
ORINATION FORM

Proposed Revisions to a Standard Plans Index

(Please provide all information — Incomplete forms will be returned)

Contact Information:

Date: March 24, 2023

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Standard Plans:

Index Number: 521-510

Sheet Number (s): 1 to 5 of 5

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

Summary of the changes:

Sheet 4: Corrected reinforcing steel estimated quantities.

Sheet 6: Added new sheet for precast version.

Sheet 7: Added new sheet for precast version.

Sheet 8: Added new sheet for precast version.

Commentary / Background:

The estimate for reinforcing steel was slightly off for the CIP version. We updated the estimate.

Added a precast version to the Index.

Other Affected Offices / Documents: (Provide name of person contacted)

Yes	No	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other Standard Plans –
<input type="checkbox"/>	<input checked="" type="checkbox"/>	FDOT Design Manual –
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Basis of Estimates Manual –
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Standard Specifications – 521-723
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Approved Product List –
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Construction –
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Maintenance –

Origination Package Includes: (Submit package to Rick Jenkins)

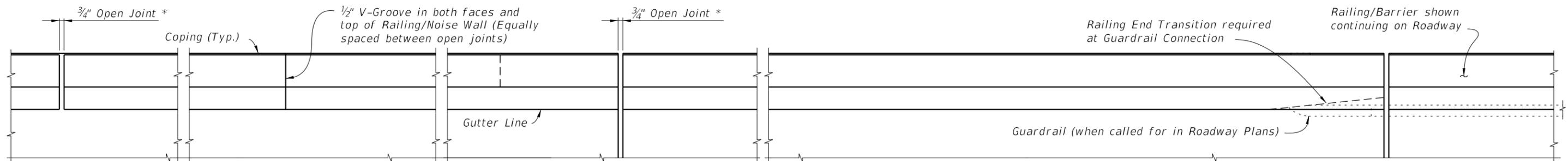
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<input checked="" type="checkbox"/>	<input type="checkbox"/>	Redline Mark-ups
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Revised or Proposed Standard Plan Instruction (SPI)
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other Support Documents

Implementation:

<input type="checkbox"/>	Design Bulletin (Interim)
<input type="checkbox"/>	DCE Memo
<input type="checkbox"/>	Program Mgmt. Bulletin
<input checked="" type="checkbox"/>	FY-Standard Plans (Next Release)

Contact the Roadway Design Office for assistance in completing this form

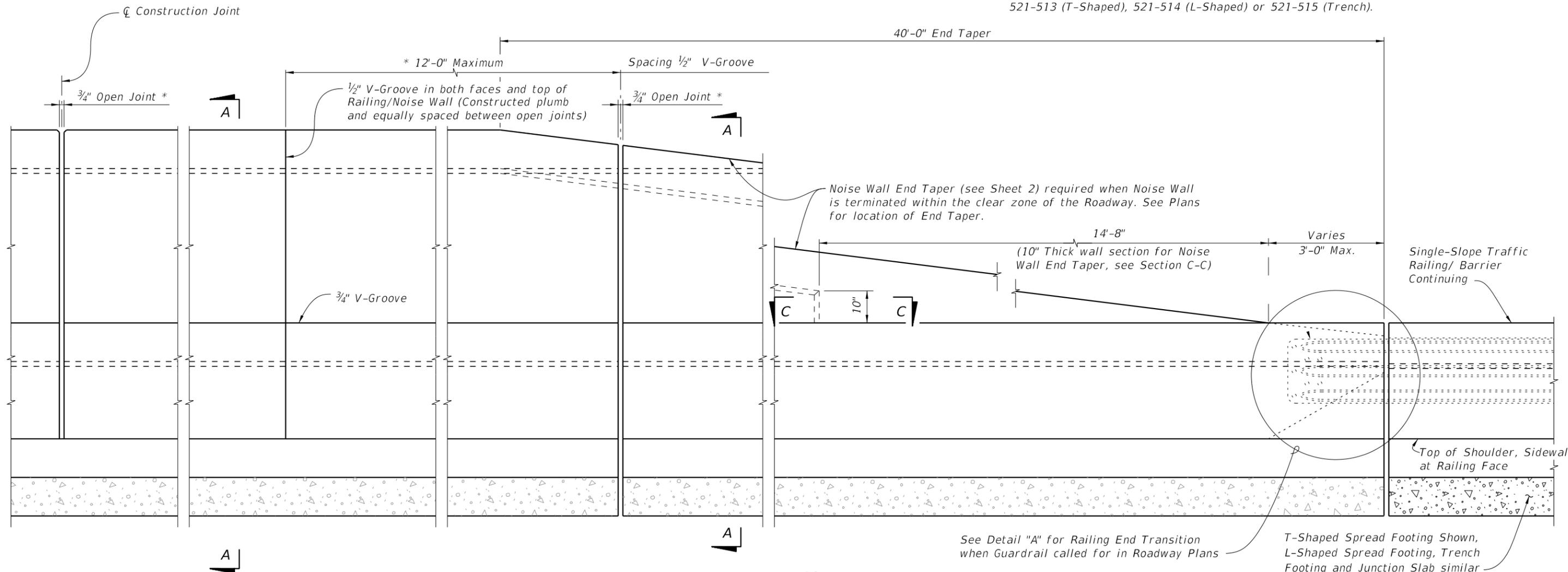
Email to: Rick Jenkins rick.jenkins@dot.state.fl.us and Darren Martin darren.martin@dot.state.fl.us



* Construct 3/4" Open Joints plumb at Construction Joints in Junction Slabs or Footings.

PLAN
(Reinforcing Steel not shown for clarity)

CROSS REFERENCE:
 For Section A-A see Sheet 3.
 For Section C-C and Detail "A" see Sheet 5.
 For Wall mounted Barrier/Noise Wall Details see Index 521-512.
 For Footing mounted Barrier/Noise Wall Details see Index 521-513 (T-Shaped), 521-514 (L-Shaped) or 521-515 (Trench).



ELEVATION

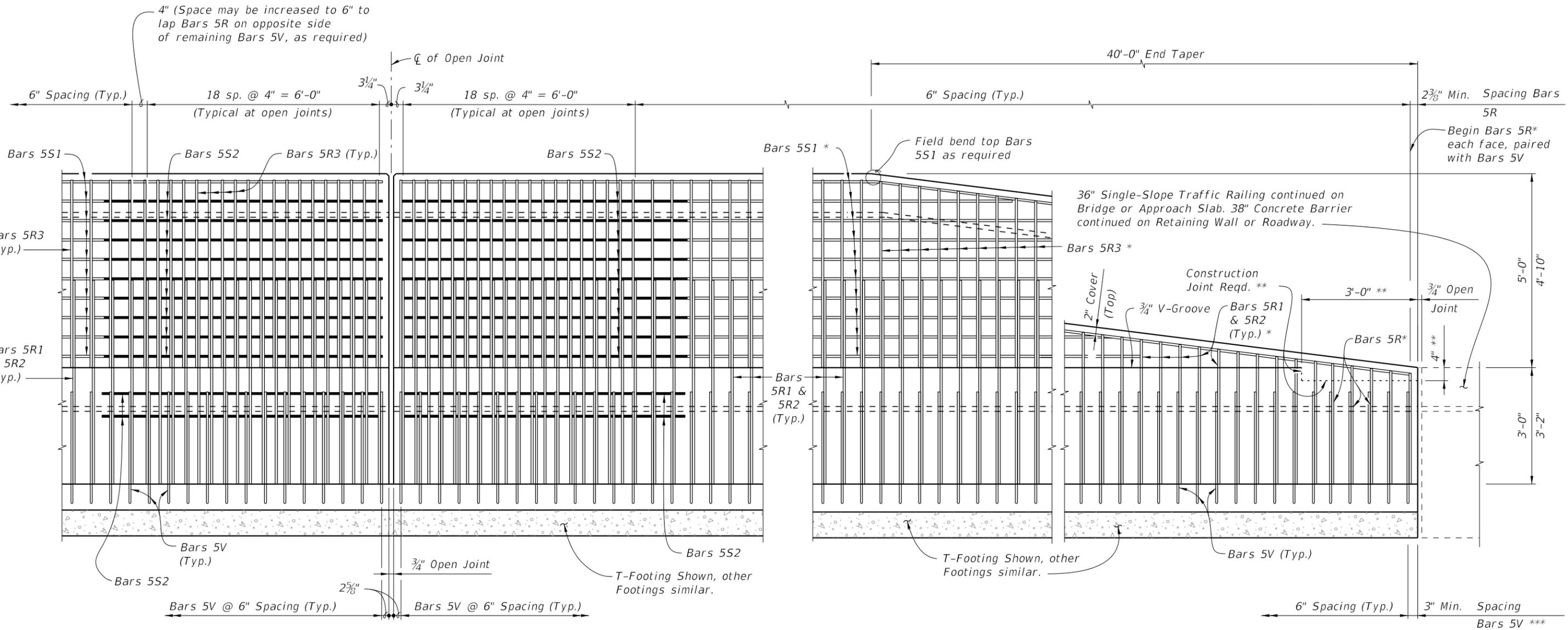
(INSIDE FACE OF CONCRETE BARRIER/NOISE WALL WITH T-SHAPED FOOTING SHOWN, Other footings similar, Reinforcing steel not shown for clarity)

- NOTES:
1. Work this Index with Indexes 521-512 through 521-515.
 2. The Concrete Barrier/Noise Wall and joints shall be constructed plumb.
 3. Concrete:
 - A. Class II for slightly aggressive environments.
 - B. Class IV for moderately or extremely aggressive environments.
 4. Provide 3/4" Open Joints spaced between 30 feet minimum to 90 feet maximum. Align Open Joints with construction joints in the Junction Slab or Footing. Provide additional reinforcing (see Sheet 2) at each open joint.
 5. Install Barrier Delineators 2'-4" above the riding surface in accordance with Specification Section 705. Match the Barrier Delineators color (White or Yellow) to the near edgeline.
 6. Slip forming of the barrier portion is permitted.
 - A. Stem walls may be widened, at no additional cost, to accommodate slip forming.

ADDED → CAST-IN-PLACE

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LAST REVISION 11/01/19	DESCRIPTION: 11/01/23	FDOT	FY 2023-24 STANDARD PLANS	CONCRETE BARRIER/NOISE WALL (8'-0")	INDEX 521-510	SHEET 8 1 of 5
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ELEVATION OF BARRIER/NOISE WALL REINFORCING STEEL AT OPEN JOINT
 (Bars 5S1 in Barrier not shown for clarity)
 (Footing or Junction Slab Details not shown)

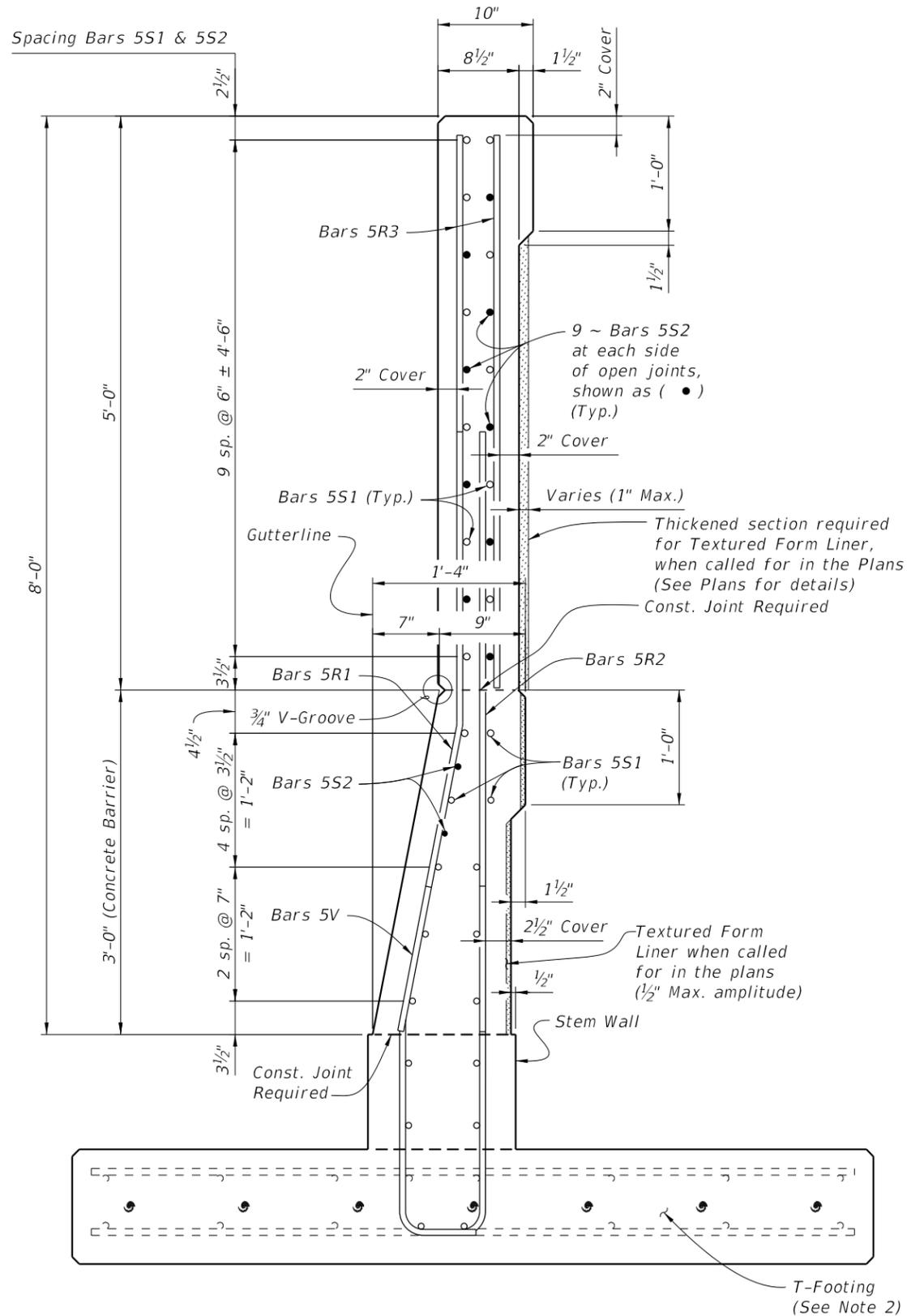
ELEVATION OF BARRIER/NOISE WALL END TAPER (ADJACENT TO CONCRETE BARRIER SHOWN, GUARDRAIL ATTACHMENT SIMILAR SEE DETAIL "A", SHEET 5)
 (Bars 5S1 in Railing not shown for clarity)
 (Footing or Junction Slab Details not shown)

- NOTES:
- * Field Cut Bars 5R & 5S1 to maintain clearance.
 - ** Terminate 3/4" 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.

ADDED
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LAST REVISION 11/01/18	REVISION 11/01/23	DESCRIPTION:		FY 2023-24 STANDARD PLANS	CONCRETE BARRIER/NOISE WALL (8'-0")	INDEX 521-510	SHEET 2 of 5
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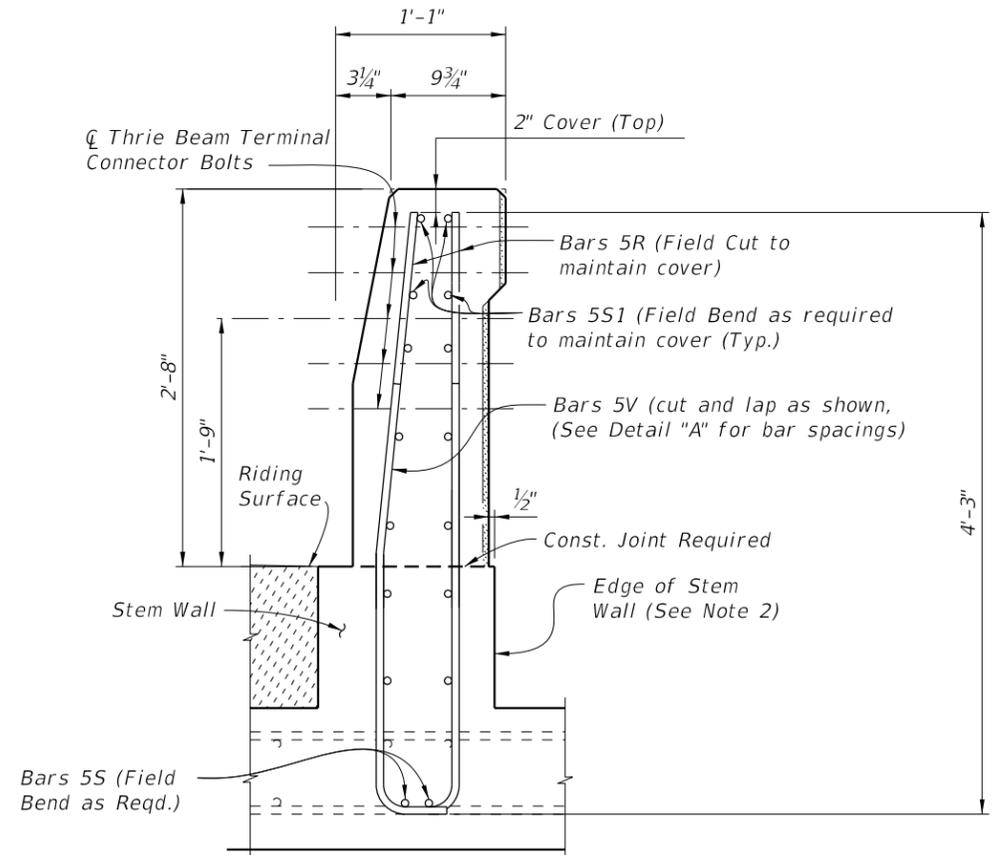
SECTION A-A
TYPICAL SECTION THRU CONCRETE BARRIER/NOISE WALL AT OPEN JOINT
 (Section Thru T-Footing Shown, Section Thru
 Junction Slab, L or Trench Footings similar)

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 5



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

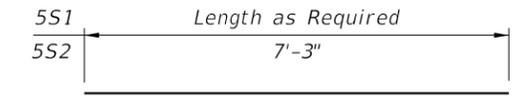
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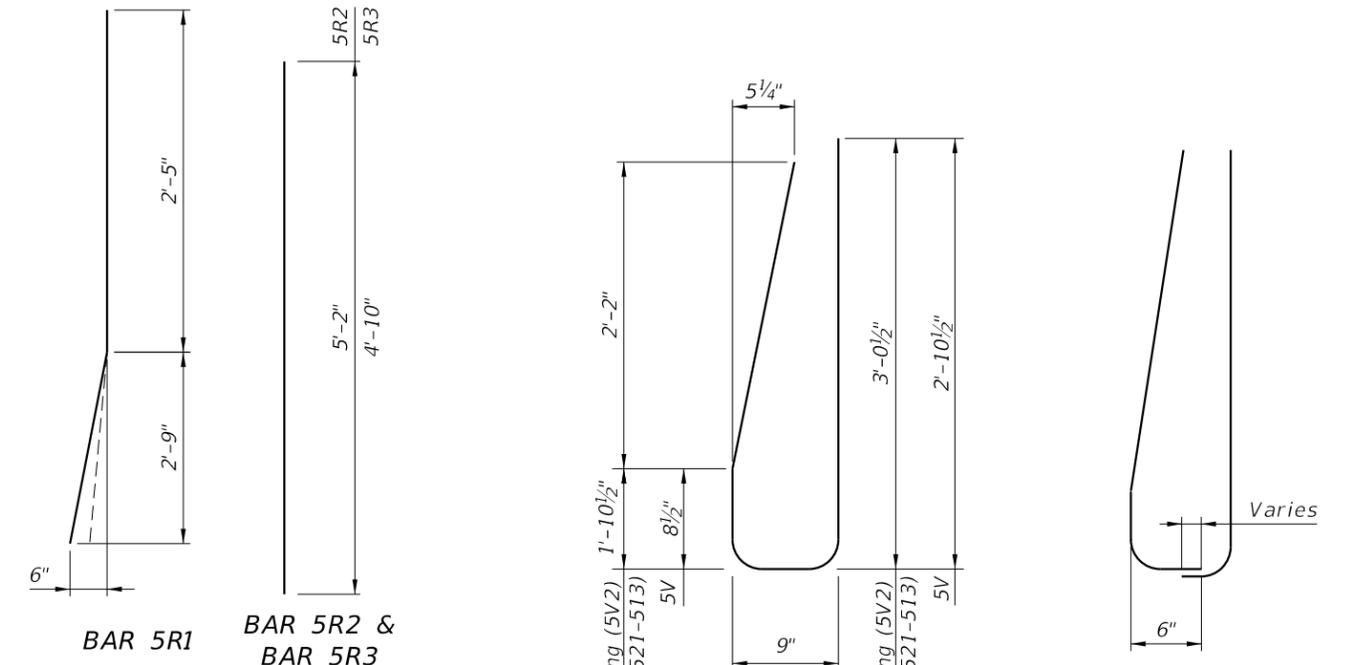
LAST REVISION 11/01/18	DESCRIPTION: 11/01/23	 FY 2023-24 STANDARD PLANS	CONCRETE BARRIER/NOISE WALL (8'-0")	INDEX 521-510	SHEET 8 3 of 5
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REINFORCING STEEL BENDING DIAGRAMS

BILL OF REINFORCING STEEL		
MARK	SIZE	LENGTH
R1	5	5'-2"
R2	5	5'-2½"
R3	5	4'-10"
S1	5	As Reqd.
S2	5	7'-3"
V (Wall)	5	6'-6½"
V (T-Footing)	5	7'-8½"



BARS 5S1 & 5S2



(Field Cut and Bend for Railing End Transition)

STIRRUP BAR 5V
END STIRRUP BAR 5V To Be Field Cut (Railing End Transition)

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, 5S1 and 5W 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 521-514 and 521-515 for L-shaped and Trench footing vertical reinforcing.

ESTIMATED TRAFFIC RAILING/NOISE WALL QUANTITIES

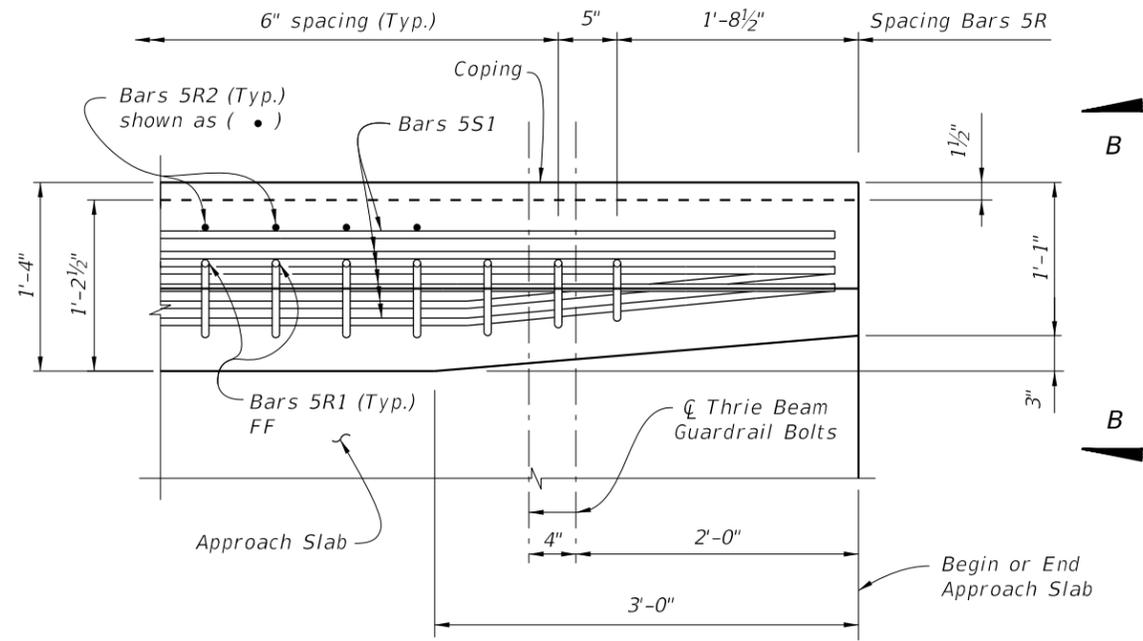
ITEM	UNIT	QUANTITY
Concrete (Railing)	CY/LF	0.107
Concrete (Noise Wall)	CY/LF	0.136
Reinforcing Steel (Typical)	LB/LF	69.36
Additional Reinf. @ Open Joint	LB	226.85

CHANGED TO:
81.55
241.58

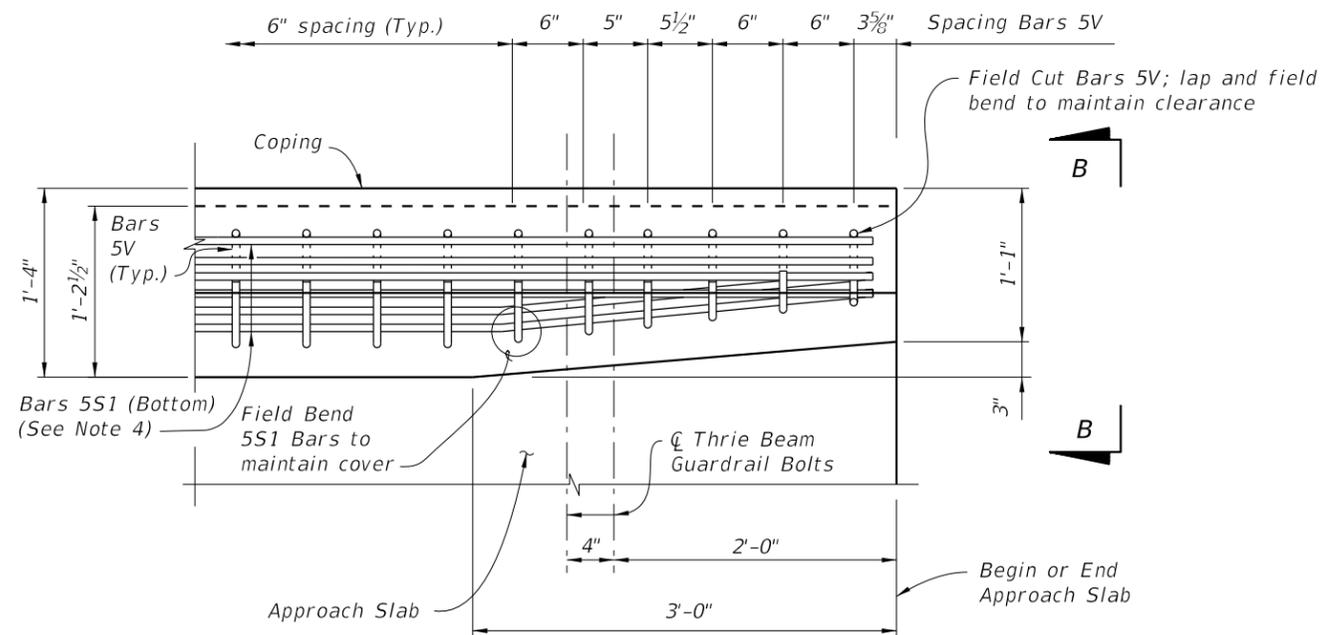
(The above quantities are based on the Concrete Barrier/ Noise wall typical section, (excluding junction slab or footing)

CROSS REFERENCE:
See Index 521-512 for Junction Slab Details and Indexes 521-513 thru 521-515 for additional Footing Details
ADDED **CAST-IN-PLACE**

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

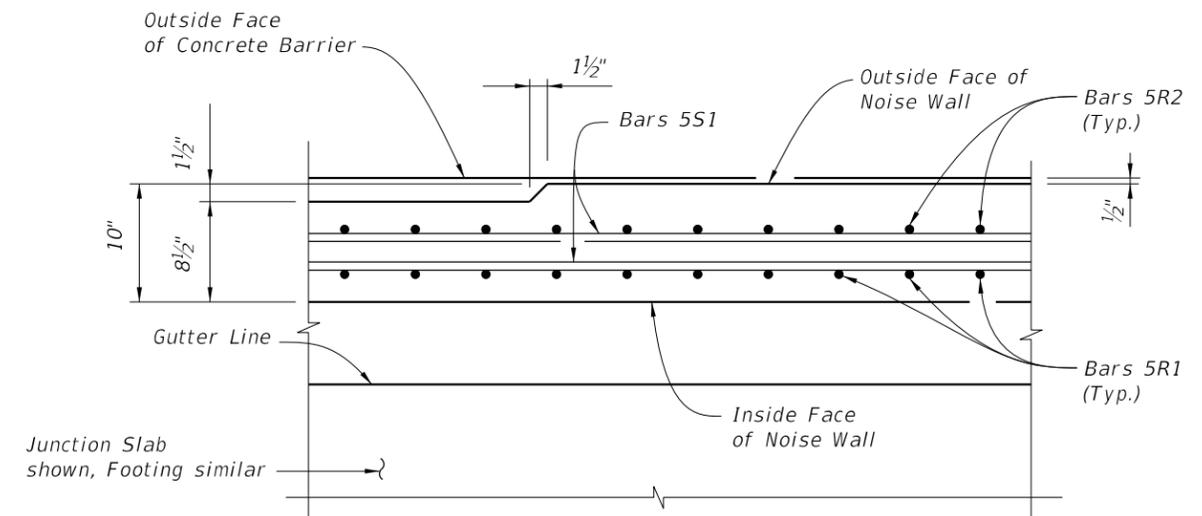


PLAN - RAILING END TRANSITION
(Showing Bars 5V and Bars 5S1)
(Bars 5R not shown for Clarity)

DETAIL "A"

DETAIL "A" NOTES:

1. Begin placing Railing Bars 5V at the railing end and proceed toward the guardrail (thru 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 5R2 to maintain cover. Field cut Bars 5V and lap as necessary to maintain cover; field cut & bend Bars 5R1 front leg (more plumb) to maintain cover and tie to S1 Bars. (See Sheet 1 Notes 1 and 2)



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 3.

ADDED → CAST-IN-PLACE

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

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NEW SHEET 6

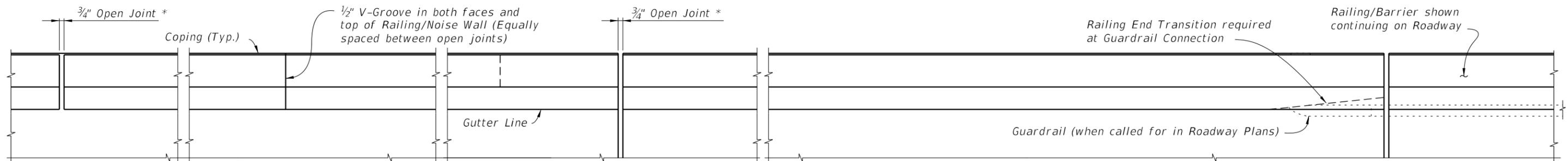
PRECAST - GENERAL NOTES AND OVERVIEW

NEW SHEET 7

FRONT FACE ELEVATION AND SECTION

NEW SHEET 8

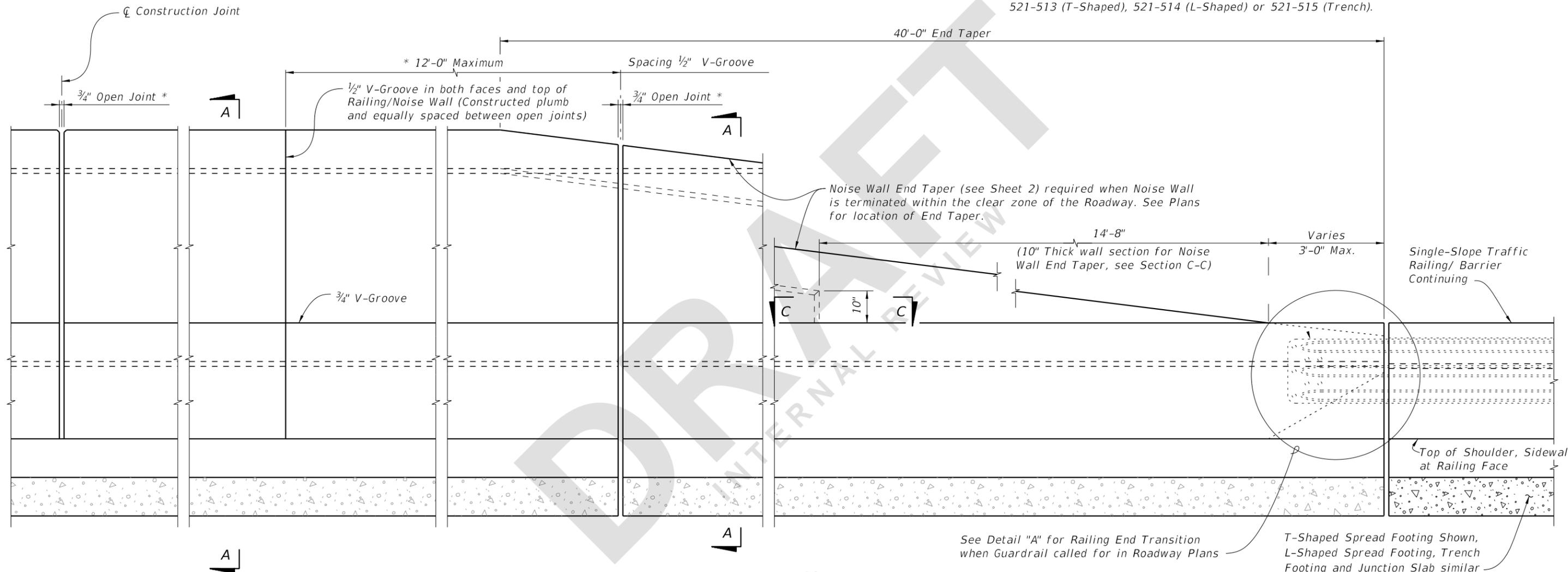
PRECAST - TONGUE AND GROOVE & REINFORCING



* Construct 3/4" Open Joints plumb at Construction Joints in Junction Slabs or Footings.

PLAN
(Reinforcing Steel not shown for clarity)

CROSS REFERENCE:
 For Section A-A see Sheet 3.
 For Section C-C and Detail "A" see Sheet 5.
 For Wall mounted Barrier/Noise Wall Details see Index 521-512.
 For Footing mounted Barrier/Noise Wall Details see Index 521-513 (T-Shaped), 521-514 (L-Shaped) or 521-515 (Trench).



ELEVATION

(INSIDE FACE OF CONCRETE BARRIER/NOISE WALL WITH T-SHAPED FOOTING SHOWN,
 (Other footings similar, Reinforcing steel not shown for clarity)

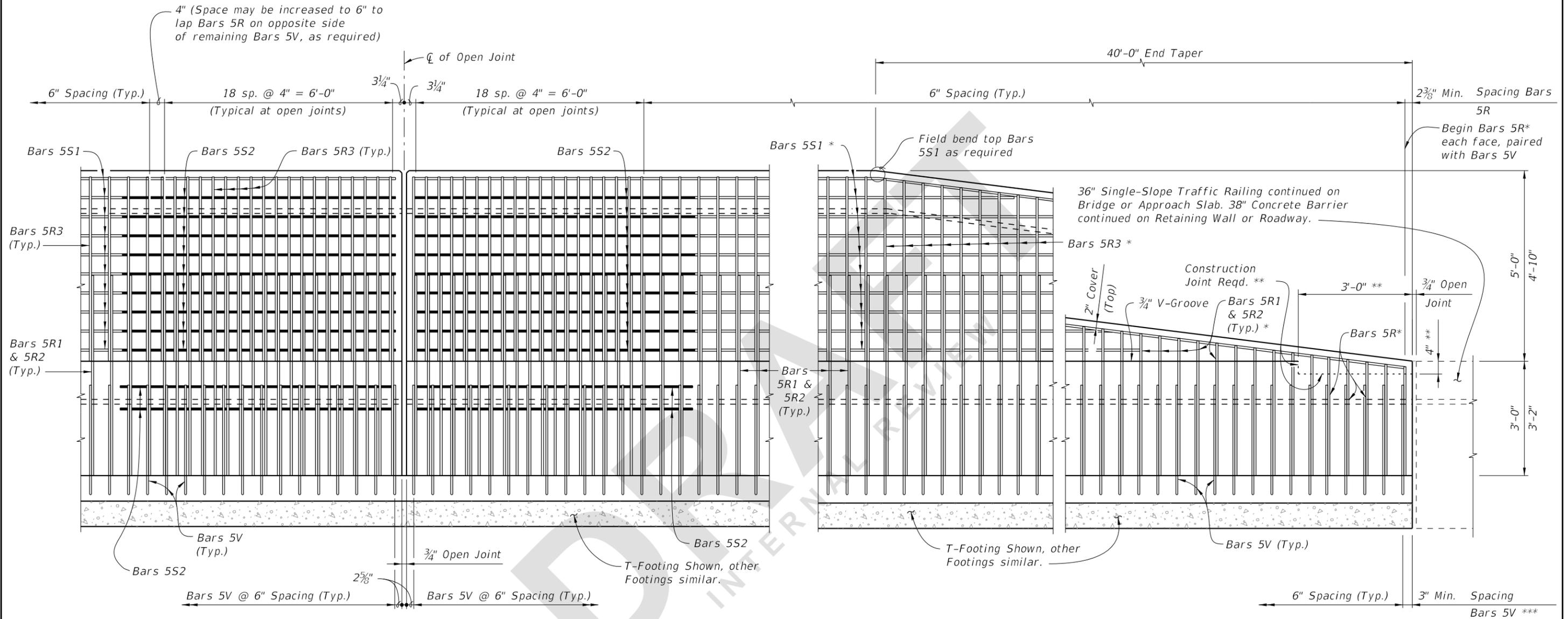
- NOTES:
1. Work this Index with Indexes 521-512 through 521-515.
 2. The Concrete Barrier/Noise Wall and joints shall be constructed plumb.
 3. Concrete:
 - A. Class II for slightly aggressive environments.
 - B. Class IV for moderately or extremely aggressive environments.
 4. Provide 3/4" Open Joints spaced between 30 feet minimum to 90 feet maximum. Align Open Joints with construction joints in the Junction Slab or Footing. Provide additional reinforcing (see Sheet 2) at each open joint.
 5. Install Barrier Delineators 2'-4" above the riding surface in accordance with Specification Section 705. Match the Barrier Delineators color (White or Yellow) to the near edgeline.
 6. Slip forming of the barrier portion is permitted.
 - A. Stem walls may be widened, at no additional cost, to accommodate slip forming.

CAST-IN-PLACE

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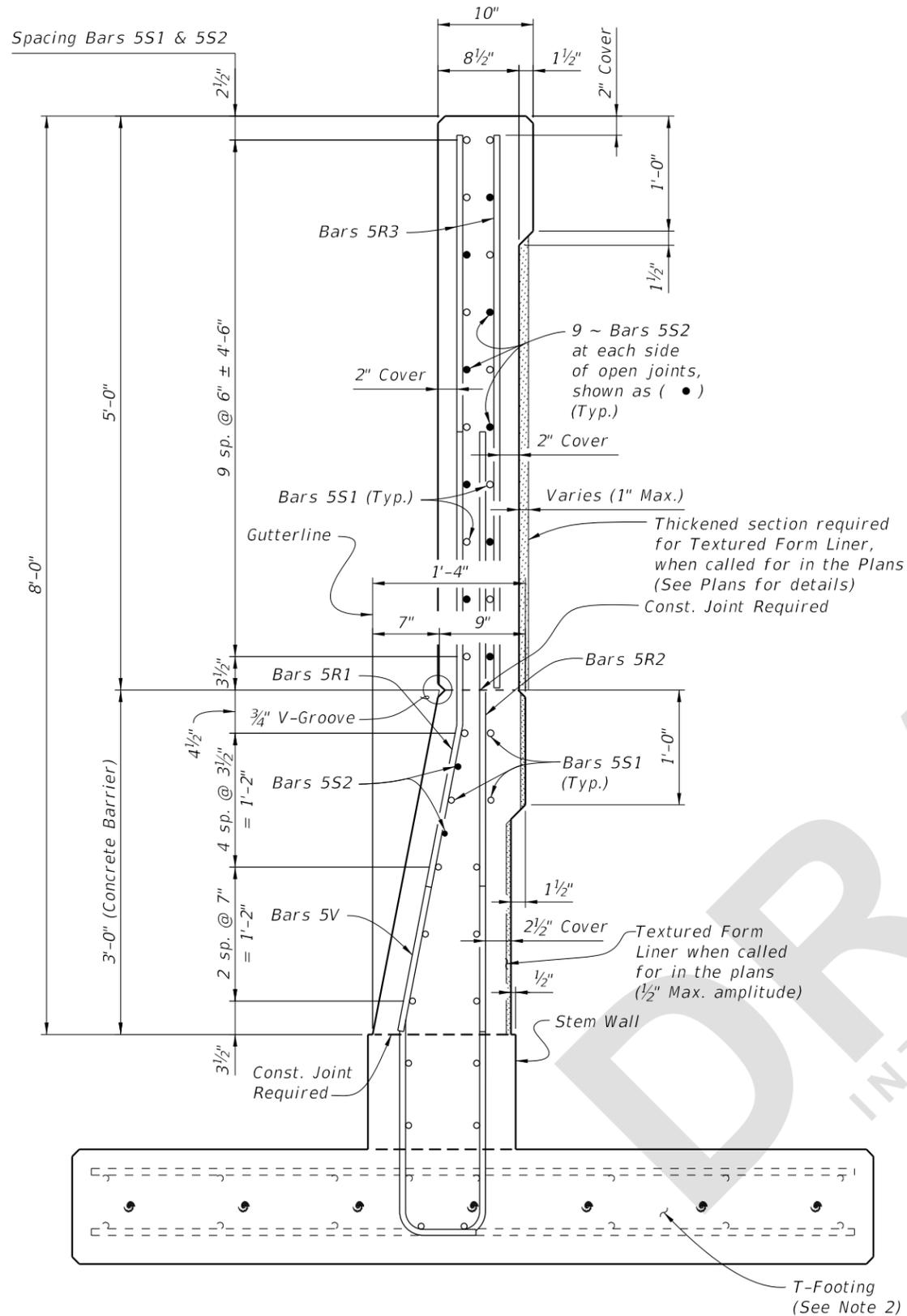
ELEVATION OF BARRIER/NOISE WALL REINFORCING STEEL AT OPEN JOINT
 (Bars 5S1 in Barrier not shown for clarity)
 (Footing or Junction Slab Details not shown)

ELEVATION OF BARRIER/NOISE WALL END TAPER (ADJACENT TO CONCRETE BARRIER SHOWN, GUARDRAIL ATTACHMENT SIMILAR SEE DETAIL "A", SHEET 5)
 (Bars 5S1 in Railing not shown for clarity)
 (Footing or Junction Slab Details not shown)

- NOTES:**
- * Field Cut Bars 5R & 5S1 to maintain clearance.
 - ** Terminate 3/4" 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)

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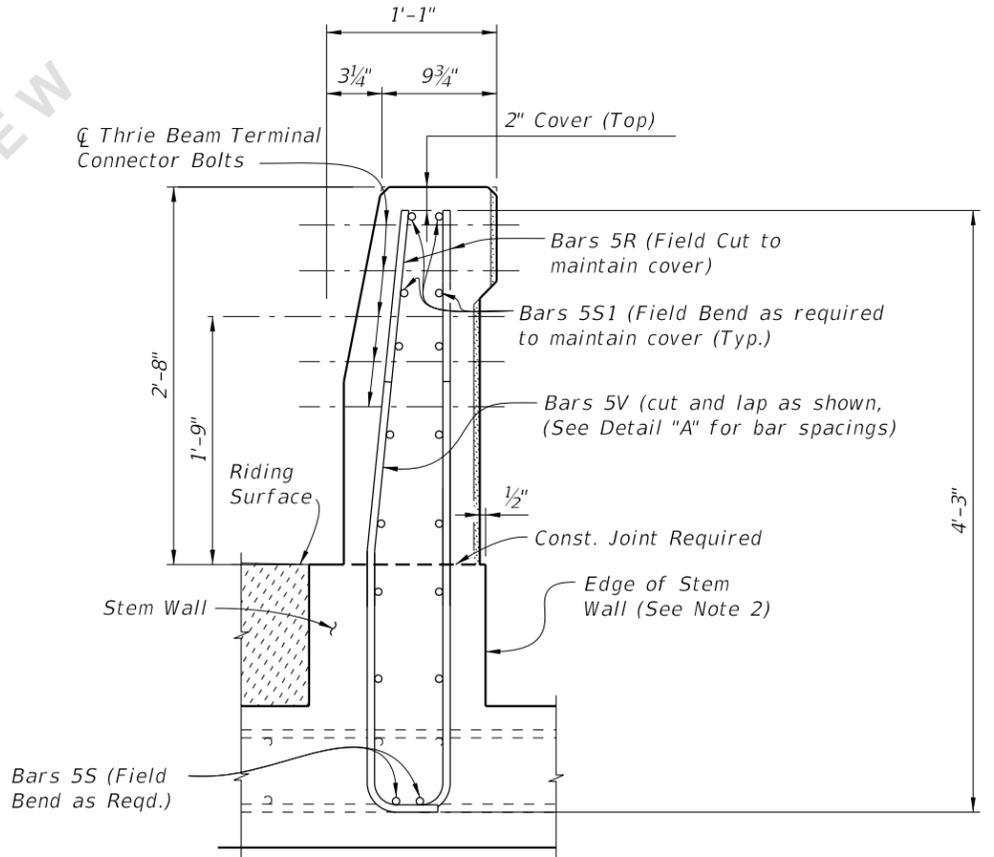


NOTES:

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 5



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)

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

CAST-IN-PLACE

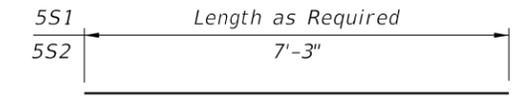
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LAST REVISION 11/01/23	REVISION	DESCRIPTION:		FY 2024-25 STANDARD PLANS	CONCRETE BARRIER/NOISE WALL (8'-0")	INDEX 521-510	SHEET 3 of 8
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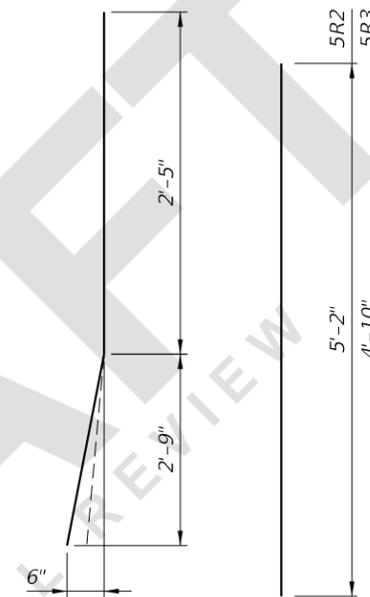
REINFORCING STEEL BENDING DIAGRAMS

BILL OF REINFORCING STEEL

MARK	SIZE	LENGTH
R1	5	5'-2"
R2	5	5'-2½"
R3	5	4'-10"
S1	5	As Req'd.
S2	5	7'-3"
V (Wall)	5	6'-6½"
V (T-Footing)	5	7'-8½"

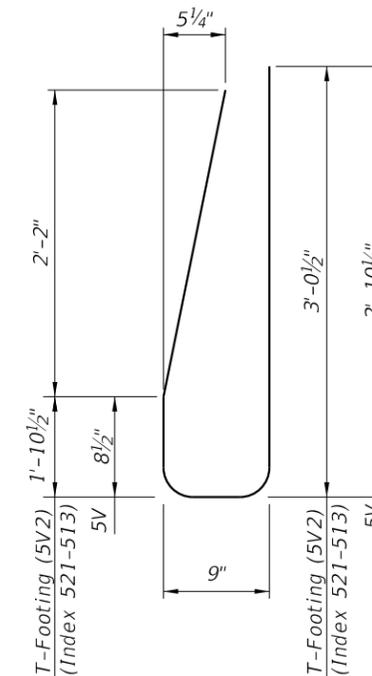


BARS 5S1 & 5S2

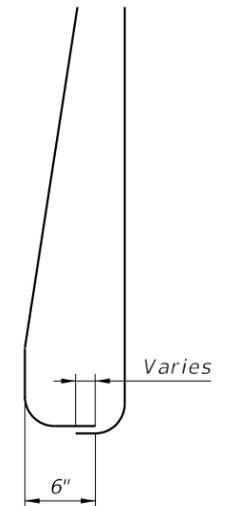


BAR 5R1
BAR 5R2 &
BAR 5R3

(Field Cut and Bend
for Railing End Transition)



STIRRUP BAR 5V



END STIRRUP BAR 5V
To Be Field Cut
(Railing End Transition)

CROSS REFERENCE:
See Index 521-512 for
Junction Slab Details and
Indexes 521-513 thru 521-515
for additional Footing details.

ESTIMATED TRAFFIC RAILING/NOISE WALL QUANTITIES		
ITEM	UNIT	QUANTITY
Concrete (Railing)	CY/LF	0.107
Concrete (Noise Wall)	CY/LF	0.136
Reinforcing Steel (Typical)	LB/LF	81.55
Additional Reinf. @ Open Joint	LB	241.59

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

REINFORCING STEEL NOTES:

- All bar dimensions in the bending diagrams are out to out.
- All reinforcing steel at the open joints shall have a 2" minimum cover.
- Bars 5R shall be one continuous or lap spliced bar. No mechanical couplers are permitted.
- Bars 5S1 may be continuous or spliced at the construction joints. Lap splices for Bars 5R, 5S1 and 5W shall be a minimum of 2'-2".
- 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.
- See Index 521-514 and 521-515 for L-shaped and Trench footing vertical reinforcing.

CAST-IN-PLACE

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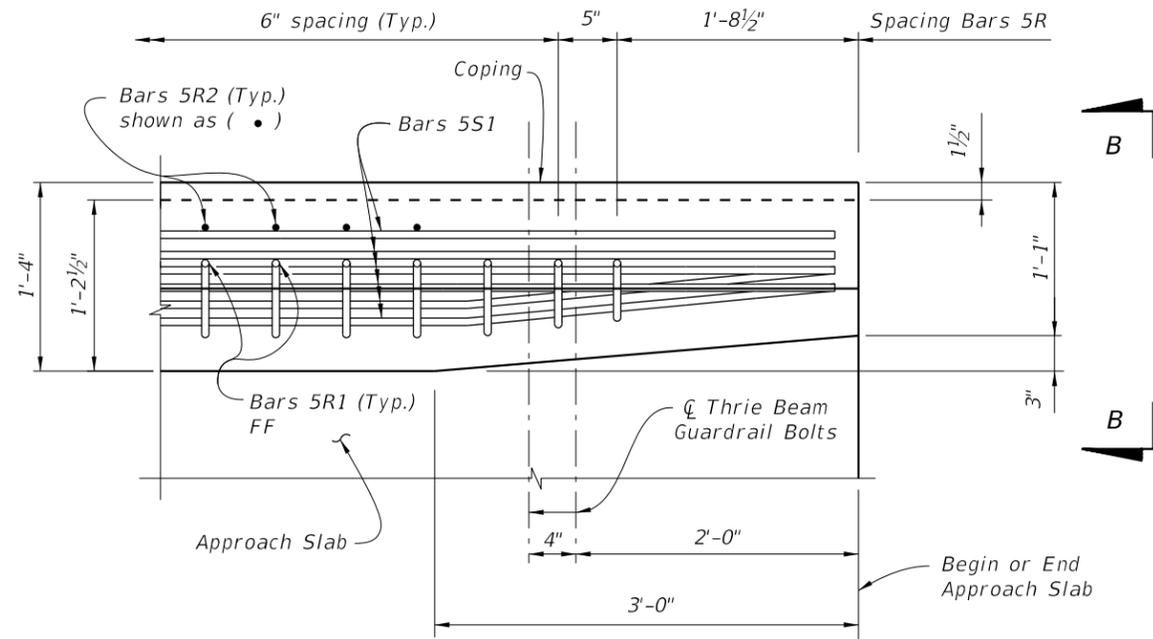


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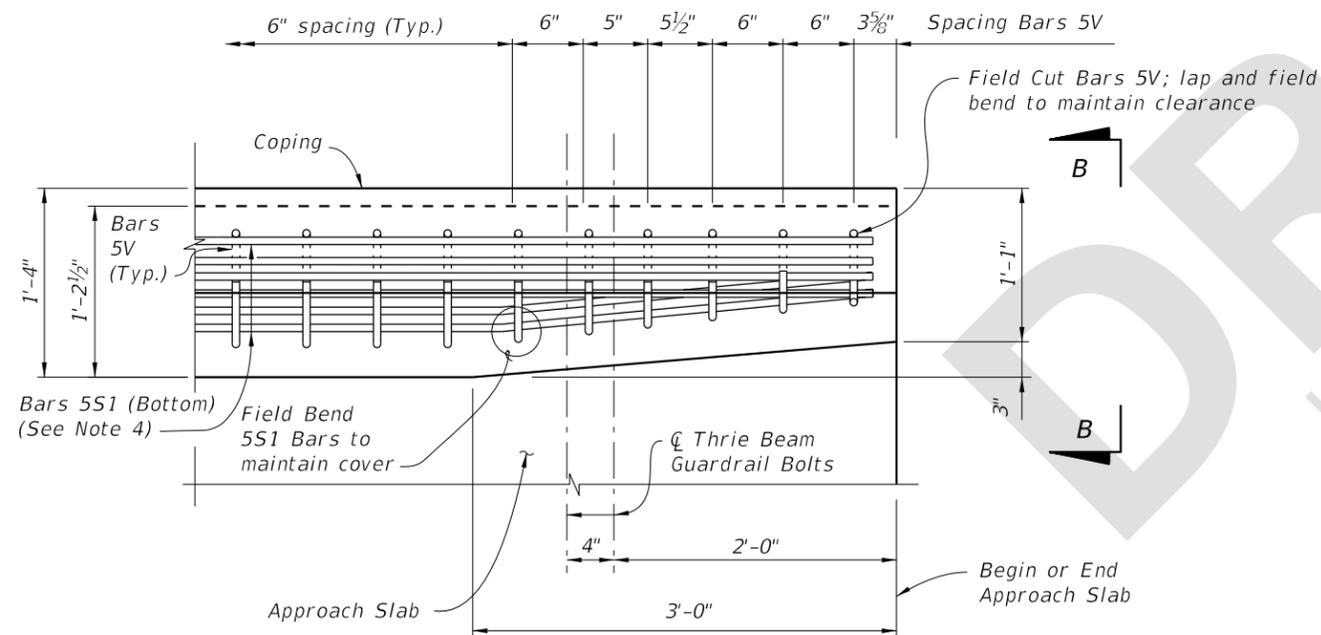
CONCRETE BARRIER/NOISE WALL (8'-0")

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



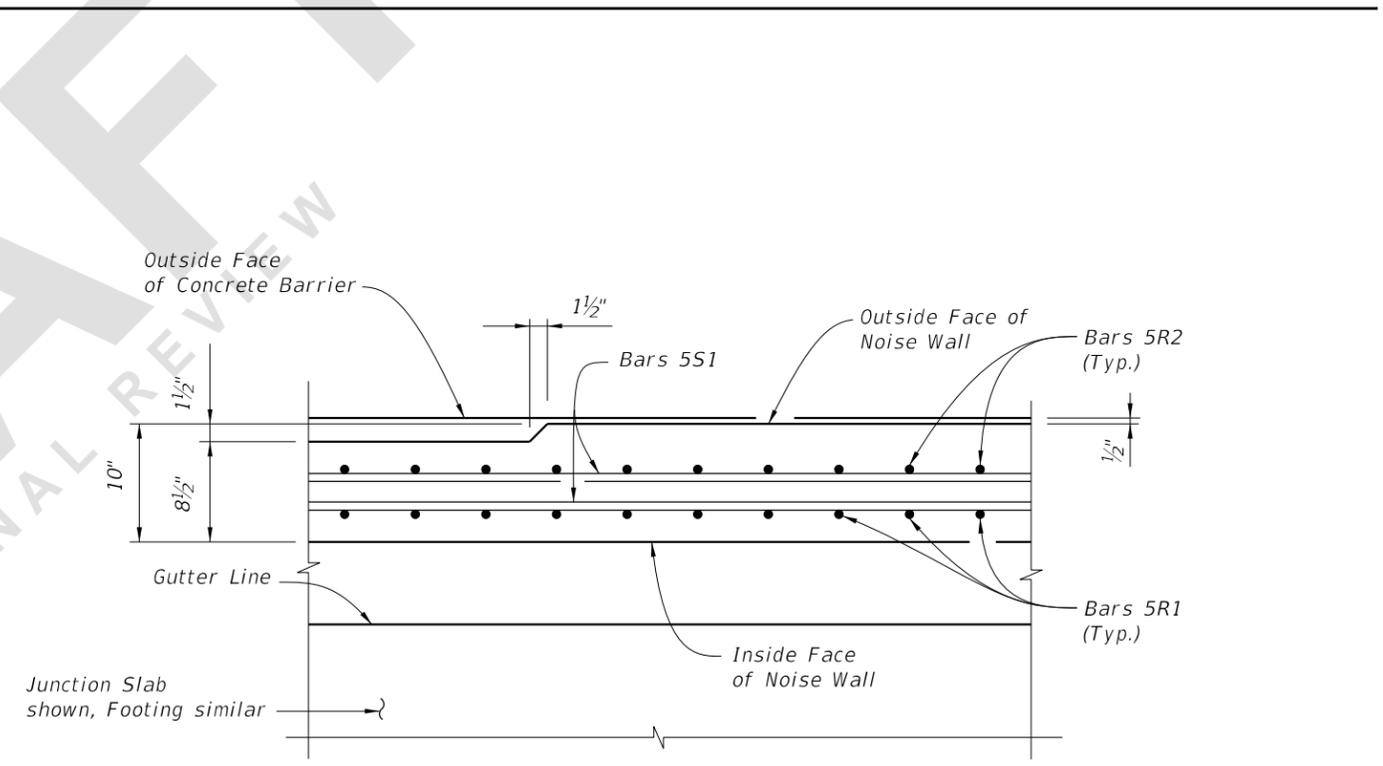
PLAN - RAILING END TRANSITION
(Showing Bars 5V and Bars 5S1)
(Bars 5R not shown for Clarity)

DETAIL "A"

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 5R2 to maintain cover. Field cut Bars 5V and lap as necessary to maintain cover; field cut & bend Bars 5R1 front leg (more plumb) to maintain cover and tie to S1 Bars. (See Sheet 1 Notes 1 and 2)

DRAFT
INTERNAL REVIEW



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 3.

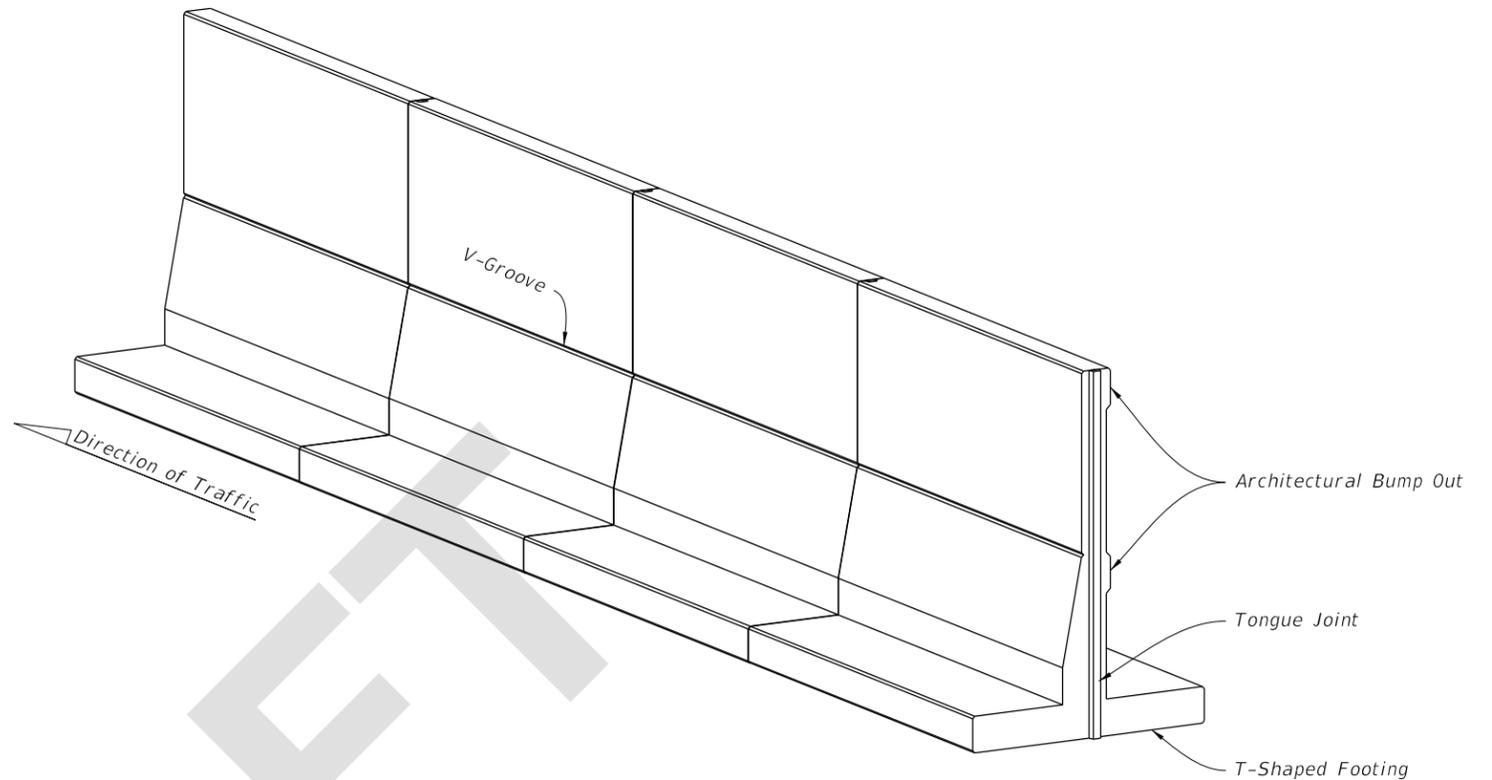
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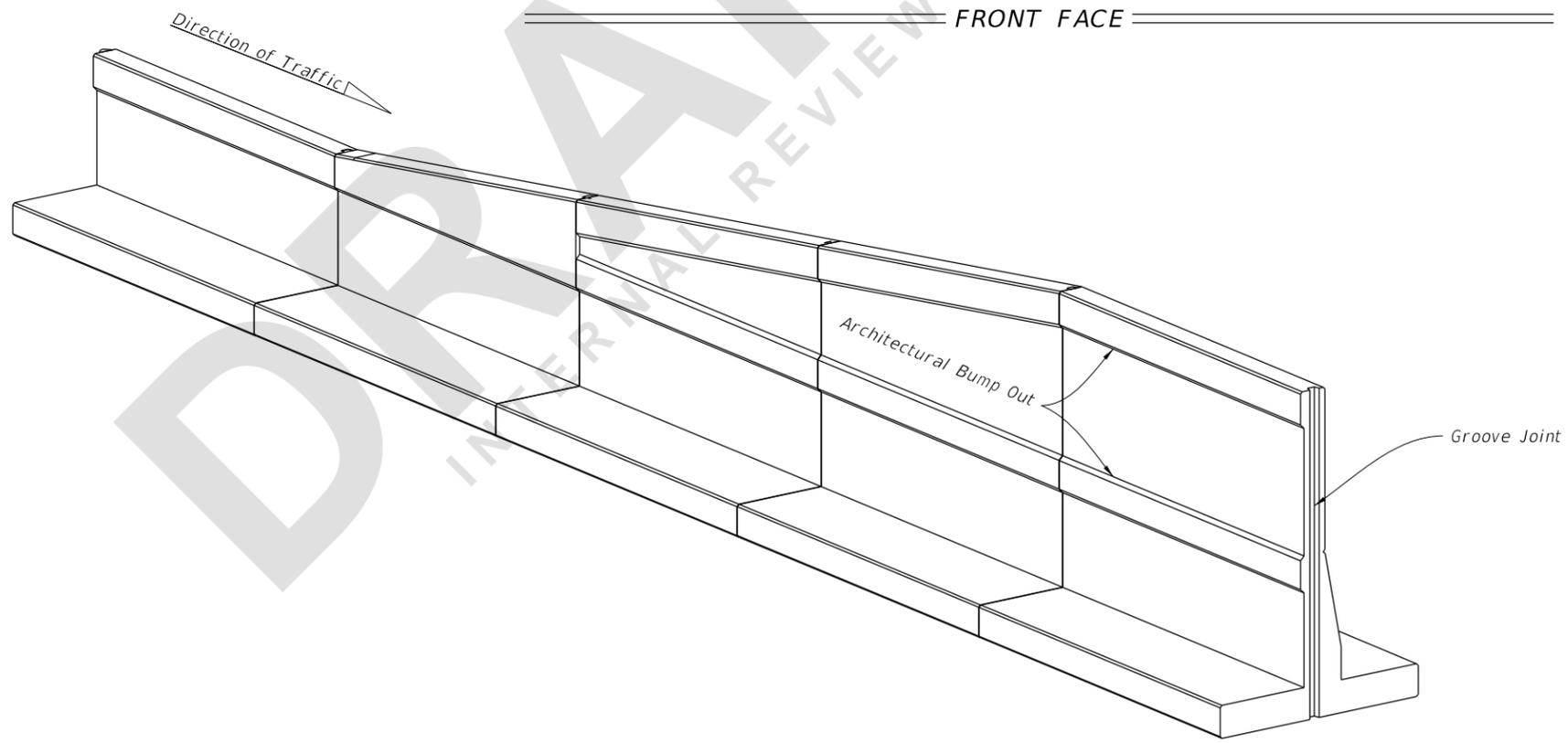
LAST REVISION 11/01/23	REVISION	DESCRIPTION:		FY 2024-25 STANDARD PLANS	CONCRETE BARRIER/NOISE WALL (8'-0")	INDEX 521-510	SHEET 5 of 8
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PRECAST GENERAL NOTES:

1. Construct the Concrete Barrier/Noise Wall and joints plumb; do not construct the Concrete Barrier/Noise Wall perpendicular to the roadway surface.
2. Concrete:
 - A. Concrete will be in accordance with Specification 346.
 - B. Concrete will be Class IV.
 - C. Concrete will be constructed in accordance Specification 400.
 - D. Concrete repair or rejection will be in accordance with Specification 450-12 and 450-13.
3. Reinforcing:
 - A. Reinforcing will be in accordance with Specification 415.
 - B. All reinforcing steel will have a 2" minimum cover.
 - C. Field cut bars in Noise Wall End Taper as required to maintain minimum cover.
4. Work this Index with Index 521-513-Concrete Barrier/Noise Wall T-Shaped Spread Footing.
5. Front Face indicates roadway side of wall. Back Face indicates non-roadway side of wall.
6. Noise wall end taper is required when transitioning to different height barrier noise walls or single slope barriers. See Plans for Concrete Barrier/Noise wall End Treatment.
7. The last full height segment in the direction traffic must be a minimum of 24 feet in length for stability.



FRONT FACE

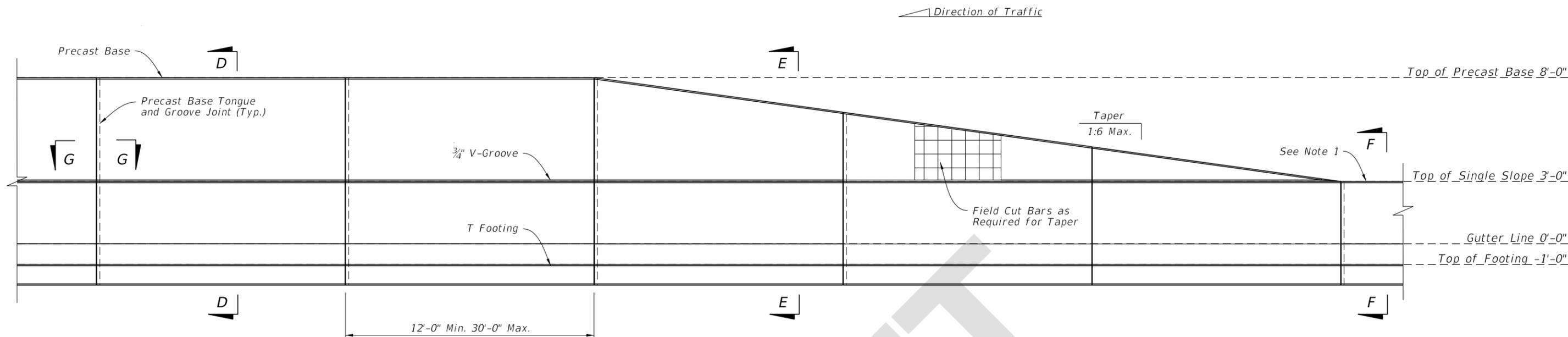


BACK FACE

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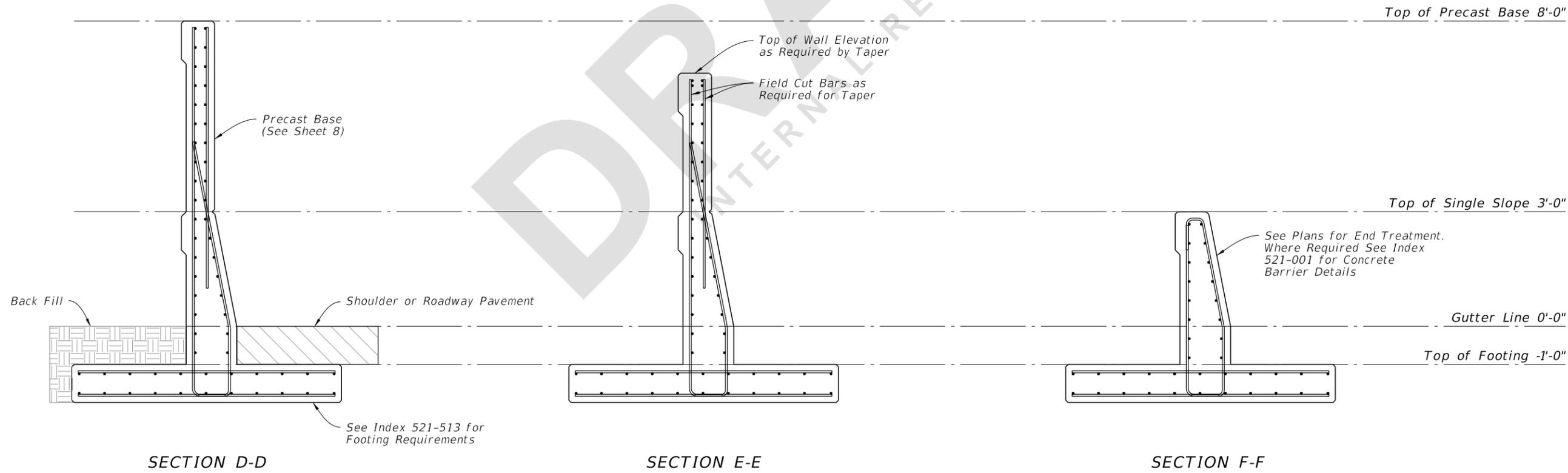
PRECAST



NOTE:

1. See Plans for end treatment. The single slope barrier shown, is an example of an end treatment using the doweled joint per Index 521-001.
2. See Section G-G on Sheet 8.

FRONT FACE ELEVATION



SECTION D-D

SECTION E-E

SECTION F-F

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PRECAST

