### TRAFFIC RAILING NOTES

**Concrete and Reinforcing Steel**: See Structures Plans General Notes.

**Markers**: Elevation Markers shall be placed on top of the traffic railing at the end bents. On bridges longer than 100 ft, one marker shall be placed at each end of the bridge. On bridges 100 ft or less, one marker shall be placed at one end of the bridge only. Markers are to be furnished by the Florida Department of Transportation and installed by the Contractor. The cost of installing the markers shall be included in the Contract Unit Price for the Traffic Railing.

**Guardsrail**: For guardsrail connection details see Index Nos. 400 and 420.

**Super Elevation Bridges**: At the option of the Contractor, the Traffic Railing on super-elevated bridges may be constructed perpendicular to the roadway surface. If an adjoining railing is constructed plumb, transition the end of the Traffic Railing from perpendicular to plumb over a minimum distance of 20'-0". The cost of all modifications shall be at the Contractor’s expense.

**Pedestrian and Bicycle Railings**: See Index Nos. 821 and 822 for Notes, Details and post spacings for "Traffic Railings with aluminum Pedestrian/Bicycle Railings."

**V-Grooves**: Construct 5" V-Grooves plumb. Space V-Grooves equally between V-Joint Open Joints and/or Deck Joints and at V-Groove locations on Retaining Wall footings.

**Reflective Railing Markers**: See General Notes. For Guardrail connection details see Index Nos. 400 and 420. For Detailed "A", see Sheet 2. For Detailed "B", see Sheet 3.

**Cross Reference**: For Section 4-4, View 0-0 and Detail "A", see Sheet 2. For Detail "B", see Sheet 3.

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**.name date and bridge number**: The name and Bridge Number shall be placed on the Traffic Railing so as to be seen on the driver's right side when approaching the bridge. The Date shall be placed on the driver's left side when approaching the bridge. The Date shall be the year the bridge is completed. For a widening when the existing railing is removed, use both the existing date and the year of the widening. Black plastic letters and figures 3" in height may be used, as approved by the Engineer, in lieu of the letters and figures formed by V-Grooves. V-Grooves shall be formed by perforated letters and figures.

**Reflective Railing Markers**: Reflective Railing Markers shall conform to Section 993 of the Specifications. Paint markers 6" below the top of the Traffic Railing at the spacings shown in the table above. Reflectors or yellow shall conform to the color of the rear edge.

**Joints**: See Plans, Superstructure, Approach Slab and Retaining Walls Sheets for actual dimensions and joint orientation. Open Rail Joints at Deck Expansion Joint locations shall match the dimensions of the Deck Joint. For treatment of Railings on skewed bridges see Index No. 490. Deck Joint of Beige Bridge or End Bridge shown. Deck Joint of E-Pier or Intermediate Rail similar. Provide 3" Intermediate Open Joints at:

1. Substructure supports where superstructure slab is continuous.
2. Midspan where span length exceeds 90 ft.
3. Intermediate locations equally spaced between midspan and substructure supports where span length exceeds 180 ft.
4. At ends of approach slab when adjacent to retaining walls and at expansion joints on retaining wall junctions.
SECTION A-A
TYPICAL SECTION THRU TRAFFIC RAILING
(Section thru Bridge Deck shown, Section thru Approach Slab and Retaining Walls similar)

PLAN - Railing End Transition
(Showing Bars 5V and 5S)

DETAIL "A"
(Railing on Approach Slab shown, Railing on Retaining Wall similar)

NOTE: For Bridge Decks of any type, the two Bars 5S placed in the Bridge Deck may substitute for the longitudinal deck steel within the limits of Bar 5V, provided that the total area of longitudinal deck steel beneath the railing, as required by calculation, is not reduced. These bars on the Structures Plans, Superstructure Sheets with the deck steel.

All Bars 5P, 5S and 5V as shown are included in the Estimated Traffic Railing Quantites. Do not include Bars 5P, 5S and 5V in the reinforcing bar lists and estimated quantities for supporting bridge decks, approach slabs or retaining walls.

INSTRUCTIONS TO DESIGNER:
For Bridge Decks up to a maximum thickness of 8", the two Bars 5S placed in the Bridge Deck may substitute for the longitudinal deck steel within the limits of Bar 5V, provided that the total area of longitudinal deck steel beneath the railing, as required by calculation, is not reduced. These bars on the Structures Plans, Superstructure Sheets with the deck steel.

NOTE: For Bridge Decks of any type, the two Bars 5S placed in the Bridge Deck may substitute for the longitudinal deck steel within the limits of Bar 5V, provided that the total area of longitudinal deck steel beneath the railing, as required by calculation, is not reduced. These bars on the Structures Plans, Superstructure Sheets with the deck steel.
ALTERNATE REINFORCING STEEL (WELDED WIRE REINFORCEMENT) DETAILS

CONVENTIONAL REINFORCING STEEL BENDING DIAGRAMS

ROADWAY CROSS-SLOPE
LOW GUTTER
HIGH GUTTER

BILL OF REINFORCING STEEL

<table>
<thead>
<tr>
<th>MARK</th>
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<tr>
<td>0</td>
<td>5</td>
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<td>0</td>
<td>5</td>
<td>As Required</td>
</tr>
<tr>
<td>0</td>
<td>5</td>
<td>5'-11&quot;</td>
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$B_4$ and $B_8$ shall be 90° if contractor elects to place railing perpendicular to the deck and approach sides.

WELDED WIRE REINFORCEMENT NOTES:

1. At the option of the Contractor, Welded Wire Reinforcement (WWR) may be utilized in lieu of all Bars 5V, 5S and 5V. Welded Wire Reinforcement shall conform to ASTM A 490.
2. Welded Wire Reinforcement at Railing End Transition shall be bent inward as required (Pieces 1 & 2) to 6" minimum embed. The vertical wires (0.307") in Piece 1 shall be cut as shown and the gutter side portion bent inward as required to allow placement.

REINFORCING STEEL NOTES:

1. All bar dimensions in the bending diagrams are cut to cut.
2. The 9" and the 2'-4½" vertical dimensions shown for Bar 5V are based on a bridge deck without a raised sidewalk. If a raised sidewalk is to be provided, increase these dimensions to achieve a 6" minimum embedment into the bridge deck. See Structures Plans, Superstructure and Approach Slab Sheets.
3. The reinforcement for the railing on a retaining wall shall be the same as detailed above for a 6" deck with $B_4 = B_8 = 90°$.
4. If reinforcing steel at the open joints shall have a 2" minimum cover.
5. Bars 5S may be continuous or spliced at the construction joints. Bar splices for bars 5S shall be a minimum of 2".

DETAIL "B" — SECTION AT INTERMEDIATE OPEN JOINT

NOTE: At Intermediate Open Joints, plug the lower 3" portion of the open joint by filling it with mortar in accordance with Section 400 of the Specifications.

SECTION THRU RECESS ED
3/4" GROOVE TO FORM INSCRIBED LETTERS AND FIGURES

ESTIMATED TRAFFIC RAILING QUANTITIES

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<th>ITEM</th>
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<tr>
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<tr>
<td>Reinforcing Steel</td>
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(The above quantities are based on a 2/7 deck cross slope railing on low side of deck.)