A DESCRIPTION

MARKERS and JOINTS notes.

BY CMH

DATE

GJM

DESCRIPTION

07/01/10

01/01/11

Wall footings.

V-Grooves equally between 2" Open Joints and/or Deck Joints and at V-Groove locations on Retain.

V-GROOVES: Construct 2" V-Grooves plumb and provide at 30'-0" maximum intervals as shown. Space of the reflective markers shall be included in the Contract Unit Price for the Traffic Railing.

The cost of installing the markers shall be included in the Contract Unit Price for the Traffic Railing. The Department will determine the vertical Datum information for the marker.

Install markers on top of the Traffic Railing 2" from the face on the traffic side at the spacing shown. The cost of the reflective markers shall be included in the Contract Unit Price for the Traffic Railing.

TRAFFIC RAILING NOTES

(Reinforcing Steel not shown for clarity)

TRAFFIC RAILING - (42" VERTICAL SHAPE)

MARKERS: Reflective Railing Markers shall meet Specification Section 993. Install markers on top of the Traffic Railing 2" from the face on the traffic side at the spacing shown in the table above. Reflectors shall 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.


CROSS REFERENCE:

For Section A-A, Detail "A", View B-B and View C-C, see Sheet 2.

REFLECTIVE RAILING MARKER SPACING

<table>
<thead>
<tr>
<th>Distance to Face of Railing</th>
<th>Spacing (Ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4'-0&quot; to 8'-0&quot;</td>
<td>80'</td>
</tr>
<tr>
<td>&gt; 8'-0&quot;</td>
<td>None Required</td>
</tr>
</tbody>
</table>

REFLECTIVE RAILING MARKER SPACING:

Begin or End Approach Slab or Begin or End Railing on Retaining Wall.

Approach Thrie-Beam Guardrail Transition on Approach Slab shown, Railing or End Railing on Retaining Wall similar (When called for in Plans).

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. The Department will determine the vertical Datum information for the marker.

GUARDRAIL: For Guardrail connection details, see Index No. 400.

RAILINGS ON RETAINING WALLS: If the Traffic Railing is to be provided on a retaining wall, the railing section will be the same as shown in Index No. 422. See Sheet 2. All other details such as the guardrail transition attachment, the maximum spacing of the 2" open joints and 2" V-Groove shall apply.

REFLECTIVE RAILING MARKERS: Reflective Railing Markers shall meet Specification Section 993. Install markers on top of the Traffic Railing 2" from the face on the traffic side at the spacing shown in the table above. Reflectors shall mate the color of the near edgeline. The cost of the reflective markers shall be included in the Contract Unit Price for the Traffic Railing.

V-GROOVES: Construct 2" V-Grooves plumb and provide at 30'-0" maximum intervals as shown. Space V-Grooves equally between 2" Open Joints and/or Deck Joints and at V-Groove locations on Retaining Wall footings.

REVISIONS

This railing has been structurally evaluated to be equivalent or greater in strength to other safety shape railings which have been crash tested to NCHRP Report 350 TL-4 Criteria.

TRAFFIC RAILING NOTES

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 Name shall be as shown in the General Notes in the Structures Plans. 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 2" V-Grooves. V-Grooves shall be formed by preformed letters and figures.


Provide 2" Intermediate Open Joints at:

(1) - Superstructure supports where slab is continuous
(2) - Ends of approach slabs where adjacent to retaining walls and at expansion joints on retaining wall junction slabs.
SECTION A-A
TYPICAL SECTION THRU TRAFFIC RAILING
SECTION THRU BRIDGE DECK SHOWN

NOTES:
- Begin placing Railing Bars ST and SX on Approach Slab at the railing end and proceed toward Begin or End Bridge to ensure placement of guardrail bolt holes. If required, adjustments to the bar spacing for Bars ST and SX shall be made immediately adjacent to Begin or End Bridge Shift and rotate Bars ST and SX as required to maintain cover in Railing End Transition.
- Omit Railing Taper, End Transition and Guardrail if Concrete Barrier Wall is used beyond the Approach Slab or Retaining Wall. See Structures Plans, Plan and Elevation Sheet and Roadway Plans. If Taper and Railing End Transition is omitted, extend Typical Section to end of the Approach Slab or Limiting station on Retaining Wall, and space Bars ST and SX at 1'-0" (Typ.)

VIEW B-B
(End View of Traffic Railing, Approach Slab shown, Retaining Wall Junction Slab similar)

VIEW C-C
RAILING END TRANSITION
(Guardrail Not Shown For Clarity)
CONVENTIONAL REINFORCING STEEL BENDING DIAGRAMS

BILL OF REINFORCING STEEL

<table>
<thead>
<tr>
<th>MARK</th>
<th>SIZE</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>5</td>
<td>As Req'd</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>10'-8&quot;</td>
</tr>
<tr>
<td>X</td>
<td>5</td>
<td>6'-9&quot;</td>
</tr>
</tbody>
</table>

ROADWAY CROSS-SLOPE

<table>
<thead>
<tr>
<th>CROSS-SLOPE</th>
<th>LOW GUTTER</th>
<th>HIGH GUTTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% to 2%</td>
<td>90°</td>
<td>90°</td>
</tr>
<tr>
<td>2% to 6%</td>
<td>87°</td>
<td>87°</td>
</tr>
<tr>
<td>6% to 10%</td>
<td>84°</td>
<td>96°</td>
</tr>
</tbody>
</table>

REINFORCEMENT NOTES:

1. All bar dimensions in the bending diagrams are cut to cut.
2. The 4'-6" vertical dimension shown for Bars ST and SX is based on a bridge deck with a 6" thick x 6" wide raised sidewalk at low side of deck, 2% deck cross slope and a counter 2% raised sidewalk cross slope. If the raised sidewalk thickness, width or cross slope vary from the above amounts, adjust this dimension accordingly 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 with ØA = 90°.
4. All reinforcing steel at the open joints shall have a 2" minimum cover.
5. Bars SS may be continuous or spliced at the construction joints. Bar splices for Bars SS shall be a minimum of 2'-2".
6. The Contractor may utilize Welded Wire Reinforcement when approved by the Engineer. Welded Wire Reinforcement shall conform to ASTM A497.

TRANSITION STIRRUP BARS ST

STIRRUP BAR SX

TRANSITION STIRRUP BARS SX

To Be Field Cut (7 of each required per Railing End Transition)

INTERMEDIATE JOINT SEAL NOTES:

1. At Intermediate Open Joints, seal the lower 6" portion of the open joint with Pre-cured Silicone Sealant in accordance with Section 932 of the Specifications.
2. Apply sealant prior to any Class V finish coating and remove all curing compound and loose material from the surface prior to application of bonding agent.
3. The cost of the Pre-cured Silicone Sealant shall be included in the Contract Unit Price for the Traffic Railing.

SECTION THRU RECESSED "V" GROOVE

TO FORM INSCRIBED LETTERS AND FIGURES

ESTIMATED TRAFFIC RAILING QUANTITIES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>UNIT</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete</td>
<td>CY/LF</td>
<td>0.145</td>
</tr>
<tr>
<td>Reinforcing Steel</td>
<td>LB/LF</td>
<td>30.68</td>
</tr>
</tbody>
</table>

(The above quantities are based on a 6" thick x 6" wide raised sidewalk at low side of deck, 2% deck cross slope and counter 2% sidewalk cross slope)