
ORIGINATION FORM

Proposed Revisions to a Standard Plans Index

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

Contact Information:

Date: January 12, 2022

Originator: Joshua Turley

Phone: (850) 414-4475

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

Standard Plans:

Index Number: 521-610

Sheet Number (s): 2 and 3 of 3

Index Title: Concrete Barrier/Junction Slab-Wall Coping

Summary of the changes:

Sheet 2 : Corrected 6 1/2" Asphalt dimension to be consistent at 6" with the other details and configurations;
Changed C-I-P Buildup Concrete (1'-1" Max.) callout in the TYPICAL SECTION THRU PRECAST 36" SINGLE-SLOPE CONCRETE BARRIER AND COPING WITH C-I-P JUNCTION SLAB to Class NS Concrete (1'-1" Max.).

Sheet 3: Corrected language in note 9 which allows contractor to form stirrup out of a single bar rather than two. The note stated use a #5 but there are two conditions one for a #4 and one for #5. Adjusted the language accordingly

Commentary / Background:

Discussed with Andre why asphalt cover is 6 1/2" on sheet 2 for Precast but 6" on sheet 3 for CIP and he said he believes it was an oversight and that 6" should be sufficient to prevent reflective cracking of the asphalt at the end of the junction slab.

CIP buildup concrete type was never clarified. SDO review deems Class NS is acceptable because the concrete buildup section is not meant to transfer any meaningful load to the wall other than self weight.

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 type="checkbox"/> | <input checked="" type="checkbox"/> | Standard Specifications – |
| <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)

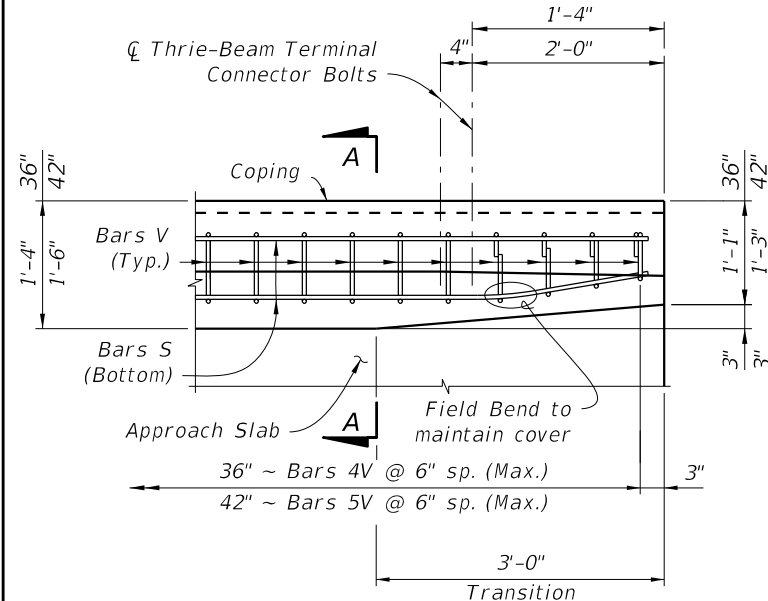
- | Yes | N/A | |
|-------------------------------------|--------------------------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Redline Mark-ups |
| <input type="checkbox"/> | <input type="checkbox"/> | Revised or Proposed Standard Plan Instruction (SPI) |
| <input type="checkbox"/>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

Implementation:

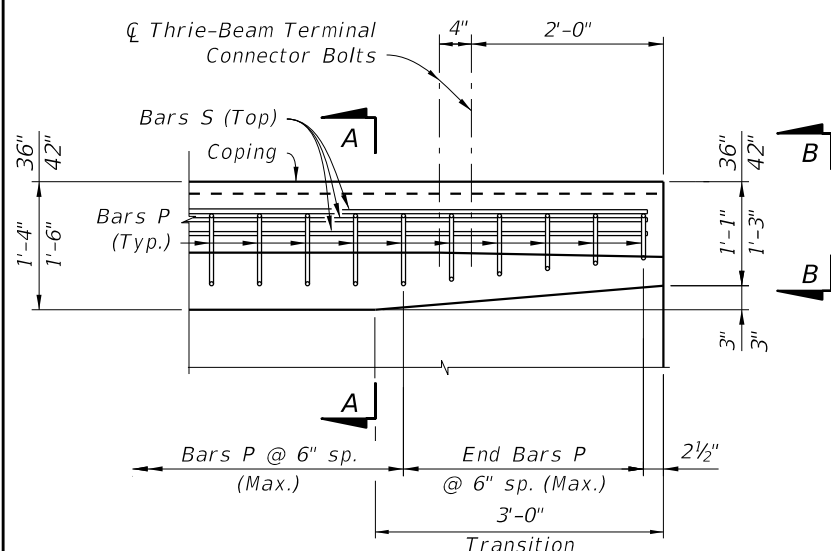
- | | |
|-------------------------------------|----------------------------------|
| <input type="checkbox"/> | Design Bulletin (Interim) |
| <input type="checkbox"/> | DCE Memo |
| <input type="checkbox"/> | Program Mgmt. Bulletin |
| <input checked="" type="checkbox"/> | FY-Standard Plans (Next Release)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

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

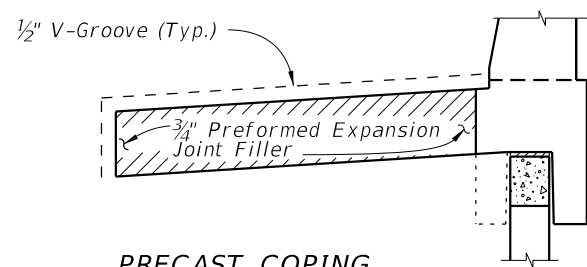


PLAN - RAILING END TRANSITION
(Showing Bars V and S)

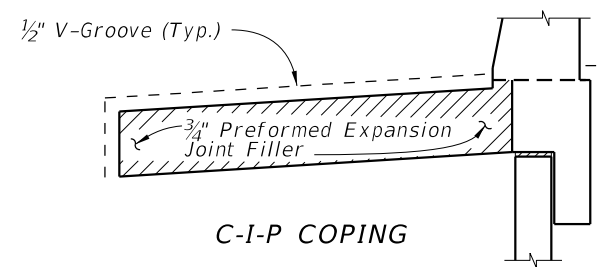


PLAN - RAILING END TRANSITION
(Showing Bars P and S)

RAILING END TRANSITION DETAILS ***



PRECAST COPING

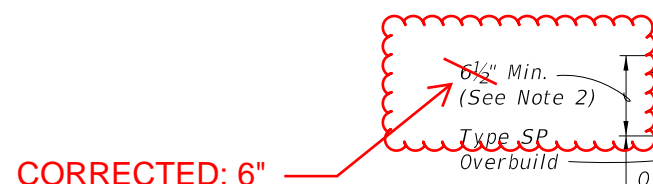


C-I-P COPING

DETAIL "A"

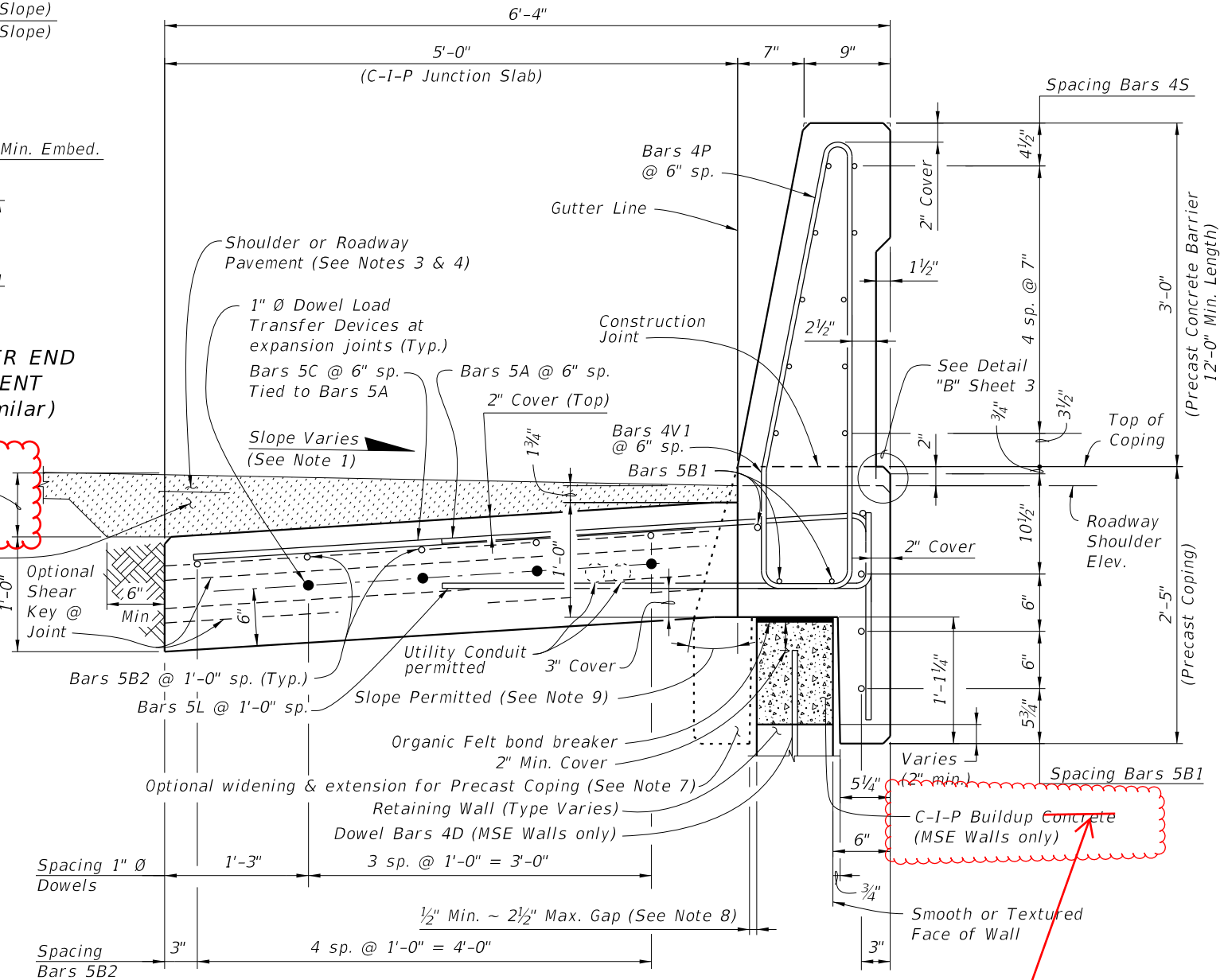
(Showing Locations of 1/2" V-Grooves and 3/4" Preformed Expansion Joint Filler)

PARTIAL END VIEW OF CONCRETE BARRIER END TRANSITION FOR GUARDRAIL ATTACHMENT
(Precast Coping Shown, C-I-P Coping Similar)



CORRECTED: 6"

*** Transition the Concrete Barrier Height to 32" as shown in Index 521-427 or 521-428. See Note 10.



TYPICAL SECTION THRU PRECAST 36" SINGLE-SLOPE CONCRETE BARRIER AND COPING WITH C-I-P JUNCTION SLAB

CHANGED TO: Class NS Concrete

NOTES:

1. Match Cross Slope of Travel Lane or Shoulder.
2. Vary Junction Slab slope based on roadway cross slope to maintain a minimum 6" asphalt depth at the edge of the slab as shown.
3. For Rigid Pavement (Concrete), Junction Slab may be thickened to match finished grade. Vary the Junction Slab slope to maintain a minimum 1'-6" thickness at the edge of the slab.
4. See Roadway Plans for asphalt shoulder, roadway pavement and overbuild.
5. Minimum length of Junction Slab between expansion joints is 30'-0".
6. At the Contractor's option, mechanical couplers may be used to splice reinforcing. Complete details, including reinforcing lengths are required in the Shop Drawings. Provide mechanical couplers in accordance with Specification Section 415. Mechanical couplers shall develop 125% of the bar yield strength.
7. Contractor to maintain stability of precast coping/Concrete Barrier prior to junction slab completion. In the Shop Drawings, show reinforcement for optional extension required for stability, shipping and handling. Maintain 2" minimum concrete cover.
8. When the air gap between the precast coping extension and retaining wall exceeds 2 1/2", fill gap with full depth Expanded Polystyrene to provide a maximum 2 1/2" air gap.
9. Angle varies ~ 0° min., 25° max.
10. The height of the concrete barrier at the guardrail connection is 32" from the riding surface for all pavement types. See Index 534-001 for connection details.

SINGLE-SLOPE CONCRETE BARRIERS

9/22/2021 8:27:00 AM

LAST REVISION	DESCRIPTION:
11/01/20	
11/01/22	



FY 2022-23
STANDARD PLANS

CONCRETE BARRIER/JUNCTION SLAB
- WALL COPING

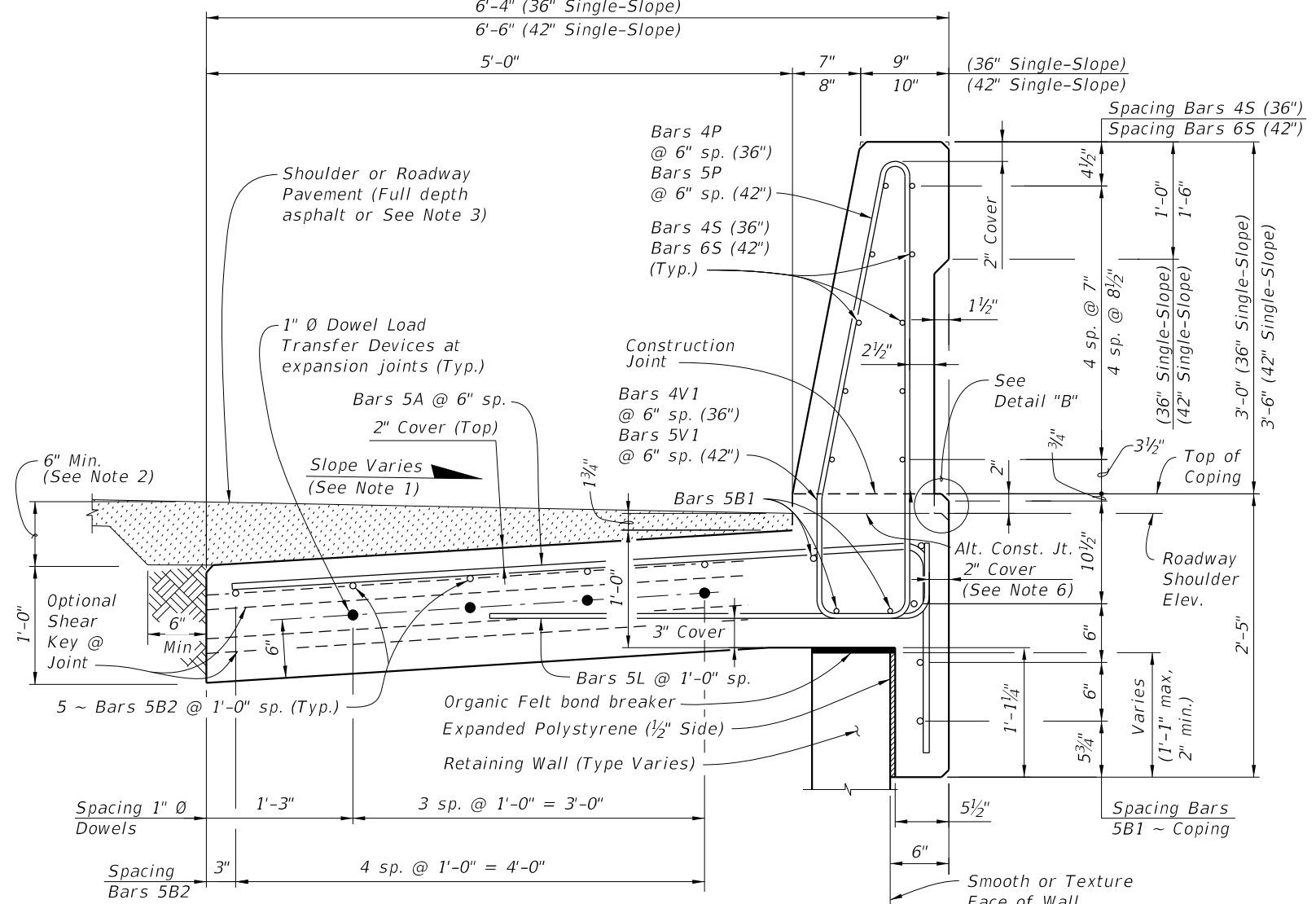
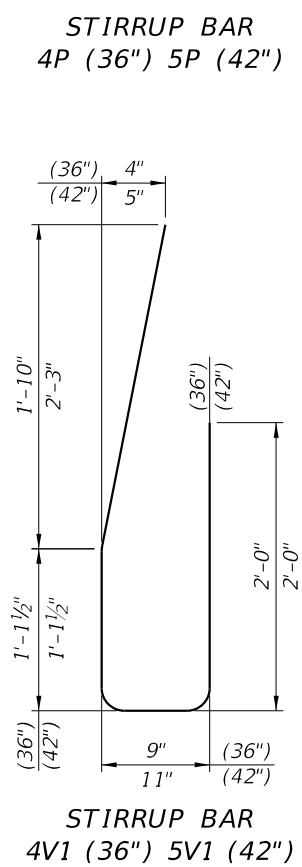
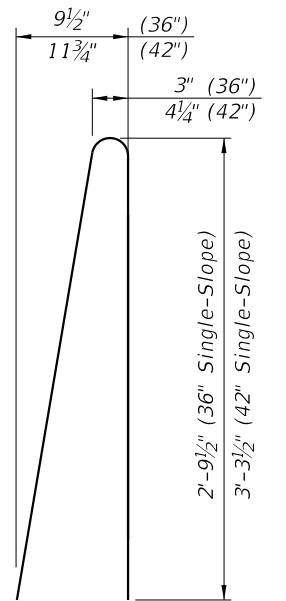
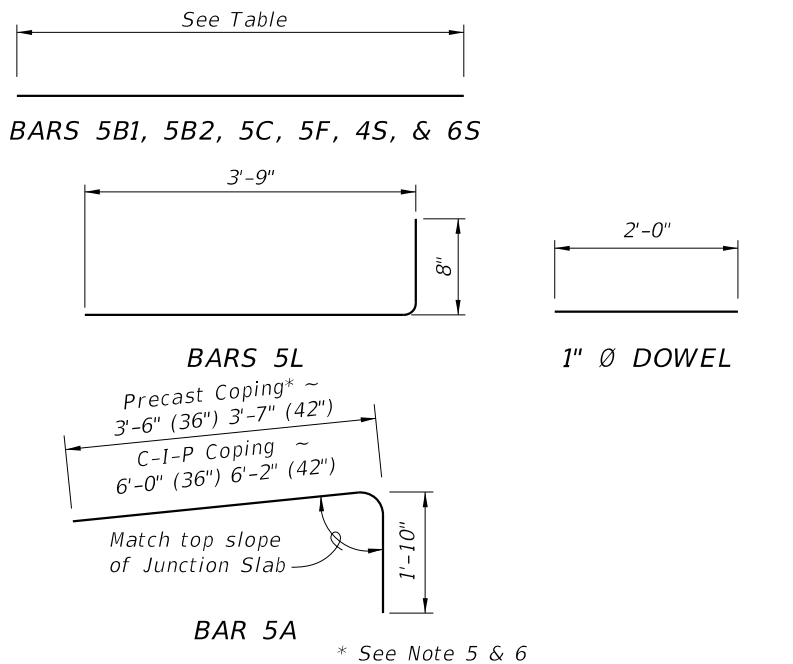
INDEX
521-610

SHEET
2 of 3

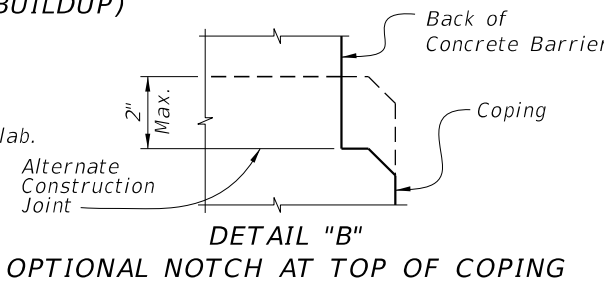
REINFORCING STEEL BENDING DIAGRAMS

BILL OF REINFORCING STEEL

MARK	SIZE	LENGTH			
		PRECAST COPING FOR SINGLE-SLOPE		C-I-P COPING FOR SINGLE-SLOPE	
		(36")	(42")	(36")	(42")
A	5	5'-3"	5'-5"	7'-10"	8'-0"
B1	5	11'-6"	9'-6"	AS REQD.	AS REQD.
B2	5	AS REQD.	AS REQD.	AS REQD.	AS REQD.
C	5	4'-10"	4'-10"	N/A	N/A
F	5	4'-10"	4'-10"	4'-10"	4'-10"
L	5	4'-5"	4'-5"	4'-5"	4'-5"
P	4	5'-11"	N/A	5'-11"	N/A
P	5	N/A	7'-0"	N/A	7'-0"
S	4	11'-6"	N/A	AS REQD.	N/A
S	6	N/A	9'-6"	N/A	AS REQD.
V1	4	5'-9"	N/A	5'-9"	N/A
V1	5	N/A	6'-4"	N/A	6'-4"
1" Ø Dowel	Smooth Bar	2'-0"	2'-0"	2'-0"	2'-0"

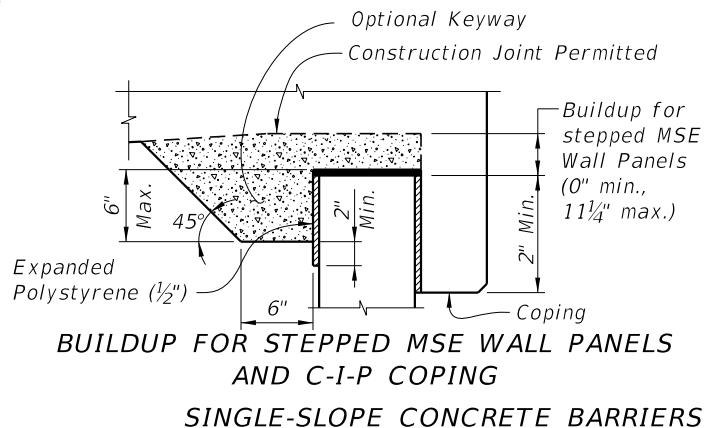


- NOTES:**
- Match Cross Slope of Travel Lane or Shoulder.
 - Vary the Junction Slab slope based on the roadway cross slope to maintain a minimum 6" asphalt depth at the edge of the slab.
 - For Rigid Pavement (Concrete), Junction Slab may be thickened to match finish grade. Vary the Junction Slab slope to maintain a minimum 1'-6" thickness at the inside edge of the slab.
 - Minimum length of Junction Slab between expansion joints is 30'-0" for 36" Single-Slope or 60'-0" for 42" Single-Slope.
 - Contractor to maintain stability of precast coping prior to junction slab completion. In the Shop Drawings, show reinforcement for optional extension required for stability, shipping and handling. Maintain 2" minimum concrete cover.
 - If slip forming is used, submit shop drawings for approval showing 2 1/2" side cover with the Typical Section dimensions adjusted.



ESTIMATED QUANTITIES FOR C-I-P			
	UNIT	QUANTITY (36")	QUANTITY (42")
	CY/LF	0.376	0.420
a)	LB/LF	62.45	82.17
ansion	LB	21.36	21.36

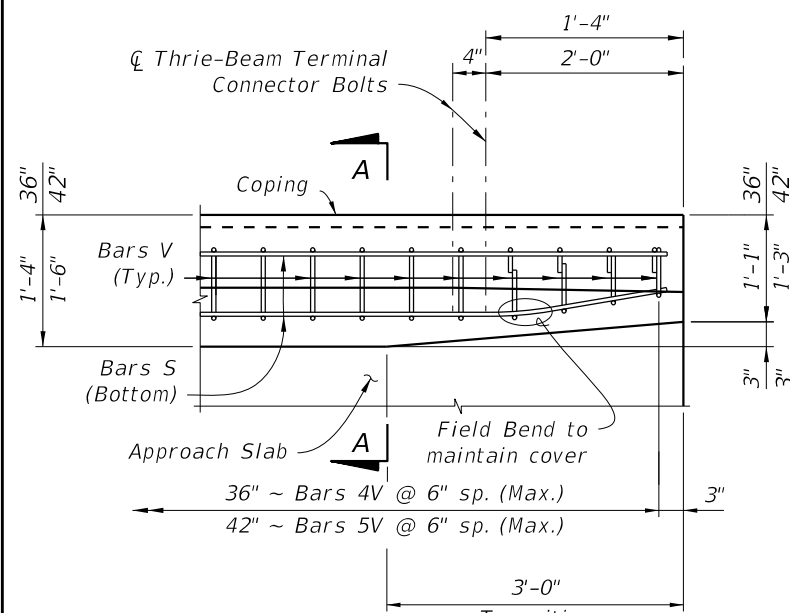
CORRECTED NOTE: Contractor may use a single #4 stirrup for Bars 4P and 4V1, or a single #5 stirrup for Bars 5P and 5V1.



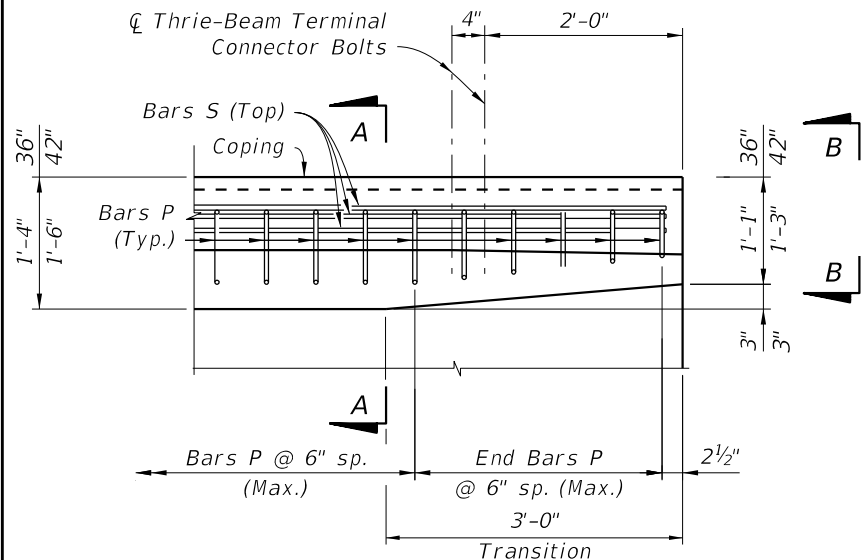
- REINFORCING STEEL NOTES:**
- All bar dimensions in the bending diagrams are out to out.
 - All reinforcing steel at expansion and open joints will have a 2" minimum cover.
 - Lap splices for Bars 5B & 5S will be a minimum of 2'-2".
 - For Precast Copings only, lap splice Bars 5A with Bars 5C. Lap splices will be a minimum of 2'-2".
 - The Contractor may use either full length Bars 5A or lap splice with Bars 5C at Bars 5A for C-I-P Copings.
 - Dimension shown is for lap splice option. For mechanical coupler option, this dimension is 1'-2 1/2" (36" Single-Slope) or 1'-4 1/2" (42" Single-Slope).
 - Dimension shown is for lap splice option. For mechanical coupler option, this dimension is 4'-8".
 - When approved by the Engineer, the Contractor may use deformed Welded Wire Reinforcement (WWR) meeting the requirements of Specification Section 931.
 - ~~Contractor may use a single #5 stirrup in lieu of two bars for 4P and 4V1.~~

(The above concrete quantities are based on a max. superelevation of 6.25%)

9/22/2021 8:27:05 AM

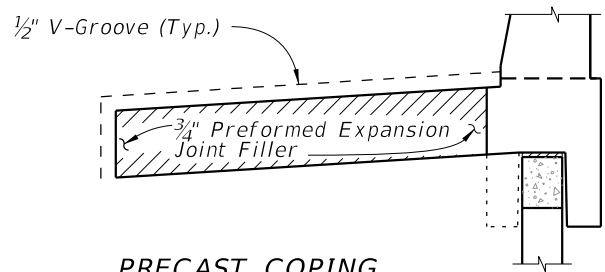


PLAN - RAILING END TRANSITION
(Showing Bars V and S)

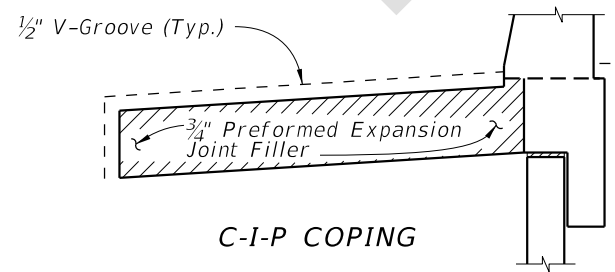


PLAN - RAILING END TRANSITION
(Showing Bars P and S)

RAILING END TRANSITION DETAILS ***



PRECAST COPING

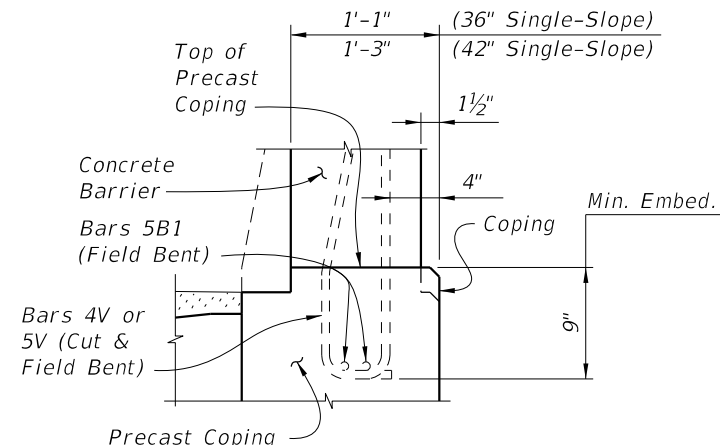


C-I-P COPING

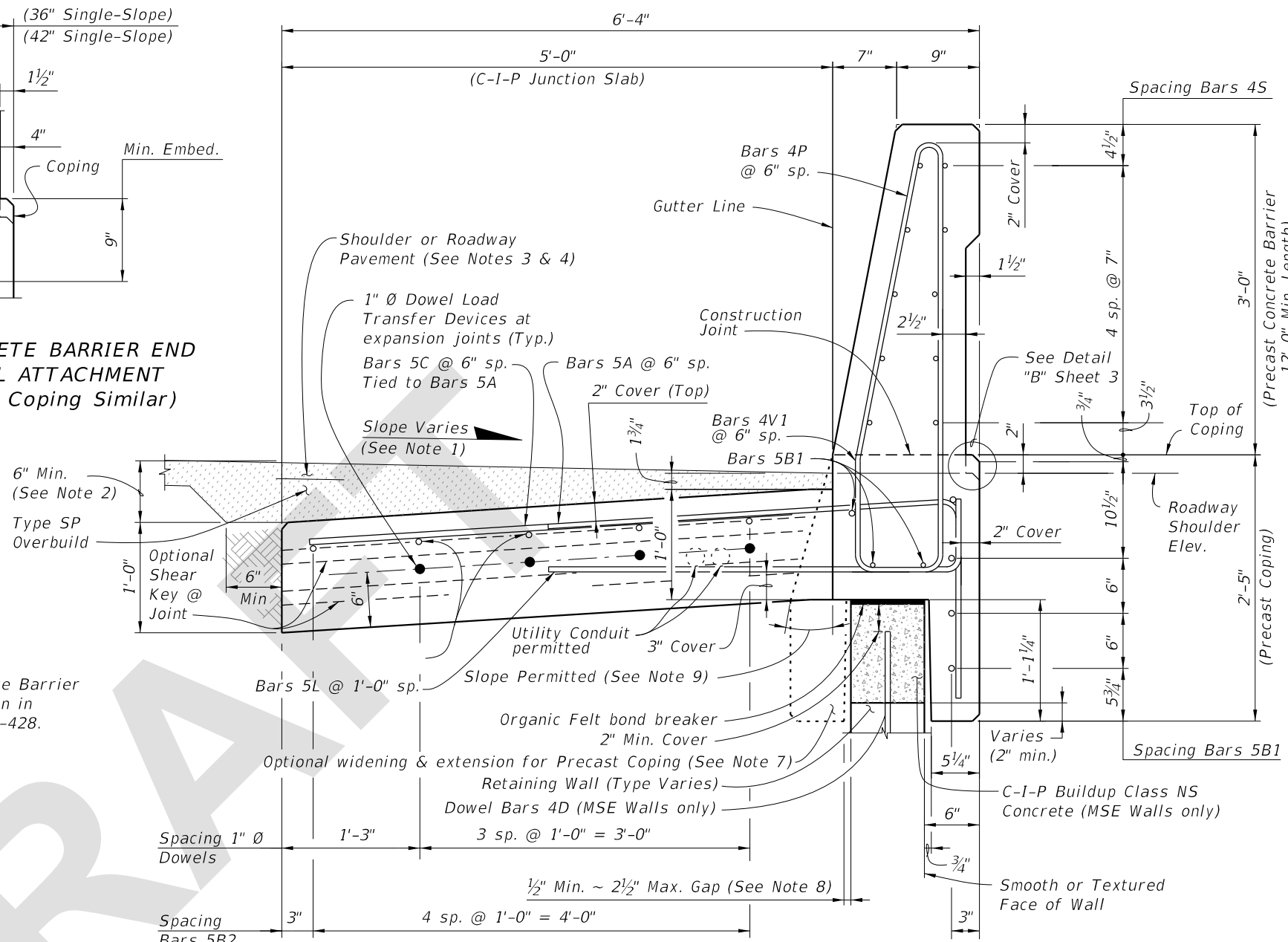
DETAIL "A"

(Showing Locations of 1/2" V-Grooves and 3/4" Preformed Expansion Joint Filler)

PARTIAL END VIEW OF CONCRETE BARRIER END TRANSITION FOR GUARDRAIL ATTACHMENT
(Precast Coping Shown, C-I-P Coping Similar)



*** Transition the Concrete Barrier Height to 32" as shown in Index 521-427 or 521-428. See Note 10.



TYPICAL SECTION THRU PRECAST 36" SINGLE-SLOPE CONCRETE BARRIER AND COPING WITH C-I-P JUNCTION SLAB

NOTES:

1. Match Cross Slope of Travel Lane or Shoulder.
2. Vary Junction Slab slope based on roadway cross slope to maintain a minimum 6" asphalt depth at the edge of the slab as shown.
3. For Rigid Pavement (Concrete), Junction Slab may be thickened to match finished grade. Vary the Junction Slab slope to maintain a minimum 1'-6" thickness at the edge of the slab.
4. See Roadway Plans for asphalt shoulder, roadway pavement and overbuild.
5. Minimum length of Junction Slab between expansion joints is 30'-0".
6. At the Contractor's option, mechanical couplers may be used to splice reinforcing. Complete details, including reinforcement lengths are required in the Shop Drawings. Provide mechanical couplers in accordance with Specification Section 415. Mechanical couplers shall develop 125% of the bar yield strength.
7. Contractor to maintain stability of precast coping/Concrete Barrier prior to junction slab completion. In the Shop Drawings, show reinforcement for optional extension required for stability, shipping and handling. Maintain 2" minimum concrete cover.
8. When the air gap between the precast coping extension and retaining wall exceeds 2 1/2", fill gap with full depth Expanded Polystyrene to provide a maximum 2 1/2" air gap.
9. Angle varies ~ 0° min., 25° max.
10. The height of the concrete barrier at the guardrail connection is 32" from the riding surface for all pavement types. See Index 534-001 for connection details.

SINGLE-SLOPE CONCRETE BARRIERS

6/17/2022 1:46:44 PM

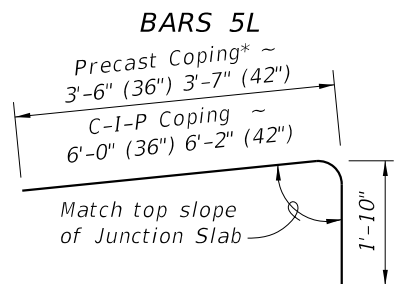
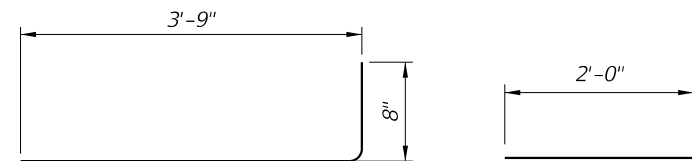
LAST REVISION 11/01/22	DESCRIPTION:	FY 2023-24 STANDARD PLANS	CONCRETE BARRIER/JUNCTION SLAB - WALL COPING	INDEX 521-610	SHEET 2 of 3
---------------------------	--------------	------------------------------	---	------------------	-----------------

REINFORCING STEEL BENDING DIAGRAMS

BILL OF REINFORCING STEEL

MARK	SIZE	LENGTH			
		PRECAST COPING FOR SINGLE-SLOPE		C-I-P COPING FOR SINGLE-SLOPE	
		(36")	(42")	(36")	(42")
A	5	5'-3"	5'-5"	7'-10"	8'-0"
B1	5	11'-6"	9'-6"	AS REQD.	AS REQD.
B2	5	AS REQD.	AS REQD.	AS REQD.	AS REQD.
C	5	4'-10"	4'-10"	N/A	N/A
F	5	4'-10"	4'-10"	4'-10"	4'-10"
L	5	4'-5"	4'-5"	4'-5"	4'-5"
P	4	5'-11"	N/A	5'-11"	N/A
P	5	N/A	7'-0"	N/A	7'-0"
S	4	11'-6"	N/A	AS REQD.	N/A
S	6	N/A	9'-6"	N/A	AS REQD.
V1	4	5'-9"	N/A	5'-9"	N/A
V1	5	N/A	6'-4"	N/A	6'-4"
1" Ø Dowel	Smooth Bar	2'-0"	2'-0"	2'-0"	2'-0"

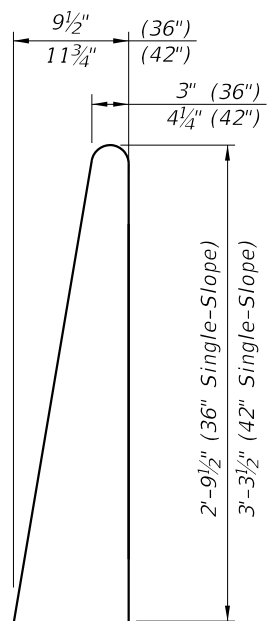
See Table
BARS 5B1, 5B2, 5C, 5F, 4S, & 6S



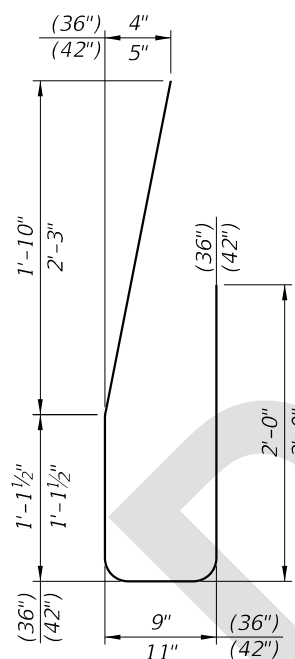
BAR 5A * See Note 5 & 6

REINFORCING STEEL NOTES:

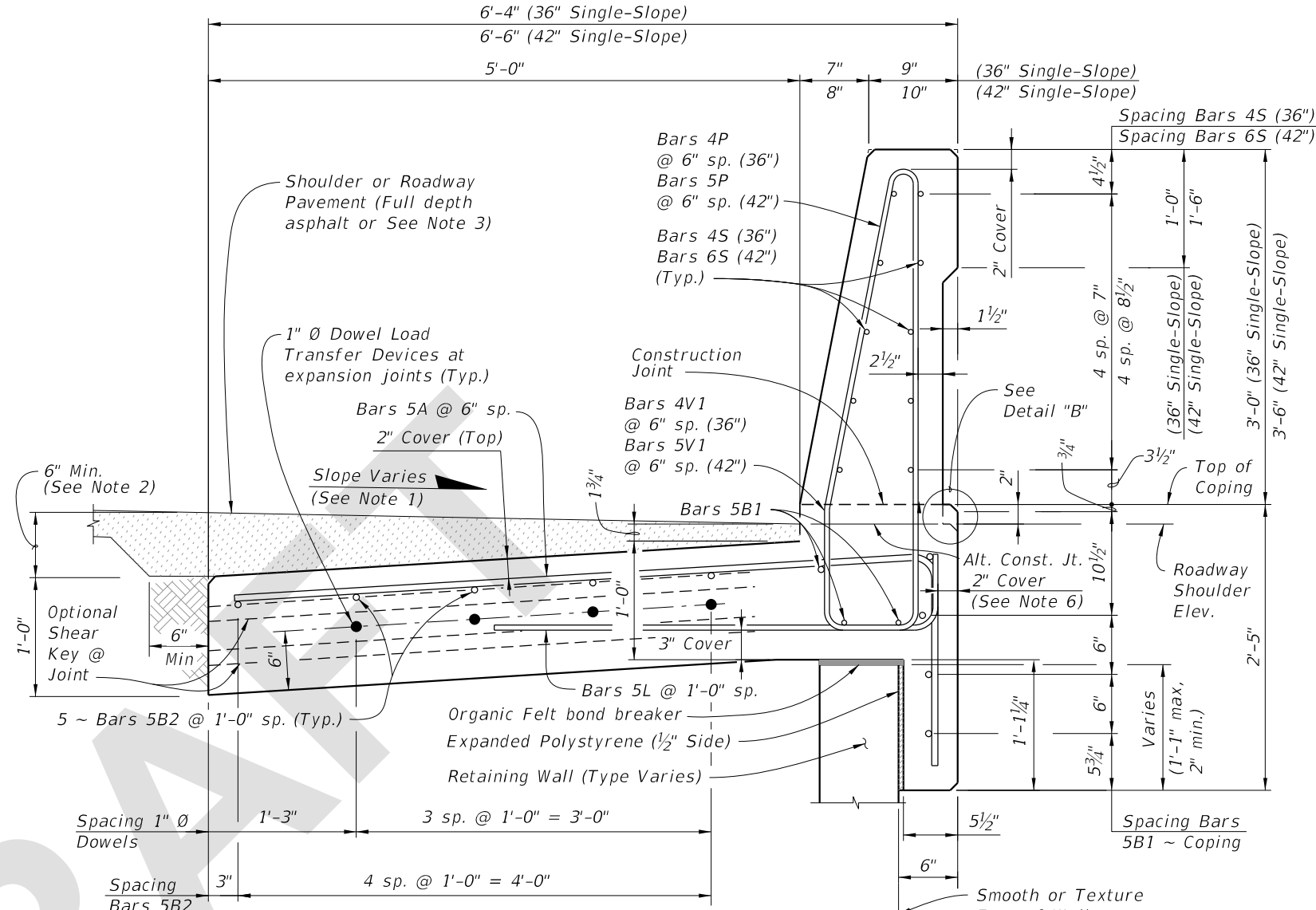
- All bar dimensions in the bending diagrams are out to out.
- All reinforcing steel at expansion and open joints will have a 2" minimum cover.
- Lap splices for Bars 5B & 5S will be a minimum of 2'-2".
- For Precast Copings only, lap splice Bars 5A with Bars 5C. Lap splices will be a minimum of 2'-2".
- The Contractor may use either full length Bars 5A or lap splice with Bars 5C at Bars 5A for C-I-P Copings.
- Dimension shown is for lap splice option. For mechanical coupler option, this dimension is 1'-2½" (36" Single-Slope) or 1'-4½" (42" Single-Slope).
- Dimension shown is for lap splice option. For mechanical coupler option, this dimension is 4'-8".
- When approved by the Engineer, the Contractor may use deformed Welded Wire Reinforcement (WWR) meeting the requirements of Specification Section 931.
- Contractor may use a single #4 stirrup for Bars 4P and 4V1, or a single #5 stirrup for Bars 5P and 5V1.



STIRRUP BAR 4P (36") 5P (42")



STIRRUP BAR 4V1 (36") 5V1 (42")



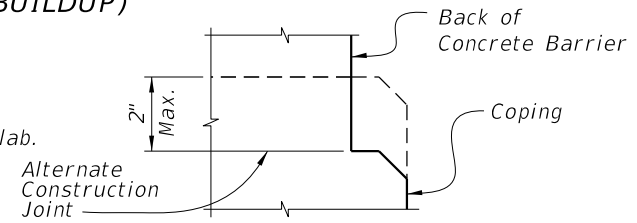
TYPICAL SECTION THRU C-I-P CONCRETE BARRIER WITH C-I-P JUNCTION SLAB AND C-I-P COPING (PRECAST COPING SIMILAR WITH C-I-P BUILDUP)

NOTES:

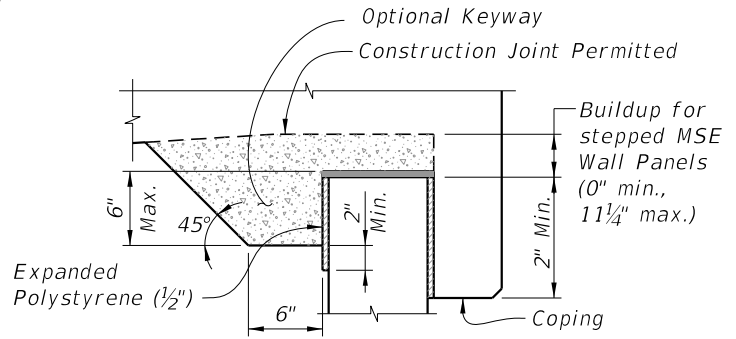
- Match Cross Slope of Travel Lane or Shoulder.
- Vary the Junction Slab slope based on the roadway cross slope to maintain a minimum 6" asphalt depth at the edge of the slab.
- For Rigid Pavement (Concrete), Junction Slab may be thickened to match finish grade. Vary the Junction Slab slope to maintain a minimum 1'-6" thickness at the inside edge of the slab.
- Minimum length of Junction Slab between expansion joints is 30'-0" for 36" Single-Slope or 60'-0" for 42" Single-Slope.
- Contractor to maintain stability of precast coping prior to junction slab completion. In the Shop Drawings, show reinforcement for optional extension required for stability, shipping and handling. Maintain 2" minimum concrete cover.
- If slip forming is used, submit shop drawings for approval showing 2½" side cover with the Typical Section dimensions adjusted.

ESTIMATED QUANTITIES FOR C-I-P			
ITEM	UNIT	QUANTITY (36")	QUANTITY (42")
Concrete	CY/LF	0.376	0.420
Reinforcing Steel (Typical) (excludes Bars 5C & 5F)	LB/LF	62.45	82.17
Additional Reinf. @ Expansion Joint (Steel Dowels)	LB	21.36	21.36

(The above concrete quantities are based on a max. superelevation of 6.25%)



DETAIL "B" OPTIONAL NOTCH AT TOP OF COPING



BUILDUP FOR STEPPED MSE WALL PANELS AND C-I-P COPING

SINGLE-SLOPE CONCRETE BARRIERS

6/17/2022 1:46:48 PM