
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	
☐	☒	Other Standard Plans –
☐	☒	FDOT Design Manual –
☐	☒	Basis of Estimates Manual –
☐	☒	Standard Specifications –
☐	☒	Approved Product List –
☐	☒	Construction –
☐	☒	Maintenance –

Origination Package Includes: (Submit package to Rick Jenkins)

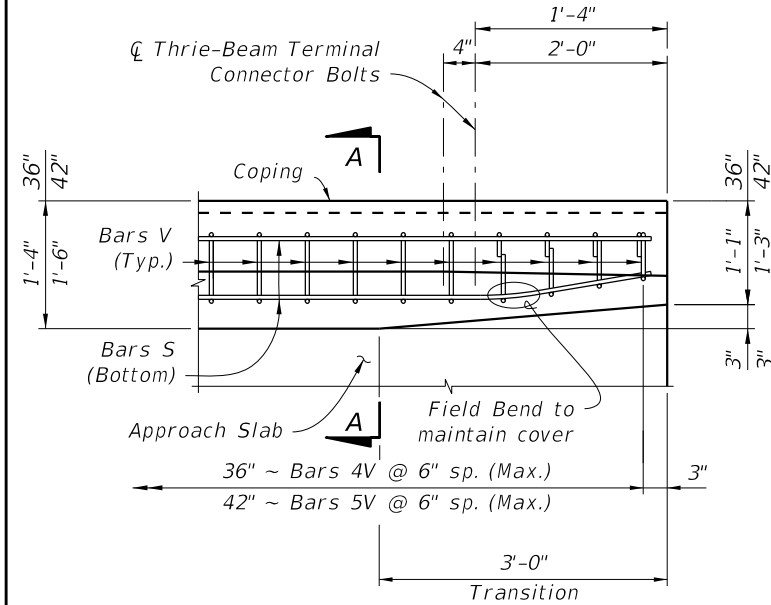
Yes	N/A	
☒	☐	Redline Mark-ups
☐	☐	Revised or Proposed Standard Plan Instruction (SPI)
☐	☐	Other Support Documents

Implementation:

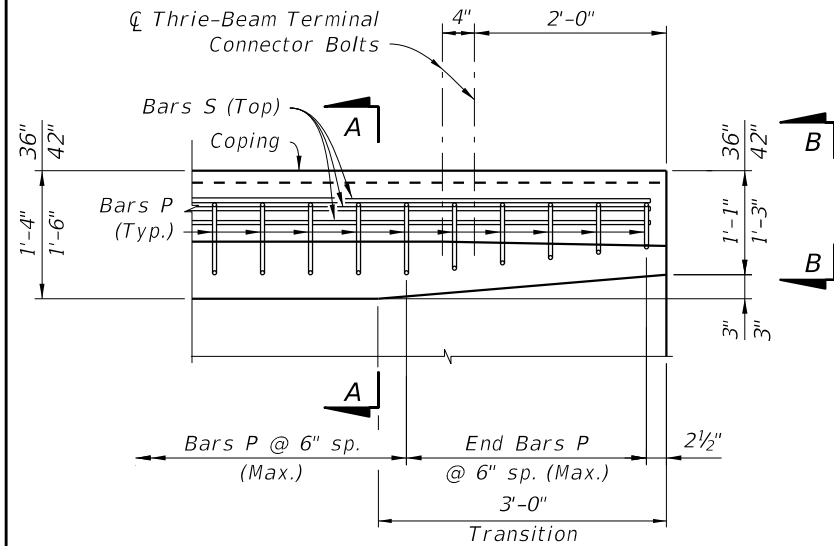
☐	Design Bulletin (Interim)
☐	DCE Memo
☐	Program Mgmt. Bulletin
☒	FY-Standard Plans (Next Release)

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

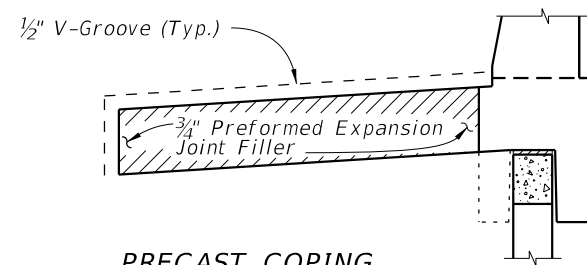


PLAN - RAILING END TRANSITION
(Showing Bars V and S)

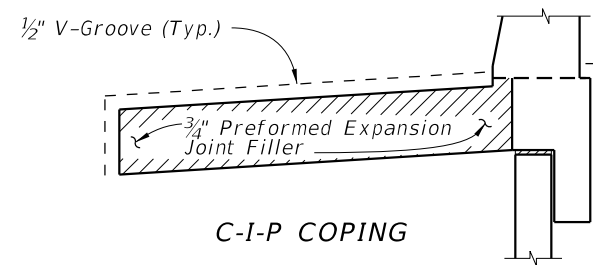


PLAN - RAILING END TRANSITION
(Showing Bars P and S)

RAILING END TRANSITION DETAILS ***



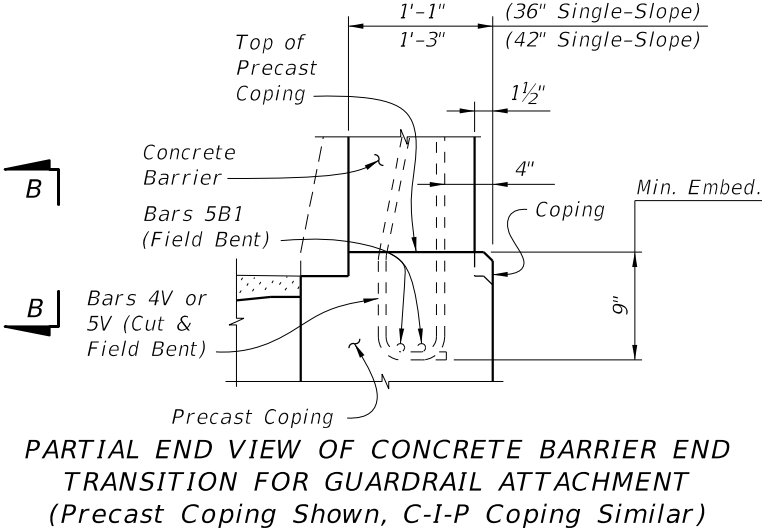
PRECAST COPING



C-I-P COPING

DETAIL "A"

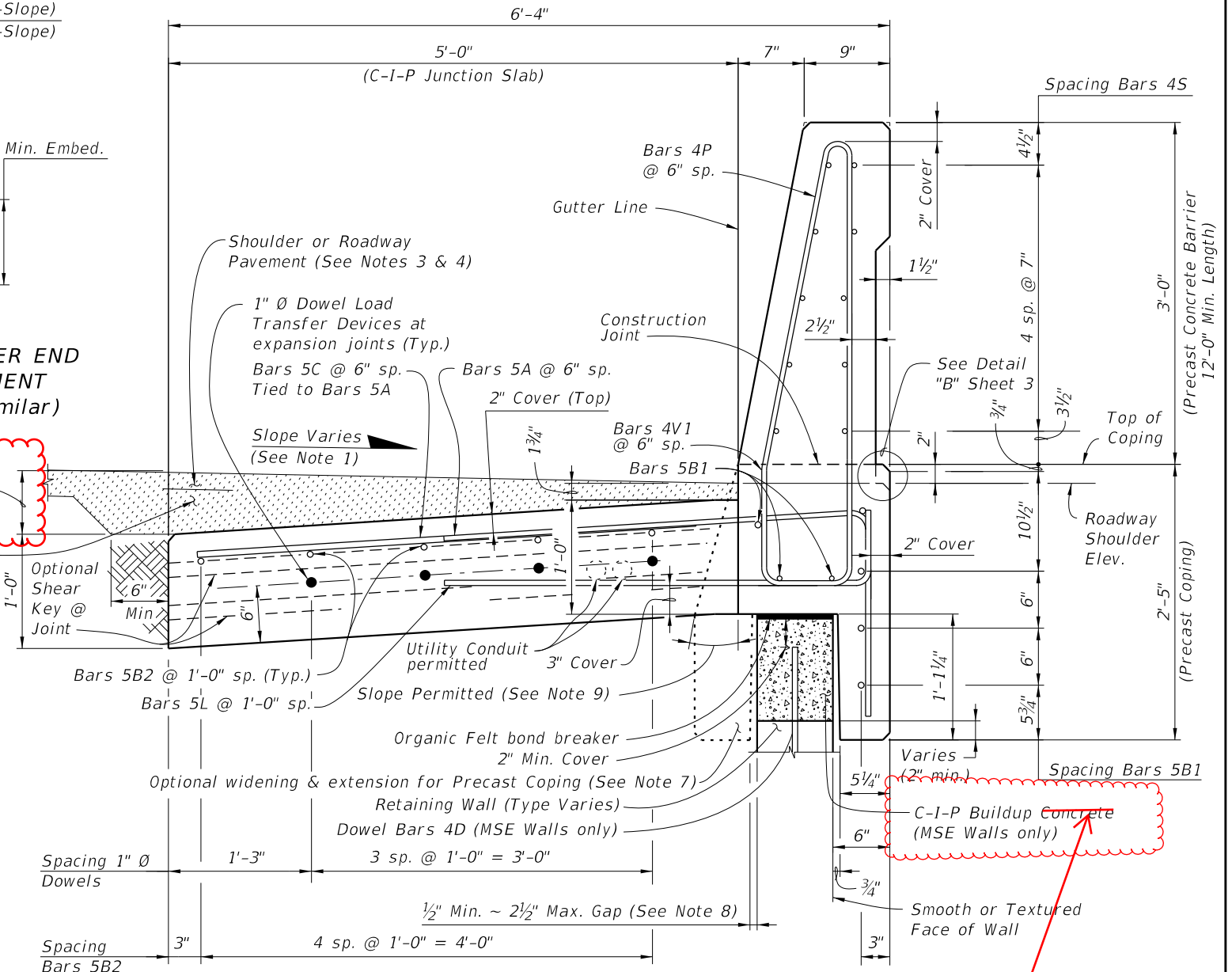
(Showing Locations of 1/2" V-Grooves and 3/4" Preformed Expansion Joint Filler)



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:

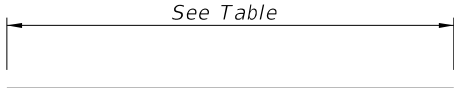
1. Match Cross Slope of Travel Lane or Shoulder.
2. Vary Junction Slab slope based on roadway cross slope to maintain a minimum 6" asphalt depth at the edge of the slab as shown.
3. For Rigid Pavement (Concrete), Junction Slab may be thickened to match finished grade. Vary the Junction Slab slope to 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 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

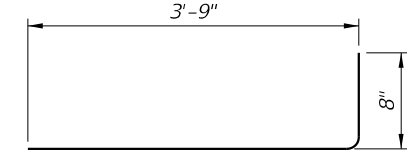
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LAST REVISION	DESCRIPTION:	FY 2022-23 STANDARD PLANS	CONCRETE BARRIER/JUNCTION SLAB - WALL COPING	INDEX	SHEET
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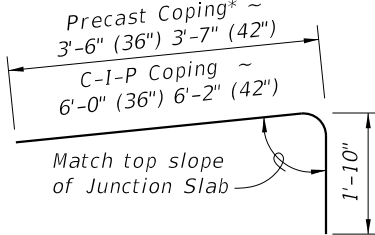
REINFORCING STEEL BENDING DIAGRAMS					
BILL OF REINFORCING STEEL					
MARK	SIZE	LENGTH			
		PRECAST COPING FOR SINGLE-SLOPE		C-I-P COPING FOR SINGLE-SLOPE	
		(36")	(42")	(36")	(42")
A	5	5'-3"	5'-5"	7'-10"	8'-0"
B1	5	11'-6"	9'-6"	AS REQD.	AS REQD.
B2	5	AS REQD.	AS REQD.	AS REQD.	AS REQD.
C	5	4'-10"	4'-10"	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"



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

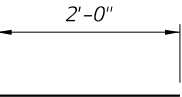


BARS 5L

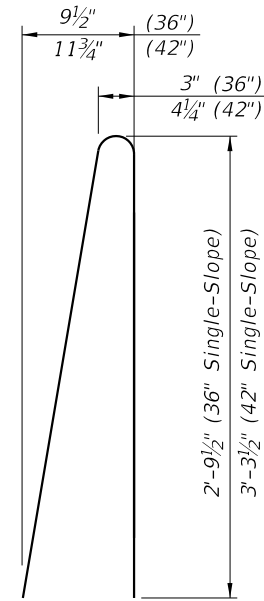


BAR 5A

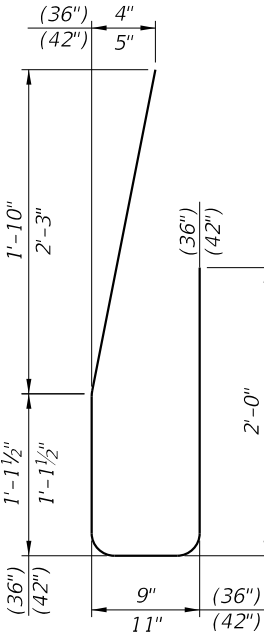
* See Note 5 & 6



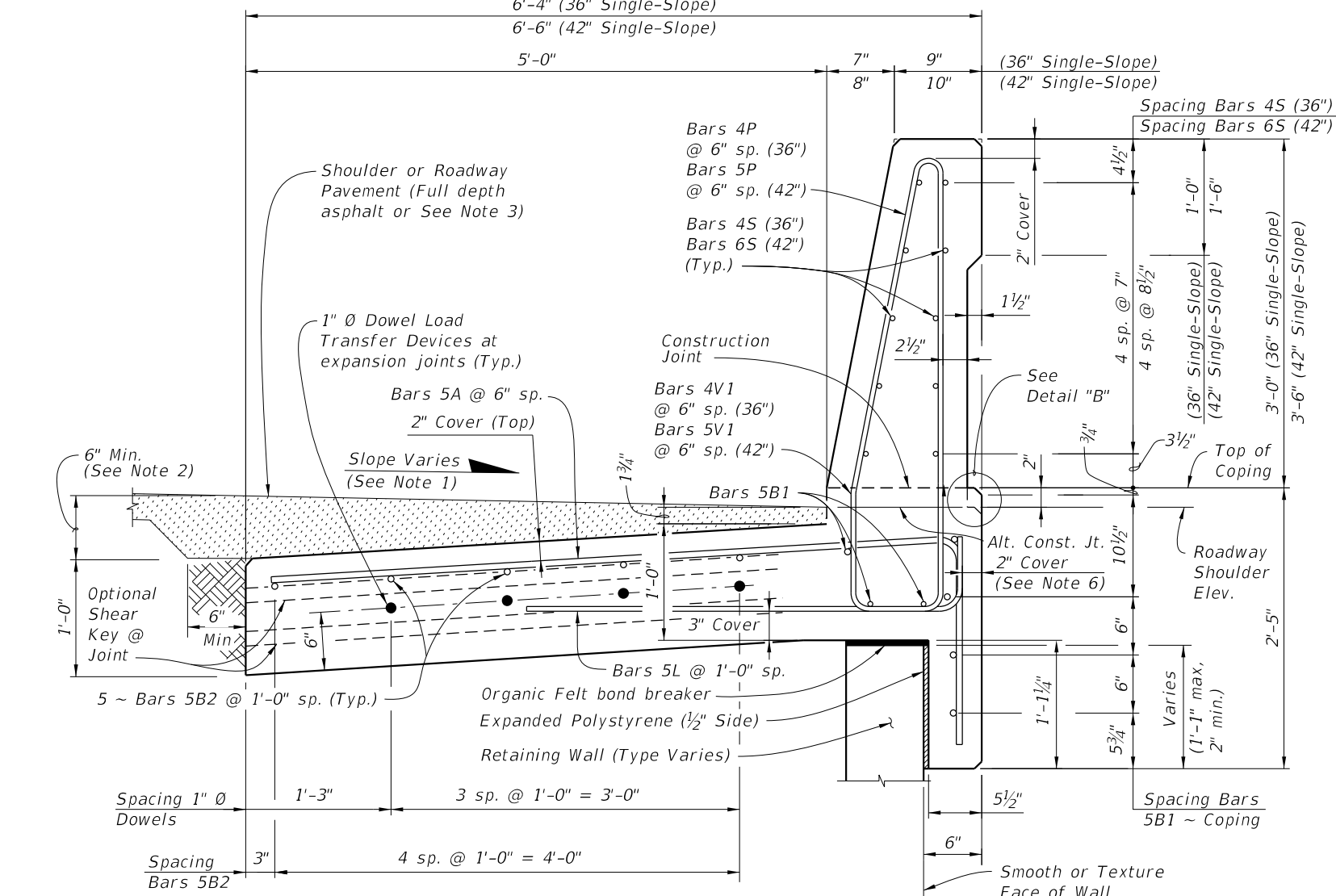
1" Ø DOWEL



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



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



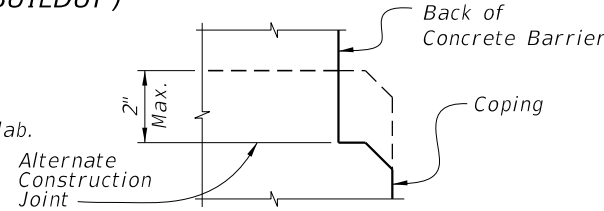
TYPICAL SECTION THRU C-I-P CONCRETE BARRIER WITH C-I-P JUNCTION SLAB AND C-I-P COPING
(PRECAST COPING SIMILAR WITH C-I-P BUILDUP)

- NOTES:
1. Match Cross Slope of Travel Lane or Shoulder.
 2. Vary the Junction Slab slope based on the roadway cross slope to maintain a minimum 6" asphalt depth at the edge of the slab.
 3. 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.
 4. Minimum length of Junction Slab between expansion joints is 30'-0" for 36" Single-Slope or 60'-0" for 42" Single-Slope.
 5. 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.
 6. If slip forming is used, submit shop drawings for approval showing 2 1/2" side cover with the Typical Section dimensions adjusted.

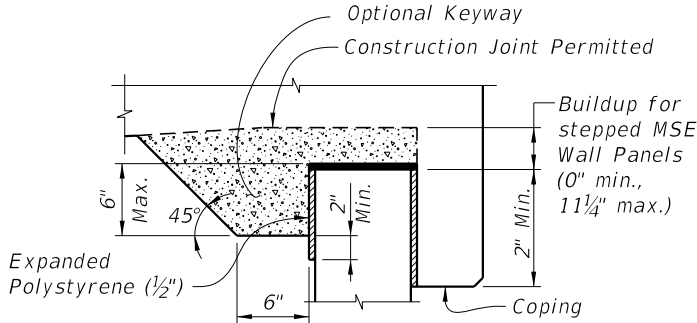
ESTIMATED QUANTITIES FOR C-I-P			
	UNIT	QUANTITY (36")	QUANTITY (42")
	CY/LF	0.376	0.420
al)	LB/LF	62.45	82.17
ansion	LB	21.36	21.36

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

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



DETAIL "B"
OPTIONAL NOTCH AT TOP OF COPING

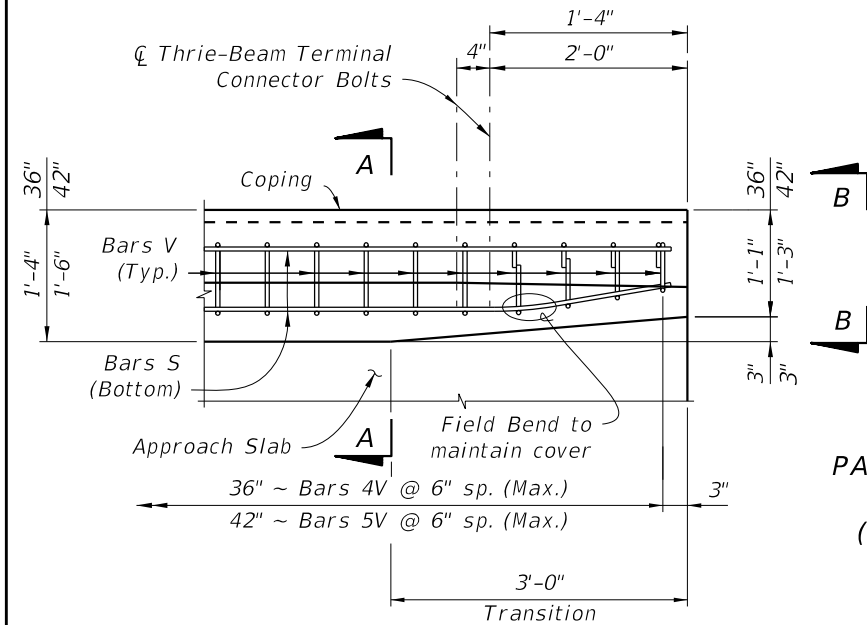


BUILDUP FOR STEPPED MSE WALL PANELS
AND C-I-P COPING

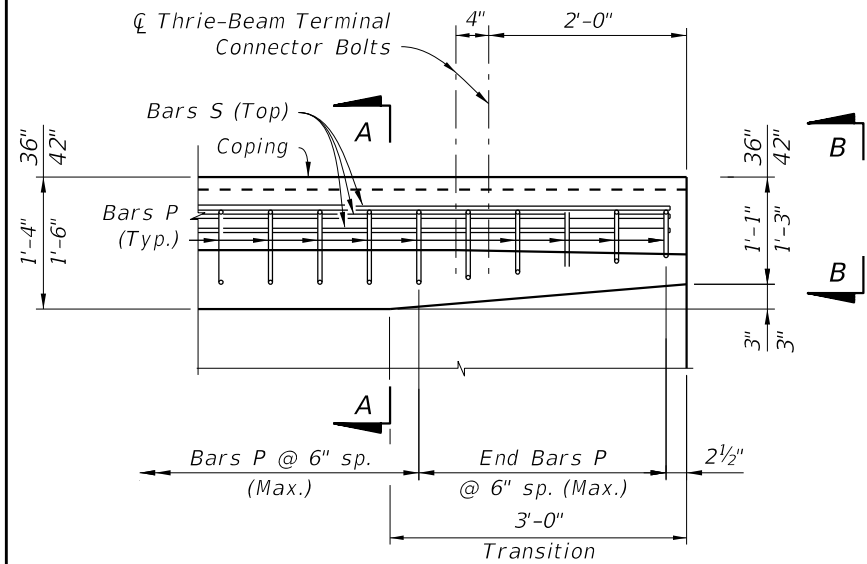
SINGLE-SLOPE CONCRETE BARRIERS

- REINFORCING STEEL NOTES:
1. All bar dimensions in the bending diagrams are out to out.
 2. All reinforcing steel at expansion and open joints will have a 2" minimum cover.
 3. Lap splices for Bars 5B & 5S will be a minimum of 2'-2".
 4. For Precast Copings only, lap splice Bars 5A with Bars 5C. Lap splices will be a minimum of 2'-2".
 5. The Contractor may use either full length Bars 5A or lap splice with Bars 5C at Bars 5A for C-I-P Copings.
 6. 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).
 7. Dimension shown is for lap splice option. For mechanical coupler option, this dimension is 4'-8".
 8. When approved by the Engineer, the Contractor may use deformed Welded Wire Reinforcement (WWR) meeting the requirements of Specification Section 931.
 9. ~~Contractor may use a single #5 stirrup in lieu of two bars for 4P and 4V1.~~

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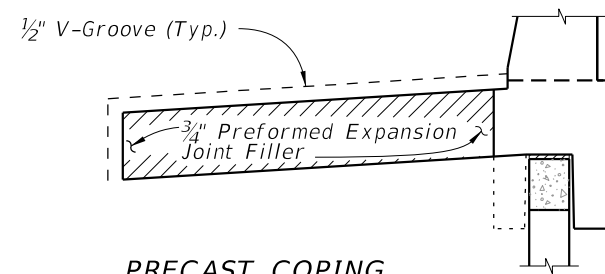


PLAN - RAILING END TRANSITION
(Showing Bars V and S)

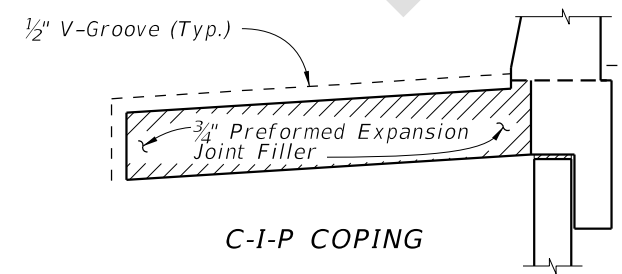


PLAN - RAILING END TRANSITION
(Showing Bars P and S)

RAILING END TRANSITION DETAILS ***



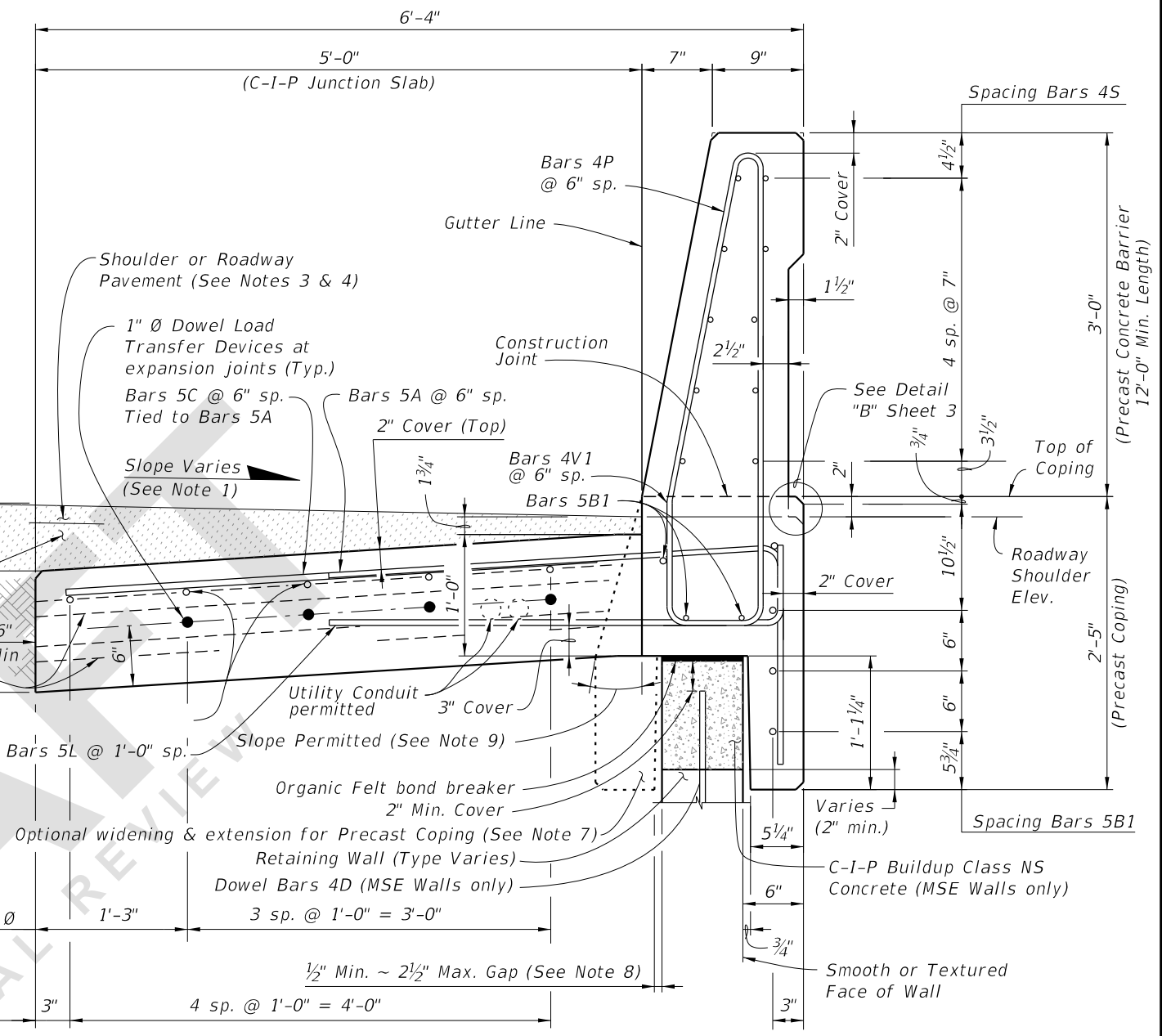
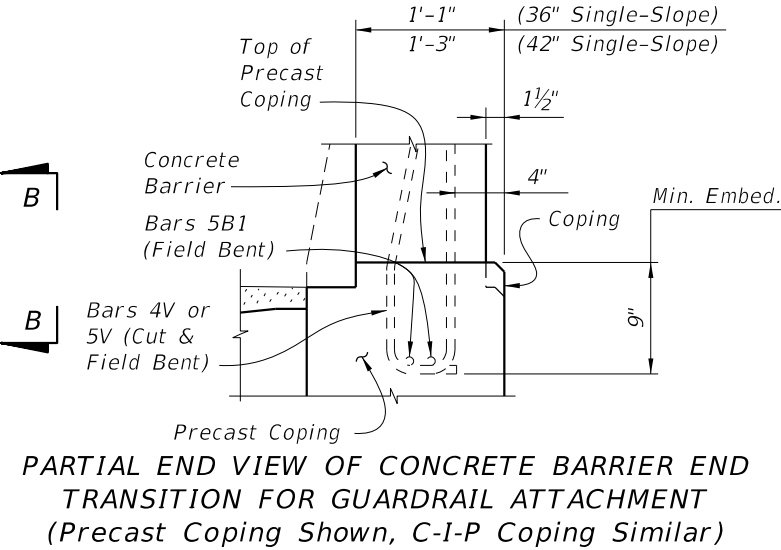
PRECAST COPING



C-I-P COPING

DETAIL "A"

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



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

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REINFORCING STEEL BENDING DIAGRAM					
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

A diagram of a rectangular sign. The top horizontal dimension is labeled $3'-9''$. The right vertical dimension is labeled $8''$. The sign has a rounded bottom-right corner.

A dimension line with arrows at both ends, labeled "2'-0"" above it.

BARS 5L

Precast Coping* ~
3'-6" (36") 3'-7" (42")

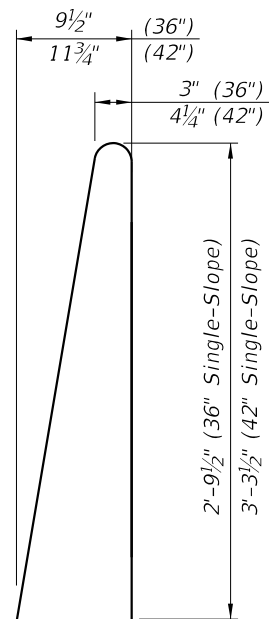
C-I-P Coping ~
6'-0" (36") 6'-2" (42")

Match top slope
of Junction Slab

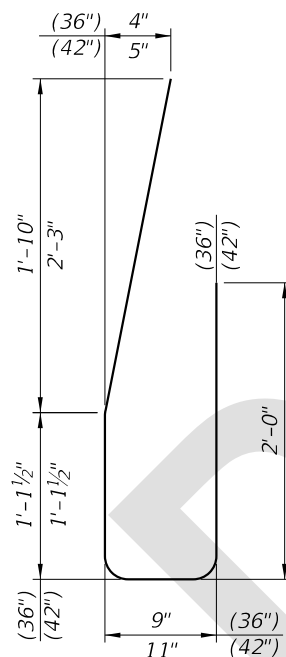
1'-10"

* See Note 5 & 6

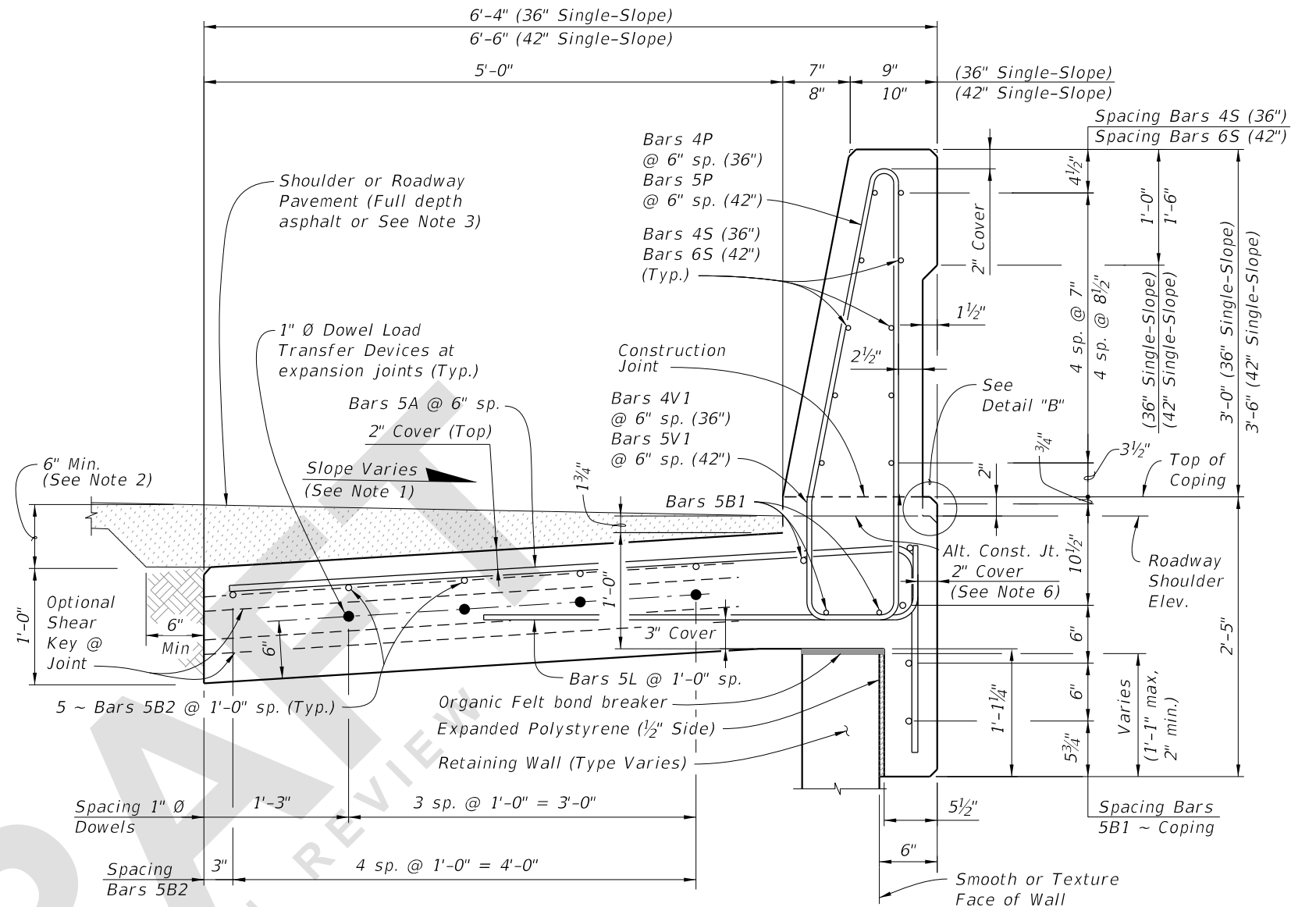
1. All bar dimensions in the bending diagrams are out to out.
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3. Lap splices for Bars 5B & 5S will be a minimum of 2'-2".
4. For Precast Copings only, lap splice Bars 5A with Bars 5C. Lap splices will be a minimum of 2'-2".
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6. Dimension shown is for lap splice option. For mechanical coupler option, this dimension is 1'-2 $\frac{1}{2}$ " (36" Single-Slope) or 1'-4 $\frac{1}{2}$ " (42" Single-Slope).
7. Dimension shown is for lap splice option. For mechanical coupler option, this dimension is 4'-8".
8. When approved by the Engineer, the Contractor may use deformed Welded Wire Reinforcement (WWR) meeting the requirements of Specification Section 931.
9. 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")

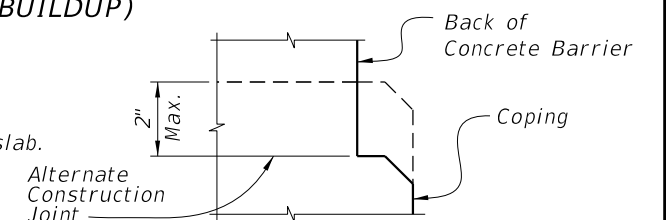


NOTES: (PRECAST COPING SIMILAR WITH C-I-P BUILDING)

1. Match Cross Slope of Travel Lane or Shoulder.
2. Vary the Junction Slab slope based on the roadway cross slope to maintain a minimum 6" asphalt depth at the edge of the slab.
3. 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.
4. Minimum length of Junction Slab between expansion joints is 30'-0" for 36" Single-Slope or 60'-0" for 42" Single-Slope.
5. 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.
6. 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%)



Optional Keyway

Construction Joint Permitted

Buildup for stepped MSE Wall Panels (0" min., 1 1/4" max.)

6" Max.

45°

Expanded Polystyrene (1/2")

2" Min.

6"

Coping

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