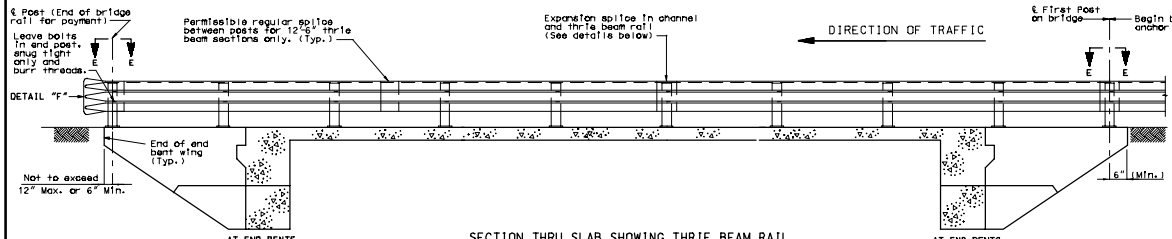
| State | Proj. No. | Sheet No. |
|---|---|---|
| MO | | |




SECTION THRU SLAB SHOWING THRIE BEAM RAIL

## GENERAL NOTES:

Design Specifications: AASHTO-1996 and Interims thru 1999.

Panel lengths of channel members shall be attached continuously to a minimum of four posts and a maximum of six posts (except at end bents).

All bolts, nuts, washers, plates and elastomeric materials are considered as parts of the thrie beam rail for payment.

All steel connecting bolts and fasteners for posts and railing, and all anchor bolts, nuts, washers and plates shall be galvanized after fabrication. For protective coating and material requirement of steel railing, see Section 1040 of the Missouri Standard Specifications.

Rail posts shall be set perpendicular to roadway profile grade and vertically in cross section, and aligned according to Section 713 of the Missouri Standard Specifications, except that the rail posts shall be aligned by the use of shims so that in the final adjustment no part shall deviate more than one inch from true horizontal alignment. The shims shall be 3" X 1-3/4" and placed between the post and the thrie beam rail. The thickness of the shims shall be determined by the contractor and verified by the engineer before ordering material for this work.

Rail posts shall be seated on elastomeric pads having the same dimensions as the post base plate and ¼" thickness. Such pads may be any elastomeric material, plain or fibered, having a hardness (Durometer) of 50 or above, as certified by the manufacturer. Additional pads or half pads may be used in shimming for alignment. Post heights shown will increase by the thickness of the pad.

At the expansion slots, in the thrie beam rails and channels, tighten bolts, back off one-half turn and burr threads.

At the thrie beam connection to posts on wings, tighten bolts, back off one-half turn and burr threads.

Minimum length of thrie beam sections is equal to one post space.

Use 5/8" Ø button-head, oval shoulder bolts with hex nuts at all slots (thickness of hex nuts = 3/8" Min.)

Thrie beam guard rail on the bridge shall be made of steel and shall be 12 Gage.

Posts, top plates, base plates, channels and channel splice plates shall be fabricated from ASTM A709 Grade 36 steel and galvanized.

Threaded rods Grade A-325 with 2 hex nuts and washers may be substituted for the A-307 anchor bolts.

Each of the three (3) shorter anchor bolts shall be furnished with a 1/4" X 2-1/2" X 2-1/2" plate (ASTM A709 Grade 36) tack welded to the head of the bolt or, at the contractor's option, one plate 1/4" X 2-1/2" X 12" continuous for all three bolts may be used.

Washers shall be used at all post bolts (between the bolt head and beam). They shall be rectangular in shape (3" X 1-3/4" X 3/16" Min.) and flat with a 11/16" X 1" slot, or when necessary of such design as to fit the contour of the beam. (Use a 3" X 1-3/4" X 5/8" rectangular washer between the post and the thrie beam rail.)

Special drilling of the thrie beam may be required at the splices. (All drilling details are to be shown on the shop drawings.)

Fabrication of structural steel shall be in accordance with Section 712 of the Missouri Standard Specifications.

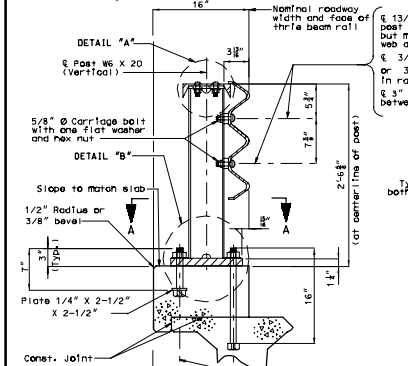
Expansion splices in the thrie beam rail and the channel shall be provided at locations so that the maximum length without expansion provisions does not exceed 200 ft.

Shim plates 6" X 6" X 1/16" may be used between the top of the post and the channel member as required for vertical alignment.

See slab sheet for rail post spacing.

See Missouri Standard Plans Drawing 606.00 for details not shown.

Note: At the bridge ends for two-way pavement, use guard rail at all four corners and for divided pavement, use a guard rail at entrance ends only (unless required at exit and for high fill).



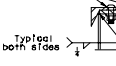

PART SECTION AT RAIL POST

℄ 13/16" X 2-1/2" Vertical slot in the post flange (Required on one side only, but may be provided on both sides of the web at the contractor's option)

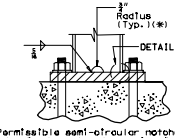
℄ 3/4" X 2-1/2" Horizontal regular slot or 3/4" X 3-3/4" Horizontal expansion slot in rail

℄ 3" X 1-3/4" X 5/8" Rectangular washer between post and thrie beam rail

5/8" Ø Button head (oval shoulder) bolt with one flat washer and hex nut

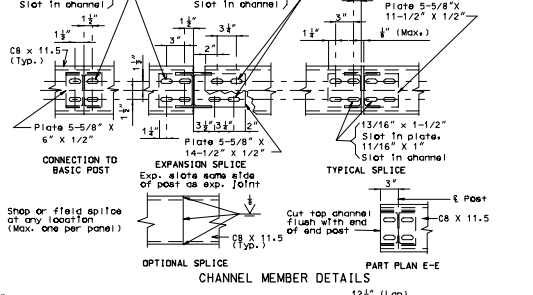



DETAIL "A"

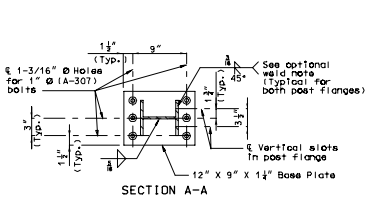



(*) Permissible semi-circular notches in ends of web centered on axis of post to facilitate galvanizing (Typical top and bottom of post).

DETAIL "B"

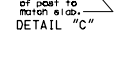



CHANNEL MEMBER DETAILS

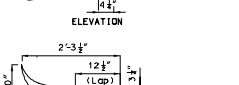



SECTION A-A

Note: Optional welding of the post to the base plate is a 3/8" fillet weld all around (including the edges of the post flanges) in lieu of the weld shown.



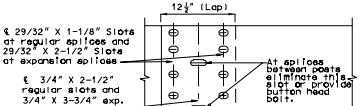

DETAIL "C"



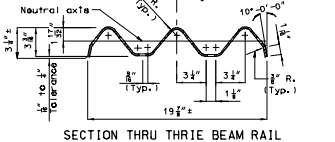

ELEVATION

PLAN

DETAIL "F"




THRIE BEAM RAIL SPLICE DETAILS




SECTION THRU THRIE BEAM RAIL

THIS DRAWING FOR USE WITH OFF-SYSTEM PROJECTS ONLY.

Note: This system meets TL-2 bridge barrier railing requirements.

Converted

Detailed
Checked

Note: This drawing is not to scale. Follow dimensions.

Sheet No. of

COUNTY THBOS 3