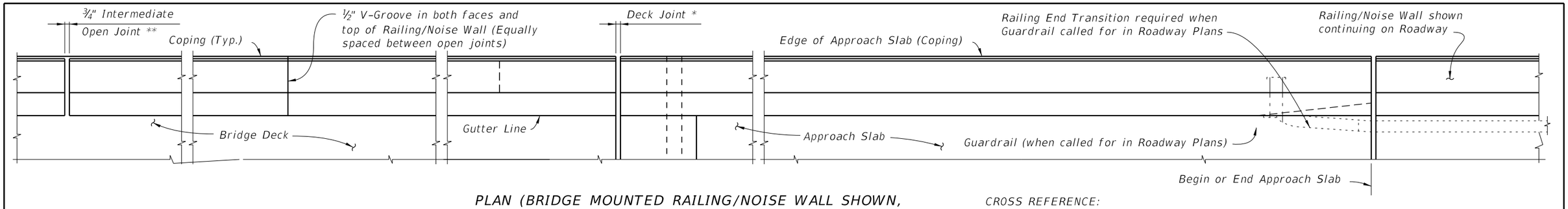
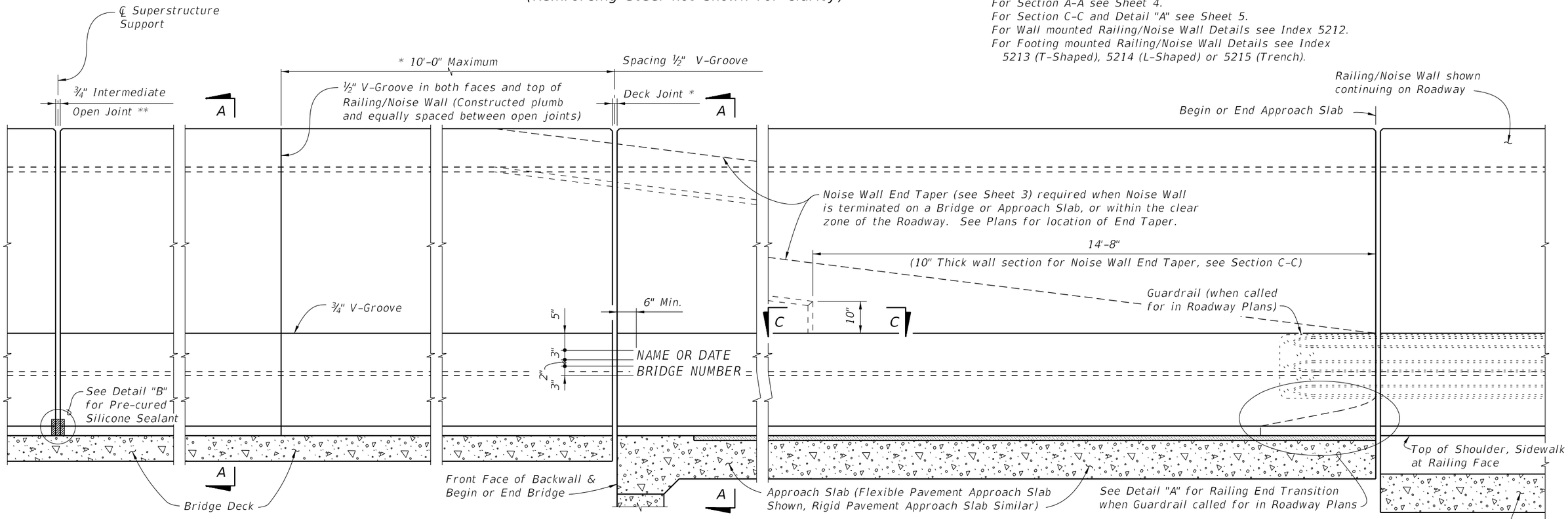



*PLAN (BRIDGE MOUNTED RAILING/NOISE WALL SHOWN, WALL OR FOOTING MOUNTED RAILING/NOISE WALL SIMILAR) (Reinforcing Steel not shown for clarity)*

*CROSS REFERENCE:*
*For Detail "B" and V-Groove Lettering Detail 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 5212.*
*For Footing mounted Railing/Noise Wall Details see Index 5213 (T-Shaped), 5214 (L-Shaped) or 5215 (Trench).*




*ELEVATION OF INSIDE FACE OF RAILING/NOISE WALL (BRIDGE MOUNTED RAILING/NOISE WALL SHOWN, WALL OR FOOTING MOUNTED RAILING/NOISE WALL SIMILAR) (Reinforcing Steel not shown for clarity)*

** On Bridges see Superstructure and Approach Slab Sheets for actual dimensions and joint orientation. Open Railing/Noise Wall Joints at Deck Expansion Joint locations shall match the dimensions of the Deck Joint. For treatment of Railing/Noise Walls on skewed bridges see Index 420. Deck Joint at Begin Bridge or End Bridge shown, Deck Joint at ℄ Pier or Intermediate Bent, Junction Slab or Footing similar.*

*** ¾" Intermediate Open Joints shall be constructed plumb and provided at :*
*(1) – Superstructure supports where slab is continuous.*
*(2) – Construction Joints for Junction Slabs and Footings.*

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## TRAFFIC RAILING/NOISE WALL NOTES

CONSTRUCTION REQUIREMENTS : The Traffic Railing/Noise Wall and joints shall be constructed plumb, they shall not be constructed perpendicular to the roadway surface.

CONCRETE : For Railing/Noise Wall on bridges see General Notes. For Wall and Footing mounted Railing/Noise Wall, concrete shall be Class II for slightly aggressive environments and Class IV for moderately or extremely aggressive environments.

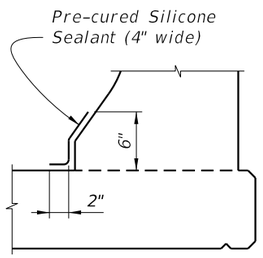
NAME, DATE AND BRIDGE NUMBER : For Railing/Noise Wall on bridges, the Name and Bridge Number shall be placed on the Traffic Railing so as to be seen on the driver's right side when approaching the bridge. The Date shall be placed on the driver's left side when approaching the bridge. The Name shall be as shown in the General Notes in 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 $\frac{3}{8}$" V-Grooves. V-Grooves shall be formed by preformed letters and figures.

BARRIER DELINEATORS: Barrier Delineators shall meet Specification Section 993. Install Barrier Delineators 2'-4" above the riding surface at the spacing shown in the table below. 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/Noise Wall.

| BARRIER DELINEATOR SPACING | |
|---|---|
| Distance – Edge of Travel Lane to Face of Railing | Spacing (Ft.) |
| < 4' | 40' |
| 4' to 8' | 80' |
| > than 8' | None Required |

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.




DETAIL "B" - SECTION AT INTERMEDIATE OPEN JOINT

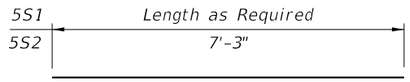
| ESTIMATED TRAFFIC RAILING/NOISE WALL QUANTITIES | | |
|---|---|---|
| ITEM | UNIT | QUANTITY |
| Concrete (Railing) | CY/LF | 0.104 |
| Concrete (Noise Wall) | CY/LF | 0.145 |
| Reinforcing Steel (Typical) | LB/LF | 78.57 |
| Additional Reinf. @ Open Joint | LB | 430.24 |

(The above quantities are based on the bridge mounted typical section, 2% deck cross slope and railing on low side of deck.)

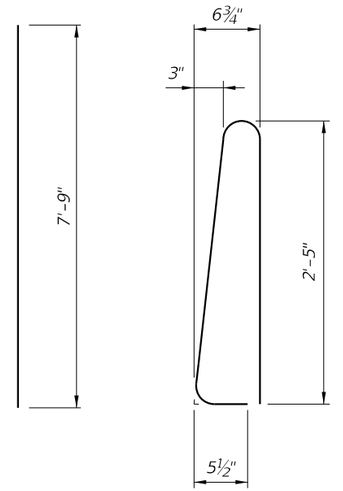
## REINFORCING STEEL BENDING DIAGRAMS

| BILL OF REINFORCING STEEL | | |
|---|---|---|
| MARK | SIZE | LENGTH |
| P | 5 | 5'-7" |
| R | 5 | 7'-9" |
| S1 | 5 | As Reqd. |
| S2 | 5 | 7'-3" |
| V (Bridge and Wall) | 5 | 5'-1" |
| V (Footing) | 5 | 7'-7" |

| BRIDGE CROSS-SLOPE | | LOW GUTTER | | HIGH GUTTER | |
|---|---|---|---|---|---|
| | | ØA | ØB | ØA | ØB |
| BRIDGE MOUNTED | 0% to 2% | 90° | 90° | 90° | 90° |
| | 2% to 6% | 93° | 87° | 87° | 93° |
| | 6% to 10% | 96° | 84° | 84° | 96° |
| WALL & FOOTING MOUNTED | | 90° | 90° | 90° | 90° |

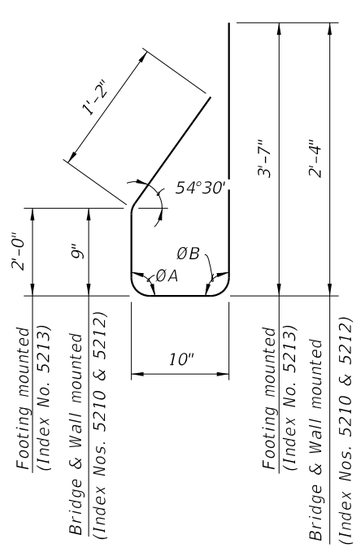


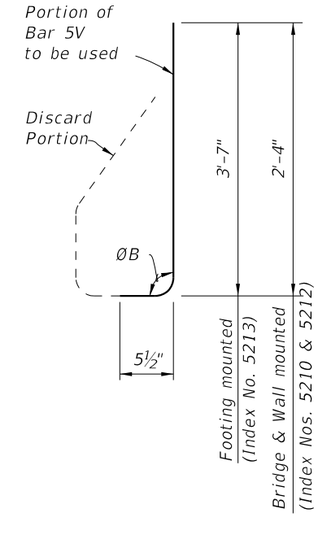

BARS 5S1 & 5S2





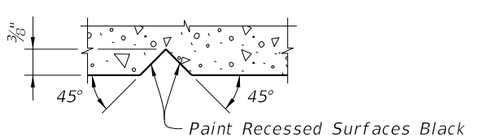





REINFORCING STEEL NOTES:

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 5R shall be one continuous or lap spliced bar. No mechanical couplers are permitted.
4. Bars 5S1 may be continuous or spliced at the construction joints. Lap splices for Bars 5R and 5S1 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.
6. See Index Nos. 5214 and 5215 for Bars 5V and 5T in L-shaped and Trench footings.




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

CROSS REFERENCE:
For locations of Detail "B", see Sheet 1.

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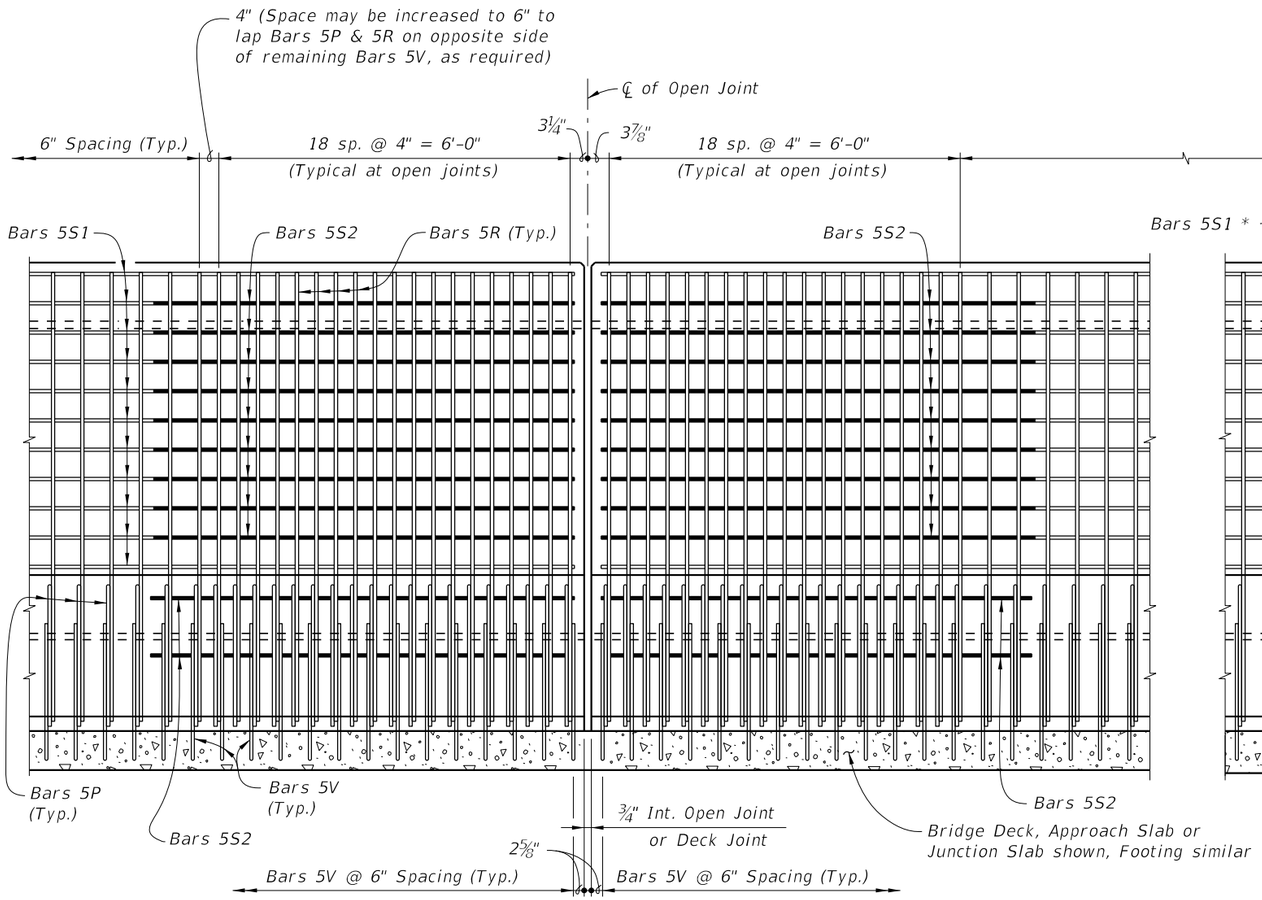
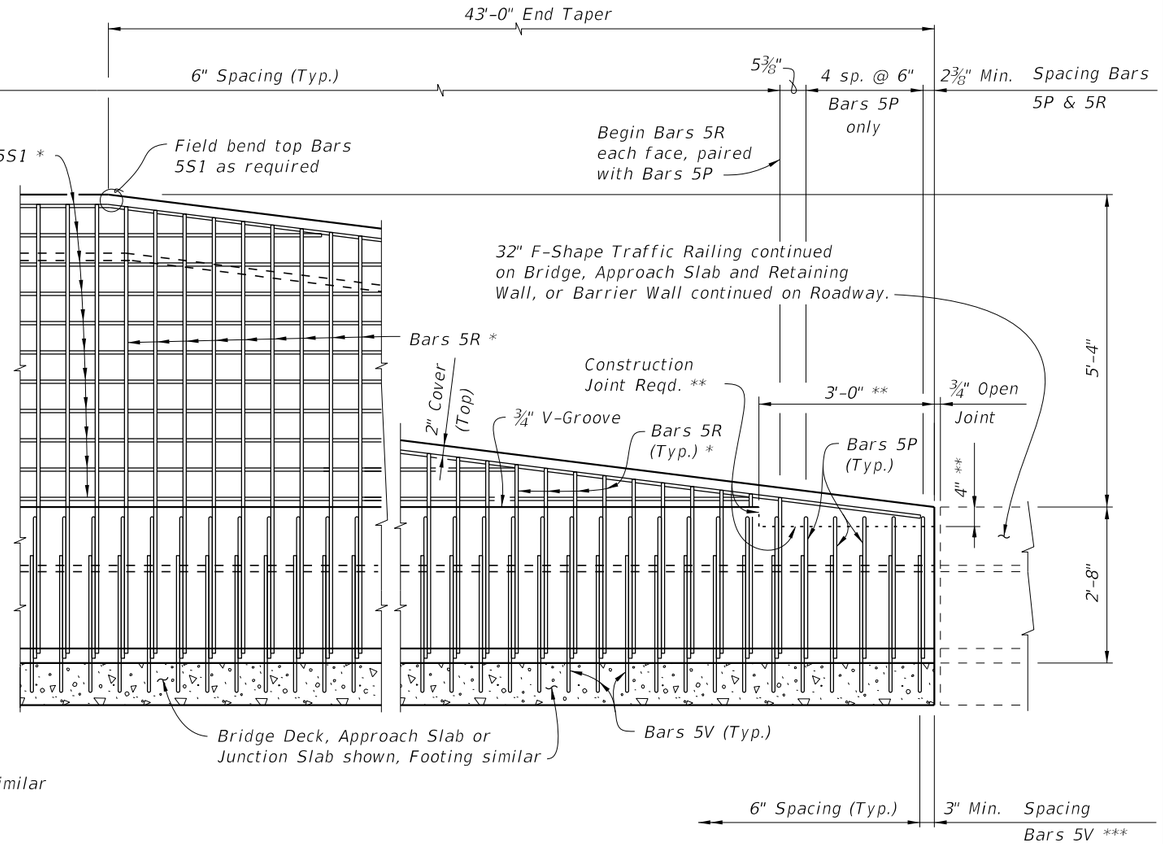



*ELEVATION OF RAILING/NOISE WALL REINFORCING STEEL*
*(INTERMEDIATE OPEN JOINT SHOWN, DECK JOINT SIMILAR)*
*(Bars 5S1 in Railing not shown for clarity)*




*ELEVATION OF RAILING/NOISE WALL END TAPER (ADJACENT TO TRAFFIC RAILING SHOWN, GUARDRAIL ATTACHMENT SIMILAR SEE DETAIL "A", SHEET 5)*
*(Bars 5S1 in Railing not shown for clarity)*

*NOTES:*
* Field Cut Bars 5R & 5S1 to maintain clearance.
** Terminate ¾" V-groove at construction joint & cast top of railing with End Taper.
*** Bar spacing shown for Bars 5V applies only to bridge mounted Railing/Noise Wall. See Index 5212 for spacing of Bars 5V in junction slabs and Index 5213 (T-Shaped), 5214 (L-Shaped) or 5215 (Trench) for Bars 5V spacing in footings.

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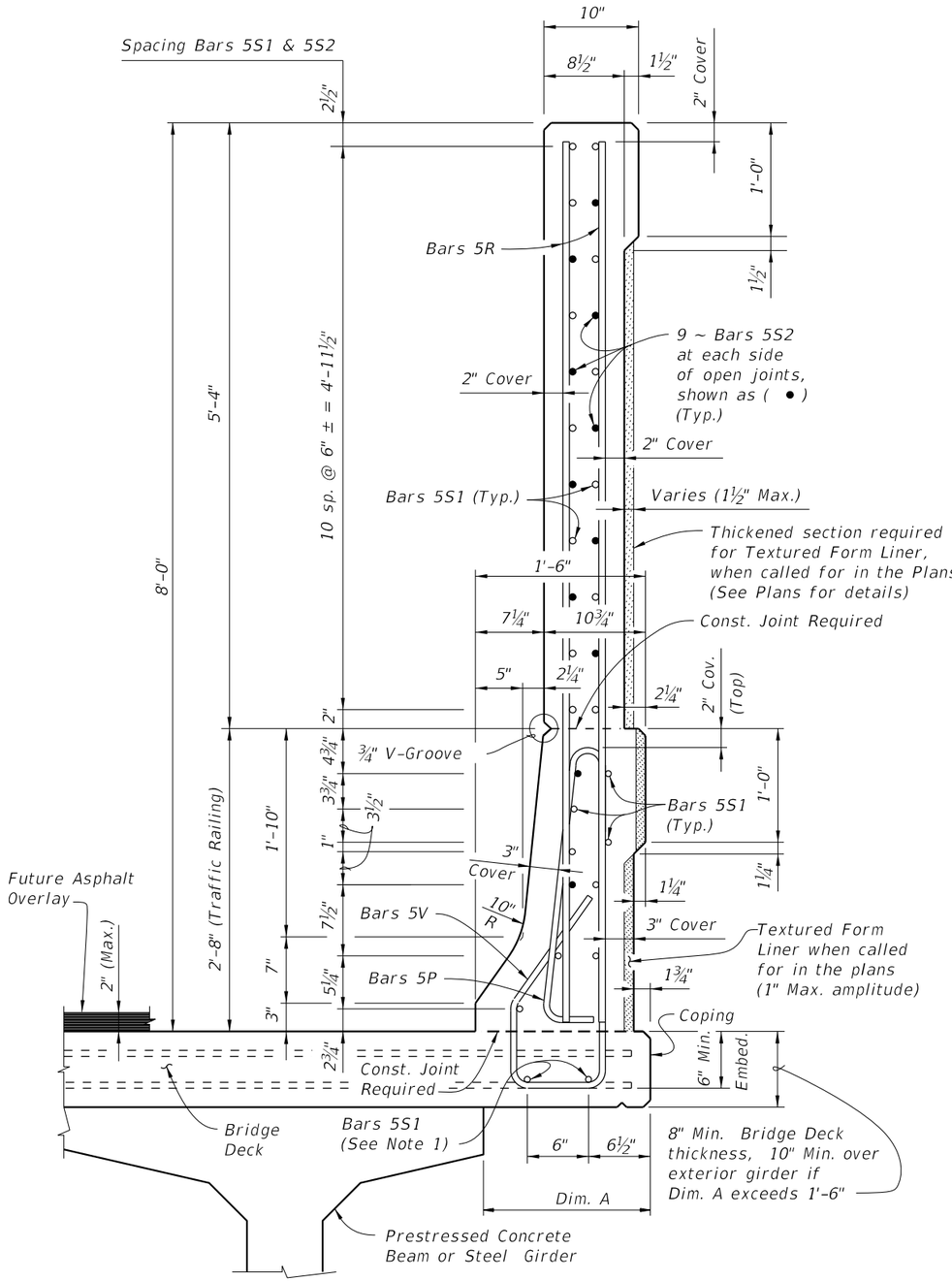
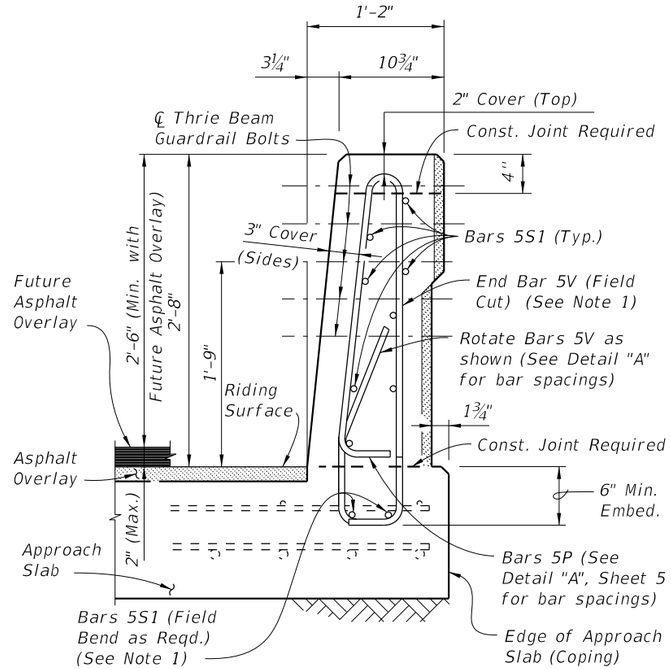



SECTION A-A
TYPICAL SECTION THRU TRAFFIC RAILING/NOISE WALL
(Section Thru Bridge Deck Shown, Section Thru Approach Slab, Junction Slab or Footing Similar)

NOTES:
1. Bottom Bars 5S1 and End Bar 5V are not present in L-Shaped (Index 5214) or Trench (Index 5215) Footings. For Bridge Mounted installations, see the Superstructure Sheets for Deck Steel.

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




VIEW B-B
END VIEW OF RAILILNG END TRANSITION FOR GUARDRAIL ATTACHMENT AT END OF APPROACH SLAB
(Flexible Pavement Approach Slab Shown, Rigid Pavement Approach Slab, Junction Slab or Footing Similar)

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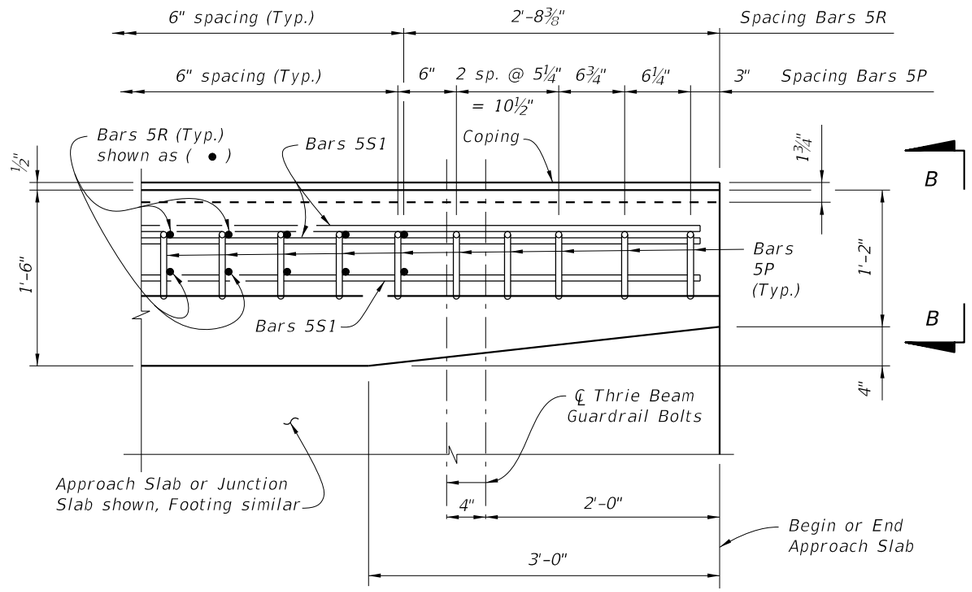
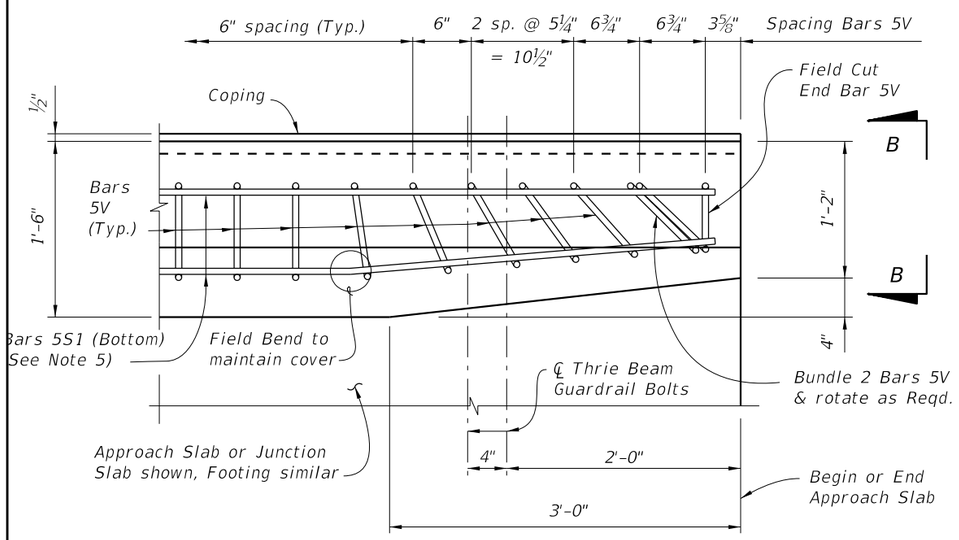



*PLAN - RAILING END TRANSITION*
*(Showing Bars 5P, 5R, and Bars 5S1) (Bars 5V, Noise Wall & Reinforcement not shown for Clarity)*

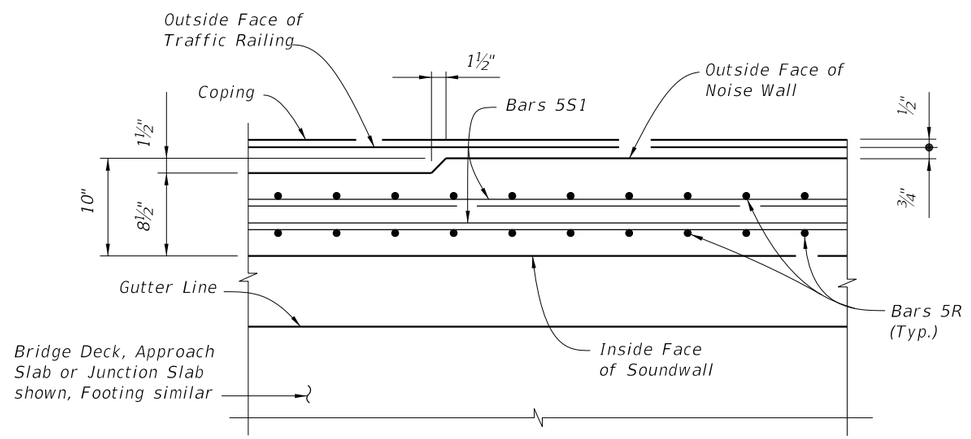



*PLAN - RAILING END TRANSITION*
*(Showing Bars 5V and Bars 5S1) (Bars 5P, 5R, Noise Wall & Reinforcement not shown for Clarity)*

## DETAIL "A"

*DETAIL "A" NOTES:*

1. *Rotate Bars 5P & 5V in Railing End Transition to maintain cover. Begin placing Railing Bars 5P and 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 5P as shown. Clearance of Bars 5P, 5R & 5V to guardrail bolt holes shall be checked to prevent cutting of bars if holes are to be drilled. Shift bars locally where conflicts occur.*
2. *For Guardrail connection details see Design Standards Index 400.*
3. *Omit Railing End Transition if a 32" F-Shape Traffic Railing is used beyond the End Taper. See the Plan Sheets. If Railing End Transition is omitted, space Bars 5P, 5R & 5V at 6" as shown above (Typ.).*
4. *For L-Shaped (Index 5214) and Trench (Index 5215) footings, Bars 5V and 5T replace Bars 5V as shown at left. Details and bar spacing shown apply except that it is not necessary to rotate Bars 5V and 5T to maintain cover and there is no field cut End Bar 5V.*
5. *Bottom Bars 5S1 are not present in L-Shaped or Trench Footings.*




*SECTION C-C*
*THRU NOISE WALL END TAPER*

*CROSS REFERENCE:*
*For location of Detail "A" see Sheet 1.*
*For location of Section C-C see Sheet 1.*
*For View B-B see Sheet 4.*

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