

**TRAFFIC RAILING NOTES**

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-5 Criteria.

**CONCRETE AND REINFORCING STEEL** - See Structures Plans, General Notes.

**SUPERELEVATED 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 will be at the Contractor's expense.

**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 on Sheet 2. All other details such as the guardrail transition attachment, the maximum spacing of the 3/4" open joints and 3/8" V-Grooves shall apply.

**V-GROOVES** - Construct 3/8" V-Grooves plum. Space V-Grooves equally between 3/4" Open Joints and/or Deck joints and at V-Groove locations on Retaining Wall footings.

**BARRIER DELINEATORS**: Barrier Delineators shall meet Specification Section 993. Install Barrier Delineators on top of the Traffic Railing 2' from the face on the traffic side at the spacing shown in the table above. Barrier Delineator color (white or yellow) shall match the color of the near edgeline. The cost of the Barrier Delineators shall be included in the Contract Unit Price for the Traffic Railing.
**Note:**

1. Begin placing Railing Bars SP and 5V 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 SP and 5V shall be made immediately adjacent to Begin or End Bridge. Shift and rotate Bars SP and 5V (see Detail "A") as required to maintain cover in Railing End Transition.

2. Where railings of adjacent bridges are to be built back to back, the outside vertical plane of the railing and deck may coincide along a plane centered 1'-8" from each gutter line. A bond breaker will be required. See Structures Plans, Superstructure Sheets for Details.

3. **See joint orientation note on Sheet 1.**

4. *** Rotate Bars 5V as shown to maintain clearance.

**DESCRIPTION:**

- Transition Bars SP Field Cut & Lap Splice (Typ. unless otherwise noted)
- Rotate Transition Bars SP as required.
- Bars 5V @ 8" sp. (Typ.)
- Bars 8T1 (Lap with Bar 8S1)
- Bars 8T2 (Lap with Bar 8S1)
- Bars 8S1 (Typ. Unless Otherwise Noted)
- Bars 5S2 (Bottom)
- Bars 5P as required
- Field Bend Bars as required

**ELEVATION - RAILING END TRANSITION**

- (Guardrail and back leg of Stirrups not shown for clarity)

**SECTION A-A**

- Typical Section Thru Traffic Railing (Section thru Bridge Deck Shown - Section thru Approach Slab Similar)

**VIEW B-B**

- (Section thru Approach Slab shown, Section thru Retaining Walls similar)
**CONVENTIONAL REINFORCING STEEL BENDING DIAGRAMS**

**BILL OF REINFORCING STEEL**

<table>
<thead>
<tr>
<th>MARK</th>
<th>SIZE</th>
<th>LENGTH</th>
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</thead>
<tbody>
<tr>
<td>P</td>
<td>5</td>
<td>7'-5&quot;</td>
</tr>
<tr>
<td>S1</td>
<td>8</td>
<td>As Reqd.</td>
</tr>
<tr>
<td>S2</td>
<td>5</td>
<td>As Reqd.</td>
</tr>
<tr>
<td>T1 &amp; T2</td>
<td>8</td>
<td>12'-0&quot;</td>
</tr>
<tr>
<td>V</td>
<td>5</td>
<td>6'-2&quot;</td>
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**ROADWAY CROSS-SLOPE**

<table>
<thead>
<tr>
<th>LOW GUTTER</th>
<th>HIGH GUTTER</th>
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<tbody>
<tr>
<td>ØA</td>
<td>ØB</td>
</tr>
<tr>
<td>0% to 2%</td>
<td>90°</td>
</tr>
<tr>
<td>2% to 6%</td>
<td>87°</td>
</tr>
<tr>
<td>6% to 10%</td>
<td>84°</td>
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</table>

ØA and ØB shall be 90° if Contractor elects to place Railing perpendicular to the Deck.

**REINFORCING STEEL NOTES:**

1. All bar dimensions in the bending diagrams are out to out.
2. The reinforcement for the railing on a retaining wall shall be the same as detailed above for a 10' deck with ØA = ØB = 90°.
3. All reinforcing steel at the open joints shall have a 2" minimum cover.
4. Bars S1 may be continuous or spliced at the construction joints. Lap splices for Bars S1 and S2 shall be a minimum of 4 Ø Ø and 2 Ø, respectively.
5. The Contractor may utilize Welded Wire Reinforcement (WWR) when approved by the Engineer. WWR must consist of Deformed wire meeting the requirements of Specification Section 931.

**TRANSITION BARS 8T1 & 8T2**

(2 of each required per Railing End Transition)

**STIRRUP BAR 5P**

To Be Field Cut (10 of each required per Railing End Transition)

**STIRRUP BAR 5V**

To Be Field Cut (One required per Railing End Transition)

**END STIRRUP BAR 5V**

(As Reqd.)

**DETAIL "B" - SECTION AT INTERMEDIATE OPEN JOINT**

**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 Specification Section 932.
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 RECESS "V" GROOVE TO FORM INSCRIBED LETTERS AND FIGURES**

**ESTIMATED TRAFFIC RAILING QUANTITIES**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>UNIT</th>
<th>QUANTITY</th>
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<tbody>
<tr>
<td>Concrete</td>
<td>CY/LF</td>
<td>0.154</td>
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<tr>
<td>Reinforcing Steel</td>
<td>LB/LF</td>
<td>44.71</td>
</tr>
</tbody>
</table>

**PRE-CURED SILICONE SEALANT** (4" wide)

**SPECIFICATION SECTION 931**

Engineer. WWR must consist of Deformed wire meeting the requirements of Specification Section 932.