Bridge Rail Notes:

Rail joints shall be set perpendicular to roadway profile grade, vertically in cross section and aligned in accordance with Sec 128, except that the rail posts shall be aligned by the use of 6 1/2 x 6 1/2 inch shims such that the post deviates no more than 1/2 inch from true horizontal alignment after final adjustment. 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 set plumb and aligned in accordance with Sec 713.

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.

Guardsrail delineators shall be attached to the top of the guardrail post using galvanized anchorage as shown on Missouri Standard Plan 606.50 and in accordance with Sec 606.

Deflectors on bridge decks with two lane, two-way traffic shall be set plumb and level and aligned with the roadway. Deflectors shall be considered completely covered by the contract unit price for Bridge Rail (Two Tube Structural Steel).

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 wing to end of wing.

Fabrication of structural steel shall be in accordance with Sec 1000.

Hollow structural sections shall be in accordance with ASTM A500 Grade B Structural Steel Tubing and shall meet the cross-sectional dimensions of 3 1/2" thick at 0°F, Sec 1000f for reporting.

All other steel shapes and plates shall be in accordance with ASTM A36.

All anchor bolts shall be ASTM A449 Type 1 with ASTM A563 Grade 80 hex nuts and ASTM F436 hardened washers.

All anchor bolts, studs, nuts, and washers shall be galvanized in accordance with AASHTO M 332 (ASTM A153), Class C.

All posts, rails, rail splices, and plates shall be galvanized after shop fabrication in accordance with AASHTO M 511 and ASTM A495. Galvanized rail shall not be painted.

Provide railing expansion joints at 50 foot maximum intervals. Railing shall be continued over two posts minimum. Rail joint expansion joints are required in rail sections that span bridge expansion joints.

Use grout with a minimum 24-hour f’c of 3000 psi in single placement.

Curb Notes:

Top of curb shall be built parallel to grade and curb joints (except at end bents) normal to grade.

All exposed edges of curb shall have either a 3/4” radius or a 3/8” bevel, unless otherwise noted.

Minimum lap for longitudinal R-bars is 2'-5".

The cross-sectional area of curb above the slab = 0.75 sq. ft. Concrete in the curb shall be Class B-D.

The curb shall be poured by application of Type I-2 Liquid Concrete.

Concrete forming curing compound is specified in accordance with Sec 1055 and tested in accordance with Sec 705. 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 wing to end of wing.

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

Bridge Rail:

Rail joints shall be set perpendicular to roadway profile grade, vertically in cross section and aligned in accordance with Sec 128, except that the rail posts shall be aligned by the use of 6 1/2 x 6 1/2 inch shims such that the post deviates no more than 1/2 inch from true horizontal alignment after final adjustment. 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 set plumb and aligned in accordance with Sec 713.

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.

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PART PLAN SHOWING JOINT LOCATION

(For skewed structures only)