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

CROSS REFERENCE:
For detail "V" and V-Groove Lettering Details see Sheet 2.
For Section 4-4 see Sheet 4.
For Section C-6 and detail "A" see Sheet 5.
For Wall-mounted Railing/Sound Barrier Details see Index No. 5212.
For Footing mounted Railing/Sound Barrier Details see Index Nos. 5213 (T-Shaped), 5214 (L-Shaped) or 5215 (Trench)

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 LINES: Form lines providing a finished finish are permitted on the outside face of the Trench Railing Barrier/Soundwall with the following provisions: (1) The maximum amplitude of the wave, here on the lower 2' to 3' section shall be limited to 1" depth; (2) No form liner used above 2' to 3' 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 inside 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 Slope, the End Taper shall terminate at the End Approach Slope as shown above.

See Sheet 5 for detail "A" for Rail Type Transition when Guardrail called for in Roadway Plans.

INSTRUCTIONS TO DESIGNER:
FORM LINES: Form lines providing a finished finish are permitted on the outside face of the Traffic Railing Barrier/Soundwall with the following provisions: (1) The maximum amplitude of the wave, here on the lower 2'-3' section shall be limited to 1" depth; (2) No form liner used above 2'-3' 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 inside face of the Traffic Railing Barrier/Soundwall are not recommended.
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 TL-4 Criteria. The Transverse Design Force for the design of bridge deck overhang shall be 54 kips applied horizontally at 3-6" 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. Slip forming is permitted.

**CONCRETE AND REINFORCING STEEL:** For Railing/Sound Barrier on bridges see General Notes. For Wall and Façade 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 BRIDGE NUMBER:** For Railing/Sound Barrier on bridges, 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 constructed. For a major widening the date shall be 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 3/8" G Grooves. V Grooves shall be formed by perforated letters and figures.

**MARKERS:** For Railing/Sound Barrier on bridges, Elevation Markers shall be placed on top of the Traffic Railing/Sound Barrier or Bridge Deck at the end bents 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 Contract Unit Price for the Railing/Sound Barrier.

**ESTIMATED TRAFFIC RAILING/SOUND BARRIER QUANTITIES**

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<tr>
<td>Concrete (Sound Barrier)</td>
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<tr>
<td>Reinforcing Steel (Typical)</td>
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<tr>
<td>Additional Rein @ Open Joint</td>
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(The above quantities are based on the bridge mounted typical section, 2x deck cross slope and railing on low side of deck.)

**BILL OF REINFORCING STEEL**

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**REINFORCING STEEL BENDING DIAGRAMS**

**BAR 5R (Field Cut for End Taper)**

**STIRRUP BAR 5P**

**STIRRUP BAR 5V**

**END STIRRUP BAR 5V**

**NEOPRENE DIAPHRAGM PLUG DETAIL**

**FIREFIGHTER HOSE ACCESS DETAIL**

**NOTE:** Fire hose access holes are required at or near fire hydrant locations. Field cuts reinforcement as required to maintain 2" minimum cover of access holes. Locate fire hose access holes a minimum of 20-50" from 3/8" open joints when possible.

**CROSS REFERENCES:** For locations of Detail "B", see Sheet 1.
ELEVATION OF RAILING/SOUND BARRIER REINFORCING STEEL
(INTERMEDIATE OPEN JOINT SHOWN, DECK JOINT SIMILAR)
(Bars 551 in Barrier not shown for clarity)

NOTES:
# Field Out Bars 5P & 5S1 to maintain clearance.
** Terminate ½" V-groove at construction joint & cast top of
  Railing with End Taper.
*** Bar spacing shown for Bars 5V applies only to bridge mounted
  Railing/Sound Barrier. See Index No. 5212 for spacing of Bars 5V
  in junction slabs and Index Nos. 5213 (T-Shaped), 5214 (L-Shaped)
  or 5215 (Truncheon) for Bars 5V spacing in footings.
INSTRUCTIONS TO DESIGNER:
For Bridge Decks up to a maximum thickness of 9", the two bars S51 placed in the Bridge Deck may substitute for the longitudinal deck steel located within the limits of Bars 5V, provided that the total area of longitudinal deck steel beneath the barrier, as required by calculation, is not reduced. Show these bars on the Superstructure Sheets with the deck steel.

NOTES:
1. Bottom Bars S51 and End Bar 5V are not present in:
   1-Shape (Index No. 5214) or Trench (Index No. 5215)
   Footings. For Bridge Mounted installations, see the
   Superstructure Sheets for Steel Deck. Use 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
(Sheet Thru to Bridge Deck, Deck Sheet Thru
Approach Slab, Junction Slab or 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)
**PLAN - RAILING END TRANSITION**
(Shewing Bars 5P, 5R, and Bars 5SI) (Bars 5V, Soundwall & Reinforcement not shown for Clarity)

**DETAIL "A"**

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/terminate 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 shall be checked to prevent cutting of bars if holes are to be drilled. Shift bars locally where conflicts occur.

2. For guardrail connection, details see Design Standards Index No. 4009.

3. Unit Railing End Transition if a 3D P-Shape Traffic Railing is used beyond the End Taper. See the Plan Sheets.

4. If Railing End Transition is omitted, space Bars 5P, 5R & 5V at 6" as shown above "Typ.".

5. For L-Shaped (Index No. 3524) and Trench (Index No. 5215) endings, 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.

6. Bottom Bars 5SI are not present in L-Shaped or Trench Footings.

**SECTION C-C**
THRU SOUNDWALL END TAPER

**CROSS REFERENCE**
For location of Detail "A" see Sheet 1.
For location of Section C-C see Sheet 1.
For View B-B see Sheet 4.