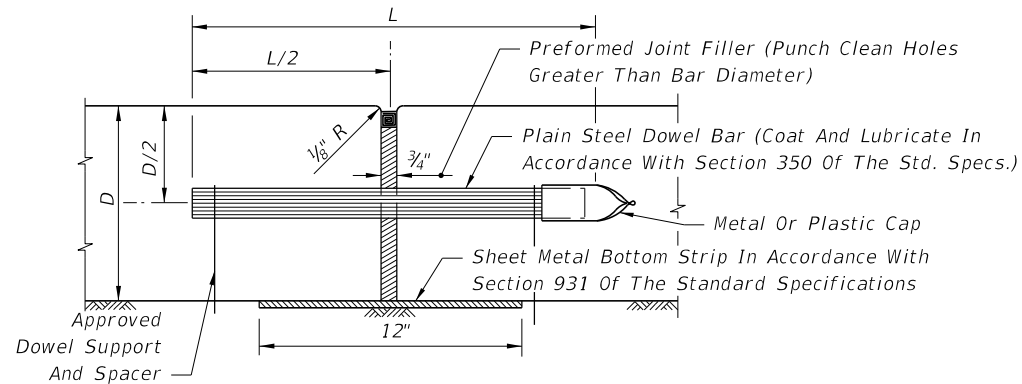
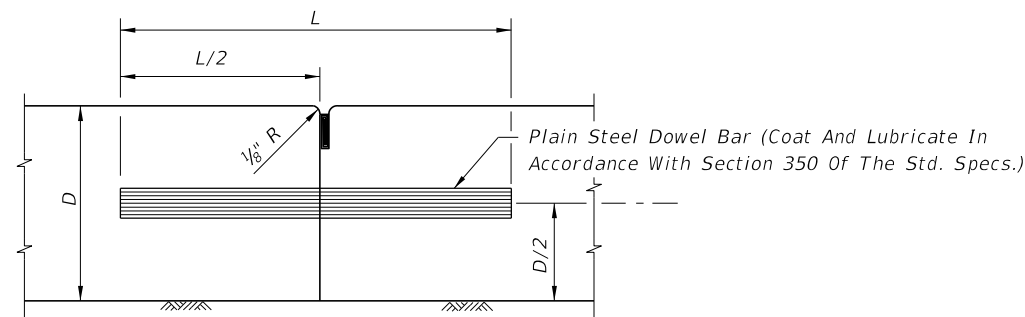


METAL OR PLASTIC CAPS FOR DOWEL BARS

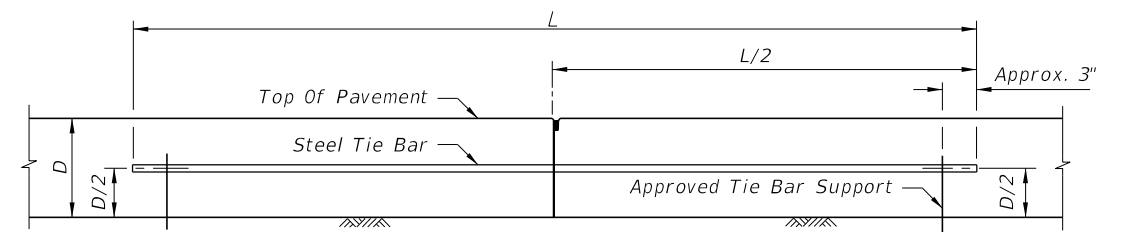


Note: Expansion joints to be placed on approaches to bridges, at street intersections and other locations indicated in detail plans.

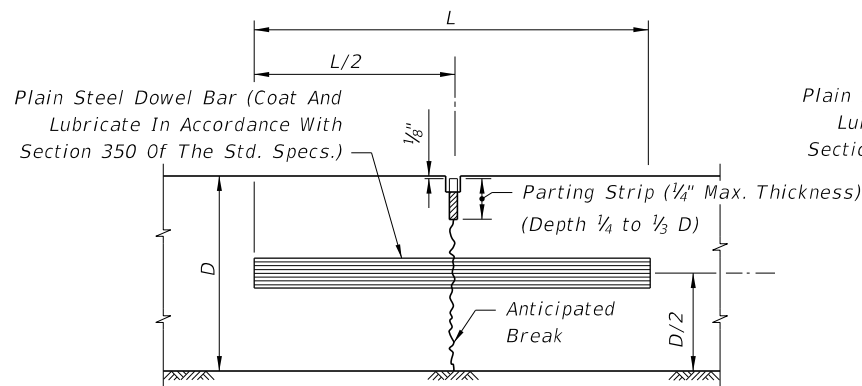
TRANSVERSE EXPANSION JOINT



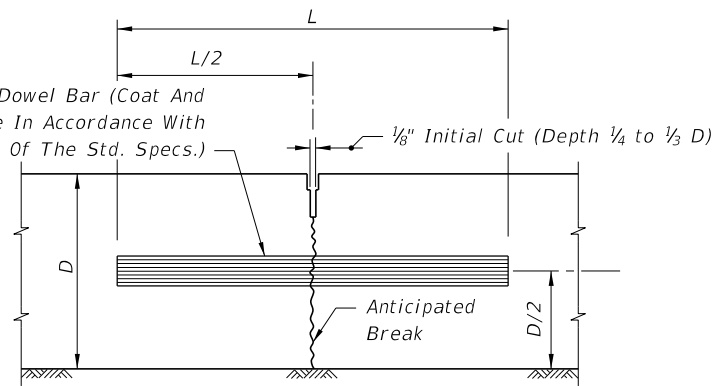
BUTT CONSTRUCTION JOINT TO BE USED AT DISCONTINUANCES OF WORK



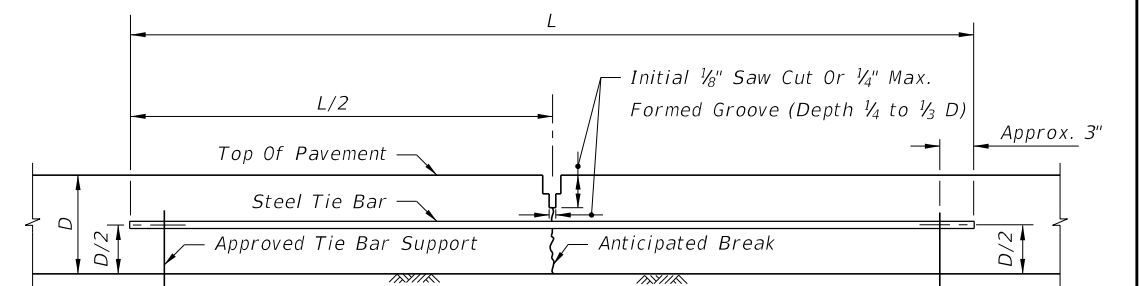
LONGITUDINAL BUTT CONSTRUCTION JOINT



TRANSVERSE CONTRACTION JOINT, VIBRO CAST METHOD



TRANSVERSE CONTRACTION JOINT, SAWED METHOD



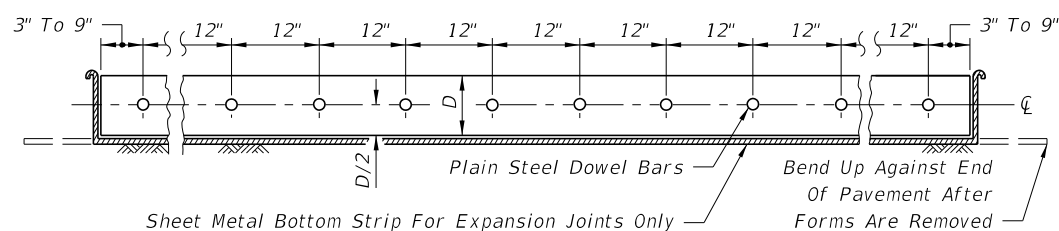
Note: Slabs poured simultaneously. Tie bars may be inserted in the plastic concrete by means approved by the Engineer.

LONGITUDINAL LANE-TIE JOINT

Tie bars are deformed #4 or #5 reinforcing steel bars meeting the requirements of Section 931 of the Standard Specifications.

Provide a standard load transfer tied joint with #4 bars 25" in length at 24" or #5 bars 30" in length at 38" spacing.

LONGITUDINAL JOINTS



DOWEL BAR LAYOUT

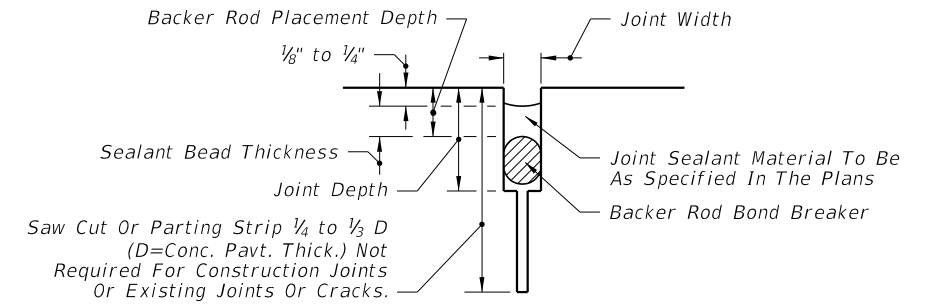
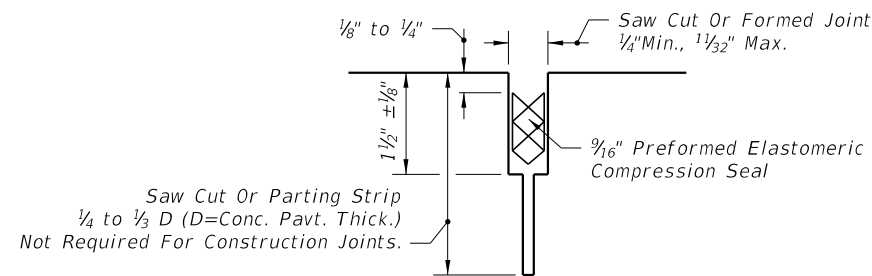
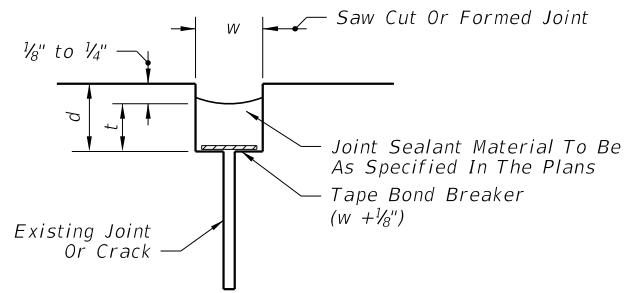
TRANSVERSE JOINTS ARE TO BE SPACED AT A MAXIMUM OF 15'. DOWELS ARE REQUIRED AT ALL TRANSVERSE JOINTS UNLESS OTHERWISE NOTED IN PLANS.

TRANSVERSE JOINTS

Note: For joint seal dimensions see Sheet 2.

DOWELS (LENGTH 18")	
Pavement Thickness "D"	Diameter
6"-6 1/2"	3/4"
7"-8 1/2"	1"
9"-10 1/2"	1 1/4"
≥11"	1 1/2"

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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.

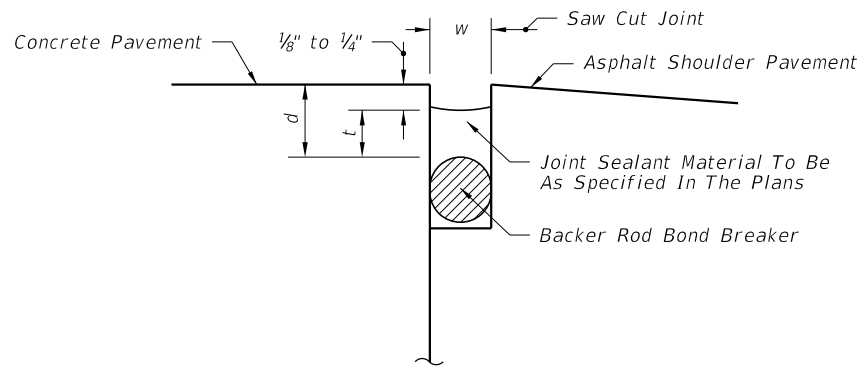
FOR NEW PROJECTS
PREFORMED ELASTOMERIC COMPRESSION SEAL

FOR NEW AND REHABILITATION PROJECTS
BACKER ROD BOND BREAKER

FOR REHABILITATION PROJECTS
TAPE BOND BREAKER

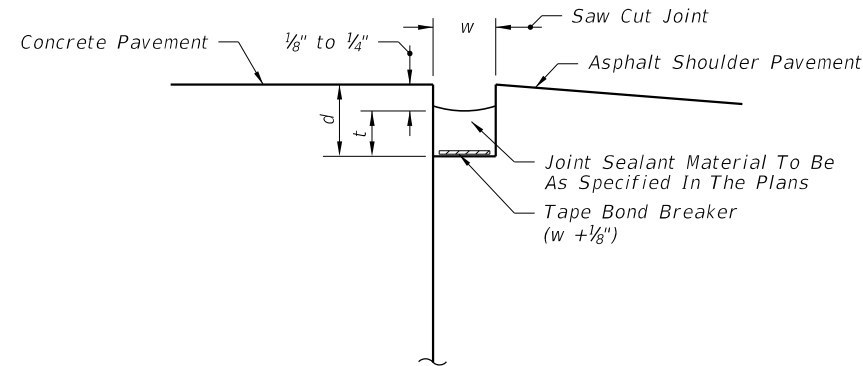
CONCRETE-CONCRETE JOINTS

$d = w = 3/4"$ Unless Specified Otherwise In The Plans



BACKER ROD BOND BREAKER

$d = w = 3/4"$ Unless Specified Otherwise 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

CONCRETE-ASPHALT SHOULDER JOINTS

JOINT SEAL DIMENSIONS

**BACKER ROD BOND BREAKER
 (CONCRETE-CONCRETE JOINTS)**

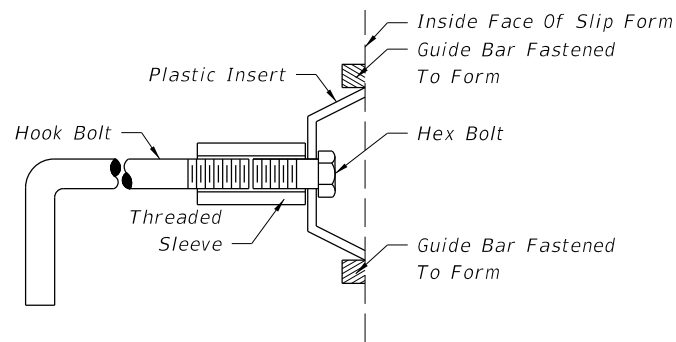
JOINT DIMENSIONS (INCHES)

JOINT WIDTH	SEALANT BEAD THICKNESS	BACKER ROD DIA.	MINIMUM JOINT DEPTH	BACKER ROD PLACEMENT DEPTH
1/4	1/4	3/8	1	1/2
3/8	1/4	1/2	1 1/4	1/2
1/2	1/4	5/8	1 1/4	1/2
5/8	5/16	3/4	1 1/2	9/16
3/4	3/8	1	1 3/4	5/8
7/8	7/16	1 1/8	1 3/4	1 1/16
1	1/2	1 1/4	2	3/4
>1	1/2	1 1/4+	2+	3/4

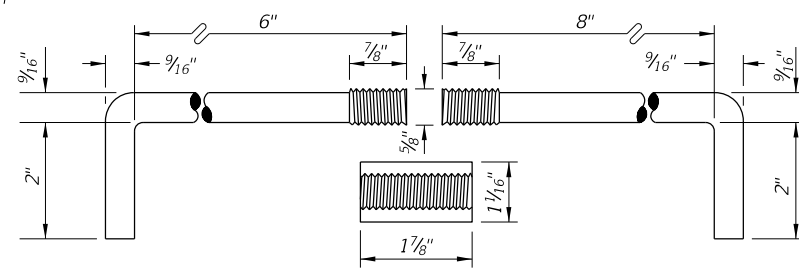
Unless otherwise indicated on the plans the joint width for new construction will be 1/4" for construction joints, 3/8" for all other joints.

For rehabilitation projects the joint width will be shown on the plans or established by the Engineer based on field conditions.

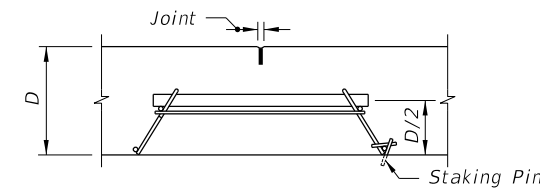
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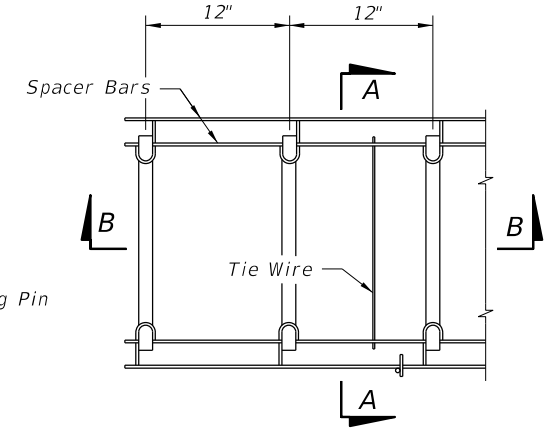
Note: After the concrete has set to the extent that the keyway will retain its shape, the hex bolt and plastic insert shall be removed. The remaining portion of the hook bolt assembly shall be installed immediately prior to placing of concrete in the adjacent lane.



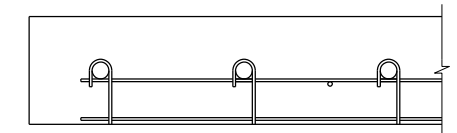
Anchor bolts shall be Grade C in accordance with ASTM A 307.
Threaded sleeves shall develop the full strength of the bolt and meet the material and thread requirements of ASTM A 563.



SECTION AA



TOP VIEW

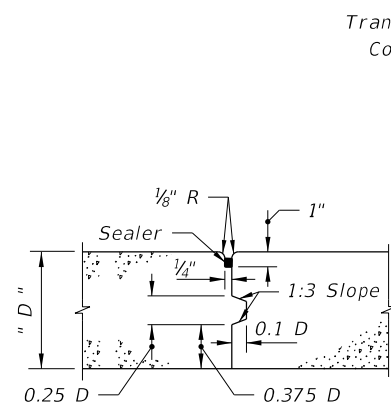


SECTION BB

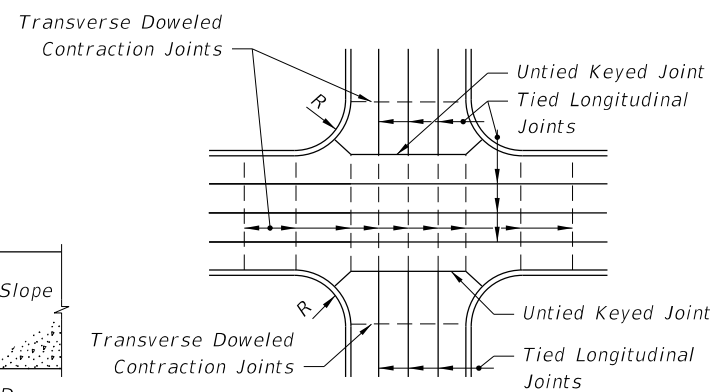
ALTERNATE KEYWAY AND HOOK BOLT

STEEL HOOK BOLT ASSEMBLY

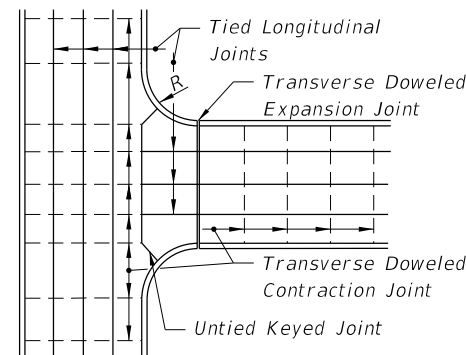
CONTRACTION ASSEMBLY



KEYED JOINT

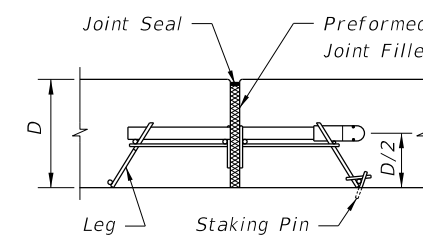


JOINT LAYOUT AT THRU INTERSECTION

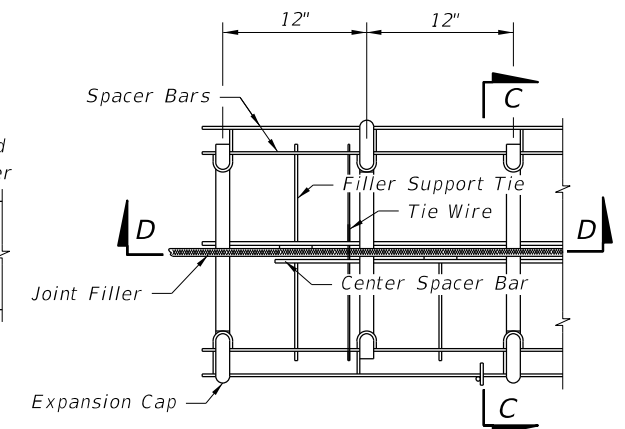


JOINT LAYOUT AT 'T' INTERSECTIONS

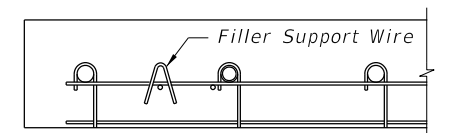
JOINT ARRANGEMENT



SECTION CC



TOP VIEW



SECTION DD

EXPANSION ASSEMBLY

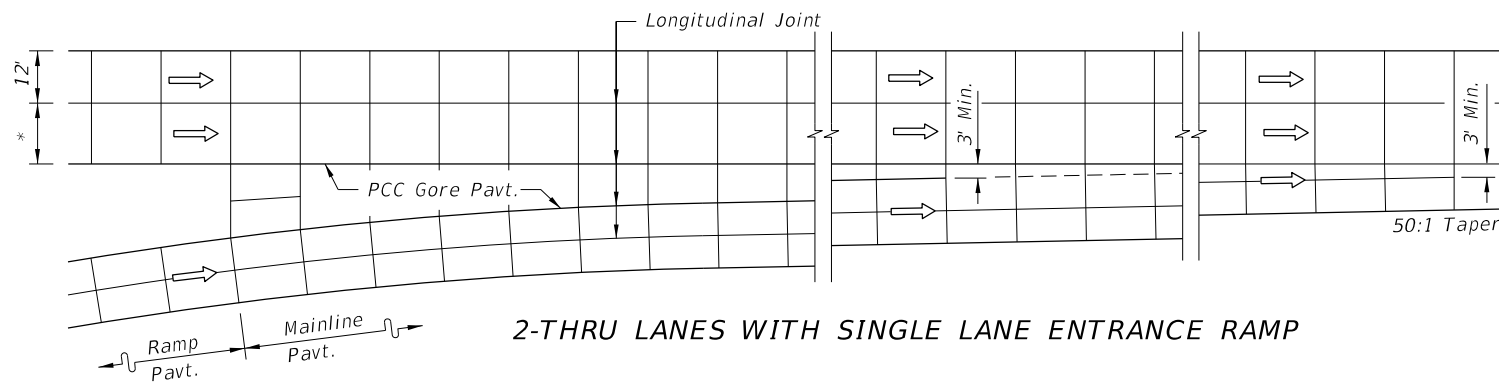
NOTES

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.

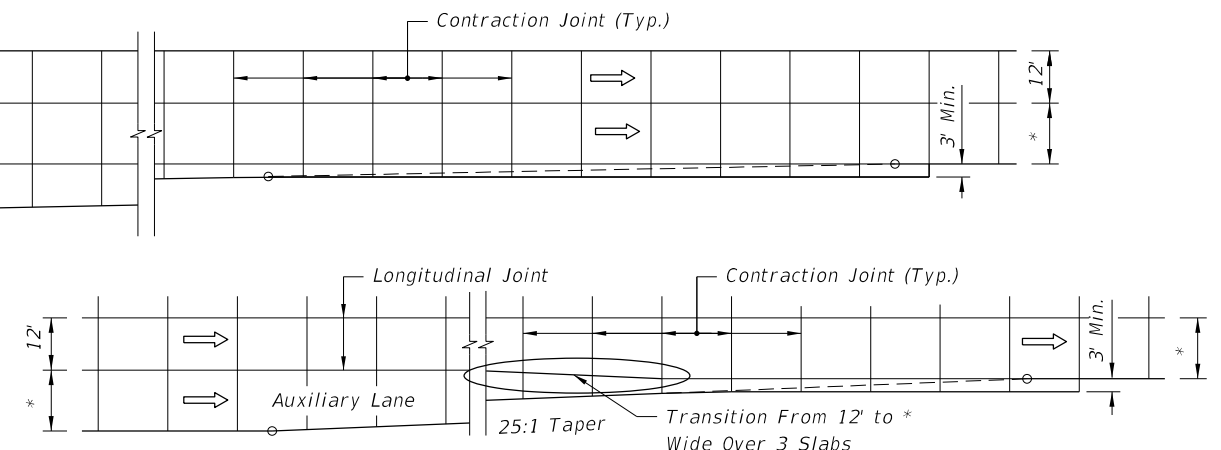
Note: Proprietary contraction and expansion assemblies may be used. Products shall be introduced to the State Construction Office in accordance with section (C) of the Product Evaluation Procedure.

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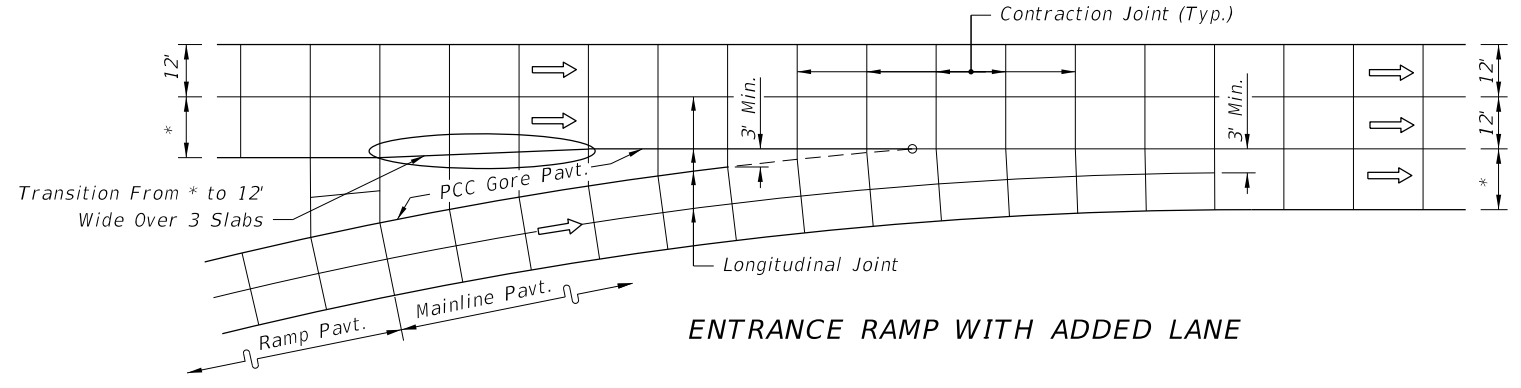
LAST REVISION 07/01/00	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	CONCRETE PAVEMENT JOINTS	INDEX NO. 305	SHEET NO. 3 of 4
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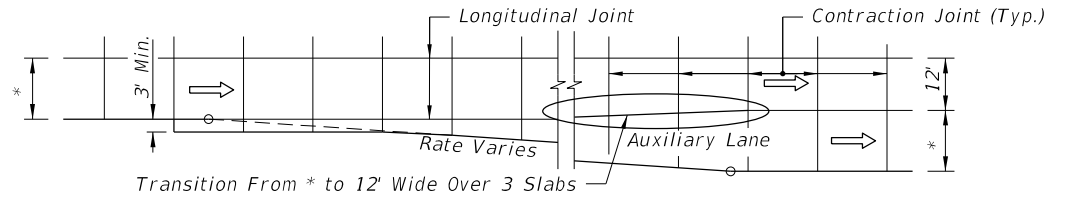
2-THRU LANES WITH SINGLE LANE ENTRANCE RAMP



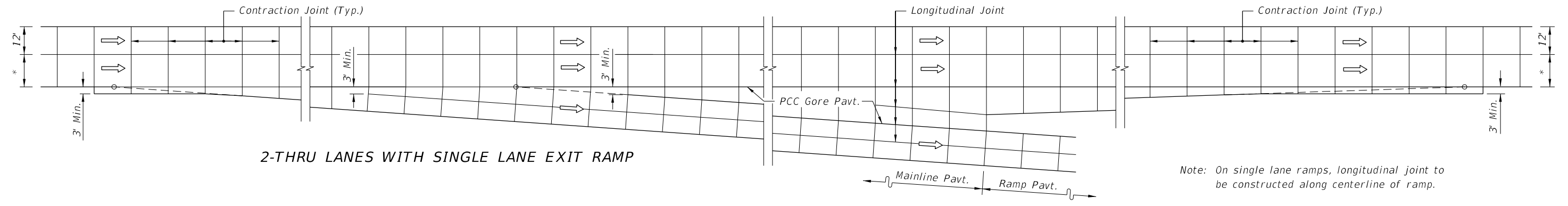
ENTRANCE TAPER WITH AUXILIARY LANE



ENTRANCE RAMP WITH ADDED LANE

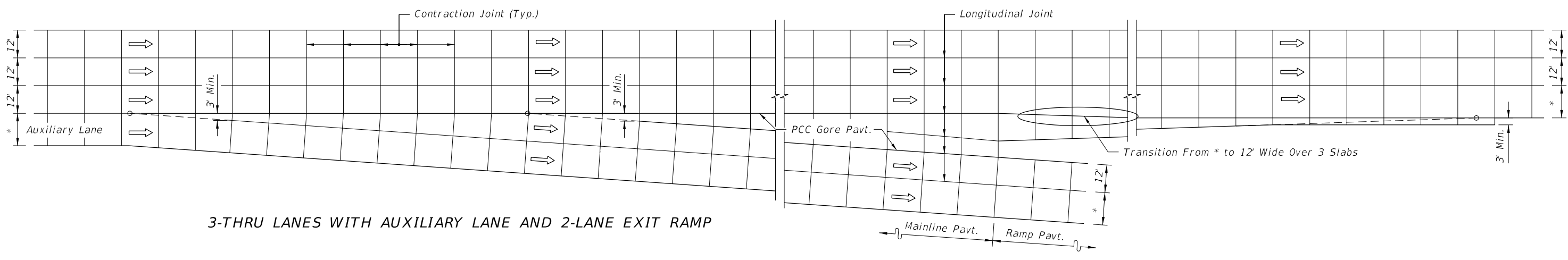


EXIT TAPER WITH AUXILIARY LANE



2-THRU LANES WITH SINGLE LANE EXIT RAMP

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



3-THRU LANES WITH AUXILIARY LANE AND 2-LANE EXIT RAMP

JOINT LAYOUT AT ENTRANCE AND EXIT RAMP TERMINALS

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

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LAST REVISION 07/01/09	REVISION	DESCRIPTION:	 2016 DESIGN STANDARDS	CONCRETE PAVEMENT JOINTS	INDEX NO. 305	SHEET NO. 4 of 4
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