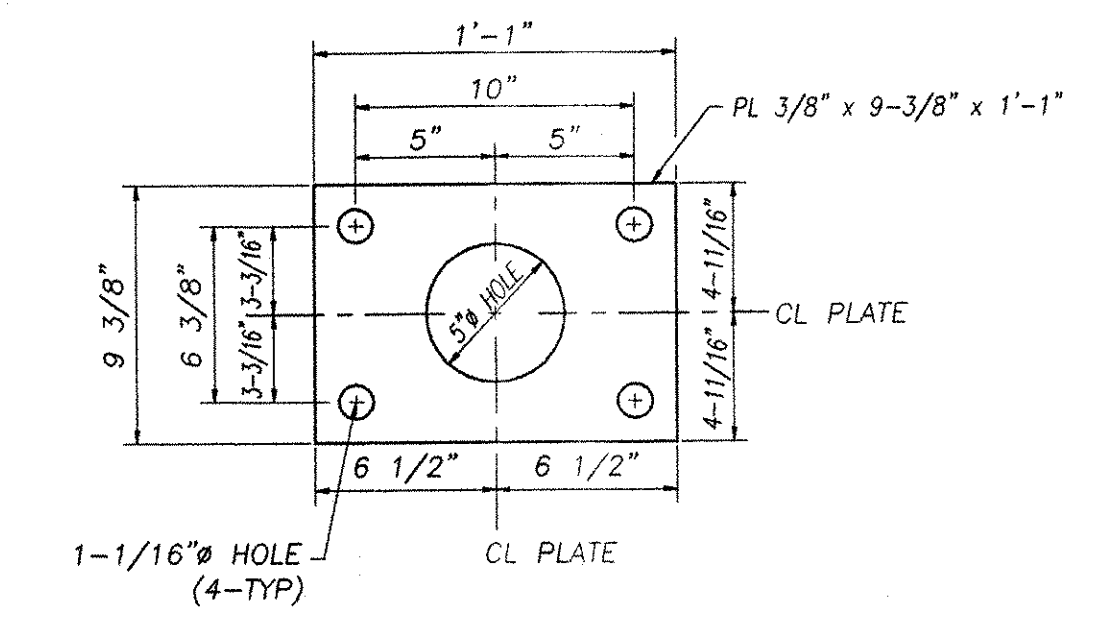
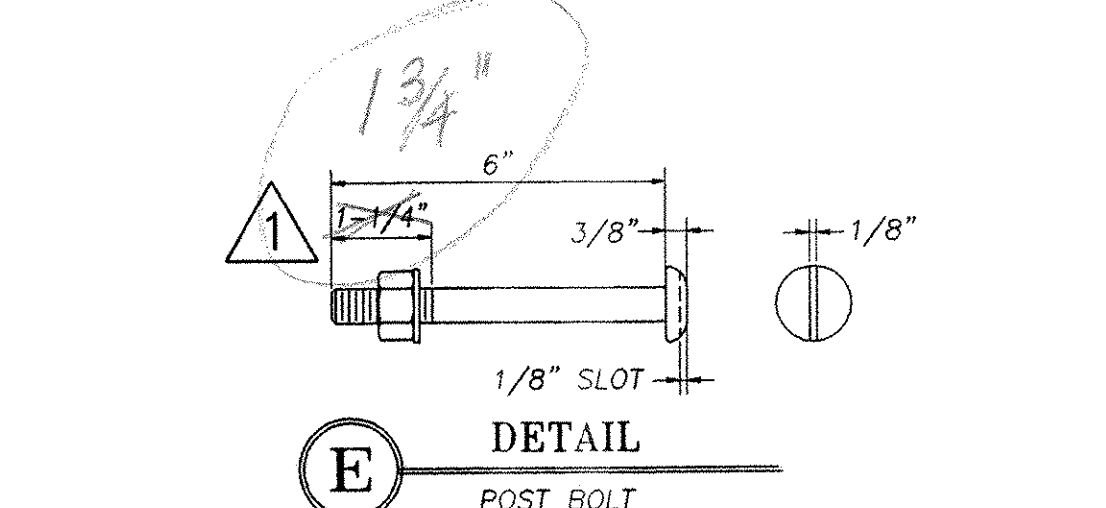


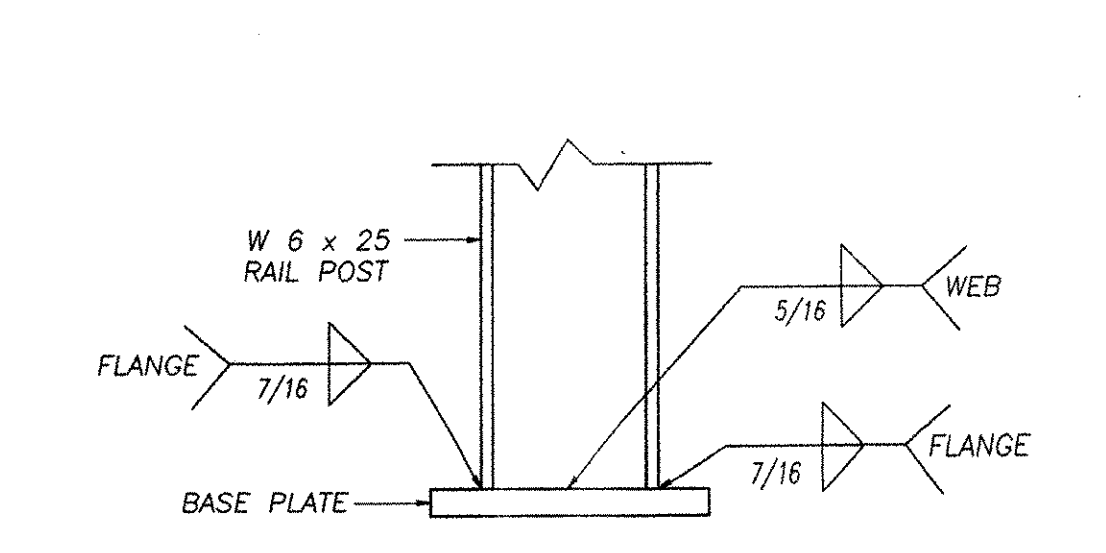
B SECTION
POST & CURB



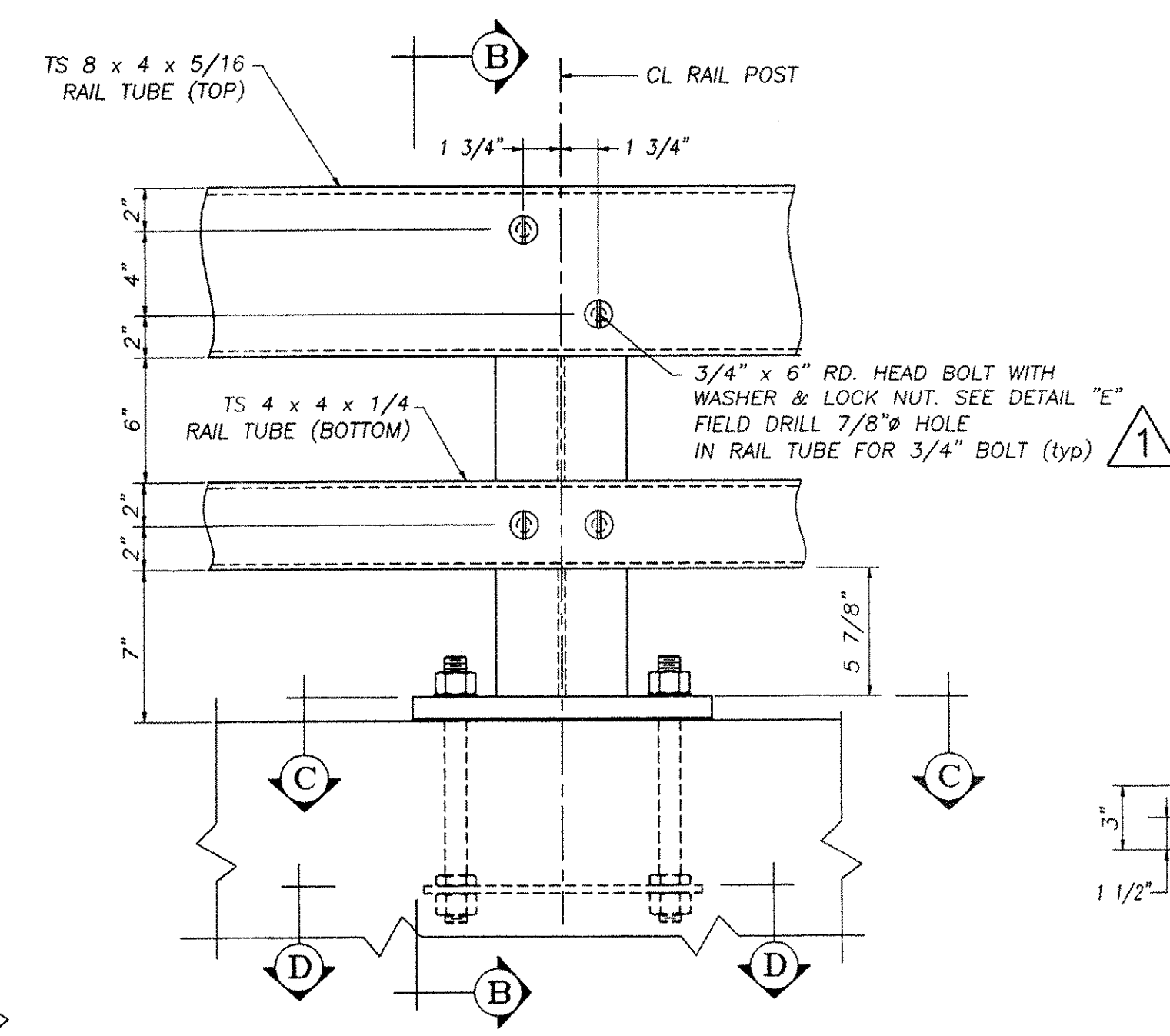
D SECTION
ANCHOR PLATE



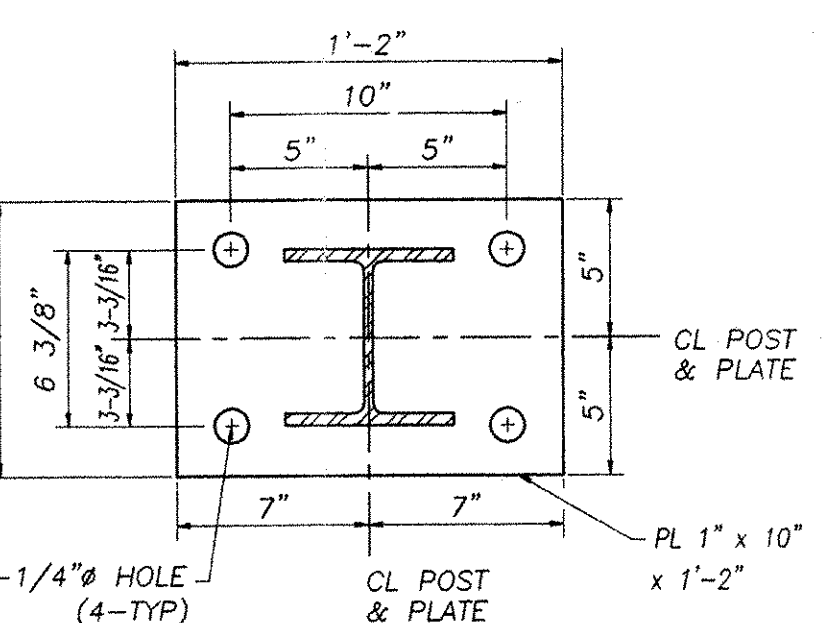
E DETAIL
POST BOLT



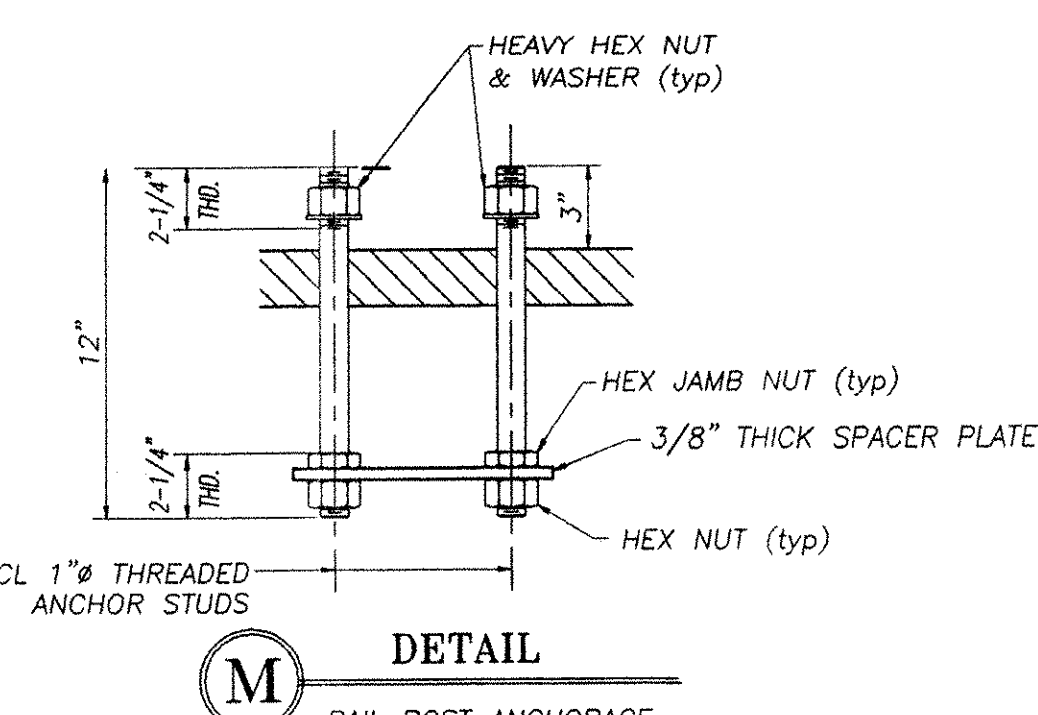
F DETAIL
POST-BASE WELD



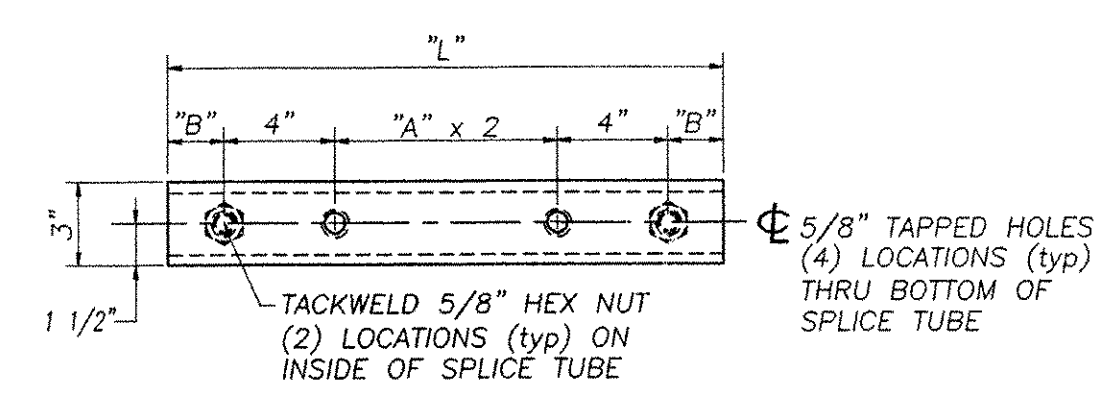
A ELEVATION



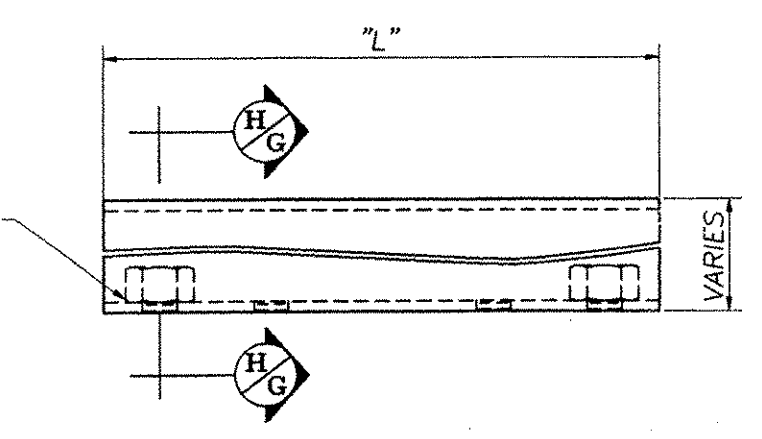
C SECTION
RAIL POST BASE PLATE
SEE DETAIL 'F' FOR POST-BASE WELD



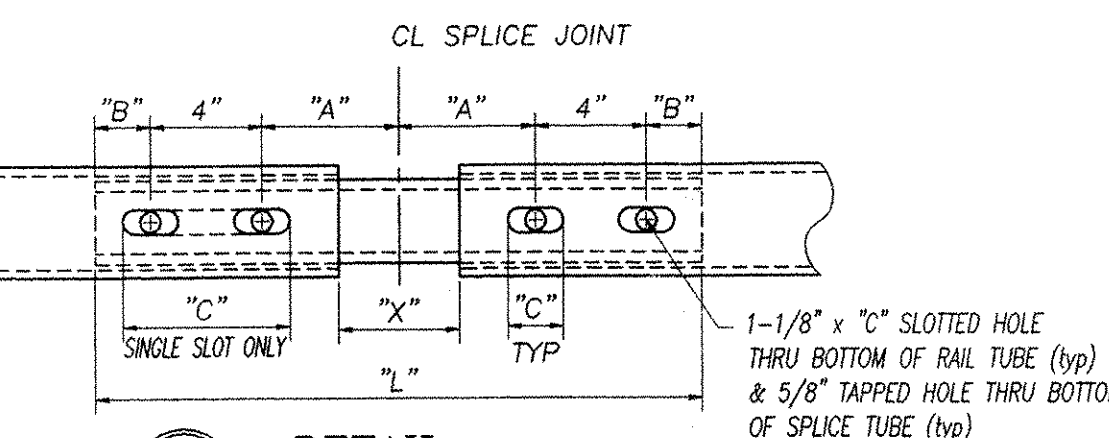
M DETAIL
RAIL POST ANCHORAGE



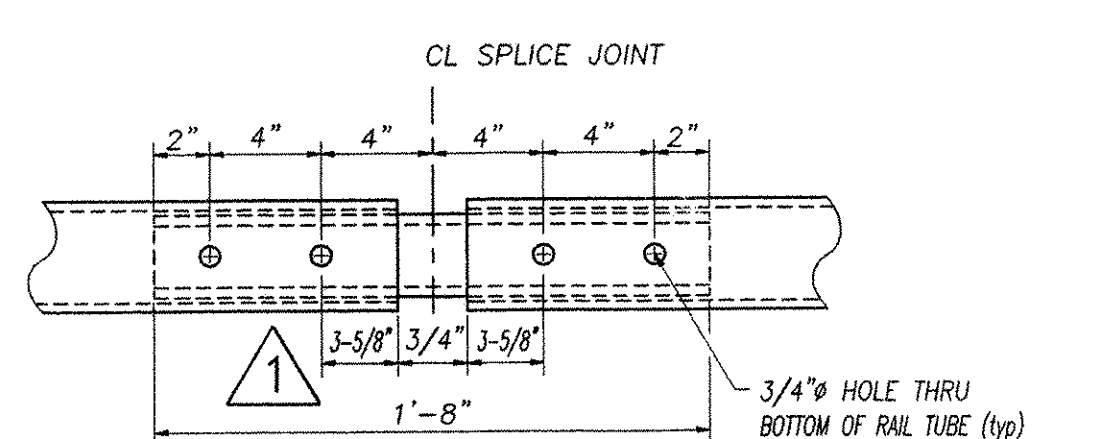
J DETAIL
SPLICE TUBE - BOTTOM VIEW
(SEE CHART FOR DIMENSIONS)



S SECTION
SPLICE TUBE ELEVATION



L DETAIL
EXPANSION JOINT - BOTTOM VIEW
HARDWARE NOT SHOWN FOR CLARITY

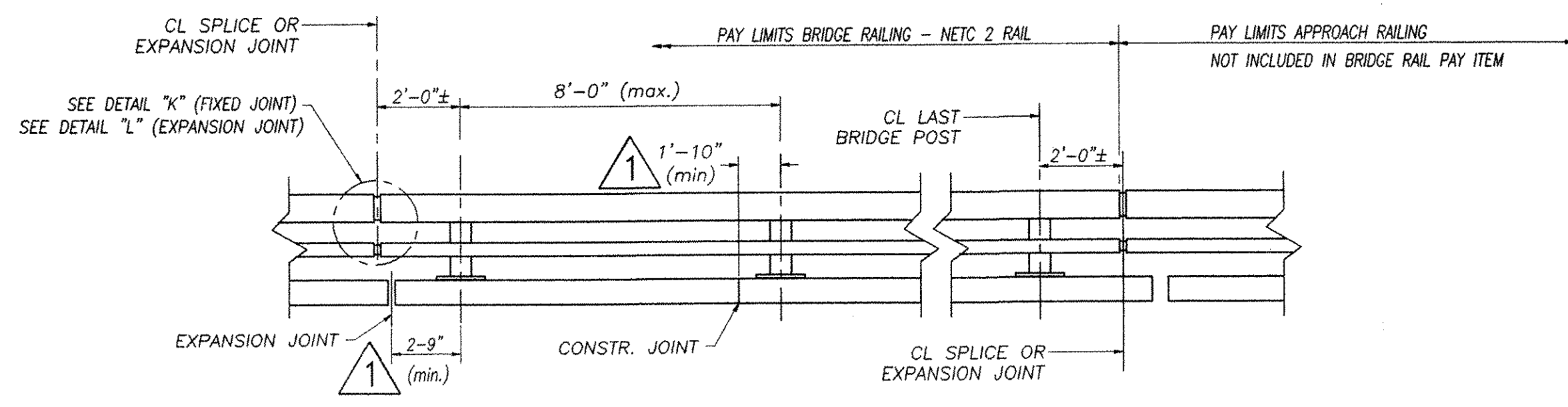


K DETAIL
SPLICE JOINT - BOTTOM VIEW
HARDWARE NOT SHOWN FOR CLARITY

SPLICE & EXPANSION JOINT TABLE					
"I"	"A"	"B"	"C"	"L"	"X"
SPLICE	4"	2"	--	20"	3/4"
≤ 4"	4"	2"	2-1/2"	20"	2-1/2"
> 4" < 6-1/2"	5-1/2"	2-3/8"	3-1/2"	23-3/4"	4"
> 6-1/2" < 9"	6-1/2"	3-3/8"	0"	27-3/4"	6"
> 9" < 13"	8-1/2"	4-3/8"	+1"	33-3/4"	7"

"I" = TOTAL REQUIRED MOVEMENT * = SINGLE SLOT

REVISIONS		
No.	Remarks	Date
0	Initial submittal	4/2/01
1	AS-BUILT REVISIONS	



TYPICAL BRIDGE RAILING & TRANSITION ELEVATION

NOTE: SPLICE TUBES & HARDWARE FOR CONNECTION BETWEEN BRIDGE RAIL & BRIDGE APPROACH RAIL ARE INCLUDED IN APPROACH RAIL PAY ITEM. NOT INCLUDED UNDER BRIDGE RAIL ITEM 525.33

GENERAL ERECTION NOTES

- All work and materials shall conform to the provisions of Section 525 - Railings of the Vermont Standard Specifications for Construction.
- Tubing & posts shall meet the requirements of Section 732 - Railing materials of the Standard Specifications for Construction.
- All exposed cut or sheared edges shall be ground to a 1/16" radius & be free of burrs.
- Rail posts shall be set normal to grade.
- Sections of rail bar shall be attached to a minimum of two (2) posts and preferably to at least four (4) posts.
- Rail bar expansion joints shall be provided in any rail bay spanning a superstructure expansion joint. Expansion joint width shall be "X" at 45° F and will be adjusted in the field by the engineer.
- All parts shall be galvanized after fabrication in accordance with AASHTO M111, except that hardware shall meet the requirements of AASHTO M232.
- Rail posts anchoring nuts shall be tightened to a snug-tight fit and given an additional 1/8 turn.
- Rail bars shall be attached using 3/4" full diameter body head bolts AASHTO M164 (Type-I) inserted through the face of the bar. Holes in post shall be 1/16" larger than the bolt size.
- Holes in rails for attachment to posts will be field-drilled. Holes shall be coated with an approved zinc-rich paint prior to erection.
- Radiused rails (if required) will be shop-curved. No field-bending of rail tubes.
- The drop-weight tear test in section 732 shall not apply to the structure tubing on this standard.
- The rail posts & base plates shall be tested for impact properties in accordance with ASTM A370 Charpy Impact Testing, using a type A specimen.
- All welds are to be cleaned prior to galvanizing to ensure proper bonding of zinc to the welded area.

TVGA
Engineering, Surveying, P.C.

NO EXCEPTIONS TAKEN REJECTED
 FURNISH AS CORRECTED
 REVISE AND RESUBMIT
 ENGINEER has reviewed Shop Drawings and Samples and other data which Contractor is required to submit, only for conformance with the information given in the Contract Documents and compliance with the division covered by the completed Project as a functioning whole as indicated in the Contract Documents. Such review shall not be construed as a guarantee or warranty of the accuracy or completeness of the information or as a representation or assurance of construction or to safety precautions and programs incident thereto. Contractor is responsible for dimensions to be confirmed and correlated at the job site; for information that pertains solely to the fabrication processes or to techniques of construction; and for coordination of the work of all trades.
 BY: *W. S. T.*
 DATE: 6/21/01

MATERIALS

- Rail bars.....ASTM A500 GR B or ASTM A501
- Rail posts.....ASTM A709 GR 50
- All other shapes & plates.....ASTM A709 GR 36
- Anchor studs.....ASTM A449
- All other bolts [unless noted].....AASHTO M164, TYPE I

1 Nuts for ASTM A307 bolts & AASHTO M164 bolts shall comply with AASHTO M291. Nuts for anchor studs shall comply with ASTM A563.

washers shall comply with ASTM F436

1/8" pad shall comply with standard specification subsection 731.01 or 731.02 of Vermont Standard Specifications.

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 525.33 - BRIDGE RAILING - NETC 2 RAIL
PROJECT No. IM-089-2(26)
TOWN OF MIDDLESEX & BOLTON
INTERSTATE ROUTE 89

DRAWN: C. A. Leblanc
CHECKED: *Paul L.*
DATE: 5/30/01
SCALE: NONE
HSC REFERENCE NO.: 1237
GENERAL CONTRACTOR: WINTERSSET, INC.
SUB CONTRACTOR: F.R. LAFAYETTE, INC.

SIZE: D REVISION: 1
SHEET NO.: 17 of 17