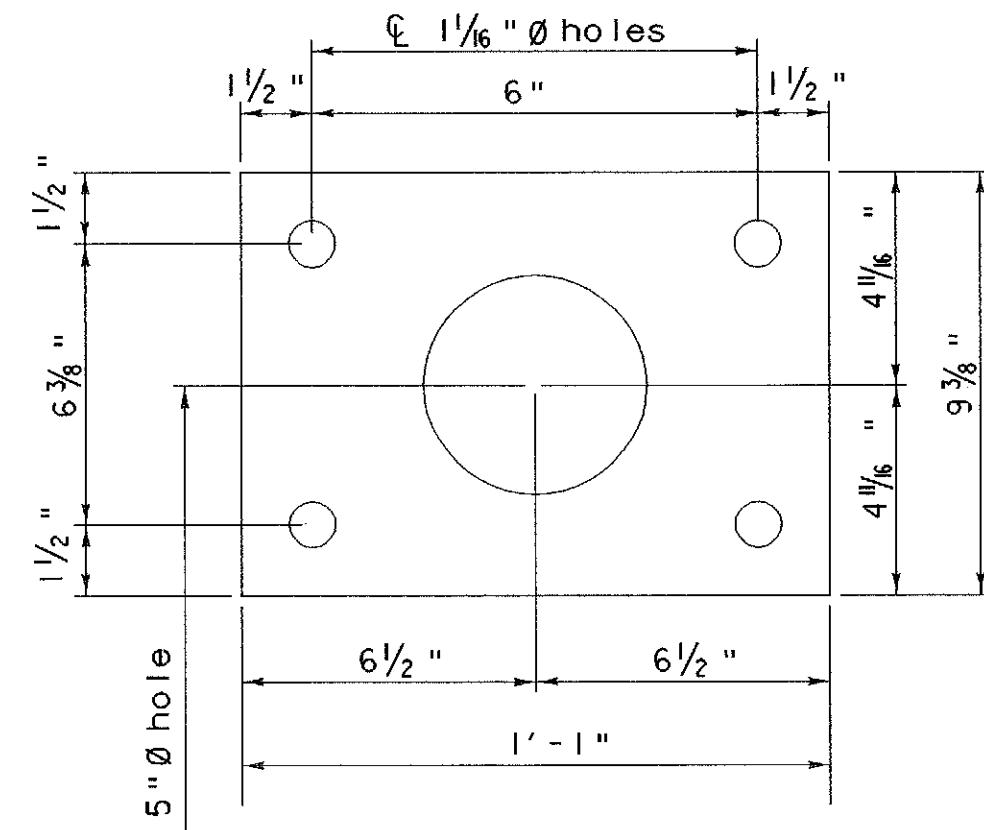
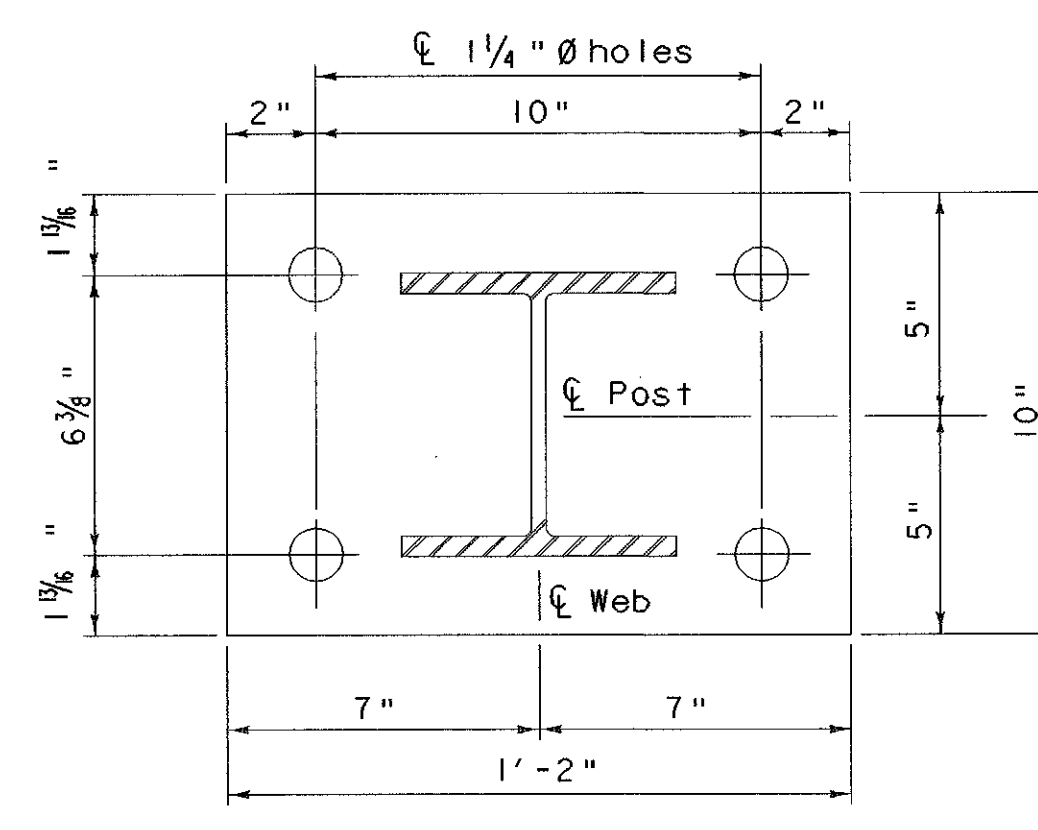


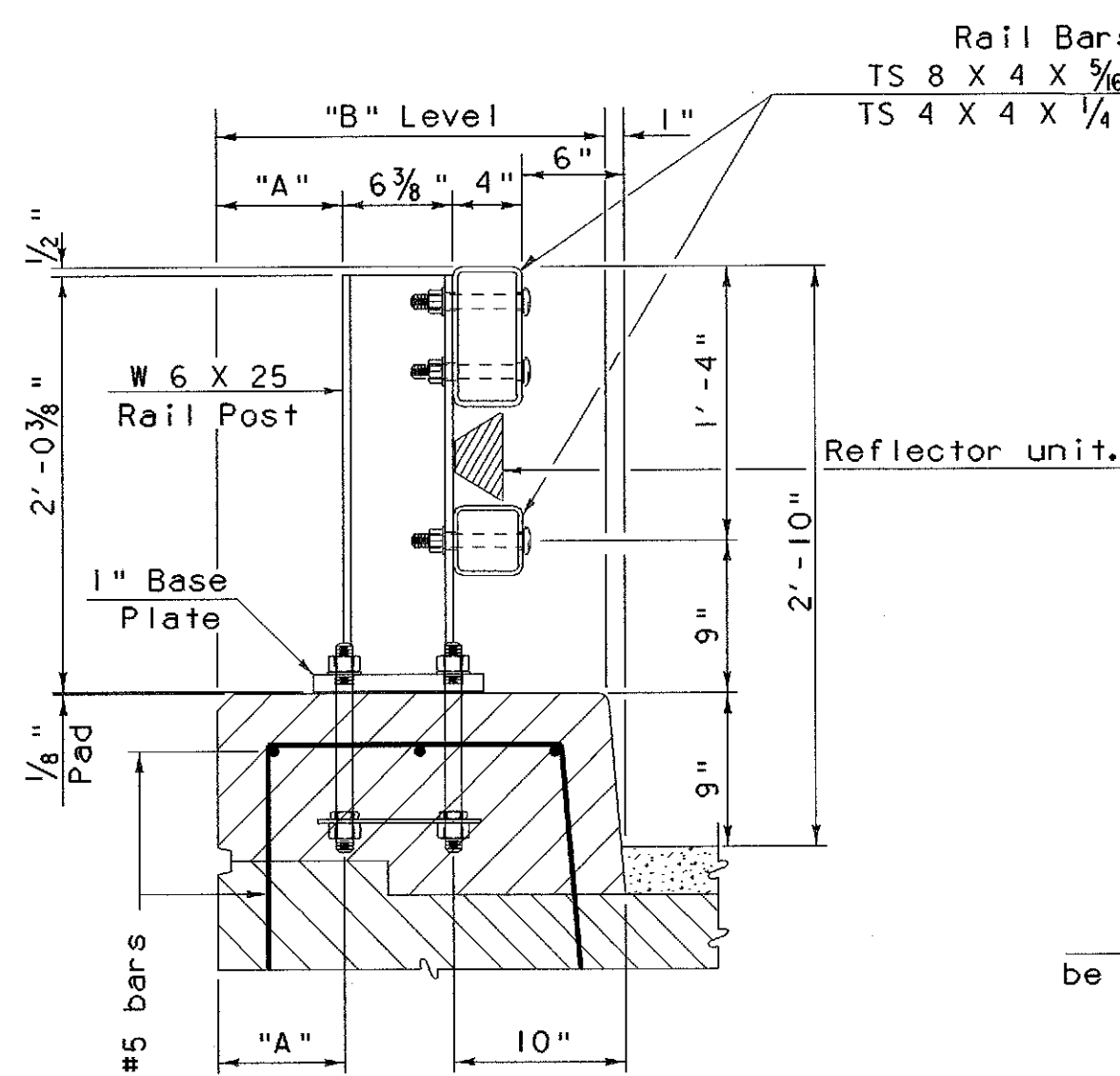
BRIDGE RAILING ELEVATION



SPACER PLATE

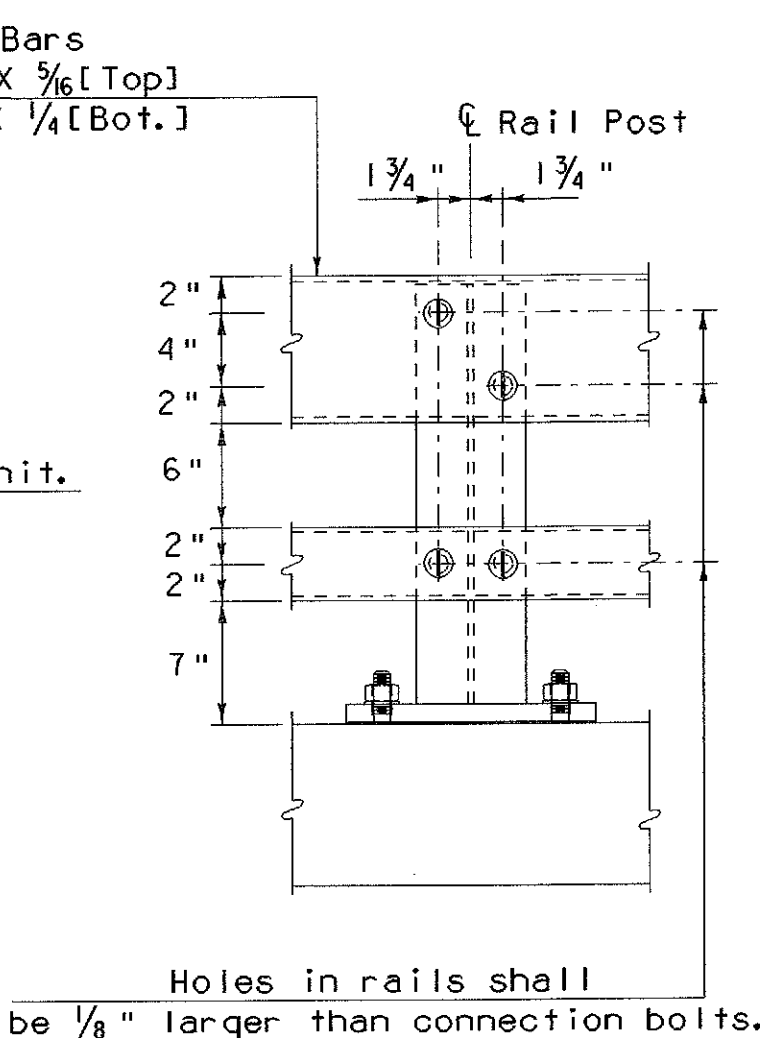


POST & BASE PLATE

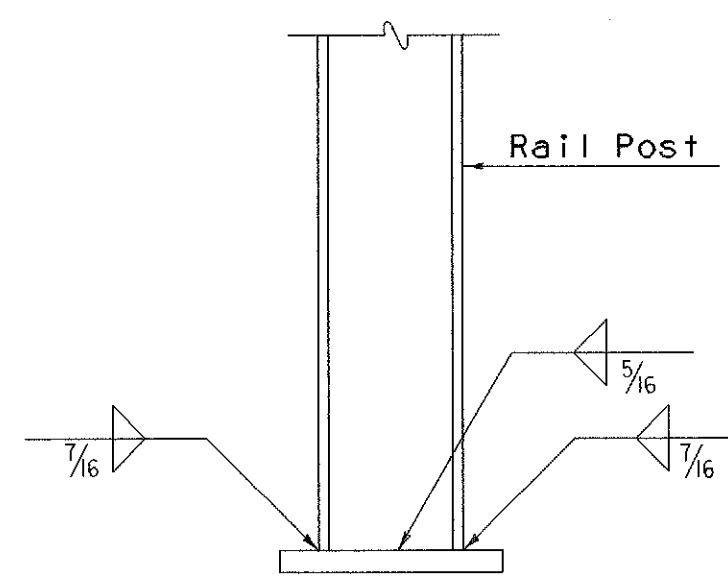


TYPICAL SECTION

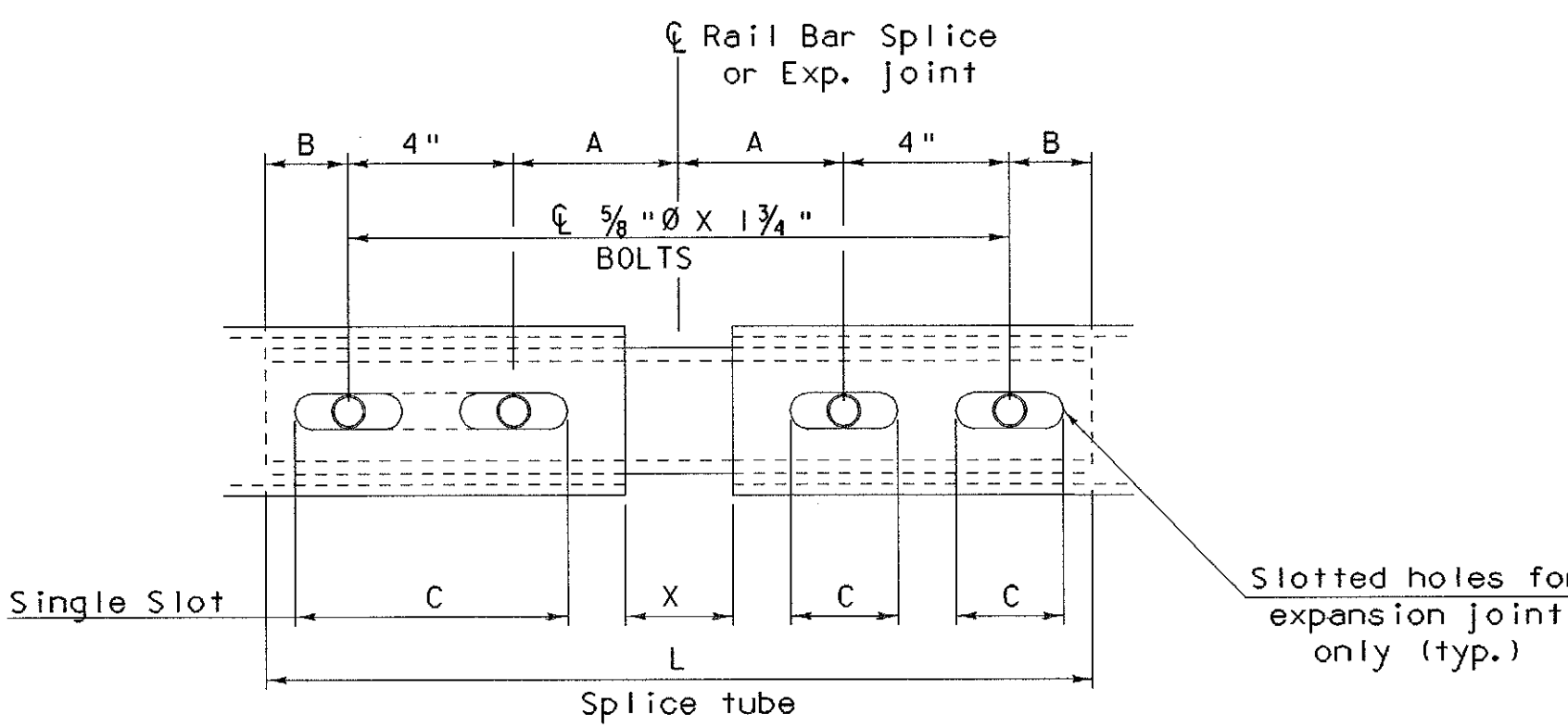
DIMENSION INDEX		
CURB WIDTH	"A"	"B"
1'-11"	6 3/8"	1'-10"
2'-8"	1'-3 3/8"	2'-7"



ELEVATION



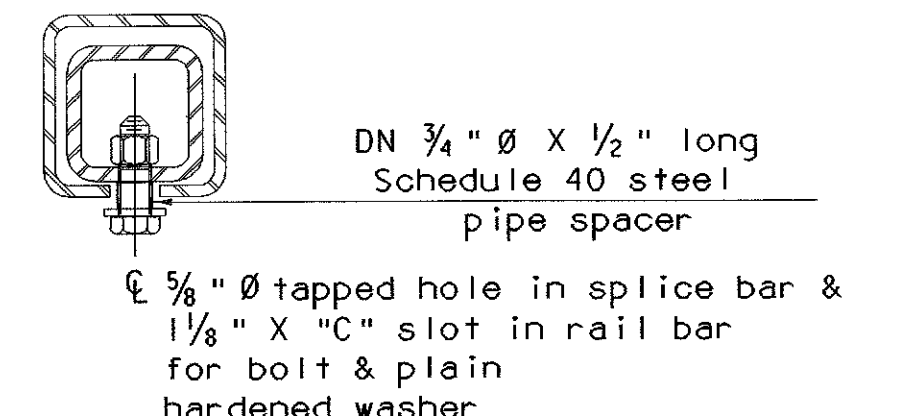
BASE WELD DETAIL



RAIL BAR SPLICE & EXP. JOINT DETAIL

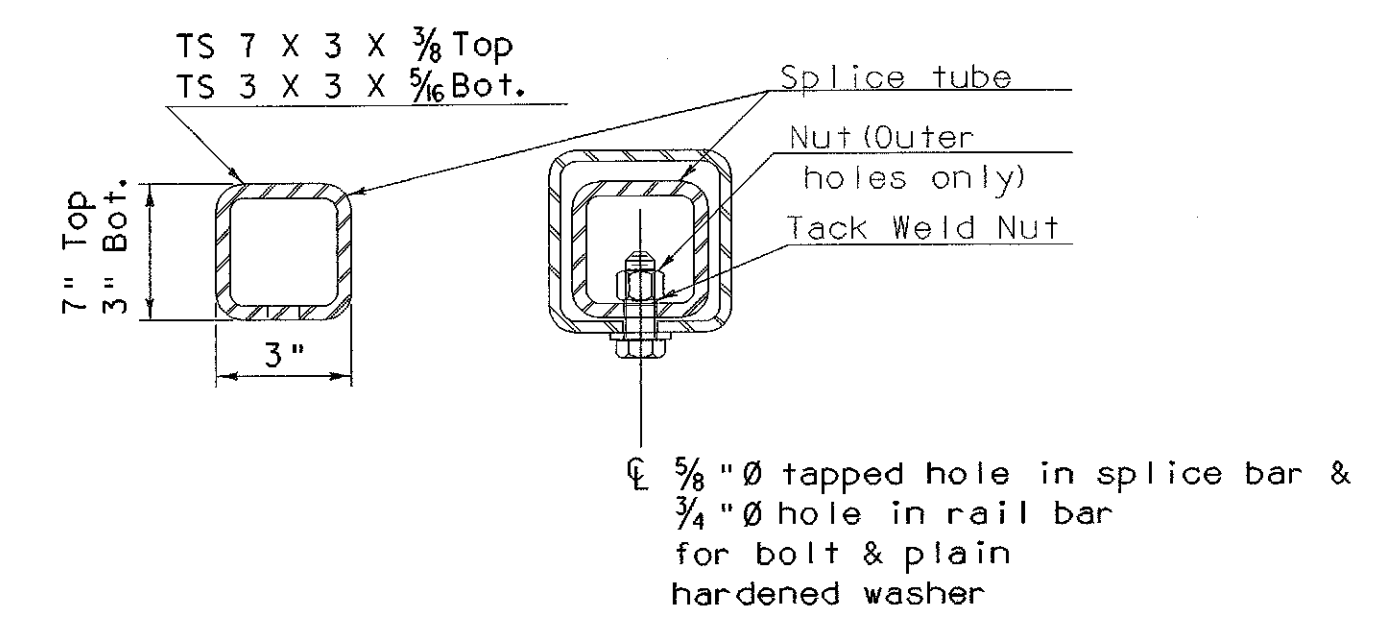
SPLICE & EXPANSION JOINT TABLE					
T	A	B	C	L	X
Splice	4"	2"	--	20"	3/4"
<4"	4"	2"	2 1/2"	20"	2 1/2"
>4" < 6 1/2"	5 1/2"	2 3/8"	3 1/2"	23 3/4"	4"
>6 1/2" < 9"	6 1/2"	3 3/8"	9"	27 3/4"	5"
>9" < 13"	8 1/2"	4 3/8"	11"	33 3/4"	7"

T = Total Movement \* = Single Slot

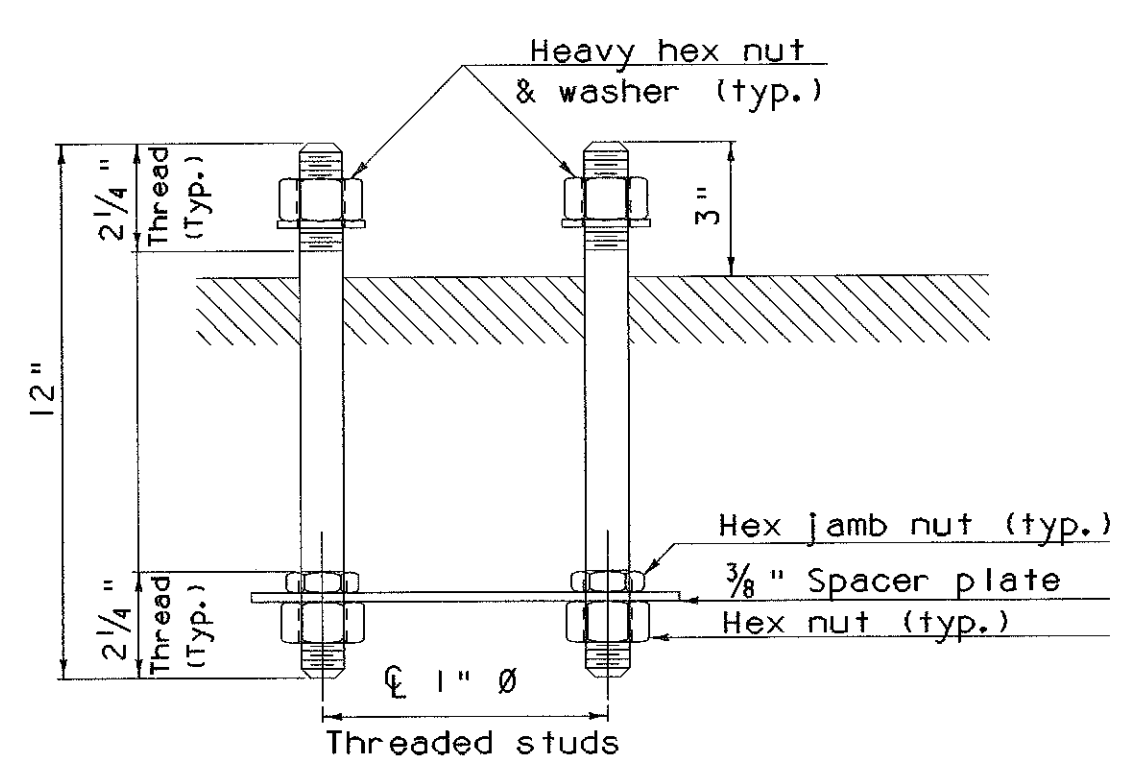


EXPANSION JOINT SECTION

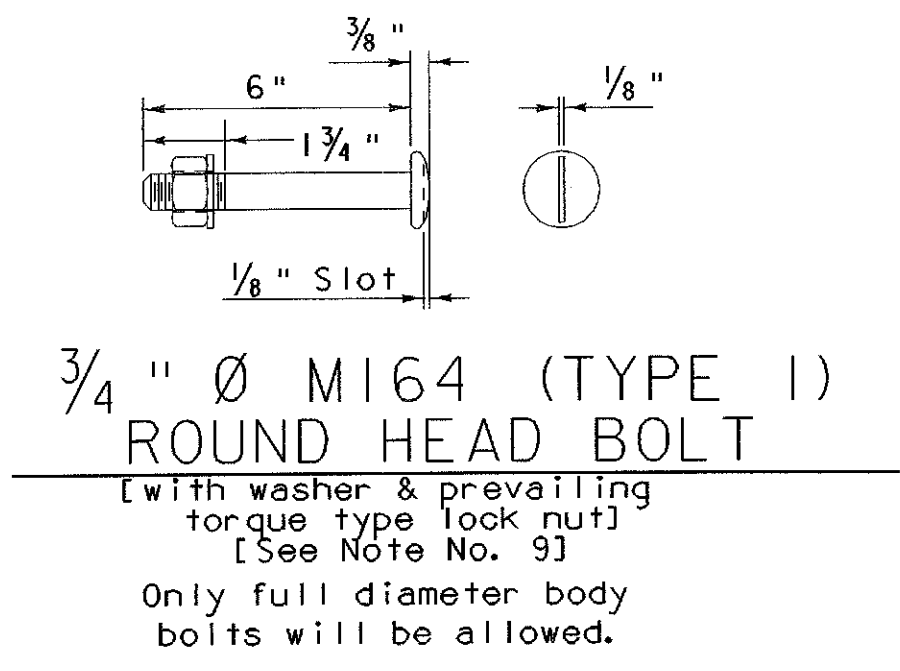
For details not shown, see "Rail Bar Splice Section"



RAIL BAR SPLICE SECTION



RAIL POST ANCHORAGE



3/4" Ø M164 (TYPE 1) ROUND HEAD BOLT  
[with washer & prevailing torque type lock nut] [See Note No. 9]  
Only full diameter body bolts will be allowed.

EXPANSION TABLE "T" (in.)

BRIDGE NO.	SPAN 1	SPAN 2	SPAN 3	SPAN 4	
6 NORTHBOUND	1/2"	1"	3/8"	---	(SIMPLE SPANS)
6 SOUTHBOUND	1/2"	1 1/8"	3/8"	---	(SIMPLE SPANS)
8	3/4"	1 3/8"	1 1/8"	5/8"	(SIMPLE SPANS)
15 NORTHBOUND	1/2"	1"	1/2"	---	(SIMPLE SPANS)
15 SOUTHBOUND	1/2"	1"	1/2"	---	(SIMPLE SPANS)
16 NORTHBOUND	4 1/8"				(CONTINUOUS)
16 SOUTHBOUND	4 7/8"				(CONTINUOUS)
17 NORTHBOUND	4 7/8"	---	4 7/8"	---	(CONTINUOUS)
17 SOUTHBOUND	4 7/8"	---	4 7/8"	---	(CONTINUOUS)
18 NORTHBOUND	5/8"	1/2"	1/2"	1/2"	(SIMPLE SPANS)
18 SOUTHBOUND	5/8"	1/2"	3/4"	3/4"	(SIMPLE SPANS)

NOTES

- All work and materials shall conform to the provisions of Section 525 - Railings of the Standard Specifications for Construction.
- Tubing and 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 and 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] rail 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 fit and given an additional 1/8 turn.
- Rail bars shall be attached using 3/4" full diameter body AASHTO M164 (Type 1) round head bolts inserted through the face of the bar. Holes in posts shall be 1/16" larger than the bolt size.
- Holes in rails for rail bar attachment may be field-drilled. Holes shall be coated with an approved zinc-rich paint prior to erection.
- Any bending of rail shall be by shop procedure only.
- The Fabricator shall submit Shop drawings, including welding procedures to the Structures Section for approval in accordance with the provisions of Section 506.04 - Shop Drawings. All welding shall conform with Section 506.10.
- The drop-weight tear test in section 732 shall not apply to the structural tubing on this sheet.
- Rail posts and base plates shall be tested for impact properties in accordance w/ ASTM A370 CHARPY IMPACT TESTING using a Type A Specimen.

MATERIALS

Rail bars.....ASTM A500, Grade B or ASTM A501  
 Rail posts & base plate.....ASTM A709/A709M, Grade 50  
 All other shapes & plates.....ASTM A709/A709M, Grade 36  
 Anchor studs.....ASTM A449  
 All other bolts [unless noted]..... AASHTO M164, Type 1  
 Nuts for AASHTO M164 shall comply with AASHTO M291.  
 Nuts for anchor studs shall comply w/ ASTM A563.  
 Washers shall comply with AASHTO M293 (ASTM F436) specification.  
 1/8" pad shall comply with standard specification subsection 731.01 or 731.02.  
 SET SCREWS FOR DELINEATION DEVICES SHALL CONFORM TO ASTM SPECIFICATION F880, CONDITION CW, ALLOY TYPE 304.

**STATE OF VERMONT AGENCY OF TRANSPORTATION**

Town Of **HARTFORD-SHARON-ROYALTON** Bridge No. \_\_\_\_\_  
 Highway No. **I-89** Log Sta. \_\_\_\_\_  
**N.E.T.C. BRIDGE RAIL DETAILS** Surv. Sta. \_\_\_\_\_

Designed By **C. MEUNIER** Drawn By **VAOT**  
 Checked By \_\_\_\_\_ Date \_\_\_\_\_ Bridge Design Supervisor  
**C. MEUNIER** 11/98 **G. S. ROGERS** Date 11/98

PROJECT **HARTFORD-SHARON-ROYALTON** PROJECT NO. **IM IR 089-1(B)**  
 I.G.C. \p08\_cadd\VI11ngcablnet\87a008\Structures\so008d1.dgn so008d1j  
 Bridge Sheet No. **BR 125** Sheet **82** of **260**