PLAN (BRIDGE MOUNTED RAILING/SOUND BARRIER SHOWN, WALL OR FOOTING MOUNTED RAILING/SOUND BARRIER SIMILAR) (Reinforcing Steel not shown for clarity)

ELEVATION OF INSIDE FACE OF RAILING/SOUND BARRIER (BRIDGE MOUNTED RAILING/SOUND BARRIER SHOWN, WALL OR FOOTING MOUNTED RAILING/SOUND BARRIER SIMILAR) (Reinforcing Steel not shown for clarity)

INSTRUCTIONS TO DESIGNER:

FORM LINERS: Form liners providing a textured finish are permitted on the outside face of the Traffic Railing Barrier/Soundwall with the following provisions: (1) The maximum amplitude of the form liner on the lower 2'-8" section shall be limited to 1" depth. (2) Any form liner used above 2'-8" must provide a thickened concrete section to maintain 2" cover. Full details of this thickened section and the form liner shall be provided in the plans. Form liners on the outside face of the Traffic Railing Barrier/Soundwall are not recommended.

END TAPER LOCATION: When the Soundwall terminates on the bridge, the End Taper shall be located at an open joint. When the Soundwall terminates on the Approach Slab, the End Taper shall terminate at the End Approach Slab or the Bridge Deck at open joint.
TRAFFIC RAILING/SOUND BARRIER NOTES

This railing has been structurally evaluated to be equivalent or greater in strength to a safety shape/sound barrier combination railing which has been crash tested to NCHRP Report 350 Test Criteria. The Transverse Design Force for the design of bridge deck overhang shall be 54 kips applied horizontally at 1-6" height above the deck.

CONSTRUCTION REQUIREMENTS: The Traffic Railing/Sound Barrier and joints shall be constructed plumb, they shall not be constructed perpendicular to the roadway surface. Slope is not permitted.

CONCRETE AND REINFORCING STEEL: For Railing/Sound Barrier on bridges see General Notes. For Wall and Footing mounted Railing/Sound Barrier, concrete shall be Class II for slightly aggressive environments and Class IV for moderately or extremely aggressive environments. All reinforcing steel shall be Grade 60.

NAME, DATE AND BIDGE NUMBER: For Railing/Sound Barrier on bridges, the Name of Bridge Number shall be placed on the Traffic Railing at 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 placed 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. Block plastic letters and figures 1-5" in height may be used, as approved by the Engineer, in lieu of the letters and figures formed by 3⁄16" V-Grooves. V-Grooves shall be formed by preferred letters and figures.

MARKERS: For Railing/Sound Barrier on Bridges, Guidance Markers shall be placed on top of the Traffic Railing/Sound Barrier or bridge deck at the end joints as directed by the Engineer. 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 Unit Price for the Traffic Railing/Sound Barrier.

REFLECTIVE RAILING MARKER SPACING:

<table>
<thead>
<tr>
<th>Distance</th>
<th>Spacing (ft)</th>
</tr>
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<tbody>
<tr>
<td>4' or less</td>
<td>10</td>
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<tr>
<td>4' to 8'</td>
<td>20</td>
</tr>
<tr>
<td>&gt; 8'</td>
<td>None Required</td>
</tr>
</tbody>
</table>

REFLECTIVE RAILING MARKER SPACING AT INTERMEDIATE OPEN JOINT

NOTE: At Intermediate Open Joints, the lower 3" portion of the open joint shall be plated by Nailing 1" with mortar in accordance with Section 400 of the Specifications.

ESTIMATED TRAFFIC RAILING/SOUND BARRIER QUANTITIES

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete (Rail)</td>
<td>CY/LF</td>
<td>0.104</td>
</tr>
<tr>
<td>Concrete (Sound Barrier)</td>
<td>CY/LF</td>
<td>0.145</td>
</tr>
<tr>
<td>Reinforcing Steel (Typical)</td>
<td>LBF</td>
<td>78.07</td>
</tr>
<tr>
<td>Additional Rein @ Open Joint</td>
<td>LF</td>
<td>4.20</td>
</tr>
</tbody>
</table>

(Quantities are based on the bridge mounted typical section, 2% deck cross slope and railing on low side of deck.)

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>P</td>
<td>5</td>
<td>5'-7&quot;</td>
</tr>
<tr>
<td>K</td>
<td>5</td>
<td>7'-9&quot;</td>
</tr>
<tr>
<td>S1</td>
<td>5</td>
<td>As Read</td>
</tr>
<tr>
<td>S2</td>
<td>5</td>
<td>7'-3&quot;</td>
</tr>
<tr>
<td>V</td>
<td>5</td>
<td>5'-1&quot;</td>
</tr>
<tr>
<td>V</td>
<td>5</td>
<td>5'-1&quot;</td>
</tr>
</tbody>
</table>

TRIPLE DIAPHRAGM PLUG DETAIL

NOTE: Neoprene Diaphragm Plug shall be flush at the diaphragm 2" hole.

TYPICAL SECTION

Note: Fire hose access holes are required at or near the fire hydrant locations. Field cut reinforcement as required to maintain 2" minimum cover at access holes. Locate the hose access holes a minimum of 10'-0" from 3/4" open joints when possible.

CROSS REFERENCE: For locations of brackets, see Sheet 1.
ELEVATION OF RAILING/SOUND BARRIER REINFORCING STEEL
(INTERMEDIATE OPEN JOINT SHOWN, DECK JOINT SIMILAR)
(Bars SS1 in Barrier not shown for clarity)

NOTES:
# Field Cut Bars 5R & SS1 to maintain clearance.
## Terminate ¾” V-groove at construction joint & cast top of railing with End Taper.
### Bar spacing shown for Bars SS applies only to bridge mounted Railing/Sound Barrier. See Index No. 5212 for spacing of Bars SS in jacket steel. 5213 (T-Shape), 5214 (L-Shape) or 5215 (Trench) for Bars SS spacing in footings.

ELEVATION OF RAILING/SOUND BARRIER END TAPER (ADJACENT TO TRAFFIC RAILING SHOWN, GUARDRAIL ATTACHMENT SIMILAR SEE DETAIL "G" BELOW)
(Bars SS1 in Railing not shown for clarity)
INSTRUCTIONS TO DESIGNER:

For bridge decks, the maximum thickness of 9" is to be used, and the two bars S51 placed in the bridge deck may substitute for the longitudinal deck steel. If the total area of longitudinal deck steel beneath the barrier is required by calculation, it is not reduced. Show these bars on the Superstructure Sheets with the deck steels.

NOTES:

1. Bottom bars S51 and End Bar S5V are not present in L-shaped (Index No. 5214) or Trench (Index No. 5215) footings. For Bridge mounted installations, see the Superstructure Sheets for Deck Steel, with the bars S51, if not specifically shown on the Superstructure Sheets.

CROSS REFERENCE:

For locations of Section A-A see Sheet 1.
For location of View B-B see Sheet 5.

SECTION A-A
TYPICAL SECTION THRU TRAFFIC RAILING/SOUND BARRIER
(Section Thru Bridge Deck Shown, Section Thru Approach Slab, Section Thru Footing Similar)

VIEW B-B
END VIEW OF RAILING END TRANSITION FOR GUARDRAIL ATTACHMENT AT END OF APPROACH SLAB
(Flexible Pavement Approach Slab Shown, Rigid Pavement Approach Slab, Junction Slab or Footing Similar)
**DETAIL "A" NOTES:**
1. Rotate Bars 5P & 5V in Railing End Transition to maintain cover. Begin placing Railing Bars 5P and 5V at the railing end and proceed toward the guardrail/three beam terminal connector to ensure placement of guardrail bolt holes. Pair Bars 5R with Bars 5P as shown. Clearance of Bars 5P, 5R & 5V to guardrail bolt holes should be checked to prevent cutting of bars if holes are to be drilled. SLTH bars locally where conflicts occur.
2. Pair Guardrail connection details see Design Standards Index No. 400.
3. Unit Railing End Transition if a "Z"-Shape Traffic Railing is used beyond the End Taper. See the Plan Sheets. If Railing End Transition is omitted, space Bars 5P, 5R & 5V at 6" as shown above (Typ.).
4. For L-Shaped (Index No. 5214) and Trench (Index No. 5215) footings, Bars 5V and 5T replace Bars 5V as shown at left. Details and bar spacing shown apply except that it is not necessary to rotate Bars 5V and 5T to maintain cover and there is no field cut End Bar 5V.
5. Bottom Bars 5S1 are not present in L-Shaped or Trench Footings.

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**PLAN - RAILING END TRANSITION**
(Showing Bars 5P, 5R, and Bars 5S1) (Bars 5V, Soundwall & Reinforcement not shown for Clarity)

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**PLAN - RAILING END TRANSITION**
(Showing Bars 5V and Bars 5S1) (Bars 5P, 5R, Soundwall & Reinforcement not shown for Clarity)