ORIGINATION FORM

Proposed Revisions to a Standard Plans Index

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

Contact Information:

Date: March 24, 2023

Originator: Joshua Turley

Phone: (850) 414-4475

Email: joshua.turley@dot.state.fl.us

Standard Plans:

Index Number: 521-511

Sheet Number (s): 1 of 3

Index Title: CONCRETE BARRIER/NOISE WALL (14'-0")

Summary of the changes:

All Sheets: Renumbered.

Sheet 1: Removed the reference to note 7 as there is no note 7; Updated note references in callouts.

Sheet 3: Corrected reinforcing steel estimated quantities.

Sheet 4: Added new sheet for precast version.

Sheet 5: Added new sheet for precast version.

Sheet 6: Added new sheet for precast version.

Commentary / Background:

Theres no note 7 so removed the reference to it and renumbers to the correct references.

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	
☐	☑	Other Standard Plans –
☐	☑	FDOT Design Manual –
☐	☑	Basis of Estimates Manual –
☑	☐	Standard Specifications – 521-723
☐	☑	Approved Product List –
☐	☑	Construction –
☐	☑	Maintenance –

Origination Package Includes: (Submit package to Rick Jenkins)

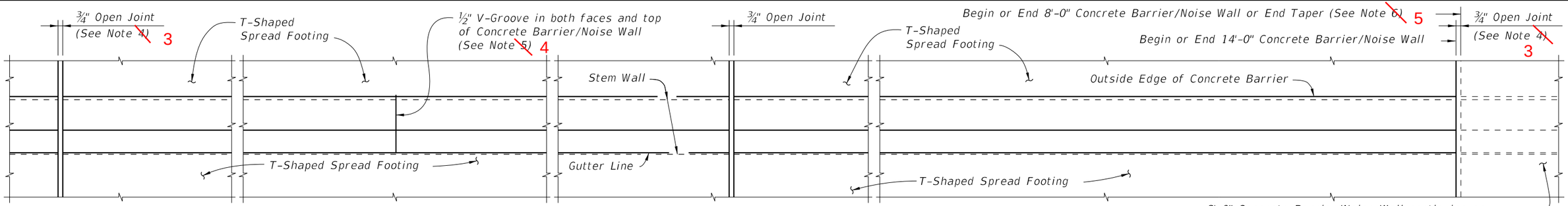
Yes	N/A	
☑	☐	Redline Mark-ups
☑	☐	Revised or Proposed Standard Plan Instruction (SPI)
☐	☑	Other Support Documents

Implementation:

- ☐ Design Bulletin (Interim)
- ☐ DCE Memo
- ☐ Program Mgmt. Bulletin
- ☑ FY-Standard Plans (Next Release)

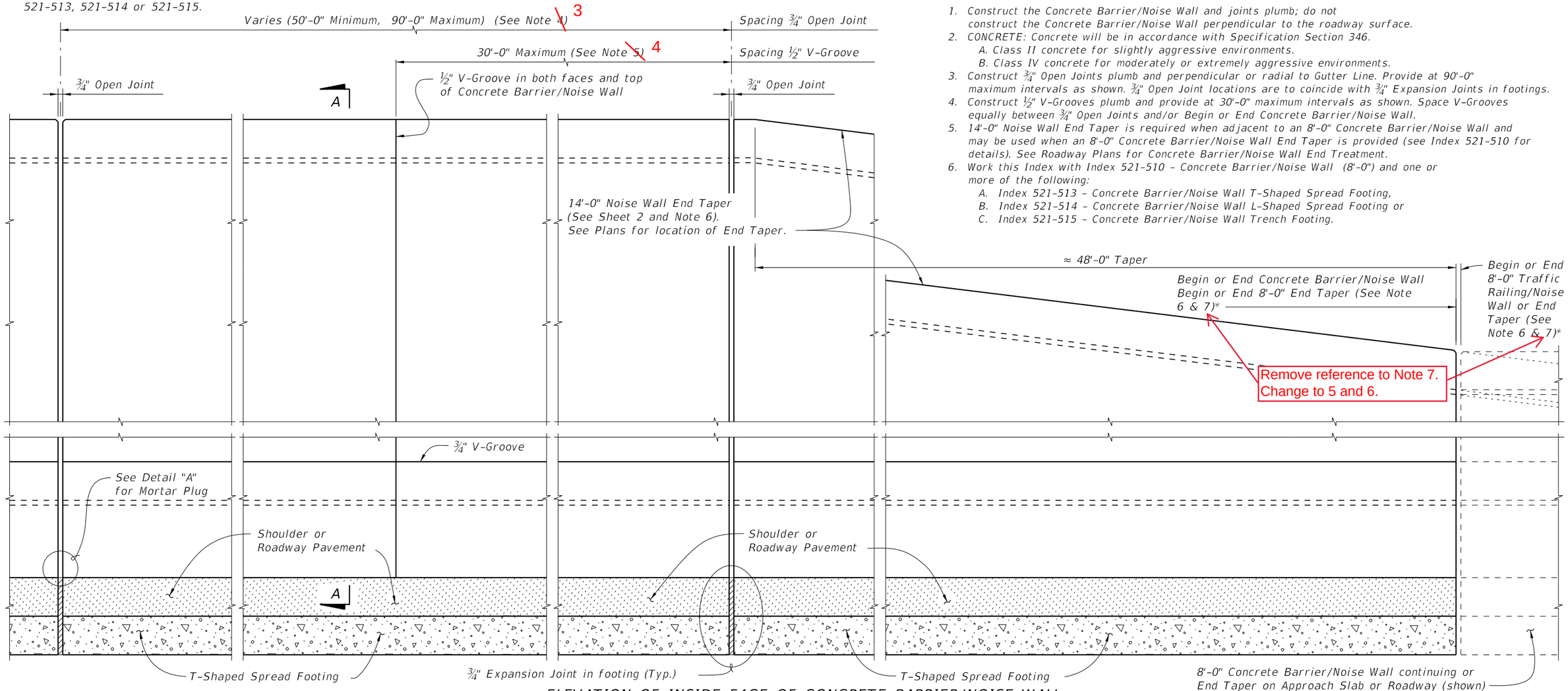
Contact the Roadway Design Office for assistance in completing this form

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



CROSS REFERENCE:
For Section A-A, Detail "A" and Estimated Quantities, see Sheet 3.
For Expansion Joint Detail in Footing, see Index 521-513, 521-514 or 521-515.

PLAN (Reinforcing Steel not shown for clarity)
(T-Shaped Spread Footing Shown, L-Shaped Spread Footing and Trench Footing Similar)



ELEVATION OF INSIDE FACE OF CONCRETE BARRIER/NOISE WALL
(Reinforcing Steel not shown for clarity)
(T-Shaped Spread Footing Shown, L-Shaped Spread Footing and Trench Footing Similar)

* ¾" Open Joint may be omitted when 8'-0" Railing/Noise Wall End Taper is adjacent to a 14'-0" Concrete Barrier/Noise Wall End Taper.

Concrete Barrier/NOISE WALL 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: Concrete will be in accordance with Specification Section 346.
   A. Class II concrete for slightly aggressive environments.
   B. Class IV concrete for moderately or extremely aggressive environments.
3. Construct ¾" Open Joints plumb and perpendicular or radial to Gutter Line. Provide at 90'-0" maximum intervals as shown. ¾" Open Joint locations are to coincide with ¾" Expansion Joints in footings.
4. Construct ½" V-Grooves plumb and provide at 30'-0" maximum intervals as shown. Space V-Grooves equally between ¾" Open Joints and/or Begin or End Concrete Barrier/Noise Wall.
5. 14'-0" Noise Wall End Taper is required when adjacent to an 8'-0" Concrete Barrier/Noise Wall and may be used when an 8'-0" Concrete Barrier/Noise Wall End Taper is provided (see Index 521-510 for details). See Roadway Plans for Concrete Barrier/Noise Wall End Treatment.
6. Work this Index with Index 521-510 - Concrete Barrier/Noise Wall (8'-0") and one or more of the following:
   A. Index 521-513 - Concrete Barrier/Noise Wall T-Shaped Spread Footing,
   B. Index 521-514 - Concrete Barrier/Noise Wall L-Shaped Spread Footing or
   C. Index 521-515 - Concrete Barrier/Noise Wall Trench Footing.

CAST-IN-PLACE

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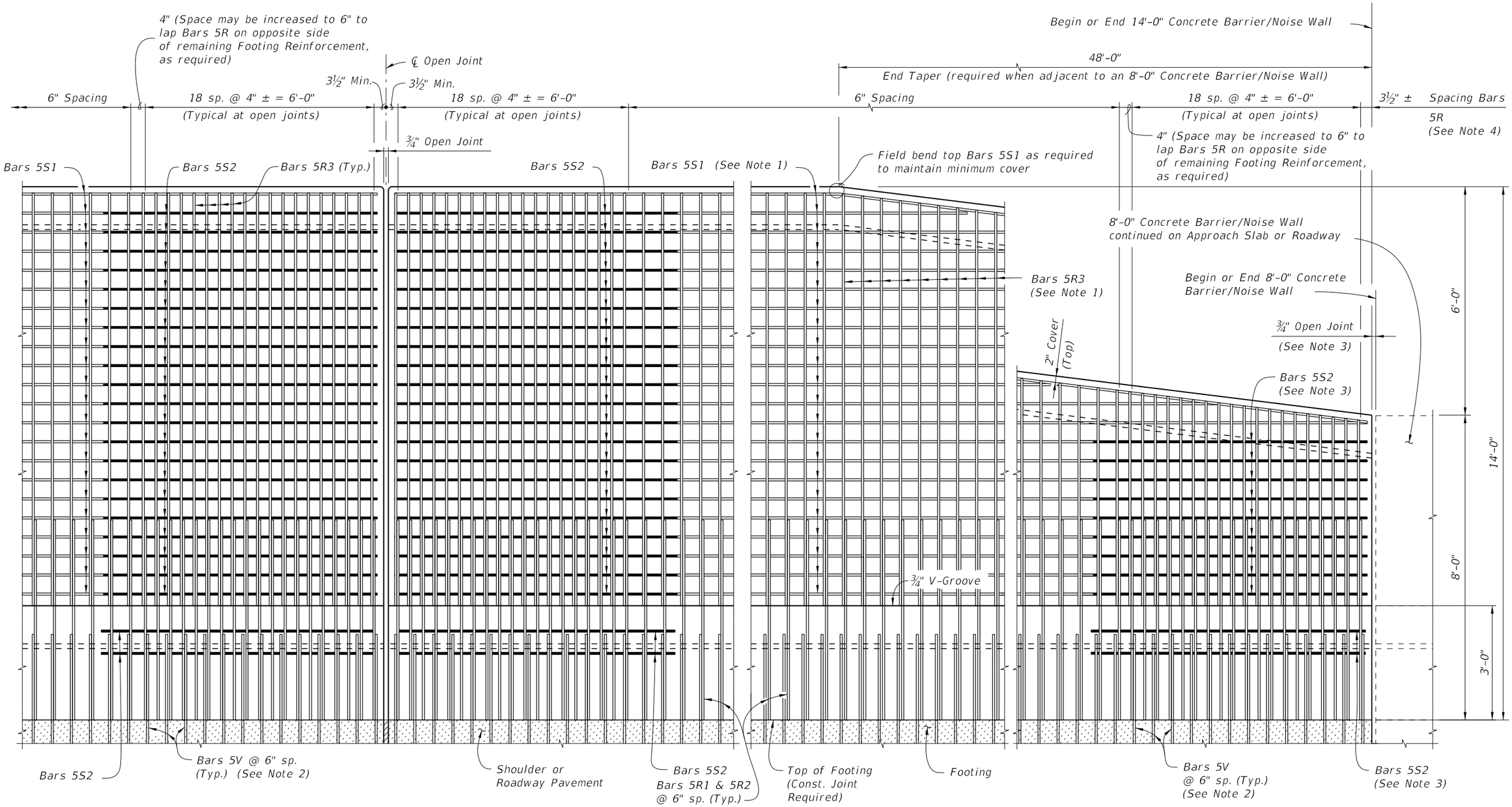
LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	CONCRETE BARRIER/NOISE WALL (14'-0")	INDEX	SHEET
~~11/01/18~~		11/01/23				521-511	~~1 of 3~~ 6



ELEVATION OF CONCRETE BARRIER/NOISE WALL REINFORCING STEEL
(Bars 5S1 in Railing not shown for clarity)

ELEVATION OF CONCRETE BARRIER/NOISE WALL END TAPER
(Bars 5S1 in Railing not shown for clarity)

NOTES:
1. Field Cut Bars 5R & 5S1 in Noise Wall End Taper as required to maintain minimum cover.
2. See Index 521-513, 521-514 and 521-515 for footing reinforcement.
3. ¾" Open Joint may be omitted when 8'-0" Railing/Noise Wall End Taper is adjacent to a 14'-0" Concrete Barrier/Noise Wall End Taper as shown on Sheet 1. See Index 521-510 for reinforcement details and spacing. Bars 5S2 are not required when ¾" Open Joint is omitted.
4. Bar spacing shown is along the Gutter Line.

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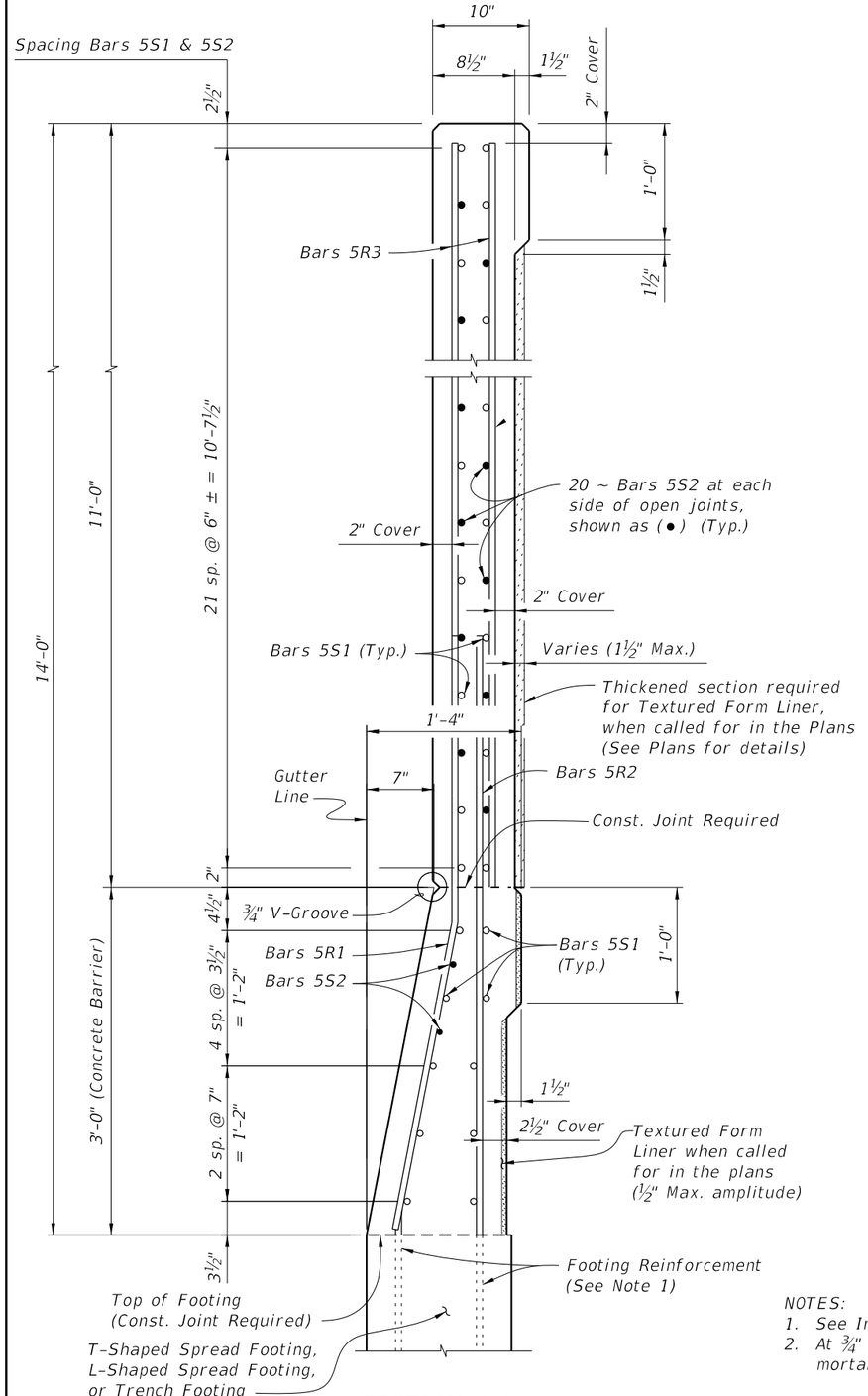
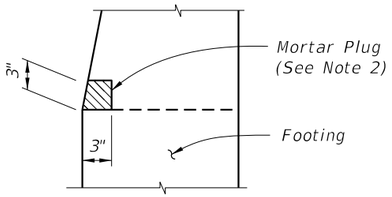


SECTION A-A
TYPICAL SECTION THRU CONCRETE BARRIER/NOISE WALL

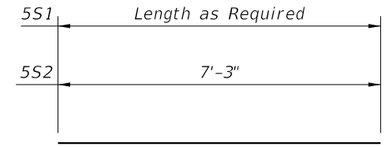


DETAIL "A" -
SECTION AT OPEN JOINT

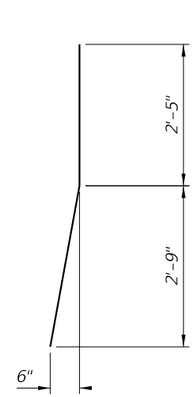
NOTES:
1. See Index 521-513, 521-514 or 521-515 for footing reinforcement.
2. At ¾" Open Joints, plug the lower 3" portion of the open joint by filling it with mortar in accordance with Specification Section 400.

REINFORCING STEEL BENDING DIAGRAMS

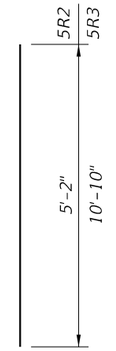
BILL OF REINFORCING STEEL		
MARK	SIZE	LENGTH
R1	5	5'-2"
R2	5	5'-2½"
R3	5	10'-10"
S1	5	AS REQD.
S2	5	7'-3"



BARS 5S1 & 5S2



BAR 5R1 (FF)



BAR 5R2 &
BAR 5R3

REINFORCING STEEL NOTES:

1. All bar dimensions in the bending diagrams are out to out.
2. All reinforcing steel at the open joints will have a 2" minimum cover.
3. Bars 5R may be continuous or spliced at construction joints. Lap splices for Bars 5R, and 5S1 will be a minimum of 2'-2".
4. 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.

ESTIMATED CONCRETE BARRIER/NOISE WALL QUANTITIES		
ITEM	UNIT	QUANTITY
Concrete (Concrete Barrier)	CY/FT	0.107
Concrete (Noise Wall, excluding any thickening)	CY/FT	0.293
Reinforcing Steel (Railing/Noise Wall) (Bars R1, R2, R3, S1 & V)	LB/FT	~~100.31~~ 120.88
Additional Reinf. @ Open Joint (Railing/Noise Wall)	LB	~~397.38~~ 378.22

CHANGED TO:
120.88
378.22

CROSS REFERENCE:
For locations of Section A-A and Detail "A", see Sheet 1.

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LAST REVISION	REVISION	DESCRIPTION:	FY 2023-24 STANDARD PLANS	CONCRETE BARRIER/NOISE WALL (14'-0")	INDEX	SHEET
~~11/01/18~~		11/01/23			521-511	~~3 of 3~~ 6

NEW SHEET 4

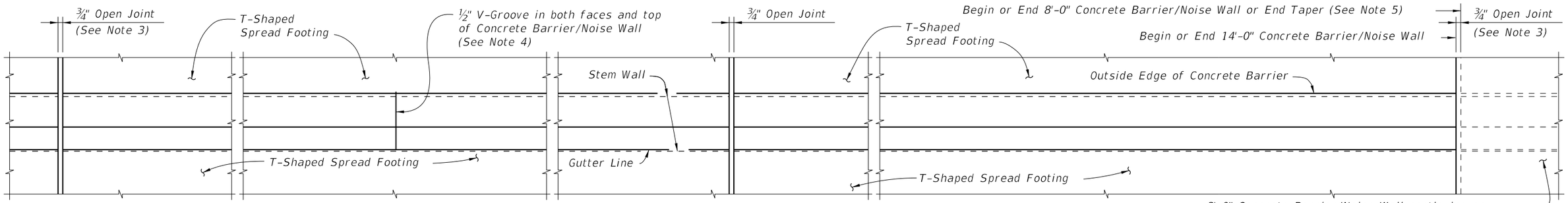
PRECAST GENERAL NOTES AND OVERVIEW

NEW SHEET 5

FRONT FACE ELEVATION AND SECTION

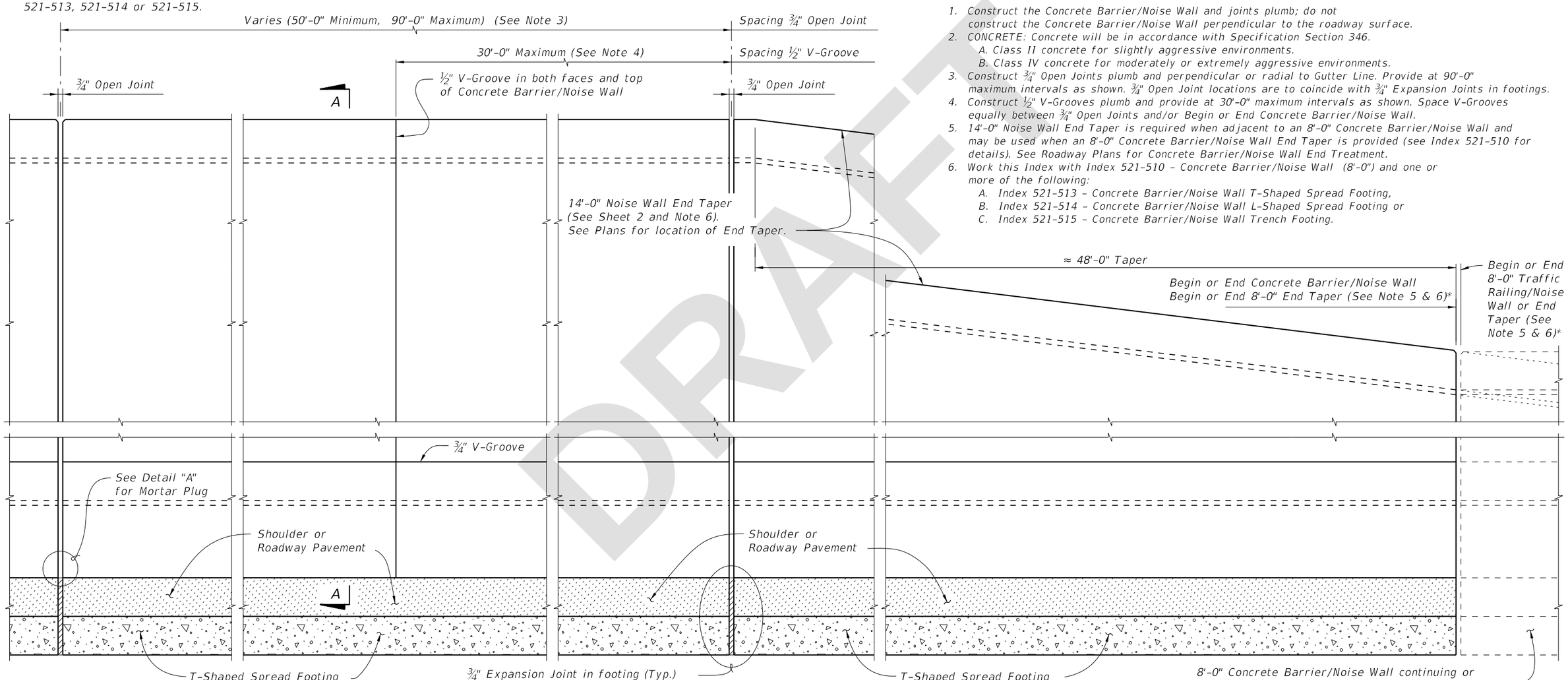
NEW SHEET 6

PRECAST - TONGUE AND GROOVE, DETAIL, AND REINFORCING



CROSS REFERENCE:
For Section A-A, Detail "A" and Estimated Quantities, see Sheet 3.
For Expansion Joint Detail in Footing, see Index 521-513, 521-514 or 521-515.

PLAN (Reinforcing Steel not shown for clarity)
(T-Shaped Spread Footing Shown, L-Shaped Spread Footing and Trench Footing Similar)



ELEVATION OF INSIDE FACE OF CONCRETE BARRIER/NOISE WALL
(Reinforcing Steel not shown for clarity)
(T-Shaped Spread Footing Shown, L-Shaped Spread Footing and Trench Footing Similar)

* ¾" Open Joint may be omitted when 8'-0" Railing/Noise Wall End Taper is adjacent to a 14'-0" Concrete Barrier/Noise Wall End Taper.

Concrete Barrier/NOISE WALL 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: Concrete will be in accordance with Specification Section 346.
   A. Class II concrete for slightly aggressive environments.
   B. Class IV concrete for moderately or extremely aggressive environments.
3. Construct ¾" Open Joints plumb and perpendicular or radial to Gutter Line. Provide at 90'-0" maximum intervals as shown. ¾" Open Joint locations are to coincide with ¾" Expansion Joints in footings.
4. Construct ½" V-Grooves plumb and provide at 30'-0" maximum intervals as shown. Space V-Grooves equally between ¾" Open Joints and/or Begin or End Concrete Barrier/Noise Wall.
5. 14'-0" Noise Wall End Taper is required when adjacent to an 8'-0" Concrete Barrier/Noise Wall and may be used when an 8'-0" Concrete Barrier/Noise Wall End Taper is provided (see Index 521-510 for details). See Roadway Plans for Concrete Barrier/Noise Wall End Treatment.
6. Work this Index with Index 521-510 - Concrete Barrier/Noise Wall (8'-0") and one or more of the following:
   A. Index 521-513 - Concrete Barrier/Noise Wall T-Shaped Spread Footing,
   B. Index 521-514 - Concrete Barrier/Noise Wall L-Shaped Spread Footing or
   C. Index 521-515 - Concrete Barrier/Noise Wall Trench Footing.

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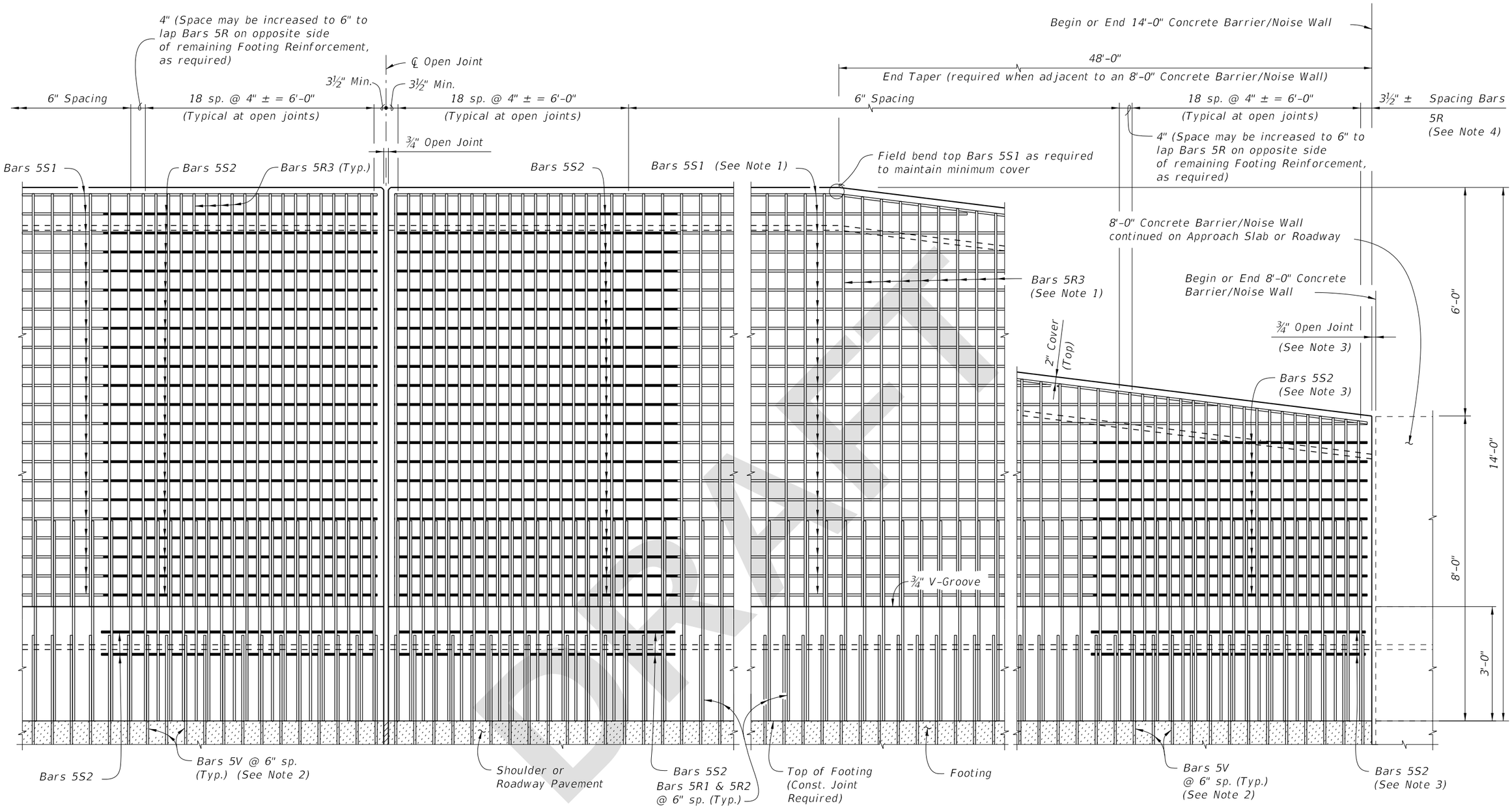
LAST REVISION	REVISION	DESCRIPTION:				
11/01/23			FY 2024-25 STANDARD PLANS	CONCRETE BARRIER/NOISE WALL (14'-0")	INDEX 521-511	SHEET 1 of 6



ELEVATION OF CONCRETE BARRIER/NOISE WALL REINFORCING STEEL
(Bars 5S1 in Railing not shown for clarity)

ELEVATION OF CONCRETE BARRIER/NOISE WALL END TAPER
(Bars 5S1 in Railing not shown for clarity)

NOTES:
1. Field Cut Bars 5R & 5S1 in Noise Wall End Taper as required to maintain minimum cover.
2. See Index 521-513, 521-514 and 521-515 for footing reinforcement.
3. ¾" Open Joint may be omitted when 8'-0" Railing/Noise Wall End Taper is adjacent to a 14'-0" Concrete Barrier/Noise Wall End Taper as shown on Sheet 1. See Index 521-510 for reinforcement details and spacing. Bars 5S2 are not required when ¾" Open Joint is omitted.
4. Bar spacing shown is along the Gutter Line.

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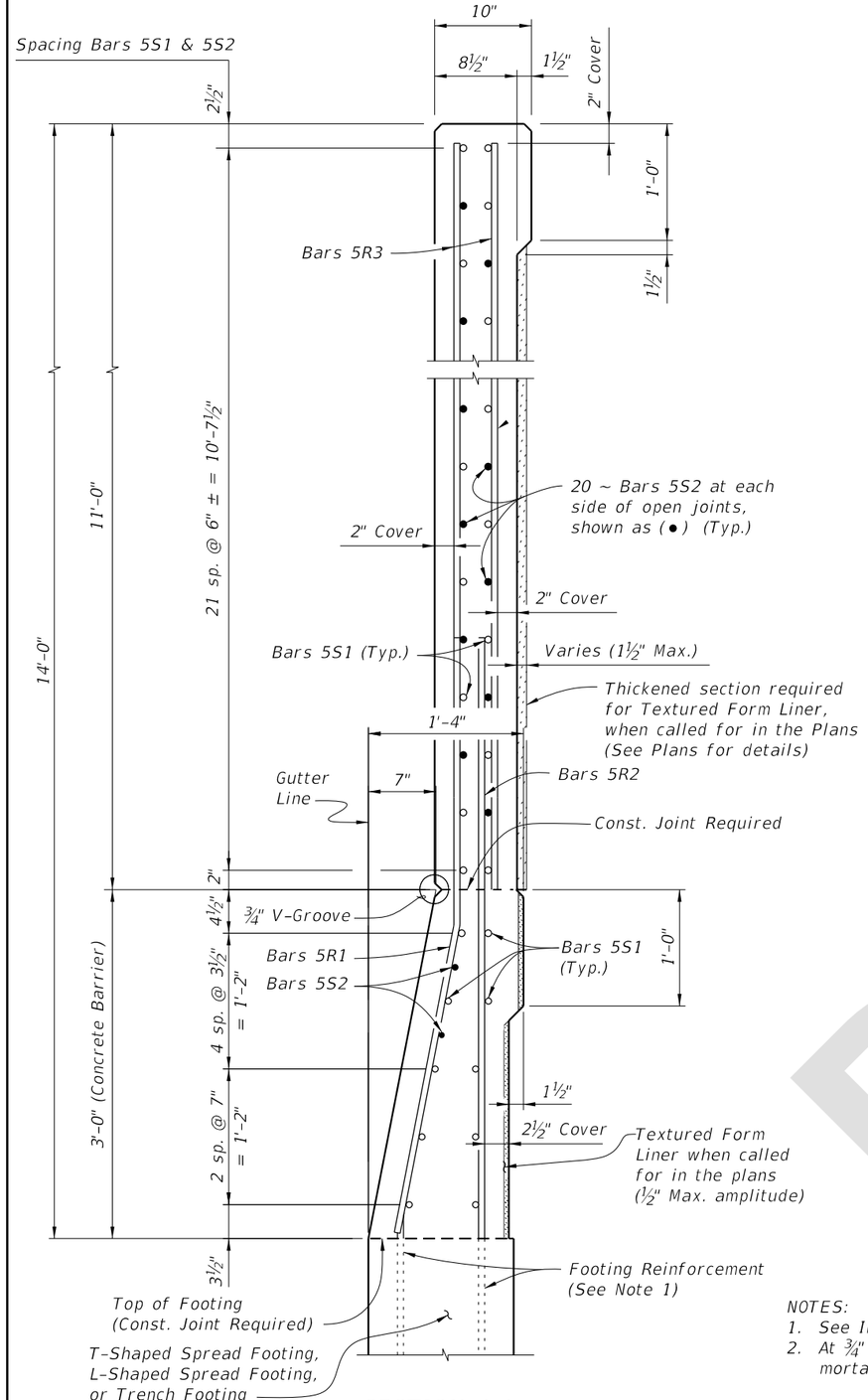
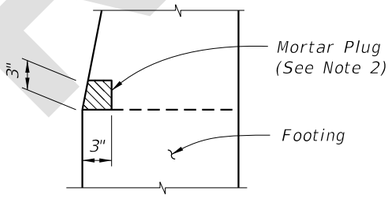


SECTION A-A
TYPICAL SECTION THRU CONCRETE BARRIER/NOISE WALL

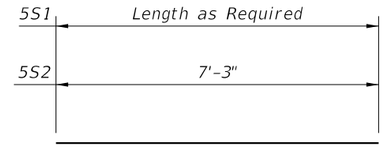


DETAIL "A" -
SECTION AT OPEN JOINT

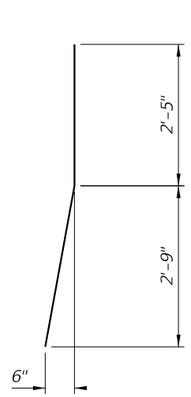
NOTES:
1. See Index 521-513, 521-514 or 521-515 for footing reinforcement.
2. At ¾" Open Joints, plug the lower 3" portion of the open joint by filling it with mortar in accordance with Specification Section 400.

REINFORCING STEEL BENDING DIAGRAMS

BILL OF REINFORCING STEEL		
MARK	SIZE	LENGTH
R1	5	5'-2"
R2	5	5'-2½"
R3	5	10'-10"
S1	5	AS REQD.
S2	5	7'-3"



BARS 5S1 & 5S2



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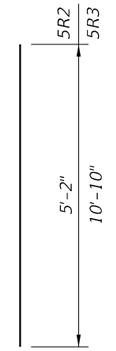

BAR 5R2 &
BAR 5R3

REINFORCING STEEL NOTES:

1. All bar dimensions in the bending diagrams are out to out.
2. All reinforcing steel at the open joints will have a 2" minimum cover.
3. Bars 5R may be continuous or spliced at construction joints. Lap splices for Bars 5R, and 5S1 will be a minimum of 2'-2".
4. 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.

ESTIMATED CONCRETE BARRIER/NOISE WALL QUANTITIES		
ITEM	UNIT	QUANTITY
Concrete (Concrete Barrier)	CY/FT	0.107
Concrete (Noise Wall, excluding any thickening)	CY/FT	0.293
Reinforcing Steel (Railing/Noise Wall) (Bars R1, R2, R3, S1 & V)	LB/FT	120.88
Additional Reinf. @ Open Joint (Railing/Noise Wall)	LB	378.22

CROSS REFERENCE:
For locations of Section A-A and Detail "A", see Sheet 1.

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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.

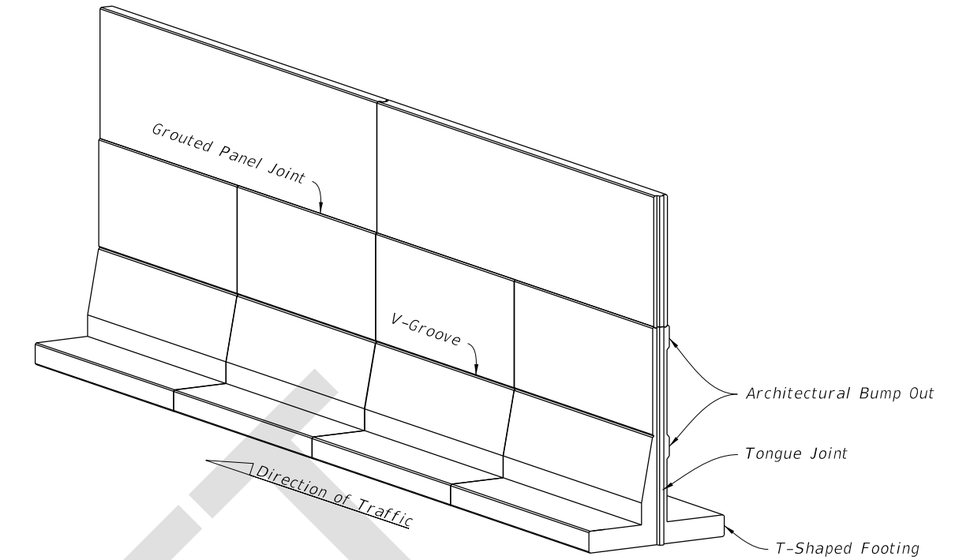
5. Front Face indicates roadway side of wall. Back Face indicates non-roadway side of wall.

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.

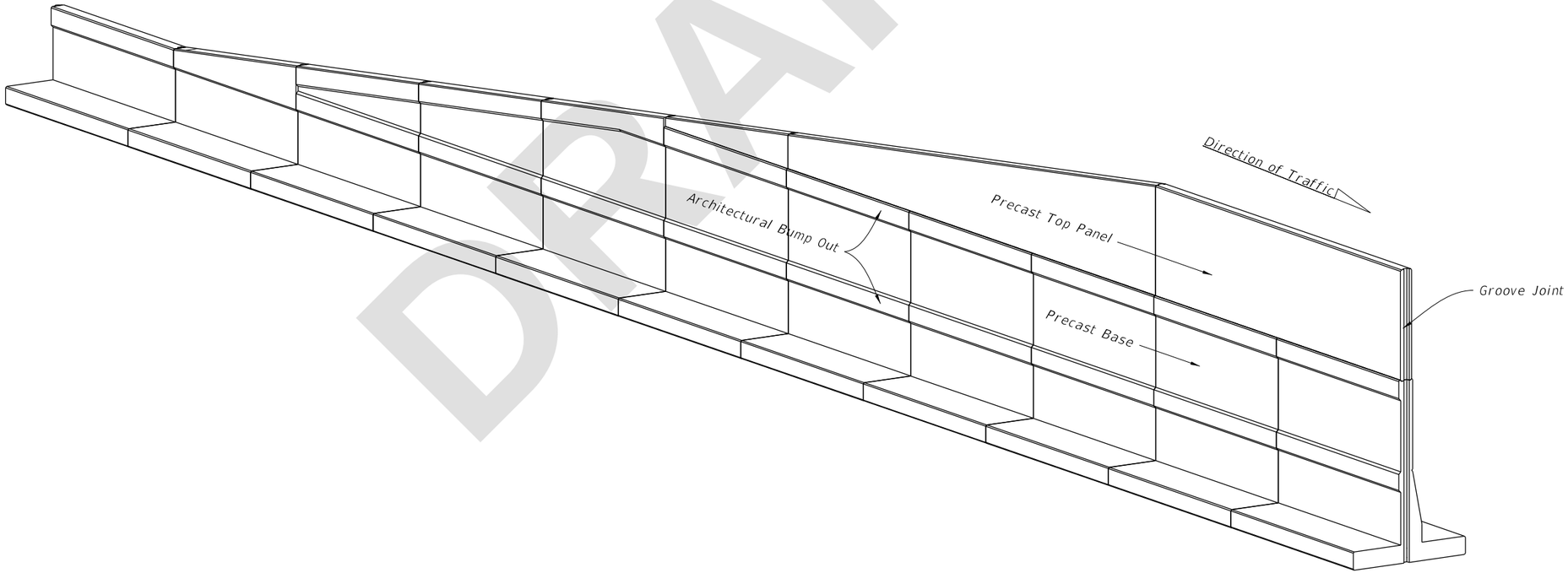
7. Corrugated metal pipe shall be fabricated from galvanized sheet steel meeting the requirements of ASTM A653, coating designation G90, 26 gauge. Ducts shall be 4" to 4-1/2" diameter with a minimum corrugation (rib) height of 0.12". Ducts shall be fabricated with either welded or interlocked seams will not be required.

8. Contractor to fill corrugated tube with a FDOT approved non-shrink grout per Specification 934 from FDOT APL.

9. The last full height segment in the direction of traffic must be a minimum of 24 feet in length for stability.



FRONT FACE



BACK FACE

PRECAST

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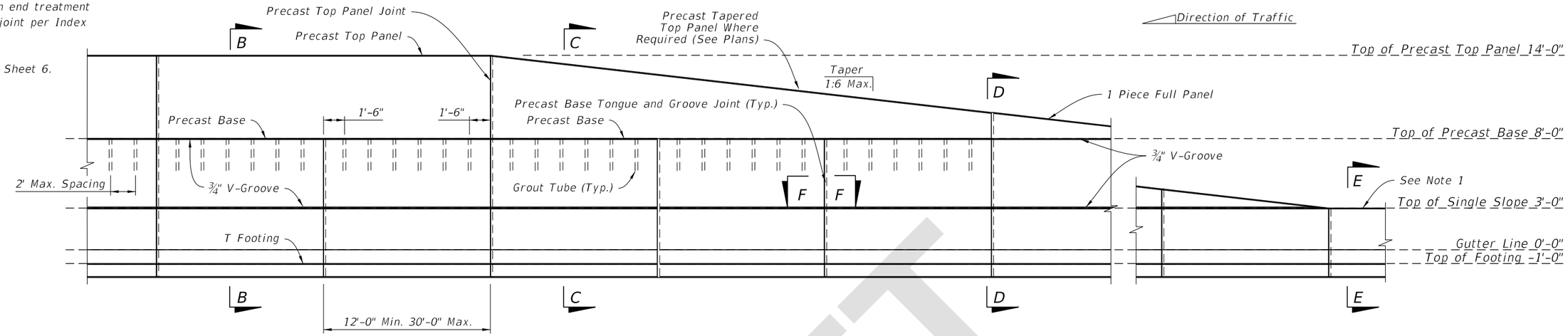
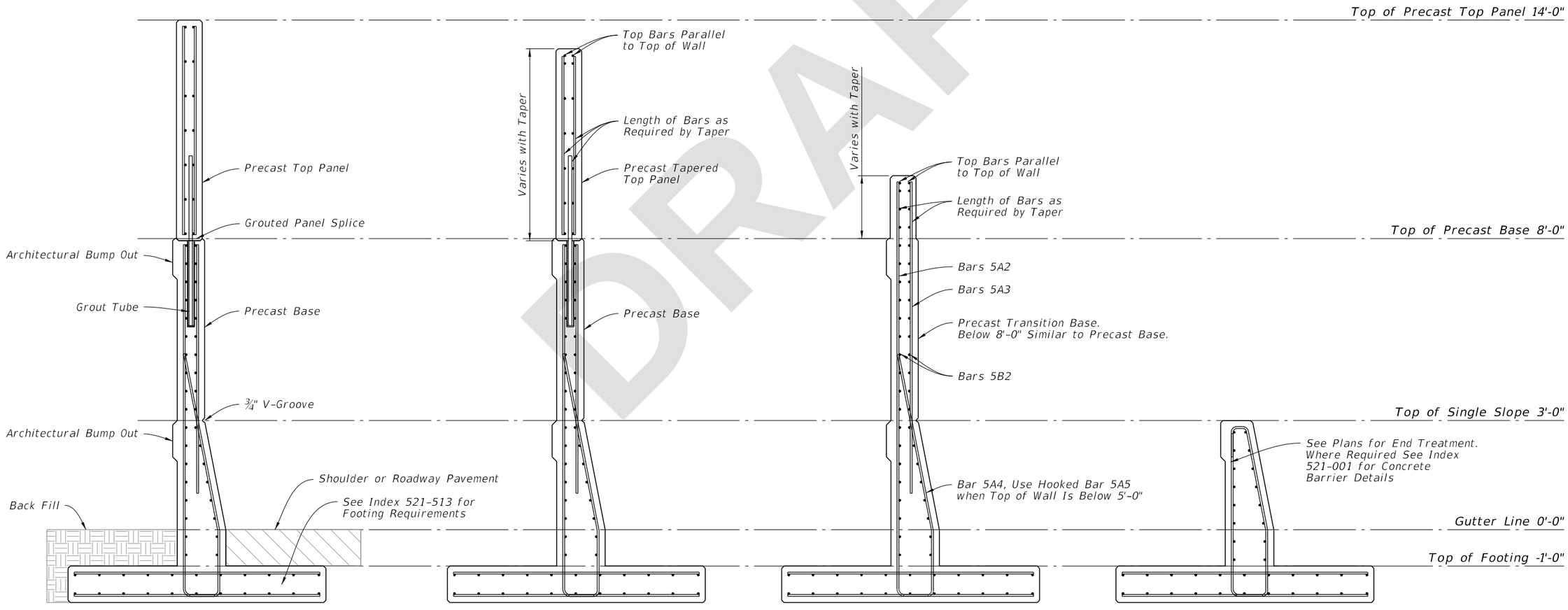
LAST REVISION	REVISION	DESCRIPTION:				
11/01/23			FDOT FY 2024-25 STANDARD PLANS	CONCRETE BARRIER/NOISE WALL (14'-0")	INDEX 521-511	SHEET 4 of 6

NOTES:

1. See Plans for end treatment. This single slope barrier shown is an example of an end treatment using the doweled joint per Index 521-001.
2. See Section F-F on Sheet 6.



FRONT FACE ELEVATION



SECTION B-B | SECTION C-C | SECTION D-D | SECTION E-E

PRECAST

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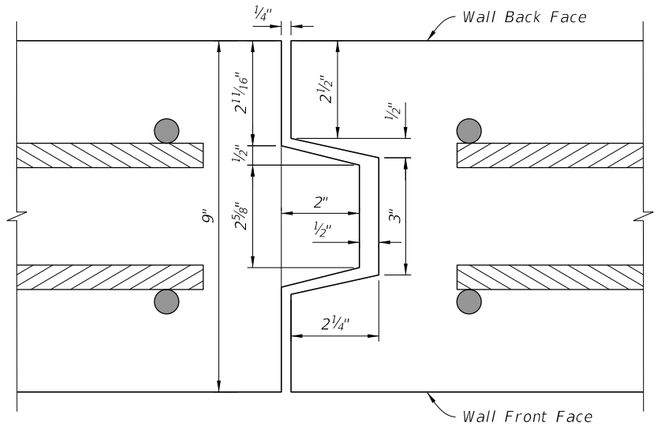
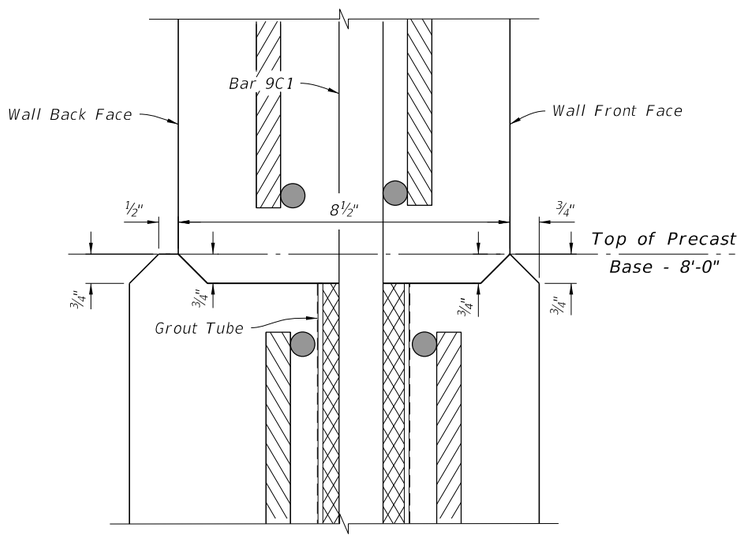
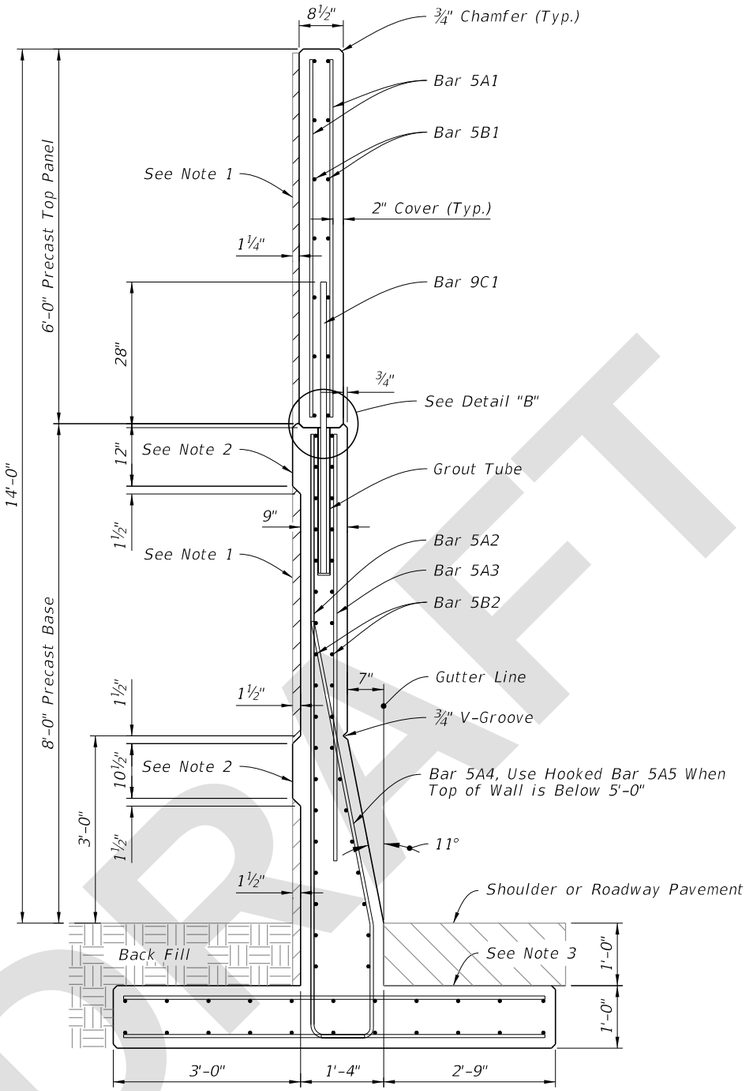
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2024-25 STANDARD PLANS	CONCRETE BARRIER/NOISE WALL (14'-0")	INDEX	SHEET
11/01/23					521-511	5 of 6



SECTION F-F
TYPICAL TONGUE AND GROOVE JOINT



DETAIL "B"
TYPICAL HORIZONTAL JOINT



SECTION B-B
FULL HEIGHT SECTION REINFORCING

ESTIMATED CONCRETE PRECAST BARRIER/NOISE WALL TYPICAL FULL HEIGHT SECTION

ITEM	UNIT	QUANTITY
Concrete (Precast Base)	CY/FT	0.574
Concrete (Precast Top Panel)	CY/FT	0.333
Reinforcing Steel (Precast Base)	LB/FT	132.37
Reinforcing Steel (Precast Top Panel-Including Dowels, 24ft Long Segment)	LB	61.51

NOTES:

1. Optional Architectural detail. See Plans for requirements.
2. Bump outs are optional when using architectural details. See Plans for requirements.
3. For T-Shaped Footing details see Index 521-513. Dowels in Index 521-513 are not required at tongue and groove joints.

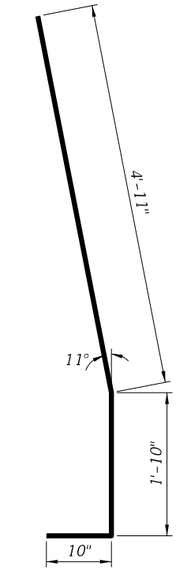
BILL OF REINFORCING STEEL

MARK	SIZE	LENGTH	SPACING
5A1	#5	5'-8 3/4"	12"
5A2	#5	10'-5"	6"
5A3	#5	6'-10"	6"
5A4	#5	7'-6"	6"
5A5	#5	6'-7"	6"
5B1	#5	Varies	12"
5B2	#5	Varies	6"
9C1	#9	4'-8"	2'-0" Max.

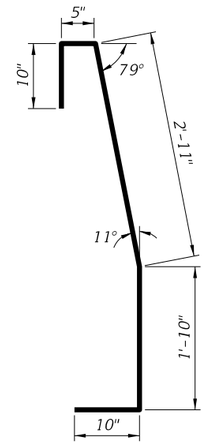
REINFORCING STEEL NOTES:

1. All bar dimensions in the bending diagrams are out to out.
2. Length of horizontal bars vary depending on the length of each segment.
3. Length of vertical bars vary in tapered segments.
4. The Contractor may use Welded Wire Reinforcement (WWR) when approved by the Engineer. WWR must consist of deformed wire meeting the requirements of Specification 931.

REINFORCING STEEL BENDING DIAGRAMS



BAR 5A4



BAR 5A5

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9/14/2023 10:56:48 AM

PRECAST

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2024-25 STANDARD PLANS	CONCRETE BARRIER/NOISE WALL (14'-0")	INDEX	SHEET
11/01/23						521-511	6 of 6