CONCRETE PAVEMENT JOINTS

TRANSVERSE CONTRACTION JOINT

PLANNED TRANSVERSE CONSTRUCTION JOINT

GENERAL NOTES:
- FORM TRANSVERSE CONTRACTION JOINTS BY SAWING WITH APPROVED EQUIPMENT.
- SPACE TRANSVERSE CONTRACTION JOINTS AT INTERVALS OF 15'.
- USE A DOWEL ASSEMBLY OR OTHER APPROVED DOWEL INSERTION TECHNIQUE IN ALL TRANSVERSE CONTRACTION JOINTS.
- DOWEL ASSEMBLIES ARE COVERED IN DETAIL 700.03.
- PROVIDE SMOOTH DOWEL BARS. PROVIDE DEFORMED TIE BARS.
- WHEN UTILIZING AN EARLY ENTRY SAW, CUT THE JOINT TO A MINIMUM DEPTH OF 3".

TABLE I - DOWEL BARS

<table>
<thead>
<tr>
<th>SLAB THICKNESS</th>
<th>DOWEL BAR &quot;D&quot;</th>
<th>DOWEL LENGTH &quot;L&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>8&quot; OR LESS</td>
<td>1&quot;</td>
<td>14&quot;</td>
</tr>
<tr>
<td>8½&quot; TO 9½&quot;</td>
<td>1½&quot;</td>
<td>16&quot;</td>
</tr>
<tr>
<td>10&quot; TO 10½&quot;</td>
<td>1¼&quot;</td>
<td>18&quot;</td>
</tr>
<tr>
<td>11&quot; AND ABOVE</td>
<td>1½&quot;</td>
<td>18&quot;</td>
</tr>
</tbody>
</table>

SEE DETAIL 'A'

SEE DETAIL 'D'
GENERAL NOTES:
- Construct transverse construction joints at the end of each day's operation (planned joint) or when the placing of concrete is suspended for more than 30 minutes (emergency joint).
- Use an approved header at emergency joints std. dwg. 700.04 and designed to permit the placement of and correctly hold in place tie bars.
- Use tie bars of the same diameter as dowel bars for emergency transverse construction joints.
- Locate planned transverse construction joints at the spacing required for contraction joints. Use an approved method of installing dowels in all planned transverse construction joints.
- Do not locate emergency transverse construction joints less than 6' from any contraction joint or planned construction joint.
- Do not place tie bars in longitudinal joints within 1'-4" of a transverse joint.
- When utilizing an early entry saw, cut the joint to a minimum depth of 3".

CONCRETE PAVEMENT JOINTS

EMERGENCY TRANSVERSE CONSTRUCTION JOINT

LONGITUDINAL CONSTRUCTION JOINT

LONGITUDINAL JOINT

Table II - Longitudinal Tie Bars

<table>
<thead>
<tr>
<th>Slab Thickness</th>
<th>Tie Bar Dia. &quot;D&quot;</th>
<th>Tie Bar Length &quot;L&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 1/2&quot; or less</td>
<td>3/8&quot;</td>
<td>30&quot;</td>
</tr>
<tr>
<td>9&quot; or above</td>
<td>5/8&quot;</td>
<td>30&quot;</td>
</tr>
</tbody>
</table>

Detail 'B'

Detail 'C'

TIE BAR @ 2'-6" CENTERS

TIE BAR @ 12" CENTERS
GENERAL NOTES:
- USE AN APPROVED TYPE OF DOWEL ASSEMBLY IN ALL TRANSVERSE EXPANSION JOINTS.
- USE RIGID CONSTRUCTED DOWEL ASSEMBLY, CAPABLE OF HOLDING THE DOWEL BARS IN PROPER POSITION DURING PLACEMENT OF THE CONCRETE AND DESIGNED TO PERMIT UNRESTRICTED MOVEMENT OF THE PAVEMENT SLAB. SEE STANDARD 700.03 FOR DOWEL ASSEMBLY.
- EXTEND EXPANSION JOINT ADJACENT TO THE APPROACH SLAB ACROSS THE ENTIRE PAVEMENT WIDTH INCLUDING THE PAVED SHOULDERS.
- SEE STD. DWG. 700.01 FOR TOLERANCE AND BAR SIZE.
**Dowel Assembly**

**Typical Unit Dimensions**

<table>
<thead>
<tr>
<th>Slab Thickness</th>
<th>Wire Gage</th>
</tr>
</thead>
<tbody>
<tr>
<td>8&quot; or less</td>
<td>#3 rebar</td>
</tr>
<tr>
<td>8 1/2&quot; - 10&quot;</td>
<td>#3 rebar</td>
</tr>
<tr>
<td>10 1/2&quot; &amp; above</td>
<td>#3 rebar</td>
</tr>
</tbody>
</table>

**Staking Pin**
- Min. 8 per basket
- Direction of paving operation

**Staking Pin Alternate**
- Min. 8 per basket
- Direction of paving operation

**General Notes:**
- Use rigid constructed dowel assembly capable of holding the dowel bar in proper position during placement of concrete and designed to permit unrestricted movement of the slab. Use dowel assembly approved by the engineer prior to use.
- Use dowel assemblies manufactured with dowels alternately welded to frame members.
- Use staking pin or approved alternate.
- Saw cut epoxy coated dowels, buffing as necessary to facilitate proper welding of the dowel to the assembly frame. Touch up of the buffed area will not be required.
- Resistance weld frame members; dowels and spreader wires may be arc welded. Weld in accordance with AWS welding code.
- Fully dip the dowel assemblies to assure a complete coating of wax.
- See detail 700D01 for dowel bar sizes.
SECTION - CONTRACTION

SECTION - EXPANSION

PARTIAL PLAN CONTRACTION
NORMAL

PARTIAL PLAN EXPANSION
NORMAL

CROSS SECTIONAL VIEWS
NOTE: UPON COMPLETION OF FINAL SLAB, REMOVE DOWEL BARS AT SUCH TIME AS CONCRETE HAS CURED ENOUGH TO LEAVE A CAVITY FOR RESETTING AT A LATER DATE.

USE WOOD OR METAL FORM OF SUFFICIENT RIGIDITY TO ADEQUATELY SUPPORT THE EDGES OF THE SLAB.
LONGITUDINAL SECTION 'A-A'
EXISTING PORTLAND CEMENT CONCRETE TO PROPOSED PORTLAND CEMENT CONCRETE

LONGITUDINAL OR TRANSVERSE SECTION 'A-A'
EXISTING PORTLAND CEMENT CONCRETE TO PROPOSED PORTLAND CEMENT CONCRETE

(DO NOT USE DOWEL BARS FOR EMERGENCY CONSTRUCTION JOINTS, SEE STANDARD DRAWING 700.01 SHEET 2 OF 2)

GENERAL NOTES:


SEE STANDARD DRAWING 700.01 FOR BAR SIZES AND OTHER JOINT RELATED INFORMATION. PROVIDE ADHESIVE BONDING MATERIAL SPECIFIED BY SECTION 1081 OF THE STANDARD SPECIFICATIONS FOR TYPE 3 OR 3A ADHESIVES.

SEE TYPICAL SECTIONS FOR PAVEMENT COMPOSITION, SUMMARY OF QUANTITIES AND FOR OTHER SPECIFIC INFORMATION.
TWO LANE PAVEMENT

GENERAL NOTES:

PROVIDE THE MARKING BY THE USE OF METAL DIES HAVING A BEVELED FACE Pressed INTO THE CONCRETE.
MAKE THE NUMBERS BETWEEN 4" AND 6" HIGH.

MARK STATIONS 1, 2, 3 ETC. EXCEPT AT EACH MULTIPLE OF FIVE STATIONS, MARK AS 5+00, 10+00, 15+00 ETC.
SHOW FULL EQUATIONS. WHERE AN EQUATION FALLS WITHIN 50 FEET OF A STATION MARKING, SHOW THE EQUATION AND ELIMINATE STATION MARKING.

MARK THE PAVEMENT BEFORE THE CONCRETE HAS TAKEN ITS INITIAL SET, AND REMOVE ALL DISPLACED AGGREGATE SO THAT THE SURFACE OF THE PAVEMENT IS LEFT IN A SMOOTH CONDITION WITH LETTERS FULLY AND NEATLY FORMED.

TWO LANE PAVEMENTS

MARK STATION NUMBERS AND EQUATIONS ALONG THE OUTSIDE EDGE OF THE PAVEMENT OF THE RIGHT LANE IN SUCH A POSITION AS TO BE READ RIGHT SIDE UP FROM THE DRIVERS SEAT OF A CAR TRAVELING ON THE SHOULDER. WHEN PAVING TWO LANES OF A FUTURE MULTI-LANE SECTION, POSITION STATION MARKING IN ACCORDANCE WITH THE REQUIREMENTS FOR MULTI-LANE PAVEMENT.

DIVIDED ROADWAYS (4-6 LANES)

MARK STATION NUMBERS AND EQUATIONS ALONG THE OUTSIDE EDGE OF BOTH LANES IN SUCH A POSITION AS TO BE READ RIGHT SIDE UP FROM THE DRIVERS SEAT OF A CAR TRAVELING ON THE SHOULDER OF EACH TWO LANE COMPONENT.

RAMPS

MARK STATION NUMBERS AND EQUATIONS ON THE RIGHT SIDE OF THE PAVEMENT EDGE IN THE DIRECTION OF THE FLOW OF TRAFFIC SUCH THAT THEY CAN BE READ RIGHT SIDE UP FROM THE DRIVERS SEAT OF A CAR TRAVELING ON THE RIGHT SHOULD.
SECTION A-A
DETAILS FOR RUMBLE STRIP

1. MATCH CONCRETE SHOULDER TRANSVERSE JOINTS TO THAT OF THE ADJACENT CONCRETE PAVEMENT.
2. SAW AND SEAL THE LONGITUDINAL JOINT AND TRANSVERSE JOINTS. SEE STD. DWG. 700.01 FOR DETAILS.
3. SEE DETAIL SHOWING "METHOD OF CONCRETE SHOULDER CONSTRUCTION" FOR PAVEMENT SLOPES.
**Notes:**

1. Match concrete shoulder transverse joints to that of the adjacent concrete pavement.
2. Saw and seal the longitudinal joint and transverse joints. See Std. DWG. 700.01 for details.
3. See detail showing "method of concrete shoulder construction" for pavement slopes.
TREATMENT AT RAMP TERMINALS

BEGIN RUMBLE STRIPS ON RAMP SHOULDER
ACCELERATION RAMP

END RUMBLE STRIPS ON RAMP SHOULDER
DECELERATION RAMP

BEGIN RUMBLE STRIPS ON MAINLINE SHOULDER
ACCELERATION LOOP

END RUMBLE STRIPS ON MAINLINE SHOULDER
DECELERATION LOOP

BEGIN RUMBLE STRIPS ON LOOP PAVEMENT WHERE TRANSITION BECOMES 4'-0"

TAPER TO CURB & GUTTER

END RUMBLE STRIPS ON MAINLINE SHOULDER

TREATMENT AT LOOP TERMINALS

BEGIN RUMBLE STRIPS ON RAMP SHOULDER
ACCELERATION RAMP

END RUMBLE STRIPS ON RAMP SHOULDER
DECELERATION RAMP

BEGIN RUMBLE STRIPS ON MAINLINE SHOULDER
ACCELERATION LOOP

END RUMBLE STRIPS ON MAINLINE SHOULDER
DECELERATION LOOP

TREATMENT AT LOOP TERMINALS