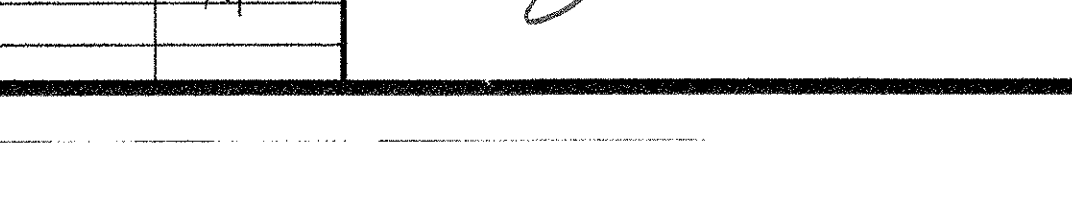
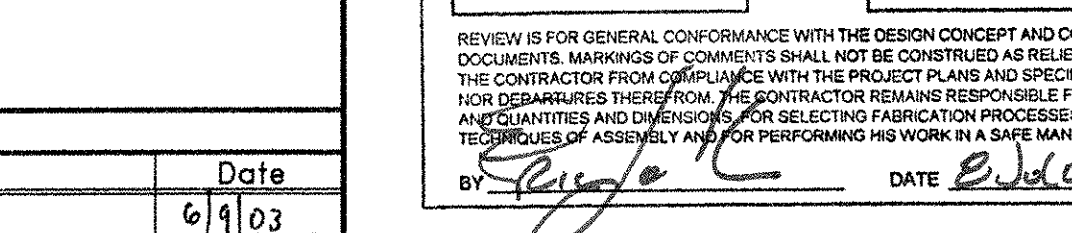
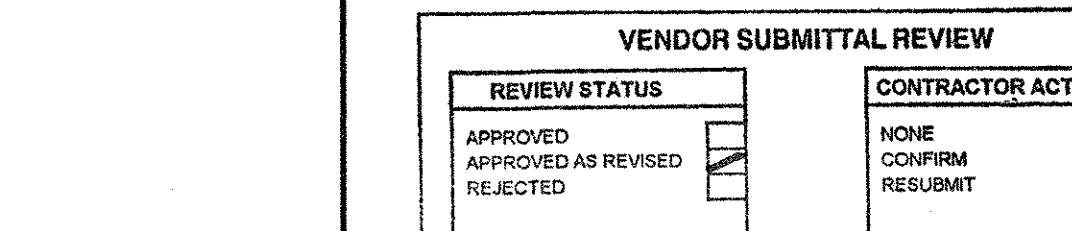
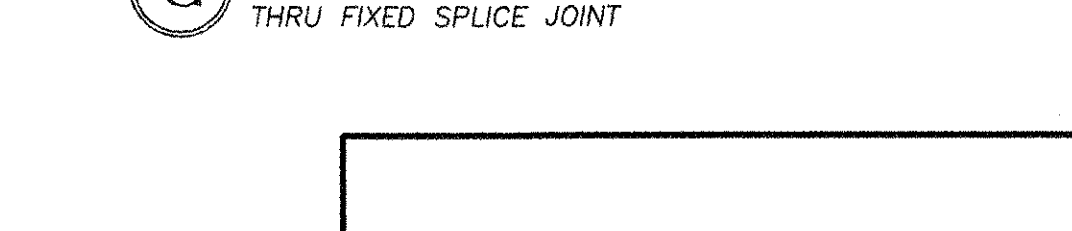
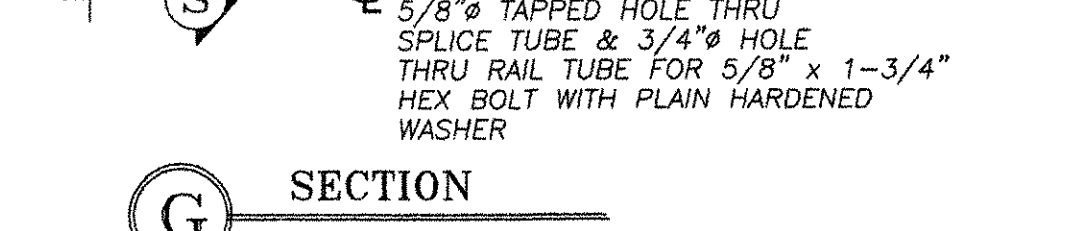
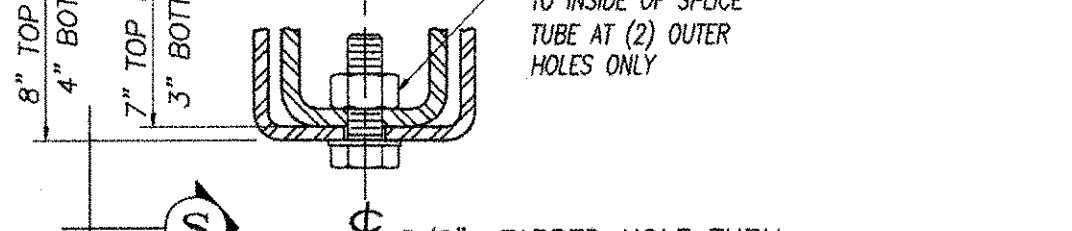
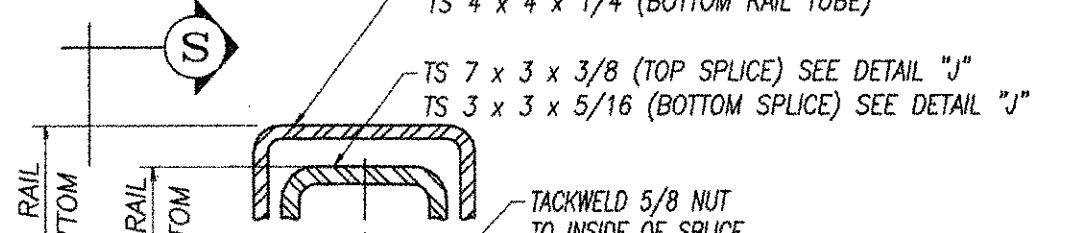
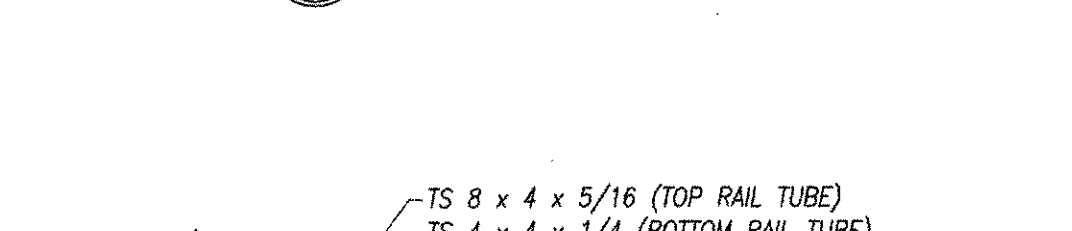
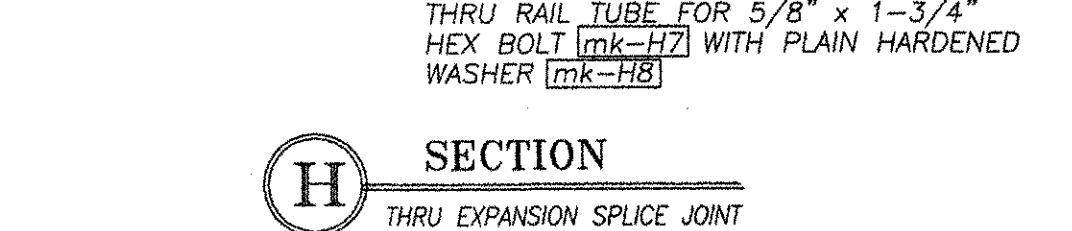
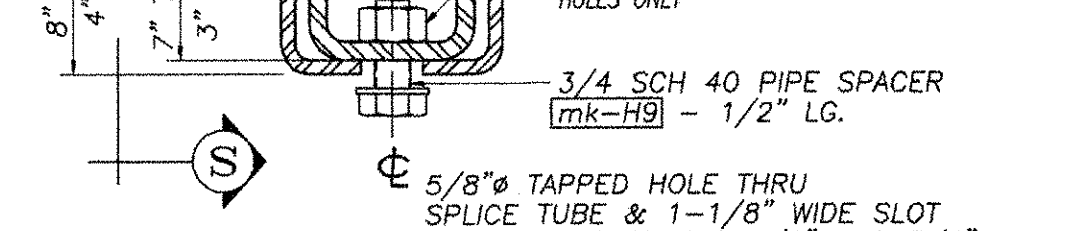
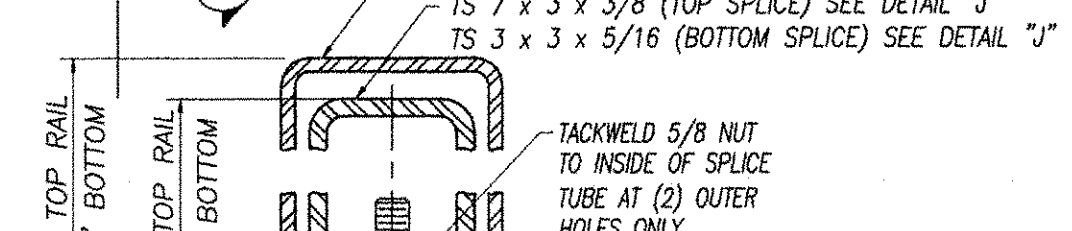
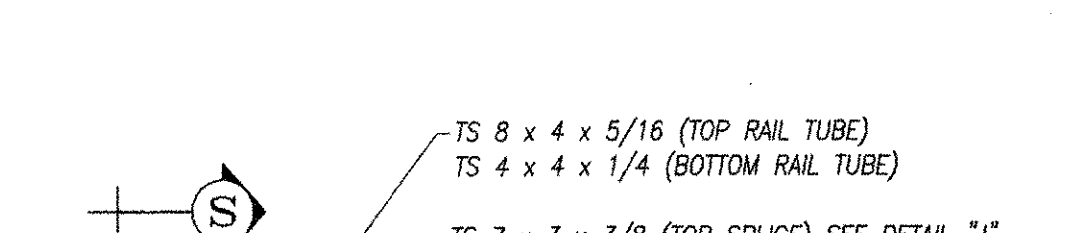


TYPICAL BRIDGE RAILING ELEVATION

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 rounded 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" 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 insure proper bonding of zinc to welded areas.

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
- 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.

SPLICE & EXPANSION JOINT TABLE					
"T"	"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"
≥ 6-1/2"	≤ 9"	6-1/2"	3-3/8"	9"	27-3/4"
> 9"	≤ 13"	8-1/2"	4-3/8"	11"	33-3/4"

"T" = TOTAL REQUIRED MOVEMENT * = SINGLE SLOT

REVISIONS		
No.	Remarks	Date
0	Initial submittal	6/1/03

VENDOR SUBMITTAL REVIEW	
REVIEW STATUS	CONTRACTOR ACTION
APPROVED	NONE
APPROVED AS REVISED	CONFIRM
REJECTED	RESUBMIT

REVIEW IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND CONTRACT DOCUMENTS. MARKINGS OF COMMENTS SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR FROM COMPLIANCE WITH THE PROJECT PLANS AND SPECIFICATIONS NOR OBTAINING THEREFROM. THE CONTRACTOR REMAINS RESPONSIBLE FOR DETAILS AND QUANTITIES AND DIMENSIONS. FOR SELECTING FABRICATION PROCESSES FOR THE PURPOSES OF ASSEMBLY AND FOR PERFORMING HIS WORK IN A SAFE MANNER.

By: *[Signature]* DATE: *6/1/03*

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 525.33 - BRIDGE RAILING - NETC 2 RAIL
PROJECT No. IM-091-1(36)
TOWN OF HARTLAND
INTERSTATE ROUTE 91 BRIDGE No. 38
STATE OF VERMONT WINDSOR COUNTY

DRAWN: MHM
CHECKED: *[Signature]*
DATE: 5-28-03
SCALE: NONE
HSC REFERENCE NO.: 1354
GENERAL CONTRACTOR: *[Signature]*
SUB CONTRACTOR: F.R. Lafayette, Inc. 104
SHEET NO.: 3 of 3