TRAFFIC RAILING - (42" F SHAPE)

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".

DRAINAGE: Guardrail Drainage Details, see Index 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 B" open joints and B" V-groove shall apply.

V-GROOVES: Construct V-Grooves plumb. Space V-Grooves equally between B" Open Joints and/or Deck Joints and at V-Groove locations on Retaining Wall footings.

Decks: For Decks see Structures Plans.

ELEVATION OF INSIDE FACE OF RAILING

(Reinforcing Steel not shown for clarity)

For Railings End Transition see Detail "A" (Typical except as noted)

Joint (see Notes)

Approach Slab

Bridge Deck

Plan

(Reinforcing Steel not shown for clarity)

BARRIER Delineator SPACING

Distance Edge of Travel Lane to Face of Railing

Spacing (Ft.)

< 4' 4' to 8'

None Required

> 8'

Traffic RAILING NOTES

Front Face of Backwall & Begin or End Bridge

V-GROOVES: Construct V-Grooves plumb. Space V-Grooves equally between B" Open Joints and/or Deck Joints and at V-Groove locations on Retaining Wall footings.

Provide B" Intermediate Open Joints shall be provided 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 slabs.

BARRIER DELINERATORS: 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.

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.

For Railings End Transition see Detail "A" (Typical except as noted)

Joint (see Notes) Cope (Typ.)

Approach Slab

Bridge Deck

Sutter Line

Joint (see Notes)
Coping

BEGIN or END Approach Slab **

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

NOTE:

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

** See joint orientation note on Sheet 1.

*** 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.

NOTE:

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.

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CONVENTIONAL REINFORCING STEEL BENDING DIAGRAMS

<table>
<thead>
<tr>
<th>BILL OF REINFORCING STEEL</th>
<th>ROADWAY CROSS-SLOPE</th>
<th>LOW GUTTER</th>
<th>HIGH GUTTER</th>
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<tr>
<td>MARK</td>
<td>SIZE</td>
<td>LENGTH</td>
<td>BA</td>
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<tr>
<td>P</td>
<td>5</td>
<td>7'-5&quot;</td>
<td>90°</td>
</tr>
<tr>
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<td>8</td>
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</tr>
<tr>
<td>S2</td>
<td>5</td>
<td>As Req'd</td>
<td>96°</td>
</tr>
<tr>
<td>T1 &amp; T2</td>
<td>8</td>
<td>13'-0&quot;</td>
<td>8% to 10%</td>
</tr>
<tr>
<td>V</td>
<td>5</td>
<td>6'-2&quot;</td>
<td>6% to 10%</td>
</tr>
</tbody>
</table>

BA and BB shall be 90° if Contractor elects to place Railing perpendicular to the Deck.

STIRRUP BAR SP
TRANSITION STIRRUP BARS SP
To Be Field Cut (30 of each required per Railing End Transition)

STIRRUP BAR SV
END STIRRUP BAR SV
To Be Field Cut (One required per Railing End Transition)

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 BA = BB = 90°.
3. All reinforcing steel at the open joints shall have a 2" minimum cover.
4. Bars S5 should be continuous or spliced at the construction joints. Lap splices for Bars S5 & S5 shall be a minimum of 3'-5" and 2'-2", 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.

Note:
The estimated railing quantities are based on a 2% deck cross slope; railing on low side of deck.

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 937.
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.

DETAIL "B" - SECTION AT INTERMEDIATE OPEN Joint

SECT ION 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>
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<tbody>
<tr>
<td>Concrete</td>
<td>CY/LF</td>
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<tr>
<td>Reinforcing Steel</td>
<td>LB/LF</td>
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</tbody>
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Note:
The estimated railing quantities are based on a 2% deck cross slope; railing on low side of deck.