Approach Slab (Flexible Pavement Approach Slab Shown, Rigid Pavement Approach Slab Similar)

Front Face of Backwall & Begin or End Bridge

Raised Sidewalk

Joint (see Notes)

Coping (Typ.)

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

Coping (Typ.)

Joint (see Notes)

3'-0" Maximum

Raised Sidewalk

Deck Joint

3" V-Groove in both faces and top of Traffic Railing (Equally spaced between open joints)

Superstructure Supports

1/2" Intermediate Open Joint

Joint (see Notes)

Coping (Typ.)

Approach Slab

Bridge Deck

Front Face of Backwall & Begin or End Bridge

Joint (see Notes)

Coping (Typ.)

3" V-Groove in both faces and top of Traffic Railing (Equally spaced between open joints)

6" Min.

ELEVATION OF INSIDE FACE OF RAILING

(Reinforcing Steel not shown for clarity)

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-4 and MASH TL-4 Criteria.

CONCRETE AND REINFORCING STEEL: See Structures Plans, General Notes.

GUARDRAIL: For Guardrail Connection details, see Index 536-001.

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 Section A-A. All other details such as the End Transition, Guardrail Connection, the maximum spacing of the 1/2" open joints and 1/2" V-Grooves shall apply.

BARRIER DELINEATORS: Install Barrier Delineators on top of the Traffic Railing 2' from the face on the traffic side in accordance with Specification Section 705.

V-GROOVES: Construct 1/2" V-Grooves plumb and provide at 30'-0" maximum intervals as shown. Space V-Grooves equally between 1/2" Open Joints and/or Deck Joints and at V-Groove locations on Retaining Wall footings.

END TRANSITIONS: When guardrail approaches are shown in the Plans, provide the Railing End Transition as shown.

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 1/2" V-Grooves. V-Grooves shall be formed by preformed letters and figures.

JOINTS: See Plans, Superstructure, Approach Slab and Retaining Walls Sheets for actual dimensions and joint orientation. Provide open Railing Joints at Deck Expansion Joint locations matching the dimensions of the Deck Joint. For treatment of Railings on skewed bridges see Index 521-427.

Provide 1/2" Intermediate Open joints at:

(1) - Superstructure supports where slab is continuous.
(2) - Ends of approach slabs when adjacent to retaining walls and at expansion joints on retaining wall junction slabs.

This page contains a diagram of a traffic railing system, including approach slabs, bridge decks, and guardrail connections. The text describes the design and installation requirements for the traffic railing, including joint orientations, spacing, and labeling. The railing has been structurally evaluated for strength and is designed to meet crash test criteria from NCHRP Report 350 TL-4 and MASH TL-4. Technical details such as joint spacing and orientation are specified, along with requirements for barrier delineators and end transitions. The name and date of the bridge are to be placed on the railing to provide clarity for drivers. The page also highlights the importance of coordinating with other structural components, such as superstructure supports and expansion joints.
NOTES:

1. Begin placing Railing Bars 5T and 5X on Approach Slab at the railing end and proceed toward Begin or End Bridge to avoid conflict with guardrail bolt holes. If required, adjustments to the bar spacing for Bars 5T and 5X shall be made immediately adjacent to Begin or End Bridge. Cut, shift and rotate Bars 5T and 5X as required to maintain cover in Railing End Transition.

2. Omit Railing End Transition and Guardrail if Concrete Traffic Railing 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 5T and 5X at 1'-0" (Typ.)
**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>S</td>
<td>5</td>
<td>As Req'd</td>
</tr>
<tr>
<td>T</td>
<td>5</td>
<td>10'-8&quot;</td>
</tr>
<tr>
<td>X</td>
<td>5</td>
<td>6'-9&quot;</td>
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**ROADWAY CROSS-SLOPE**

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<thead>
<tr>
<th>LOW GUTTER</th>
<th>HIGH GUTTER</th>
<th>ØA</th>
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<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>
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LENGTH AS REQUIRED

**STIRRUP BAR 5T**

**STIRRUP BAR 5X**

**END TRANSITION STIRRUP BARS 5T**

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

**END TRANSITION STIRRUP BARS 5X**

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

**REINFORCING STEEL NOTES:**

1. All bar dimensions in the bending diagrams are out to out.
2. The 4'-6" vertical dimension shown for Bars 5T and 5X 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 5S may be continuous or spliced at the construction joints. Bar splices for Bars 5S shall be a minimum of 2'-2".
6. 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.

**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**

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<th>ITEM</th>
<th>UNIT</th>
<th>QUANTITY</th>
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<tbody>
<tr>
<td>Concrete</td>
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<tr>
<td>Reinforcing Steel</td>
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</tbody>
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(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)