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 Criteria.

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

GUARDRAIL :  For guardrail connection details, see Index 400.

PEDESTRIAN/BICYCLE RAILING AND SPECIAL HEIGHT BICYCLE RAILING DETAILS :  See Index 822

TRAFFIC RAILING NOTES

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 \( \frac{3}{16} \) open joints and \( \frac{3}{16} \) V-Groove shall apply.

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 of 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 \( \frac{3}{16} \) V-Grooves. V-Grooves shall be formed by preformed letters and figures.


For treatment of Railings on skewed bridges see Index 420.

When Railing is continuous provide Tapered End Transition at terminus of Bullet Railing.

CROSS REFERENCE: For Section A-A and View B-B, see Sheet 2.
For Detail "A" see Sheet 3.

TRAFFIC RAILING - (32" VERTICAL SHAPE)
SECTION A-A
TYPICAL SECTION THRU TRAFFIC RAILING
SECTION THRU BRIDGE DECK SHOWN

NOTES:
Omit Railing End Taper and Guardrail if Concrete Barrier Wall is used beyond the Approach Slab. See Structures Plans, Plan and Elevation Sheet and Roadway Plans. If Railing End Taper is omitted, extend Typical Section to the end of the Approach Slab. Begin placing Railing Bars ST and SX 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 ST and SX shall be made immediately adjacent to Begin or End Bridge. Shift and rotate Bars ST and SX on Approach Slab in end taper section as required to maintain cover.

Special Height Bicycle Railing
Pedestrian/Bicycle Railing
Bars ST @ 1'-0" sp. (Max.) (Alternate with Bars ST)
2'-8"
Bars S5 (Typ.)
Bars ST @ 1'-0" sp. (Max.) (Alternate with Bars S5)
2" Cover (Top)
2" Sp (Sid)
Steel in Deck (Rotate to maintain cover)
6" Min. Embedment into Deck
Standard Hook Top
Coping
Slope Varies
Const. Joint
Raised Sidewalk
Bridge Deck
Bars S5
8" A
1'-0"

VIEW B-B
APPROACH SLAB END VIEW
OF TRAFFIC RAILING

CROSS REFERENCE:
For location of Section A-A and View B-B see Sheet 1.

NOTE: For Post "E", Post "C" and Rail Details, see Index No. 822

RAILING END DETAIL

Additional Rail required for Special Height Bicycle Railing

TRAFFIC RAILING - (32" VERTICAL SHAPE)
CONVENTIONAL REINFORCING STEEL BENDING DIAGRAMS

<table>
<thead>
<tr>
<th>MARK</th>
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<tbody>
<tr>
<td>5</td>
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<td>As Req</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>9'-0&quot;</td>
</tr>
<tr>
<td>X</td>
<td>5</td>
<td>5'-10&quot;</td>
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ROADWAY CROSS-SLOPE

<table>
<thead>
<tr>
<th>LOW GUTTER</th>
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<tbody>
<tr>
<td>0% to 2%</td>
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<tr>
<td>2% to 6%</td>
<td>87°</td>
</tr>
<tr>
<td>6% to 10%</td>
<td>84°</td>
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REINFORCING STEEL NOTES:

1. All bar dimensions in the bending diagrams are cut to cut.
2. The 3'-8" vertical dimensions shown for Bars 5T and 5X are 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 slopes vary from the above amounts, adjust these vertical dimensions accordingly to achieve a 6" minimum embedment into the bridge deck.
3. The reinforcement for the railing on a Retaining Wall shall be the same as detailed 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.

ESTIMATED TRAFFIC RAILING QUANTITIES

<table>
<thead>
<tr>
<th>ITEM</th>
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<tr>
<td>Concrete</td>
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<tr>
<td>Reinforcing Steel</td>
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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.)