1/4" Open Joint *

3/4" V-Groove in both faces and top of Railing/Noise Wall (Equally spaced between open joints)

Gutter Line

3/4" V-Groove

3'-0" Max. V-Groove in both faces and top of Railing/Noise Wall (Constructed plumb and equally spaced between open joints)

10'-0" Maximum

A

See Detail "A" for Railing End Transition when Guardrail called for in Roadway Plans

40'-0" End Taper

C

Noise Wall End Taper (see Sheet 3) required when Noise Wall is terminated within the clear zone of the Roadway. See Plans for location of End Taper.

(10" Thick wall section for Noise Wall End Taper, see Section C-C)

3'-0" Max.

Single-Slope Traffic Railing/Barrier Continuing

T-Shape Spread Footing Shown, L-Shaped Spread Footing, Trench Footing and Junction Slab similar

Top of Shoulder, Sidewalk at Railing Face

See Detail "A" for Railing End Transition when Guardrail called for in Roadway Plans

14'-8"

VARIES

Railing/Barrier shown continuing on Roadway

Railing End Transition required at Guardrail Connection

Guardrail (when called for in Roadway Plans)

Coping (Typ.)

Gutter Line

10'-0"

A

Plan

(Reinforcing Steel not shown for clarity)

CROSS REFERENCE:
For Detail "B" see Sheet 2.
For Section A-A see Sheet 4.
For Section C-C and Detail "A" see Sheet 5.
For Wall mounted Railing/Noise Wall Details see Index 521-512.
For Footing mounted Railing/Noise Wall Details see Index 521-513 (T-Shaped), 521-514 (L-Shaped) or 521-515 (Trench).

ELEVATION OF INSIDE FACE OF RAILING/NOISE WALL (T-SHAPED FOOTING SHOWN, OTHER FOUNDATIONS SIMILAR) (Reinforcing Steel not shown for clarity)

* Construct 1/4" Open Joints plumb at Construction Joints in Junction Slabs or Footings.
CONSTRUCTION REQUIREMENTS: The Concrete Barrier/Noise Wall and joints shall be constructed plumb, they shall not be constructed perpendicular to the roadway surface. Class II for slightly aggressive environments and Class IV for moderately or extremely aggressive environments.

BARREL Delineators: Install Barrel Delineators 2'-4" above the riding surface in accordance with Specification Section 705. Match the Barrel Delineators color (White or Yellow) to the near edgeline.

OPEN JOINTS: Provide 3/16" Open Joints spaced between 30 feet minimum or 90 feet maximum. Align Open Joints with construction joints in the Junction Slab or footing. Provide additional reinforcing (see Sheet 3) at each open joint.

REINFORCING STEEL BENDING DIAGRAMS

BILL OF REINFORCING STEEL

<table>
<thead>
<tr>
<th>MARK</th>
<th>SIZE</th>
<th>LENGTH</th>
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</thead>
<tbody>
<tr>
<td>R1</td>
<td>5</td>
<td>5'-10&quot;</td>
</tr>
<tr>
<td>R2</td>
<td>5</td>
<td>7'-10&quot;</td>
</tr>
<tr>
<td>S1</td>
<td>5</td>
<td>As Req'd</td>
</tr>
<tr>
<td>S2</td>
<td>5</td>
<td>7'-3&quot;</td>
</tr>
<tr>
<td>V (Wall)</td>
<td>5</td>
<td>7'-1&quot;</td>
</tr>
<tr>
<td>V (T-Footing)</td>
<td>5</td>
<td>9'-5&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 SR shall be one continuous or lap spliced bar. No mechanical couplers are permitted.
4. Bars SSR may be continuous or spliced at the construction joints. Lap splices for Bars SR and SSR shall be a minimum of 2'-2".
5. The Contractor may use Welded Wire Reinforcement (WWR) when approved by the Engineer. WWR must consist of deformed wire meeting the requirements of Specification Section 931.

CONCRETE BARRIER/NOISE WALL (8'-0")

ESTIMATED TRAFFIC RAILING/NOISE WALL QUANTITIES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>UNIT</th>
<th>QUANTITY</th>
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</thead>
<tbody>
<tr>
<td>Concrete (Rail)</td>
<td>CY/LF</td>
<td>0.107</td>
</tr>
<tr>
<td>Concrete (Noise Wall)</td>
<td>CY/LF</td>
<td>0.136</td>
</tr>
<tr>
<td>Reinforcing Steel (Typical)</td>
<td>LB/FP</td>
<td>67.36</td>
</tr>
<tr>
<td>Additional Rein. at Open Joint</td>
<td>LB</td>
<td>262.58</td>
</tr>
</tbody>
</table>

(The above quantities are based on the Concrete Barrier/Noise wall typical section (excluding junction slab or footing).)

NOTES:
Work this Index with Indexes 521-512 through 521-515.

CONCRETE: Class II for slightly aggressive environments and Class IV for moderately or extremely aggressive environments.

CROSS REFERENCE:
See Index 521-512 for Junction Slab Details and Indexes 521-513 thru 521-515 for additional footing details.
NOTES:
* Field Cut Bars 5R & 5S1 to maintain clearance.
** Terminate 2" V-groove at construction joint & cast top of railing with End Taper.
*** Bar spacing shown for Bars 5V only applies when Single-Slope Concrete Barrier continues. For transition to guardrail see Sheet 5.

Work Traffic/ Railing Noise Wall reinforcing with Index 521-512 (Junction Slab) or Index 521-513 through 521-515 (T, L or Trench Footings)

36" Single-Slope Concrete Barrier continued on Bridge or Approach Slab. 38" Concrete Barrier or Barrier Wall continued on Retaining Wall or Roadway.
Riding Surface

Const. Joint Required

2" Cover (Top)

Spacing Bars 5S1 & 5S2

Bars 5R2

Bars 5R1

Bars 5S2

Bars 5V

Gutterline

Bars 5S1 (Typ.)

Bars 5S2

Bars 5V

V-Groove

Varies (T. Max.)

Thickened section required for Textured Form Liner, when called for in the Plans (See Plans for details)

Const. Joint Required

SECTION A-A

TYPICAL SECTION THRU CONCRETE BARRIER/NOISE WALL AT OPEN JOINT
(Section Thru T-Footing Shown, Section Thru Junction Slab, L or Trench Footings similar)

NOTES:
1. Bars 5V shown are for T-Shape footings.
   5V for Junction Slab, L-Shape and Trench footings are similar.
2. Foundation Details:
   Index 521-512 (Junction Slab)
   Index 521-513 (T-Shape)
   Index 521-514 (L-Shape)
   Index 521-515 (Trench)

CROSS REFERENCE:
For locations of Section A-A see Sheet 1.
For location of View B-B see Sheet 5.
For Detail "A", see Sheet 3

VIEW B-B
END VIEW OF RAILING END TRANSITION FOR GUARDRAIL ATTACHMENT
(T-Footing shown, Junction Slab, L or Trench Footings similar)

NOTES:
1. Bars 5V shown are for T-Shape footings.
   5V for Junction Slab, L-Shape and Trench footings are similar.
2. Foundation Details:
   Index 521-512 (Junction Slab)
   Index 521-513 (T-Shape)
   Index 521-514 (L-Shape)
   Index 521-515 (Trench)

CONCRETE BARRIER/NOISE WALL (8'-0")

INDEX
521-510

SHEET
4 of 5
DETAIL "A" NOTES:
1. Begin placing Railing Bars 5V at the railing end and proceed toward the guardrail (thrie beam) terminal connector to ensure placement of guardrail bolt holes. Pair Bars 5R with Bars 5V as shown. Clearance of Bars 5R & 5V to guardrail bolt holes shall be checked to prevent cutting of bars if bolt holes are to be drilled. Shift bars locally where conflicts occur.
2. For Guardrail connection details see Index 536-001.
3. Omit Railing End Transition if a Single-Slope Concrete Barrier/Barrier continues beyond the End Taper. See the Plan Sheets.
4. Field cut Bars 5R1 to maintain cover. Field cut Bars 5V and lap as necessary to maintain cover; field cut & bend Bars 5R2 front leg (more plumb) to maintain cover and tie to S1 Bars. (See Sheet 4 Notes 1 and 2)

PLAN - RAILING END TRANSITION
(Showing Bars 5R, and Bars 5S1)
(Bars 5V not shown for Clarity)

DETAIL "A"

PLAN - RAILING END TRANSITION
(Showing Bars 5V and Bars 5S1)
(Bars 5R not shown for Clarity)