NOTES:
1. For joint seal dimensions see Sheet 2.
2. For slabs poured simultaneously, tie bars may be inserted in the plastic concrete by means approved by the Engineer.
3. For Longitudinal Joints:
   A. Tie bars are deformed #4 or #5 reinforcing steel bars meeting the requirements of Specifications, Section 931.
   B. Provide a standard load transfer tied joint with #4 bars 27" in length at 24" spacing or #5 bars 30" in length at 36" spacing.
4. Transverse joints are to be spaced at a maximum of 15'. Dowels are required at all transverse joints unless otherwise noted in the plans.
5. Expansion joints to be placed on approaches to bridges, at street intersections and other locations indicated in the plans.
6. Punch clean holes in preformed joint filler greater than bar diameter.
7. Coat and lubricate plain steel dowel bars in accordance with Specifications, Section 931.
8. Sheet metal bottom strips in accordance with Specifications, Section 350.

DOWEL BARS CAPS

LONGITUDINAL JOINTS

TRANSVERSE JOINTS

CONCRETE PAVEMENT JOINTS

INDEX

LAST REVISION 01/01/17

CONSTRUCTION METHODS

DOWELS (LENGTH 18")

FACTOR OF RECOMMENDATION

CONTRACTION JOINT

EXPANSION JOINT

BUTT CONSTRUCTION JOINT

APPLICATIONS:

BUTT CONSTRUCTION JOINT

(Used At Discontinuance Of Work)

EXPANSION JOINT

(See Note #6)

BUTT CONSTRUCTION JOINT

(Used At Discontinuance Of Work)

CONTRACTION JOINT

(Vibro Case Method)

CONSTRUCTION JOINTS

(Sawed Method)

DOWEL BAR LAYOUT
CONCRETE-CONCRETE JOINTS

CONCRETE-ASPHALT SHOULDER JOINTS

Joint Sealant Material To Be As Specified In The Plans

Tape Bond Breaker

Concrete Pavement

Asphalt Shoulder Pavement

Joint Sealant Material To Be As Specified In The Plans

Backer Rod Bond Breaker

Joint Sealant Material To Be As Specified In The Plans

Tape Bond Breaker

FOR NEW AND REHABILITATION PROJECTS:
EITHER TAPE OR BACKER ROD BOND BREAKER REQUIRED;
SHOULDER MUST BE REPAIRED IF PROPER JOINT SHAPE
CAN NOT BE ATTAINED.

JOINT SEAL DIMENSIONS

<table>
<thead>
<tr>
<th>JOINT WIDTH</th>
<th>SEALANT BEAD THICKNESS</th>
<th>BACKER ROD DIA.</th>
<th>MINIMUM JOINT PLACEMENT Depth</th>
</tr>
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<tbody>
<tr>
<td>1/8</td>
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</table>

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.

\[
d = w = \frac{3}{8} \text{ unless specified otherwise in the plans.}
\]

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 \( w/d \) has a maximum value of 2.0 and a minimum value of 1.6.

As Specified In The Plans

Joint Sealant Material To Be

Tape Bond Breaker

Concrete Pavement

Asphalt Shoulder Pavement

Joint Sealant Material To Be

Tape Bond Breaker

Concrete Pavement

Saw Cut Or Parting Strip

Joint Depth

Sealant Bead Thickness

Saw Cut Or Parting Strip

Joint Width

Backer Rod Placement Depth

Backer Rod Bond Breaker

Notes:

- Lifetime of sealant is generally assumed to be 10 years.
- Widths are measured to the center of the joint, except for construction joints.
- Joint depth shall be measured from the final finish surface back to the joint groove.
- Dimensions for concrete joints are in inches.

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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

ANCHOR BOLTS

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.

KEYED JOINT

KEYWAY AND HOOK BOLT

Note: After the concrete has set to the extent that the keyway will retain its shape, the hex 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.

NOTES

1. Longitudinal joints will not be required for single lane pavement 14' 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 1/2" preformed expansion joint material.
**REVISION DESCRIPTION:**

**LAST REVIEW:**

**REVISION:**

**STANDARD PLANS**

**INDEX:** 350-001

**SHEET:** 4 of 4

**CONCRETE PAVEMENT JOINTS**

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

- **2-THRU LANES WITH SINGLE LANE ENTRANCE RAMP**
  - Transition From * to 12'
  - Wide Over 3 Slabs
  - Longitudinal Joint
  - Contraction Joint (Typ.)

- **ENTRANCE TAPER WITH AUXILIARY LANE**
  - Transition From * to 12' Wide Over 3 Slabs

- **ENTRANCE RAMP WITH ADDED LANE**
  - Longitudinal Joint
  - Contraction Joint (Typ.)

- **EXIT TAPER WITH AUXILIARY LANE**
  - Transition From * to 12' Wide Over 3 Slabs

- **2-THRU LANES WITH SINGLE LANE EXIT RAMP**
  - Longitudinal Joint
  - Contraction Joint (Typ.)

- **EXIT RAMP WITH ADDED LANE**
  - Contraction Joint (Typ.)
  - Longitudinal Joint

- **3-THRU LANES WITH AUXILIARY LANE AND 2-LANE EXIT RAMP**
  - Transition From * to 12' Wide Over 3 Slabs

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

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