This railing has been structurally evaluated to be equivalent or greater in strength to other single slope railings which have been crash tested to MASH TL-5.

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

SUPERELEVATED BRIDGES: At the option of the Contractor the Traffic Railing on superelevated 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 536-001.

V-GROOVES: Construct 1/2" V-Grooves plumb. Space V-Grooves equally between 3/8" Open Joints and/or Deck Joints 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 in Detail "B". When a concrete Traffic railing or barrier is shown on the approaches, provide the Railing Height Transition as shown in Detail "B".

DRAINAGE SLOTS: When shown in the plans, see Index 521-427 Sheet 3 for details.
NOTE:
Begin placing Railing Bars 5P 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 5P and 5V shall be made immediately adjacent to Begin or End Bridge. Shift Bars 5P and 5V (see Detail "A") as required to maintain cover in Railing End Transition.

NOTE:
Omit Detail "A" and provide Detail "B" if 44" Concrete Barrier or Single-Slope Traffic Railing is used beyond the Approach Slab. See Structures Plan and Elevation Sheet and Roadway Plans. If Transitions are not required, extend Typical Section to end of Approach Slab.

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'-6" from each gutter line. A bond breaker will be required. See Structures Plans, Superstructure Sheets for Details.

** See joint orientation note on Sheet 1.

*** Field Cut & Lap Bars 5V in Toe Transition to maintain clearance.
NOTE:
1. Provide Detail "B" height transition where 42" Single-Slope Traffic Railings increase to 44" Barriers beyond flexible pavement approaches.
2. Work Detail "B" with Index 400-090.
3. Provide Detail "C" height transition where 42" Traffic Railings are required on bridge, and 36" or 38" Barriers are shown on approaches.
4. Work Detail "C" with Indexes 400-090 or 400-091, 521-427, and 521-610 as necessary.
5. Field cut 5P Bars as shown to maintain 2" min. (4" max.) cover at top of traffic railing.

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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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<tbody>
<tr>
<td>P</td>
<td>5</td>
<td>7'-0&quot;</td>
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<tr>
<td>S1</td>
<td>6</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>6</td>
<td>10'-0&quot;</td>
</tr>
<tr>
<td>V</td>
<td>5</td>
<td>9'-9&quot;</td>
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ROADWAY CROSS-SLOPE

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<tr>
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<th>HIGH GUTTER</th>
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<tbody>
<tr>
<td>#8</td>
<td>10'-0&quot;</td>
</tr>
<tr>
<td>0% to 2%</td>
<td>10'-0&quot;</td>
</tr>
<tr>
<td>2% to 6%</td>
<td>9'-0&quot;</td>
</tr>
<tr>
<td>6% to 10%</td>
<td>10'-0&quot;</td>
</tr>
</tbody>
</table>

REINFORCING STEEL NOTES:

1. All bar dimensions in the bending diagrams are out to out.
2. All reinforcing steel at the open joints shall have a 2" minimum cover.
3. Bars 6S1 may be continuous or spliced at the construction joints. Lap splices for Bars 6S1 and 5S2 shall be a minimum of 3'-0" and 2'-2", respectively.
4. The Contractor may utilize deformed WWR when approved by the Engineer. WWR must meet 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.

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>
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<tr>
<td>Reinforcing Steel</td>
<td>LB/LF</td>
<td>39.34</td>
</tr>
</tbody>
</table>

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

DELTA "C" - SECTION AT INTERMEDIATE OPEN JOINT

SECTION THRU RECESSED "V" GROOVE TO FORM INSCRIBED LETTERS AND FIGURES

TRAFFIC RAILING - (42" SINGLE-SLOPE)