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

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, Design Standards Revision DSR-500-01.

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 3/8" open joints and 1/2" V-groove shall apply.

V-GROOVES: Construct 1/2" V-grooves plumb. Space V-grooves equally between 3/8" Open Joints and/or Deck Joints and at V-groove locations on Retaining Wall footings.

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**Traffic Railing - (42' Single-Slope)**

**Plan - Railing End Transition**

- **Showing Bars SV, 6S1, 5S2 and 6T2**
- **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 Bars SP and SV (see Detail "A") as required to maintain cover in Railing End Transition.

**Detail "A"**

**Section A-A**

- Typical Section Thru Traffic Railing
- (Section thru Bridge Deck Shown - Section thru Approach Slab Similar)
- Transition Bars SP Field Cut (Typ. Unless Otherwise Noted)
- Bars 6T1 and 6S1 (Bottom) as required
- Bar 5V (see Detail "A")
- Approach Slab (Flexible Pavement Approach Slab Shown, Rigid Pavement Approach Slab Similar)

**View C-C**

- Elevation - Railing End Transition
- (Guardrail not shown for clarity)

**View B-B**

- Section thru Approach Slab shown, Section thru Retaining Walls similar

**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.

**Revision:** 07/01/16

**Description:** Developmental Design Standards
CONVENTIONAL REINFORCING STEEL BENDING DIAGRAMS

BILL OF REINFORCING STEEL

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<thead>
<tr>
<th>MARK</th>
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<tr>
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<tr>
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ROADWAY CROSS-SLOPE

<table>
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<tbody>
<tr>
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<tr>
<td>2% to 6%</td>
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<tr>
<td>6% to 10%</td>
<td>95°</td>
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<tr>
<td>ØB</td>
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BA and BB shall be 90° if Contractor elects to place Railing perpendicular to the Deck.

NOTE:
The estimated railing quantities are based on a 2% deck cross slope; railing on low side of 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 651 may be continuous or spliced at the concrete joints. Splices for Bars 651 and 552 shall be a minimum of 2'-0" and 2'-2", respectively.
5. The Contractor may utilize Deformed Welded Wire Reinforcement (WWR) when approved by the Engineer. WWR must meet the requirements of Specification Section 931.

STIRRUP BAR 5P

TRANSITION STIRRUP BAR 5P

To Be Field Cut (30 of each required per Railing End Transition)

STIRRUP BAR SV

END STIRRUP BAR SV

To Be Field Bent (8 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 ØA = ØB = 90°.
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ESTIMATED TRAFFIC RAILING QUANTITIES

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<tr>
<td>Reinforcing Steel</td>
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Note:
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