1. Construct the expansion joints, V-Grooves and face of coping plumb.

2. Provide Class III concrete for slightly aggressive environments or Class IV for moderate or extremely aggressive environments.

3. Dowel Load Transfer Devices will be hot-dip galvanized ASTM A36 smooth round bar, or GFRP smooth round bars with a minimum shear strength of 22 ksi in accordance with ASTM D7617. Install Dowel Load Transfer Devices in accordance with Specification Section 230.

4. Construct 2" 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 3x3x3 Mortar plugs in open joints at the base of Concrete Barriers to contain runoff.

5. Shear Keys in junction slabs 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\(^\circ\) to 45\(^\circ\) from horizontal.

6. Provide and install Preformed Expansion Joint Filler in accordance with Specification Section 922.

7. Construct 2" V-Grooves in junction slabs and C-I-P copings at 30'-0" maximum intervals as shown. Space V-Grooves equally between 2" Expansion Joints and/or Begin or End Junction Slab. V-Groove locations are to coincide with V-Groove locations in the Concrete Barrier.

8. Shoulder or Roadway Paving is required on top of the junction slab for its entire length on the traffic lane side of the Concrete Barrier. See Typical Sections on Sheets 2 and 3 for details.

9. Spacing shown is along the Gutter Line.

10. 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.

11. 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)

**CROSS REFERENCE:** For Detail "A", see Sheet 2.
NOTES:
1. Match Cross Slope of Travel Lane or Shoulder.
2. Vary Section 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), Section Slope may be thickened to match finished grade.
4. Minimum length of Concrete Slab between expansion joints is 30'-0".
5. At the Contractor's option, mechanical couplers may be used to splice reinforcing.
6. Complete details, including reinforcement lengths are required in the Shop Drawings.
7. Minimum Embedment depth at the edge of the slab as shown.
8. Angle varies, 0° min., 25° max.

\[ \text{PRECAST COPING} \]

\[ \text{DETAIL "A"} \]

\[ \text{(Showing Locations of \( \frac{1}{2} \) V-Grooves and \( \frac{3}{8} \) Preformed Expansion Joint Filler)} \]
Coping

DESCRIPTION:

1. Match Cross Slope of Travel Lane or Shoulder.
2. Vary the Jnct 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), Jnct Slab may be thickened to match finish grade.
4. Vary the Jnct Slab slope to maintain a minimum 1'-6" thickness at the inside edge of the slab.
5. Contractor to maintain stability of precast coping prior to jnct 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" side cover with 2" minimum concrete cover.
7. For Precast Copings only, lap splice Bars 5A with Bars 5C. Lap splices will be a minimum of 2'-3".
8. Minimum length of Jnct Slab between expansion joints is 30'-0" for 36" Single-Slope or 60'-0" for 42" Single-Slope.
9. Conductor to maintain stability of precast coping prior to jnct slab completion. In the shop drawings, show reinforcement for optional extension required for stability, shipping and handling. Maintain 2" minimum concrete cover.
10. If slip forming is used, submit shop drawings for approval showing 2" side cover with the typical section dimensions adjusted.

REINFORCING STEEL NOTES:

1. Marble dimensions in the bending diagrams are cut out to cut.
2. All reinforcing steel at expansion and open joints will have a 2" minimum cover.
3. Lap splice bars at 5B & 5E 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 splices 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'-25" (36" Single-Slope) or 1'-42" (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 93).
9. Contractor may use a single #5 stirrup in lieu of two bars for 4P and 4V1.

REINFORCING STEEL:

1. Match Cross Slope of Travel Lane or Shoulder.
2. Vary the Jnct 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), Jnct Slab may be thickened to match finish grade.
4. Vary the Jnct Slab slope to maintain a minimum 1'-6" thickness at the inside edge of the slab.
5. Contractor to maintain stability of precast coping prior to jnct 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" side cover with the typical section dimensions adjusted.

ESTIMATED QUANTITIES FOR C-I-P:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>UNIT</th>
<th>QUANTITY (36&quot;)</th>
<th>QUANTITY (42&quot;)</th>
</tr>
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<tbody>
<tr>
<td>Concrete</td>
<td>CY/LF</td>
<td>0.376</td>
<td>0.420</td>
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<tr>
<td>Reinforcing Steel (Typical) (includes Bars 5C &amp; 5E)</td>
<td>LB/LF</td>
<td>62.45</td>
<td>62.17</td>
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<tr>
<td>Additional Rein. @ Expansion Joint (Steel Dowels)</td>
<td>LB</td>
<td>21.36</td>
<td>21.36</td>
</tr>
</tbody>
</table>

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

Detail "A" OPTIONAL NOTCH AT TOP OF COPING

BACK OF CONCRETE BARRIER

CONSTRUCTION JOINT PERMITTED

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

SINGLE-SLOPE CONCRETE BARRIERS

FY 2018-19 STANDARD PLANS