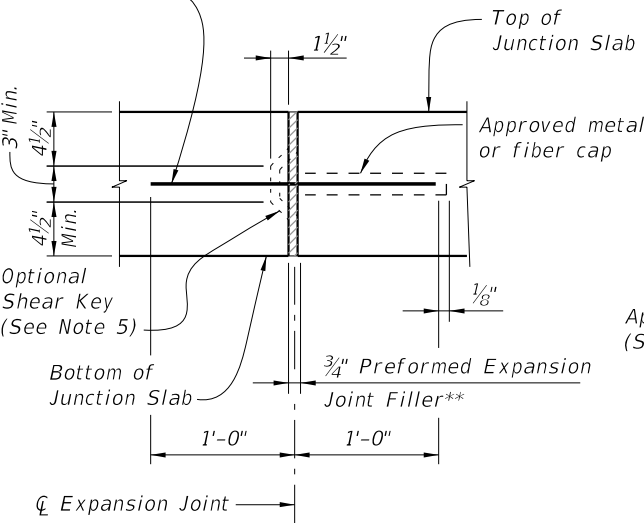


1" Ø Dowel Load Transfer Devices (See Typical Sections for details)

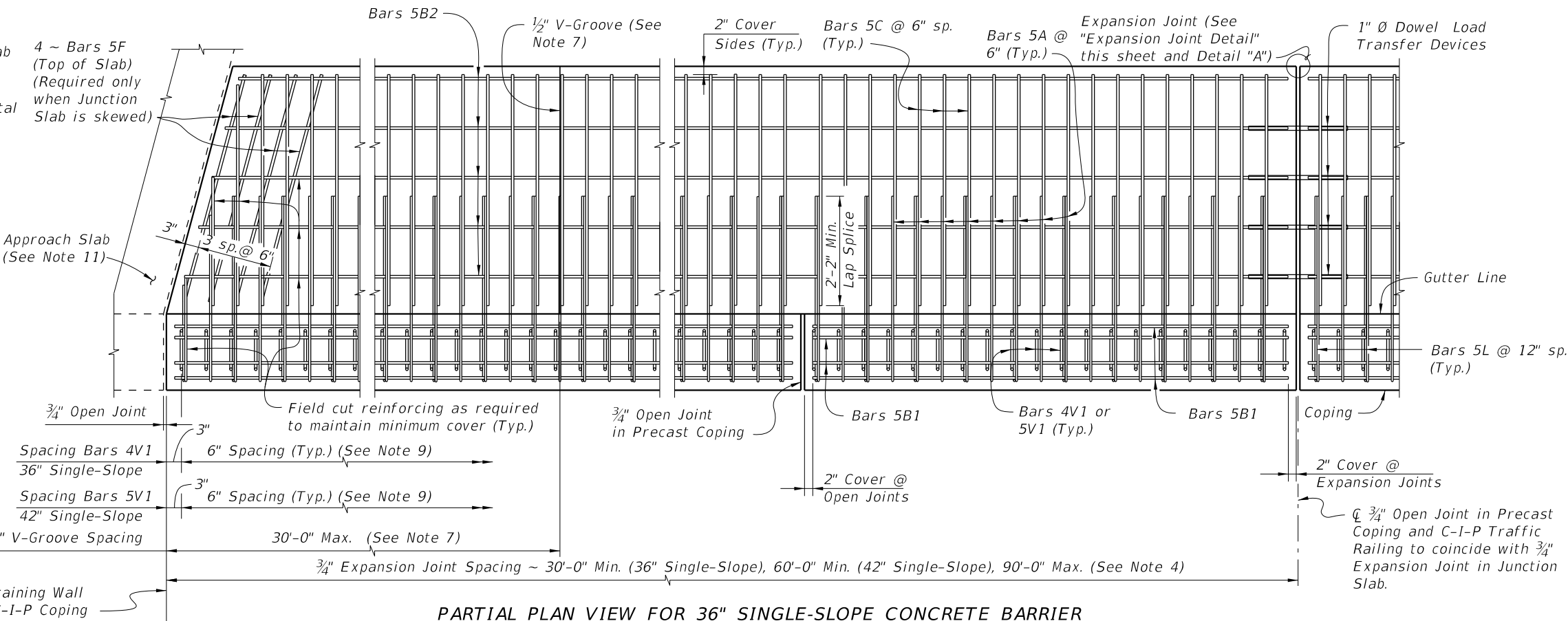


EXPANSION JOINT DETAIL

(Junction Slab expansion joints are to coincide with 3/4" open joints in Concrete Barrier)

** Stay-In-Place Plastic Preformed Bond Breakers are permitted to form joints.

CROSS REFERENCE: For Detail "A", see Sheet 2.
For Detail "B", see Sheet 3.

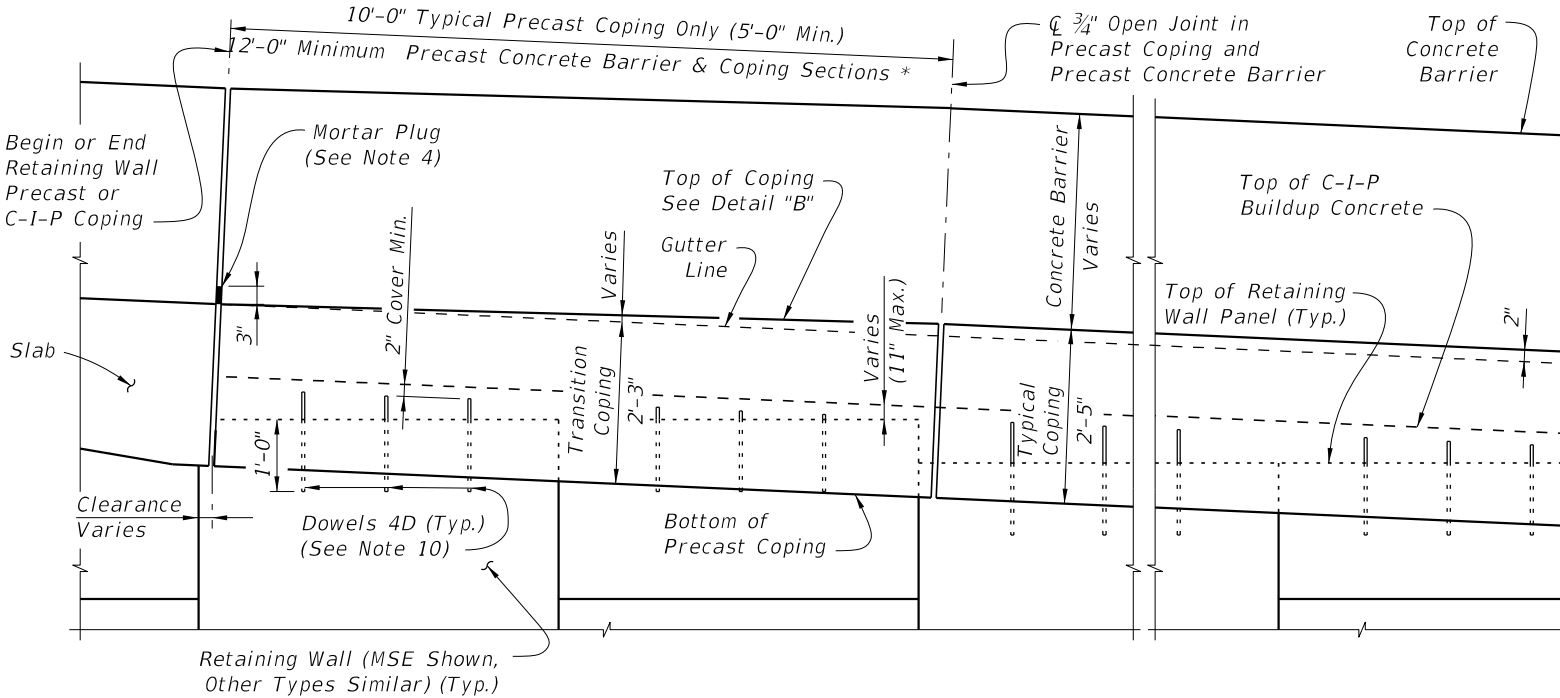


PARTIAL PLAN VIEW FOR 36" SINGLE-SLOPE CONCRETE BARRIER
(Skewed Approach Slab Shown, Perpendicular Approach Slab Similar)

(Precast Coping Shown, C-I-P Coping Similar) (Concrete Barrier not Shown for Clarity)

JUNCTION SLAB NOTES:

- Construct the expansion joints, V-Grooves and face of coping plumb.
- Provide Class II concrete for slightly aggressive environments or Class IV for moderate or extremely aggressive environments.
- Dowel Load Transfer Devices will be hot-dip galvanized ASTM A 36 smooth round bar, or GFRP smooth round bars that meet ASTM D8444 with a minimum shear strength of 22 ksi in accordance with ASTM D7617. Install Dowel Load Transfer Devices in accordance with Specification Section 350.
- Construct 3/4" Expansion Joints in junction slabs and C-I-P copings plumb and perpendicular or radial to the Gutter Line. Provide at 90'-0" maximum intervals as shown. Provide 3"x3" Mortar plugs in open joints at the base of Concrete Barriers to contain runoff.
- Shear Keys in Junction Slab are required when GFRP bars are used for Dowel Transfer Devices and are optional with steel dowel bars. Tongue Slope on Shear Key must be constant and between 5° to 45° from horizontal.
- Provide and install Preformed Expansion Joint Filler in accordance with Specification Section 932.
- Construct 1/2" V-Grooves in junction slabs and C-I-P copings at 30'-0" maximum intervals as shown. Space V-Grooves equally between 3/4" Expansion Joints and/or Begin or End Junction Slab. V-Groove locations are to coincide with V-Groove locations in the Concrete Barrier.
- Shoulder or Roadway Pavement is required on top of the junction slab for its entire length on the traffic side of the Concrete Barrier. See Typical Sections on Sheets 2 and 3 for details.
- Spacing shown is along the Gutter Line.
- For Precast Coping only, provide Dowel Bars 4D embedded 1'-0" and extended 9" above the top of MSE wall panels. Field cut as necessary to maintain 2" minimum cover to the top of the buildup concrete. See Wall Company Drawings for number and spacing of Dowel Bars 4D.
- The following Indexes contain details of the intersection of the retaining wall at approach slabs:
Index 400-090 - Approach Slabs (Flexible Pavement Approaches)
Index 400-091 - Approach Slabs (Rigid Pavement Approaches)
- Junction slabs with rigid pavement: the two inch increase in concrete barrier height is not required.
- There are two options to accommodate the 2" height transitions :
A. Raise the top of coping elevation 2" and mount either a 36" or 42" standard barrier on top
B. Transition the height of the concrete barrier by gradually extending the toe and back of the barrier 2" while keeping the top of coping elevation even with the gutterline elevation.
- The barrier construction joint must be at the interface of the coping and the barrier base. Embed the V bars a minimum of 9" below the construction joint.
- For embedded conduit and junction boxes, see Index 630-010.



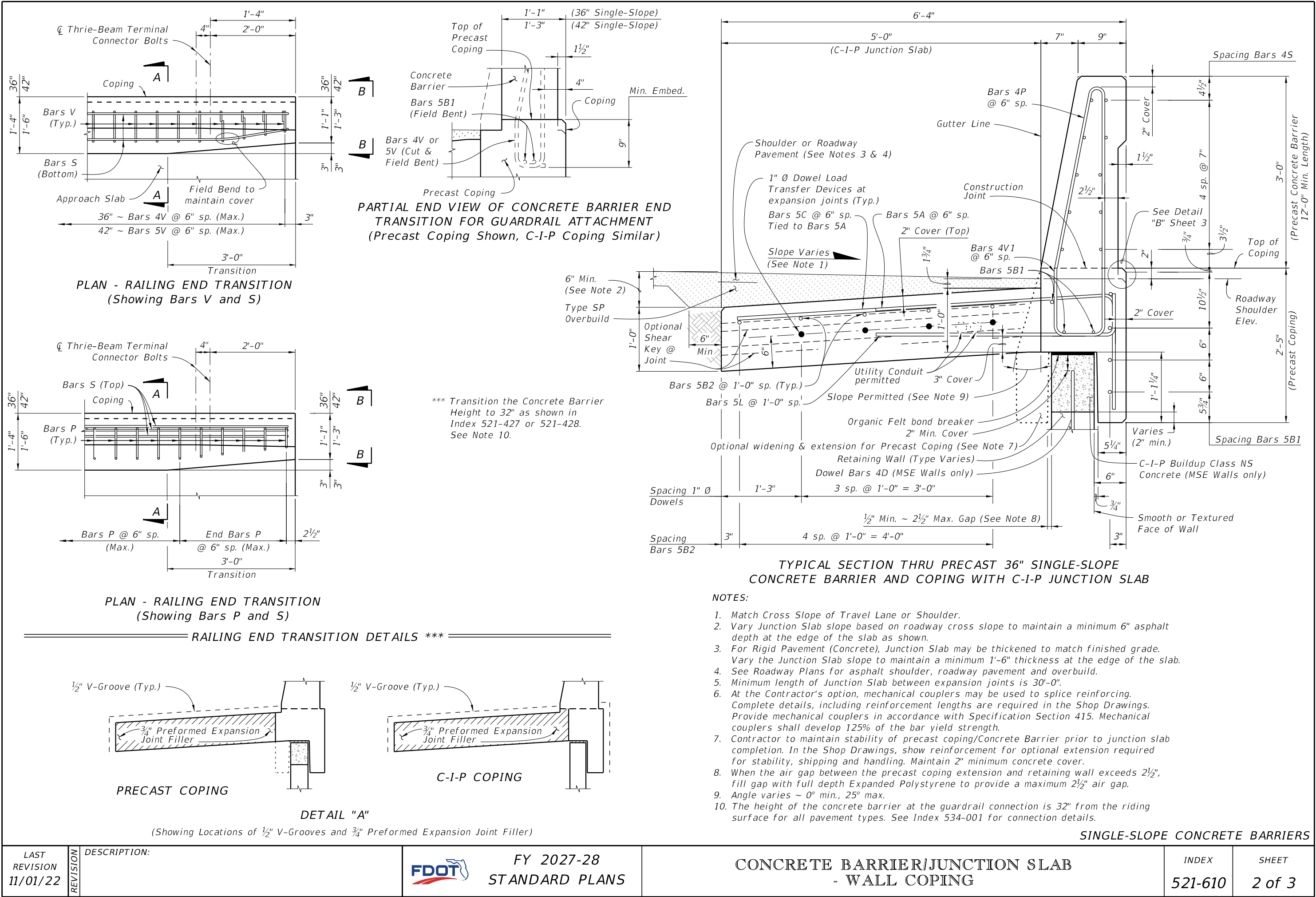
PARTIAL ELEVATION VIEW

(Precast Coping and Junction Slab Reinforcing not Shown for Clarity)
(Precast Coping Shown, C-I-P Coping Similar)

* C-I-P End Section must be ≥ 12'-0".

SINGLE-SLOPE CONCRETE BARRIERS

LAST REVISION	DESCRIPTION:	FY 2027-28 STANDARD PLANS	CONCRETE BARRIER/JUNCTION SLAB - WALL COPING	INDEX	SHEET
11/01/24				521-610	1 of 3



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"

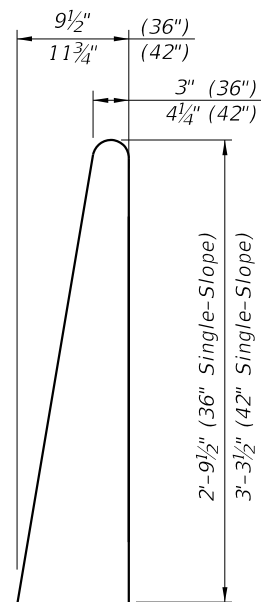
A diagram of a rectangular box. The top horizontal edge is labeled $3'-9''$. The right vertical edge is labeled $8''$.

Diagram illustrating the dimensions of a precast coping profile:

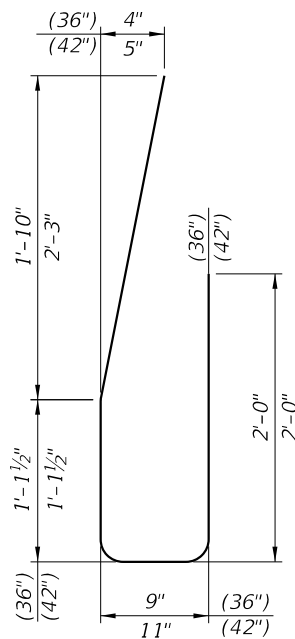
- Top horizontal dimension: **Precast Coping* ~**
 3'-6" (36") 3'-7" (42")
- Bottom horizontal dimension: **C-I-P Coping ~**
 6'-0" (36") 6'-2" (42")
- Vertical dimension on the right: **1'-10"**
- Annotation: **Match top slope of Junction Slab** (indicated by a curved arrow pointing to the top edge of the coping).

* See Note 5 & 6

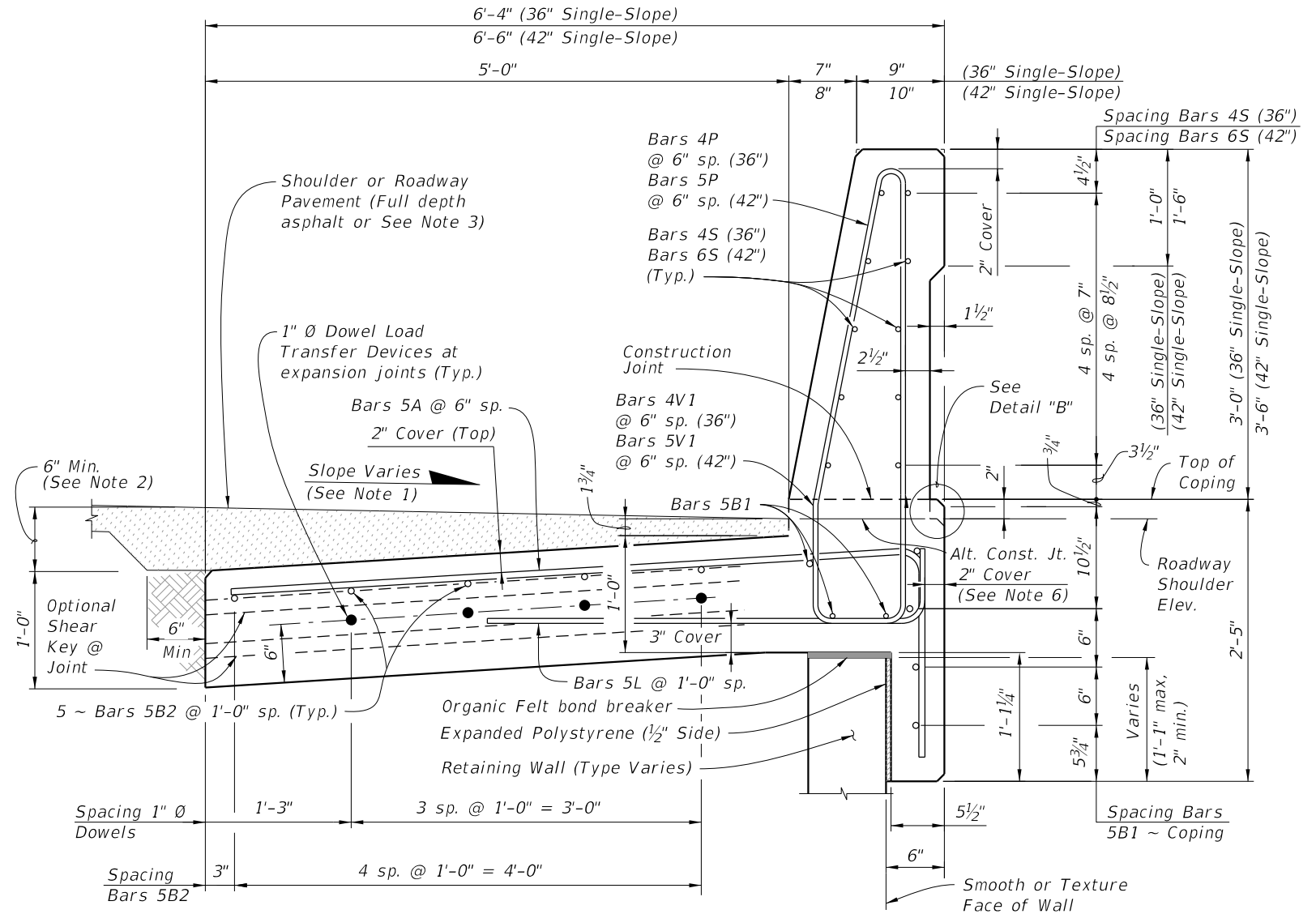
1. All bar dimensions in the bending diagrams are out to out.
2. All reinforcing steel at expansion and open joints will have a 2" minimum cover.
3. Lap splices for Bars 5B & 5S will be a minimum of 2'-2".
4. For Precast Copings only, lap splice Bars 5A with Bars 5C. Lap splices will be a minimum of 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'-2½" (36" Single-Slope) or 1'-4½" (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")

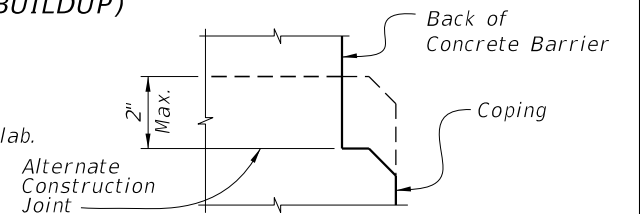


STIRRUP BAR
4V1 (36") 5V1 (42")



NOTES:

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.



Optional Keyway

Construction Joint Permitted

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

2" Min.

6"

6" Max.

45°

2" Min.

Coping

Expanded Polystyrene (1/2")

BUILDUP FOR STEPPED MSE WALL PANELS
AND C-I-P COPING
SINGLE-SLOPE CONCRETE BARRIERS

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%)