
Index 521-610 Concrete Barrier/Junction Slab – Wall Coping

ORIGINATION

Date: 6/5/24

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COMMENTARY

There is an updated more comprehensive ASTM that has recently been made available.

COMMENTS AND RESPONSES

BLACK = Industry Review Comments **BLUE** = Standard Plans Response **GREEN** = Change Made to Index

Name: Halim Bas

Date: 7/18/24

COMMENT: ASTM D8444 is a specification for Dowel Bars not a testing method. It probably refers to ASTM D7617 for shear strength testing. I understand the need to include ASTM D8444, since it is the more proper standard to reference for GFRP dowels. It can be included with the following language.

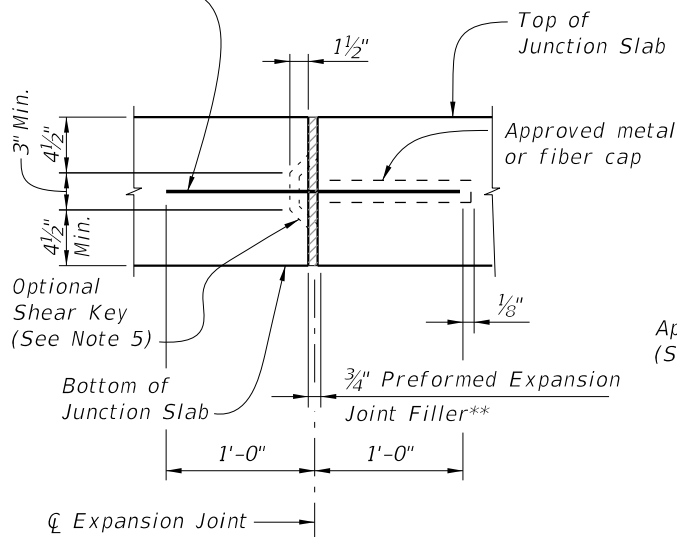
...GFRP smooth round bars that meet ASTM D8444 with a minimum shear strength of 22 ksi tested in accordance with ASTM D7617.

RESPONSE: Agreed. We will update.

CHANGE MADE TO INDEX: Updated language to match suggestion.

Response Date: 7/24/24

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

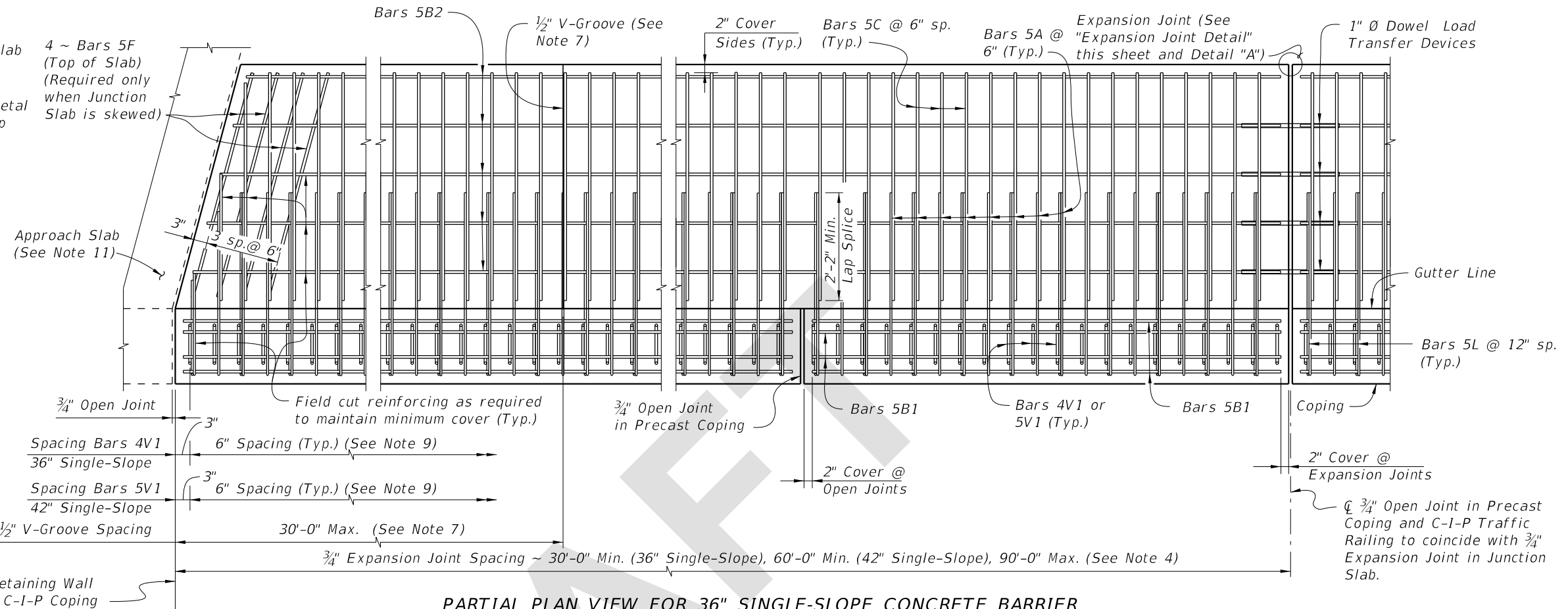


EXPANSION JOINT DETAIL

(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.

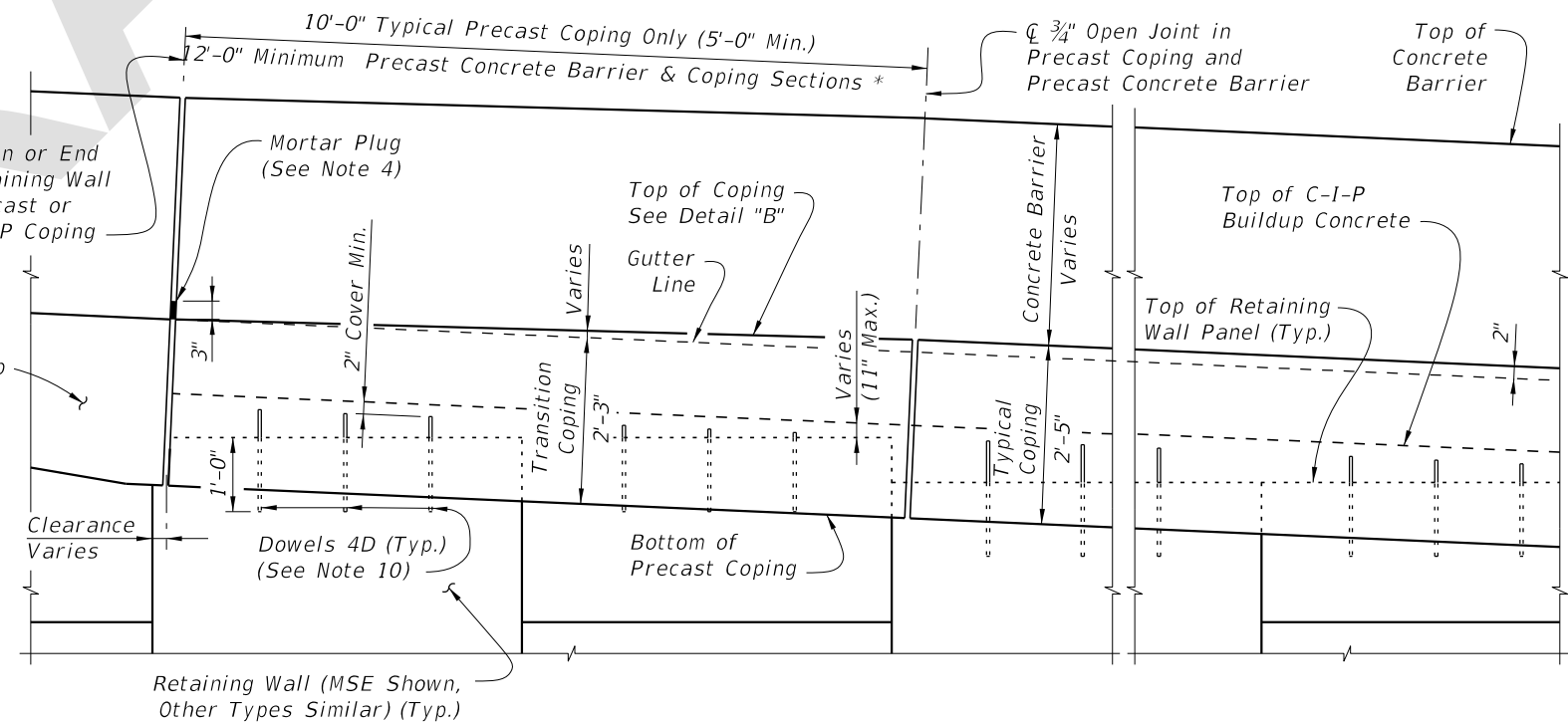
CROSS REFERENCE: For Detail "A", see Sheet 2.
For Detail "B", see Sheet 3.



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

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LAST REVISION 11/01/24	DESCRIPTION:	 FY 2025-26 STANDARD PLANS	CONCRETE BARRIER/JUNCTION SLAB - WALL COPING	INDEX 521-610	SHEET 1 of 3
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