

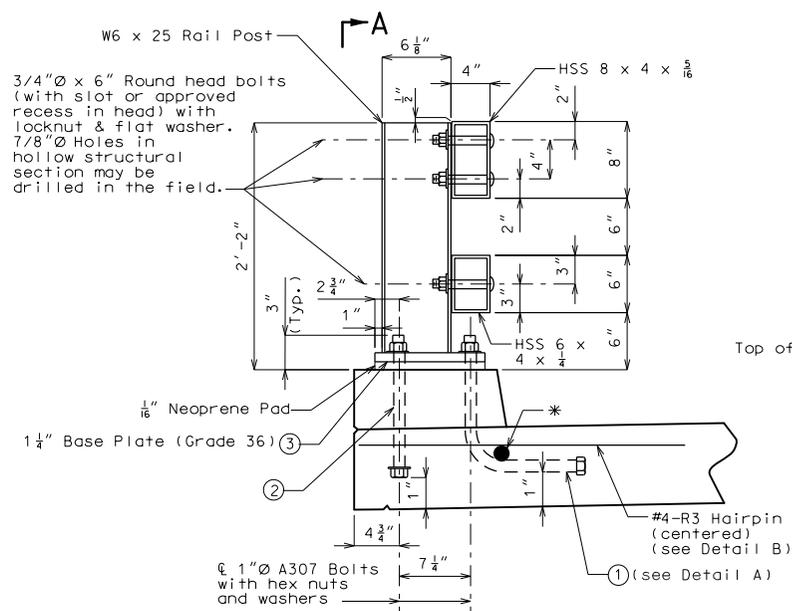
Standard Drawing Guidance (do not show on plans):

① Modify as required.

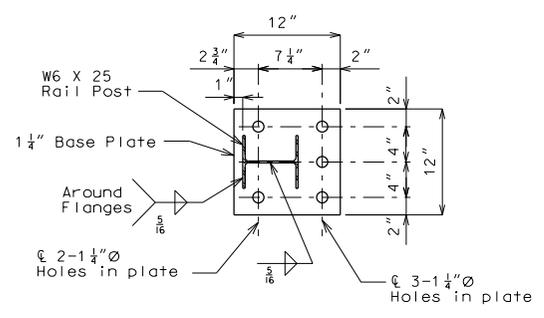
TL-4 (NCHRP 350) bridge rail is typically used on spread box beam bridges and may be used on adjacent box beam bridges where reinforcement is embedded in the beam.

Use only in certain applications because of cost. Acceptable for use when roadway width or site distance is a concern. Curb shall be used to prevent drainage over deck.

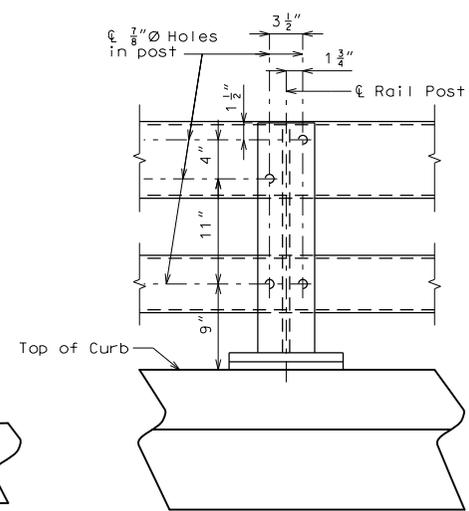
TTR1 New: Feb. 2014



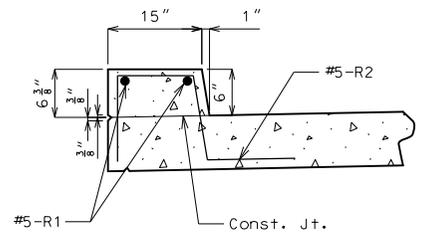
SECTION AT RAIL POST



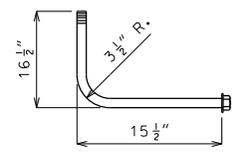
PLAN OF BASE PLATE



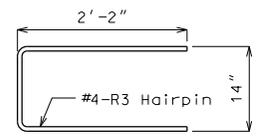
PART ELEVATION A-A



PART SECTION SHOWING CURB



DETAIL A



DETAIL B

\* Tack weld same size bar (2'-8" long and centered) as slab longitudinal reinf. Optional to wrap bolt under slab long. reinf. provided that 1" clearance is maintained to bottom of slab.

- ① 3-1" Ø A307 Bolts with hex nuts and washers
- ② 2-1" Ø A307 Bolts with hex nuts and standard flat washers
- ③ Bevel bottom of post (slope 2% or slab cross slope).

Notes on Bridge Rail:

Rail posts shall be set perpendicular to roadway profile grade, vertically in cross section and aligned in accordance with Sec 713 except that the rail posts shall be aligned by the use of shims such that the post deviates not more than 1/2 inch from true horizontal alignment after final adjustment. The shims shall be 3" x 1 3/4" and placed between the post and the 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 base plate and 1/16" thickness. Pads may be any elastomeric material, plain or fibered, having a hardness (Durometer) of 50 or greater, and certified by the manufacturer. Additional pads or half pads may be used for shimming for alignment. Post heights shown will increase by the thickness of the pad.

HSS = Hollow Structural Section

Dimensions of bridge rails are measured horizontally.

Bridge Rails will be measured to the nearest linear foot for each structure measured from end of slab to end of slab.

Payment for furnishing all materials and labor necessary to install Bridge Rail, complete-in-place, will be considered completely covered by the contract unit price for Bridge Rail (Two Tube Structural Steel) per linear foot.

Notes on Curb:

Top of curb shall be built parallel to grade.

All exposed edges of curb shall have either a 1/2" radius or a 3/8" bevel, unless otherwise noted.

Use a minimum lap of 2'-11" for #5-R1 bars.

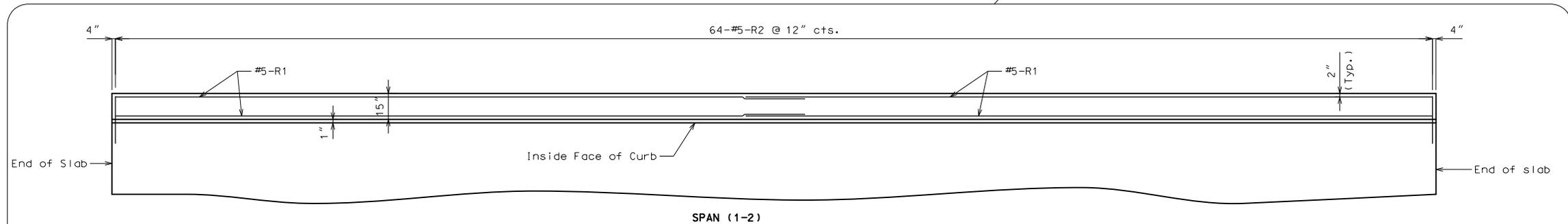
The cross-sectional area of curb above the slab = 0.66 sq. ft.

Concrete in the curb shall be Class B-2.

The curb shall be cured by application of Type 1-D Liquid Membrane-Forming Curing Compound in accordance with Sec 1055 and sealed in accordance with Sec 703. The contractor shall remove all curing compound in accordance with the manufacturer's recommendations before the concrete sealer is applied.

Measurement of the curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of slab to end of slab.

Payment for all concrete and reinforcement, complete-in-place, will be considered completely covered by the contract unit price for Concrete Curb (Bridge Rail) per linear foot.



PLAN OF LEFT CURB SHOWING REINFORCEMENT

(Left curb shown. Right curb similar.)

Note: Longitudinal dimensions are horizontal along outside face of curb.

Detailed Checked

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

Sheet No. of

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."	
DATE PREPARED	2/21/2014
ROUTE	STATE
* BR	* MO
DISTRICT	SHEET NO.
BR	*
COUNTY	*
JOB NO.	*
CONTRACT ID.	*
PROJECT NO.	*
BRIDGE NO.	*
DESCRIPTION	
DATE	
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	
	
105 WEST CAPITAL JEFFERSON CITY, MO 65102 1-888-ASK-MDDOT (1-888-275-6636)	

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.