CONCRETE PAVEMENT JOINTS

Transverse expansion joint

- Plain Steel Dowel Bar (Coat and lubricate in accordance with Section 350 of the Standard Specifications)
- Preformed Joint Filler (Punch clean holes greater than bar diameter)
- Sheet Metal Bottom Strip in accordance with Section 931 of the Standard Specifications

Transverse contraction joint, vibro cast method

- Plain Steel Dowel Bar (Coat and lubricate in accordance with Section 350 of the Standard Specifications)
- Sheet Metal Bottom Strip in accordance with Section 931 of the Standard Specifications

Transverse contraction joint, sawed method

- Plain Steel Dowel Bar (Coat and lubricate in accordance with Section 350 of the Standard Specifications)
- Sheet Metal Bottom Strip in accordance with Section 931 of the Standard Specifications

Butt construction joint to be used at discontinuances of work

- Plain Steel Dowel Bar (Coat and lubricate in accordance with Section 350 of the Standard Specifications)
- Metal or plastic cap
- Approved Tie Bar Support
- Top of Pavement

Dowels (length 18"")

<table>
<thead>
<tr>
<th>Pavement Thickness (in.)</th>
<th>Diameter (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6&quot;-8&quot;</td>
<td>½</td>
</tr>
<tr>
<td>9&quot;-10&quot;</td>
<td>½</td>
</tr>
<tr>
<td>≥11&quot;</td>
<td>¾</td>
</tr>
</tbody>
</table>

Dowel bar layout

- Plain Steel Dowel Bars
- Sheet Metal Bottom Strip for expansion joints only
- Bend up against end of pavement after forms are removed

Note: Expansion joints to be placed on approaches to bridges, at street intersections and other locations indicated in detail plans.

Note: Tie bar spacing shall not exceed 24" at these joints.

Dowel joints

- Transverse joints are to be spaced at a maximum of 15'. Dowels are required at all transverse joints unless otherwise noted in plans.

Transverse joints

Note: For joint seal dimensions see Sheet 2.
**Concrete Pavement Joints**

For new projects:

- **Preformed Elastomeric Compression Seal**
- **Concrete-Concrete Joints**

For new and rehabilitation projects:

- **Backer Rod Bond Breaker**

### Joint Seal Dimensions

<table>
<thead>
<tr>
<th>Joint Type</th>
<th>Dimensions (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Concrete-Concrete Joints</strong></td>
<td></td>
</tr>
<tr>
<td>Joint Width</td>
<td>1/4</td>
</tr>
<tr>
<td>Sealant Bead Thickness</td>
<td>1/32</td>
</tr>
<tr>
<td>Backer Rod Dia</td>
<td>1/16</td>
</tr>
<tr>
<td>Minimum Joint Depth</td>
<td>1/8</td>
</tr>
<tr>
<td>Backer Rod Placement Depth</td>
<td>1/8</td>
</tr>
</tbody>
</table>

**Concrete-Asphalt Shoulder Joints**

For new and rehabilitation projects:

- **Backer Rod Bond Breaker** (Concrete-Concrete Joints)

**Note:** Dimension w will be shown in the plans or established by the Engineer based on field conditions. Dimension d will be constructed so that the shape factor w/t has a maximum value of 2.0 and a minimum value of 1.0.

**Asphalt Shoulder Pavement**

Concrete Pavement

Joint Sealant Material To Be As Specified In The Plans

Saw Cut Joint

Concrete Pavement

Joint Sealant Material To Be As Specified In The Plans

Saw Cut Joint

For rehabilitation projects:

- **Tape Bond Breaker**

- **Backer Rod Bond Breaker**

**Note:** Unless otherwise indicated on the plans the joint width for new construction will be 1/4” for construction joints, 1/8” for all other joints.

**For rehabilitation projects:**

The joint width will be shown on the plans or established by the Engineer based on field conditions.
ALTERNATE KEYWAY AND HOOK BOLT

STEEL HOOK BOLT ASSEMBLY

CONTRACTION ASSEMBLY

EXPANSION ASSEMBLY

NOTES
1. Longitudinal joints will not be required for single lane pavement 14 ft or less in width. For entrance and exit ramp joint details, see Sheet 4.
2. Arrangement of longitudinal joints are to be as directed by the Engineer.
3. All manholes, meter boxes and other projections into the pavement shall be boxed-in with 12" preformed expansion joint material.

Anchor bolts shall be Grade C in accordance with ASTM A307. Threaded sleeves shall develop the full strength of the bolt and meet the material and thread requirements of ASTM A563.

Note: After the concrete has set to the extent that the Keyway will retain its shape, the hexagonal bolt and plastic insert shall be removed. The remaining portion of the hook bolt assembly shall be installed immediately prior to placing of concrete in the adjacent lane.

Anchor bolts shall be Grade C in accordance with ASTM A 307. Threaded sleeves shall develop the full strength of the bolt and meet the material and thread requirements of ASTM A 563.

The remaining portion of the hook bolt assembly shall be installed immediately prior to placing of concrete in the adjacent lane.

Note: After the concrete has set to the extent that the Keyway will retain its shape, the hexagonal bolt and plastic insert shall be removed. The remaining portion of the hook bolt assembly shall be installed immediately prior to placing of concrete in the adjacent lane.

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**CONCRETE PAVEMENT JOINTS**

**DESCRIPTION:**

- **2-THRU LANES WITH SINGLE LANE ENTRANCE RAMP**
  - Longitudinal Joint
  - Contraction Joint (Typ.)
- **ENTRANCE TAPER WITH AUXILIARY LANE**
  - Longitudinal Joint
  - Contraction Joint (Typ.)
- **ENTRANCE RAMP WITH ADDLED LANE**
  - Longitudinal Joint
  - Contraction Joint (Typ.)
- **EXIT TAPER WITH AUXILIARY LANE**
  - Longitudinal Joint
  - Contraction Joint (Typ.)
- **2-THRU LANES WITH SINGLE LANE EXIT RAMP**
  - Longitudinal Joint
  - Contraction Joint (Typ.)
- **3-THRU LANES WITH AUXILIARY LANE AND 2-LANE EXIT RAMP**
  - Longitudinal Joint
  - Contraction Joint (Typ.)

**JOINT LAYOUT AT ENTRANCE AND EXIT RAMP TERMINALS**

* 12' with tied Concrete Shoulders or 14' with Asphalt Shoulders.

**Note:** On single lane ramps, longitudinal joint to be constructed along centerline of ramp.