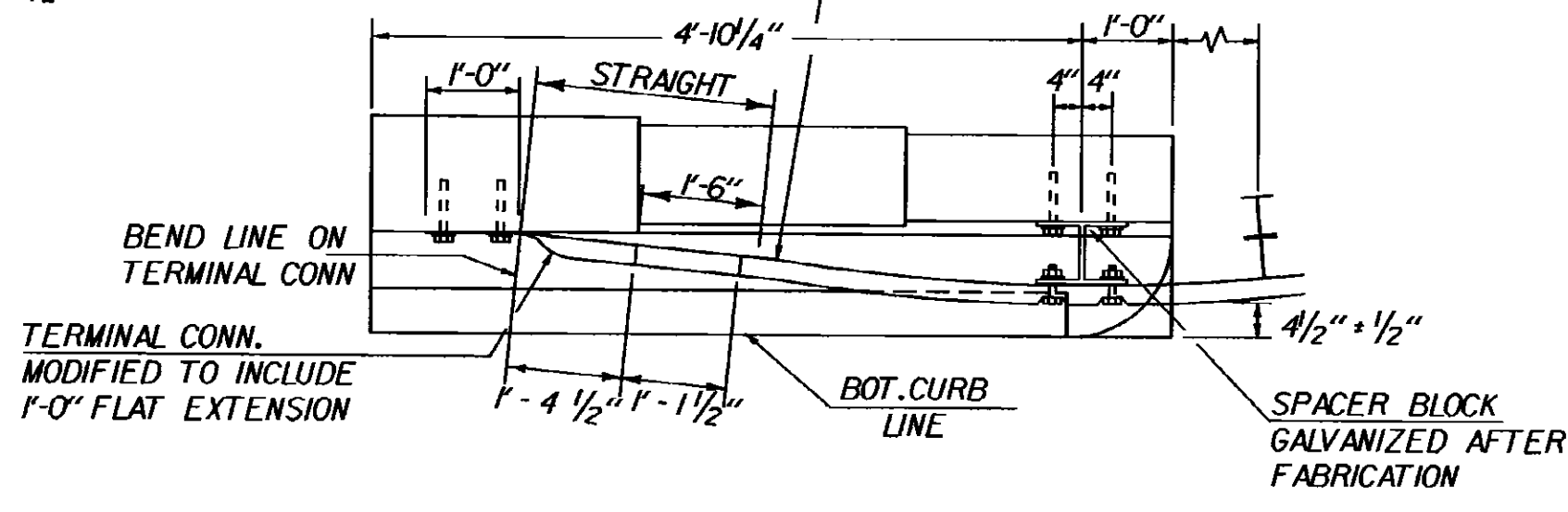
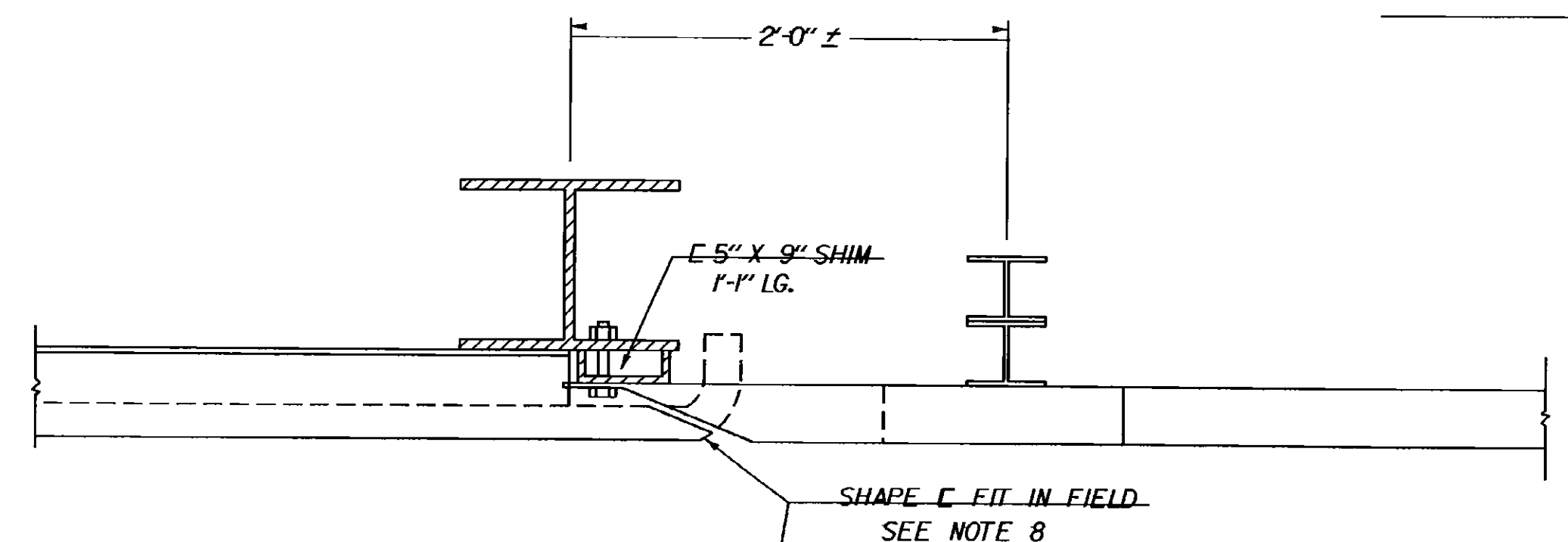
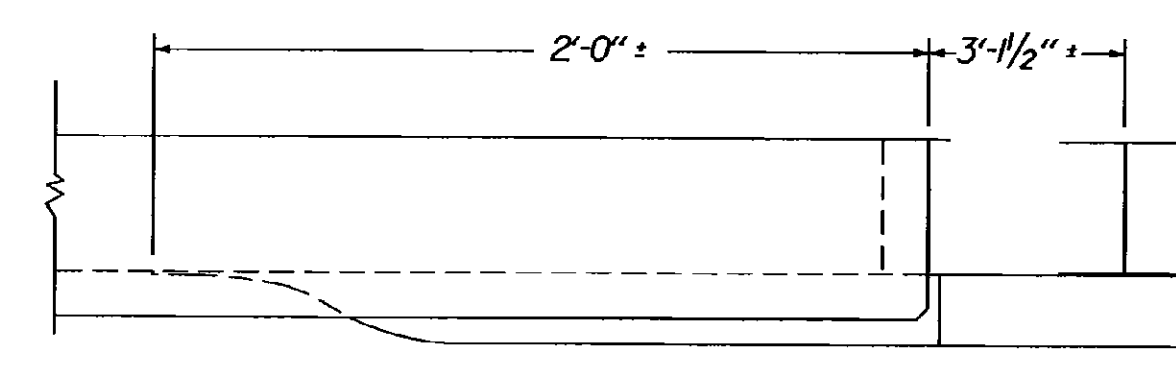
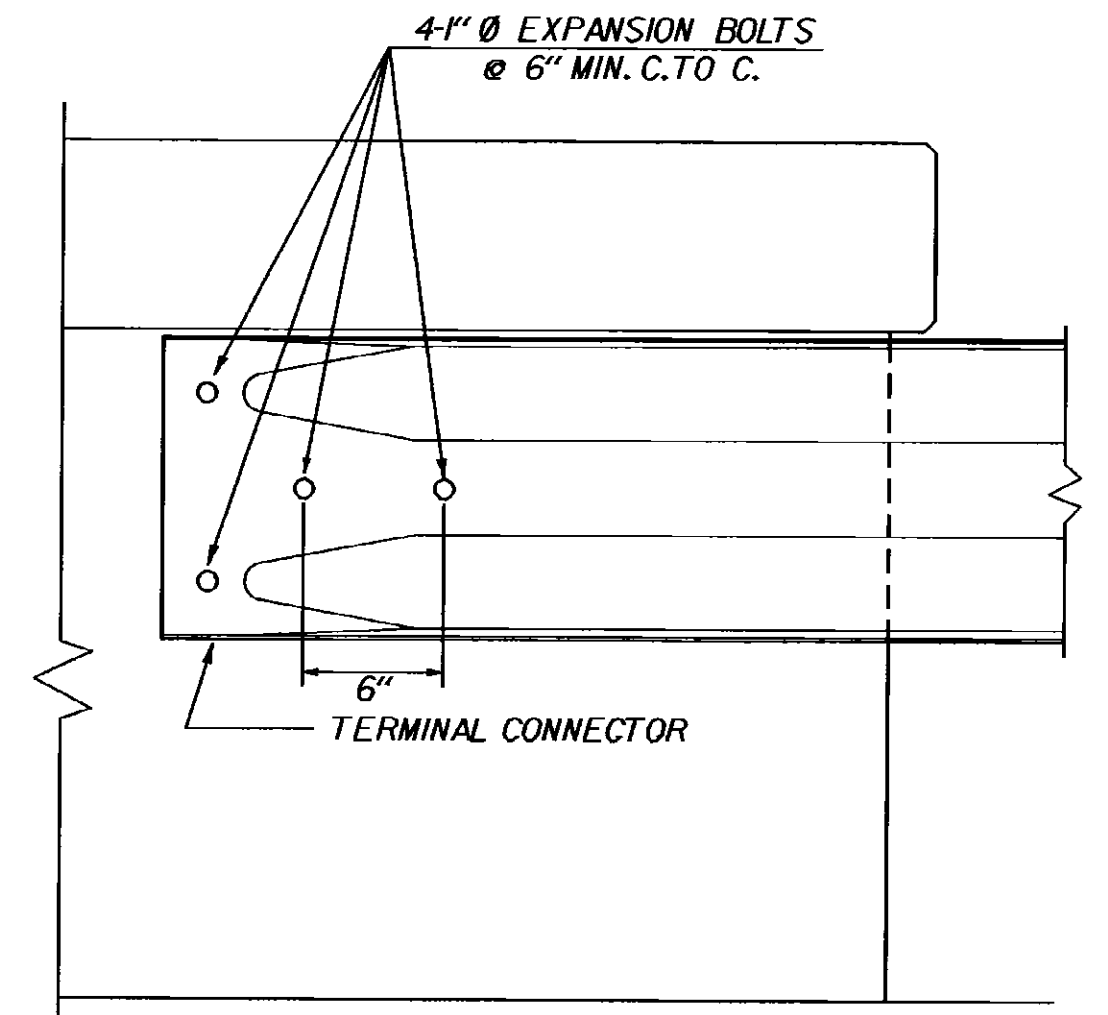


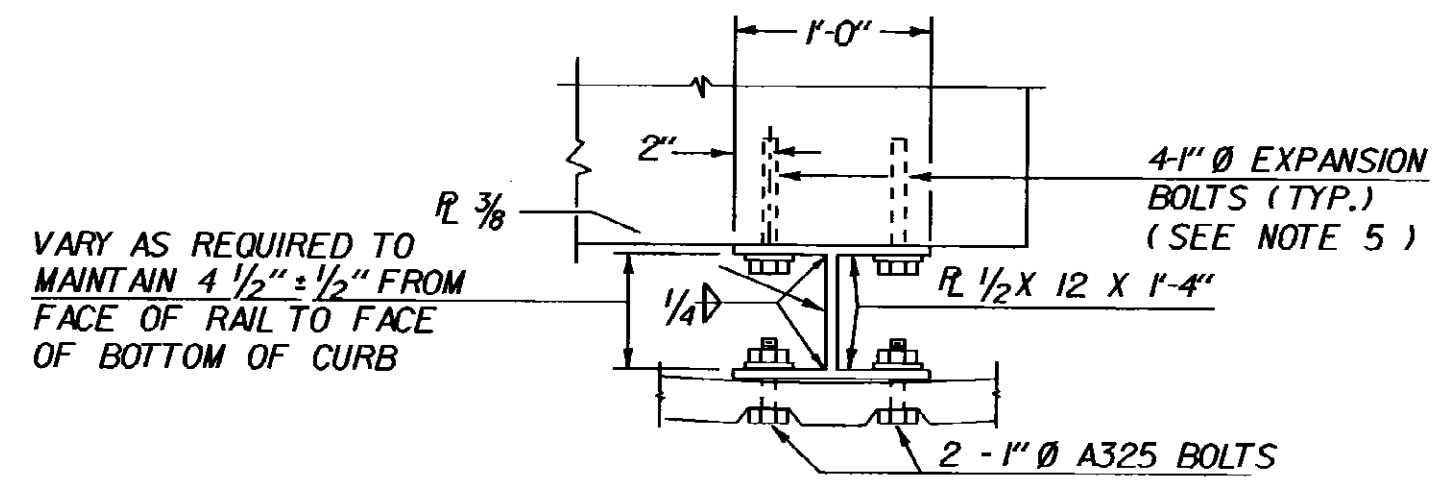
**DETAIL "B"**  
STEEL BEAM INSTALLATION ON CONCRETE POST  
SCALE: 1/2" = 1'-0"



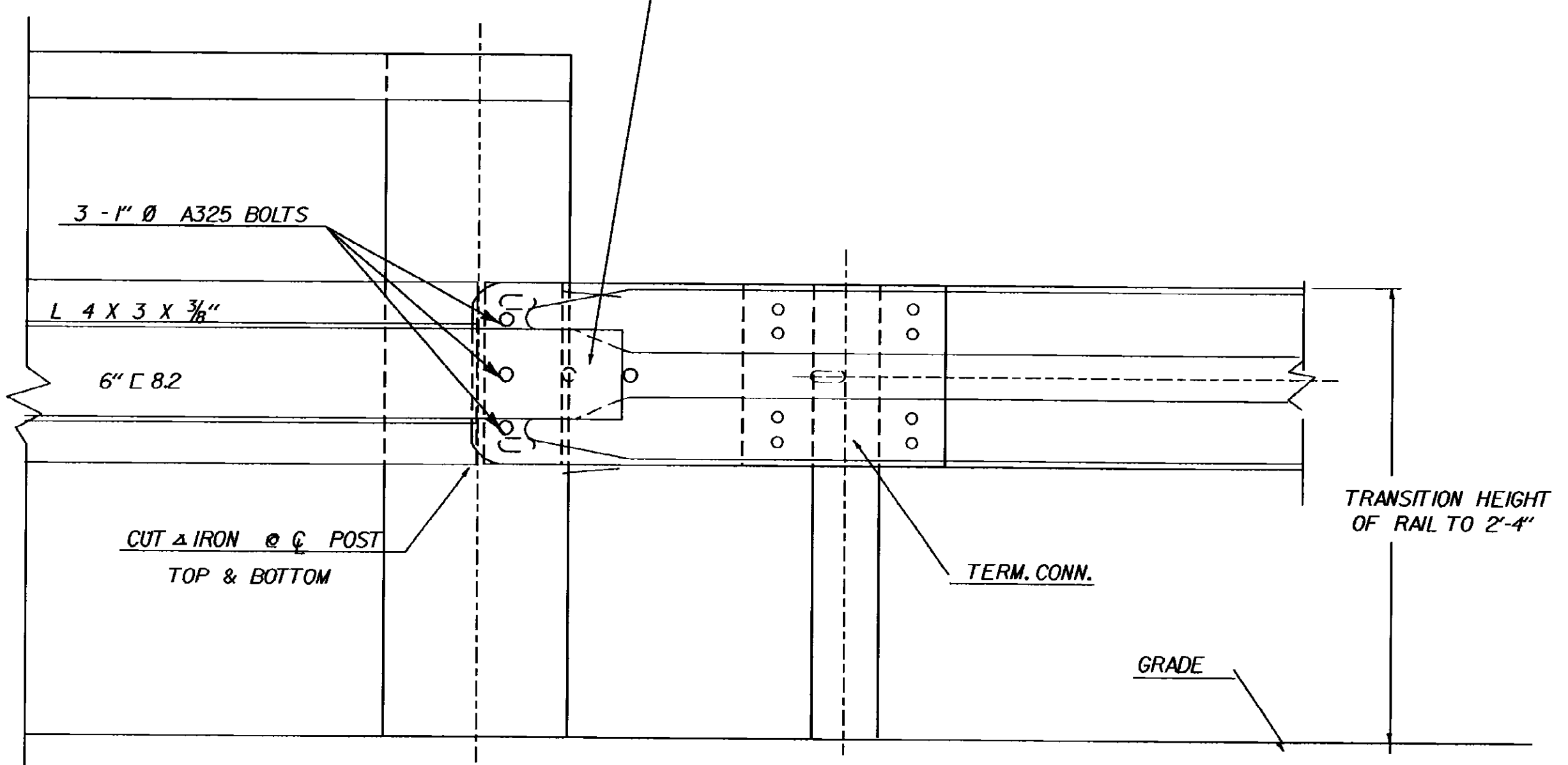
**DETAIL "C"**  
TERMINAL CONNECTION TO SOLID RAIL  
SCALE: 1/2" = 1'-0"



**DETAIL "A"**  
BLOCKED-OUT STEEL BEAM CONNECTION ON CONCRETE PYLON WITH CURB  
SCALE: 1/2" = 1'-0"



**SECTION A-A**  
SPACER BLOCK DETAIL  
SCALE: 1" = 1'-0"



**DETAIL "D"**  
TERMINAL CONNECTION TO STEEL TRUSS RAIL  
SCALE: 1/2" = 1'-0"

**GENERAL NOTES**

- AT LEAST 2 PANELS (25') OF RAIL AT APPROACH TO BRIDGE SHALL BE HEAVY DUTY STEEL BEAM. SEE STANDARD G-1 FOR ADDITIONAL DETAILS.
- ALL METAL PARTS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M-311. ALL FIELD ALTERATIONS TO GALVANIZED MEMBERS SHALL BE PAINTED WITH 2 COATS OF ZINC RICH PAINT (SECTION 708.07).
- TERMINAL CONNECTORS SHALL BE STANDARD HM-TF-13/RE-8.
- EXPANSION BOLTS SHALL BE STAINLESS STEEL, ASTM A582 TYPE 303, 1" Ø BY 9 INCHES IN LENGTH WITH A MINIMUM THREAD LENGTH OF 2 INCHES. EXPANSION WEDGES SHALL BE ASTM A276 TYPE 304. NUTS AND WASHERS SHALL BE TYPE 18-8 STAINLESS STEEL.
- EXPANSION BOLTS SHALL HAVE 7" MIN. DEPTH OF EMBEDMENT INTO EXISTING CONCRETE AND SHALL BE CAPABLE OF ULTIMATE TENSILE STRENGTH = 18,000 LBS MIN. DETAILS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION.
- STEEL BEAM RAILING TO BE INSTALLED ON EXISTING CONCRETE POSTS SHALL BE DRILLED TO FIT IN THE FIELD.
- POST SPACING TO BE 3' - 1 1/2" AT EACH CORNER OF ALL BRIDGES FOR ONE PANEL (12.5'), UNLESS OTHERWISE NOTED. NORMAL LINE POST SPACING TO BE 6' - 3".
- WHEN CONNECTING NEW BEAM RAIL TO EXISTING STEEL RAIL ON TRUSS BRIDGES, ANY EXISTING BRIDGE RAIL CUT SHALL BE CLEANED AND PAINTED IN ACCORDANCE WITH SECTION 513.
- EXISTING BRIDGE RAILING SHALL NOT BE REMOVED UNTIL THE NEW BRIDGE RAILING AND ALL NECESSARY ACCESSORIES ARE ON THE PROJECT.
- ONLY ONE SIDE OF EACH BRIDGE SHALL BE WORKED ON AT A TIME.
- WHEN THE CURB TO RAIL OFFSET EXCEEDS 8", USE A SPACER BLOCK AS SHOWN IN SECTION A-A. MAINTAIN 4 1/2" ± 1/2" CURB TO RAIL OFFSET.
- THE POST MAY BE DRILLED THROUGH AND THE RAIL FASTENED WITH ONE 5/8" Ø GALVANIZED BOLT. A 6" SQUARE GALVANIZED WASHER (1/4" THICK) SHALL BE INSTALLED ON THE BACK SIDE OF THE POST.

**REVISIONS AND CORRECTIONS**

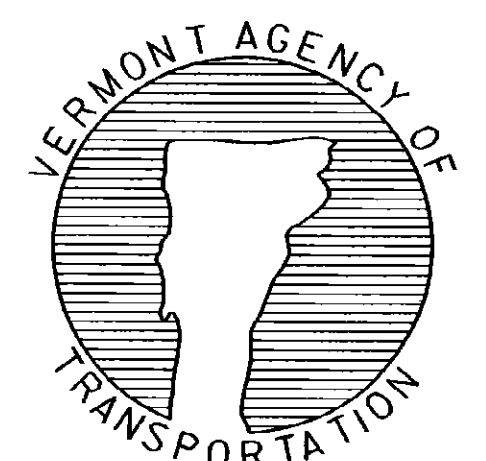
NOV. 29, 1977 - ORIGINAL APPROVAL DATE  
FEB. 15, 1978 - CONSTRUCTION DETAILS REVISED  
NOV. 25, 1980 - TITLE BLOCK REVISED  
JUNE 1, 1994 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.

**APPROVED**

APPROVED FOR THIS PROJECT AND/OR DESIGN IMPLEMENTATION. FHWA FINAL APPROVAL PENDING.

*Joseph A. Vito, P.E.*  
DIRECTOR OF ENGINEERING  
*Richard M. Mungler, P.E.*  
DESIGN ENGINEER

**STEEL BEAM GUARD RAIL ATTACHMENTS TO EXISTING BRIDGE**  
**TERMINAL CONNECTOR FOR STEEL BEAM GUARD RAIL**



**STANDARD**  
**G-16**