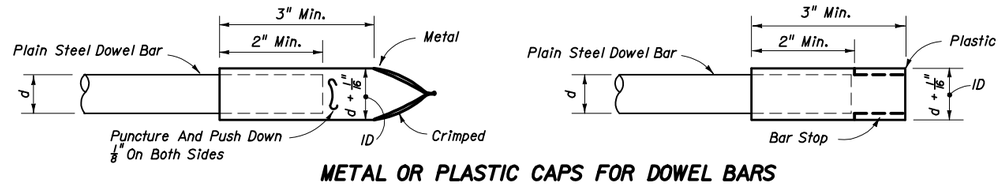
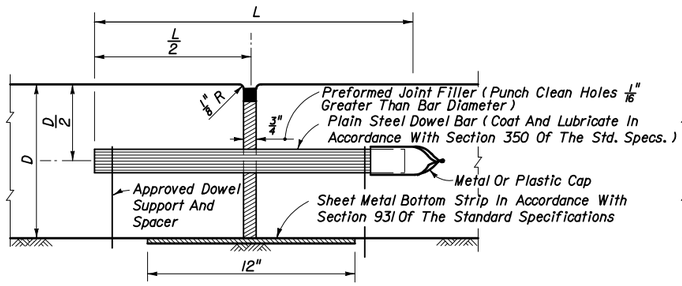
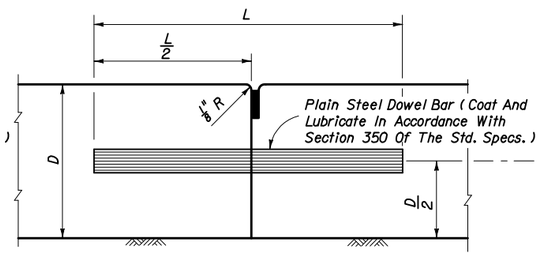



## METAL OR PLASTIC CAPS FOR DOWEL BARS

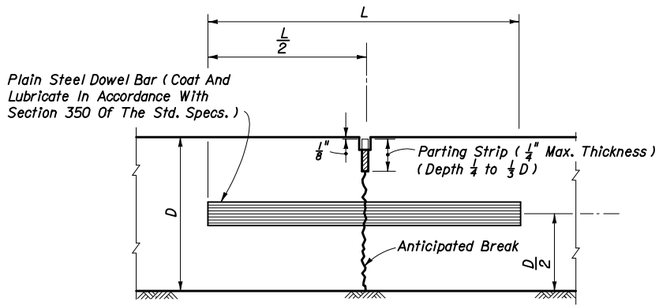



Note: Expansion joints to be placed on approaches to bridges, at street intersections and other locations indicated in detail plans.

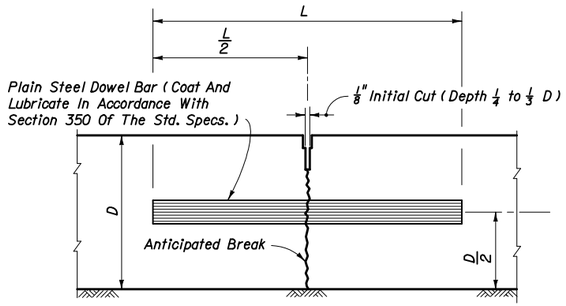
## TRANSVERSE EXPANSION JOINT



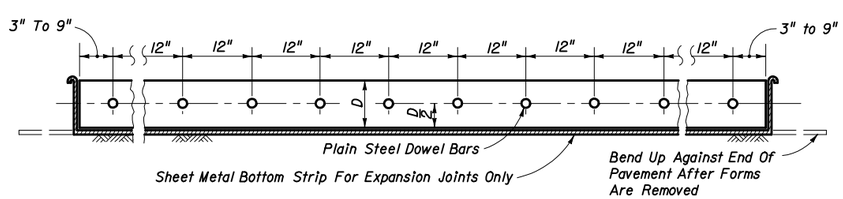

## BUTT CONSTRUCTION JOINT TO BE USED AT DISCONTINUANCES OF WORK




## TRANSVERSE CONTRACTION JOINT, VIBRO CAST METHOD




## TRANSVERSE CONTRACTION JOINT, SAWED METHOD




## DOWEL BAR LAYOUT

| DOWELS ( LENGTH 18" ) | |
|---|---|
| Pavement Thickness "D" | Diameter |
| 6"-6½" | ¾" |
| 7"-8½" | 1" |
| 9"-10½" | 1¼" |
| ≥11" | 1½" |

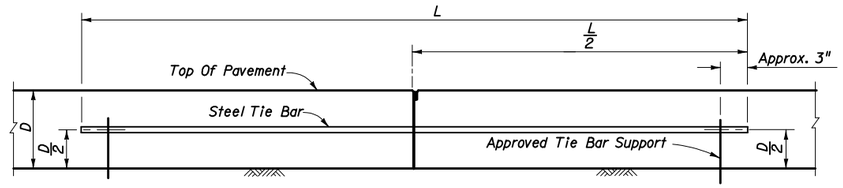
TRANSVERSE JOINTS ARE TO BE SPACED AT A MAXIMUM OF 15'. DOWELS ARE REQUIRED AT ALL TRANSVERSE JOINTS UNLESS OTHERWISE NOTED IN PLANS.

## TRANSVERSE JOINTS

| MAXIMUM TIE BAR SPACING | | | | |
|---|---|---|---|---|
| Pavement Thickness "D" | Distance To Closest Free Edge | | | |
| | 12' | | 24' | |
| | #4 Bars Length 25" | #5 Bars Length 30" | #4 Bars Length 25" | #5 Bars Length 30" |
| 6" | 24" | 38" | 24" | 38" |
| 7" | 24" | 38" | 22" | 35" |
| 8" | 24" | 38" | 19" | 31" |
| 9" | 24" | 38" | 17" | 27" |
| 10" | 24" | 38" | 15" | 24" |
| 11" | 24" | 38" | 14" | 22" |
| 12" | 24" | 38" | 13" | 20" |
| 13" | 24" | 38" | 12" | 19" |
| 14" | 22" | 35" | 11" | 17" |
| 15" | 21" | 33" | 10" | 16" |

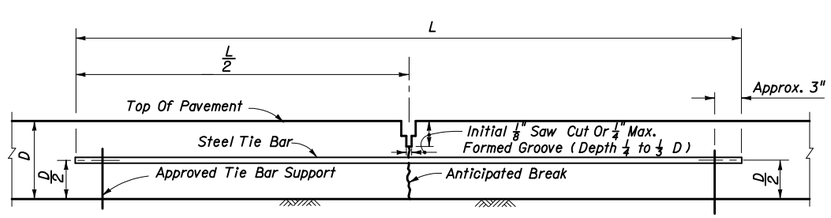
Tie bars are deformed #4 or #5 reinforcing steel bars meeting the requirements of Section 931 of the Standard Specifications.

When the distance to the closest free edge exceeds 24', provide a standard load transfer tied joint with #4 bars at 24" or #5 bars at 38" spacing.




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

## LONGITUDINAL BUTT CONSTRUCTION JOINT

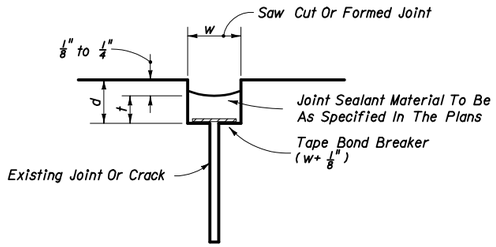



Note: Slabs poured simultaneously. Tie bars may be inserted in the plastic concrete by means approved by the Engineer.

## LONGITUDINAL LANE-TIE JOINT

## LONGITUDINAL JOINTS

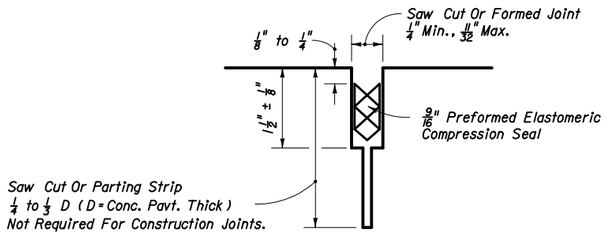
Note: For joint seal dimensions see Sheet 2.




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 $\frac{w}{d}$ has a maximum value of 2.0 and a minimum value of 1.0.

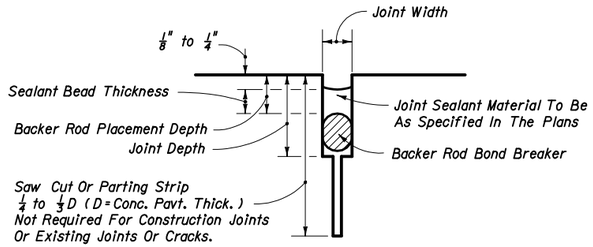
FOR REHABILITATION PROJECTS

**TAPE BOND BREAKER**




FOR NEW PROJECTS

**PREFORMED ELASTOMERIC COMPRESSION SEAL**




FOR NEW AND REHABILITATION PROJECTS

**BACKER ROD BOND BREAKER**

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

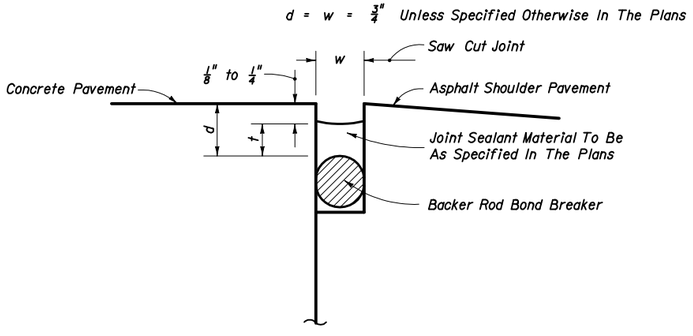
JOINT DIMENSIONS (INCHES)

| JOINT WIDTH | SEALANT BEAD THICKNESS | BACKER ROD DIAMETER | 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 | 11/16 |
| 1 | 1/2 | 1 1/4 | 2 | 3/4 |
| > 1 | 1/2 | 1 1/4 + | 2+ | 3/4 |

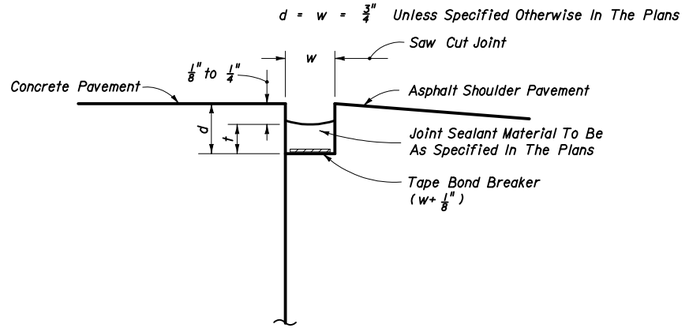
Unless otherwise indicated on the plans the joint width for new construction will be 1/4" for construction joints, 3/8" for all other joints.

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

# CONCRETE-CONCRETE JOINTS




**BACKER ROD BOND BREAKER**

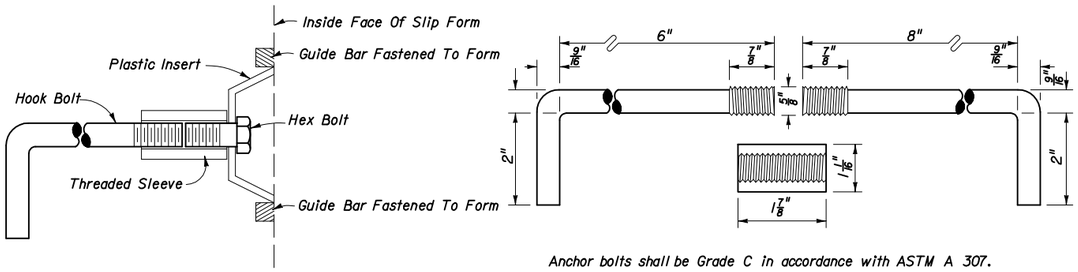



**TAPE BOND BREAKER**

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



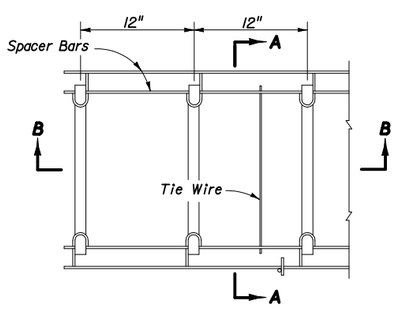

NOTE: After the concrete has set to the extent that the Keyway will retain its shape, the hex bolt and plastic insert shall be removed. The remaining portion of the hook bolt assembly shall be installed immediately prior to placing of concrete in the adjacent lane.

Anchor bolts shall be Grade C in accordance with ASTM A 307.

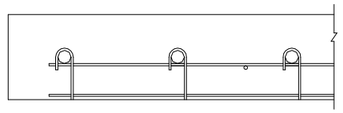
Threaded sleeves shall develop the full strength of the bolt and meet the material and thread requirements of ASTM A 563.

**ALTERNATE KEYWAY AND HOOK BOLT**

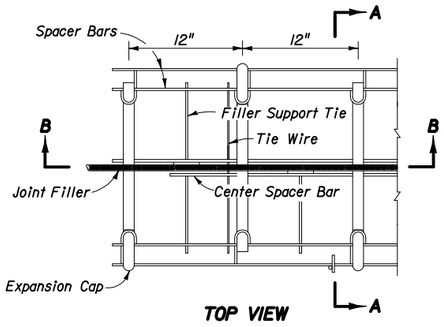
# STEEL HOOK BOLT ASSEMBLY



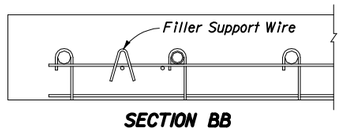

**TOP VIEW**



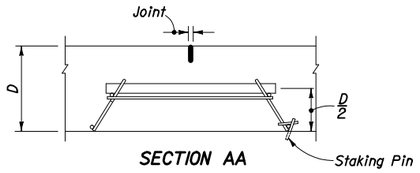
**SECTION BB**



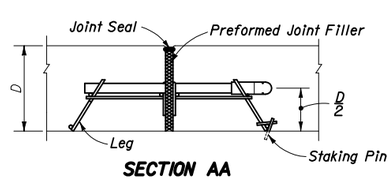

**TOP VIEW**




**SECTION BB**




**SECTION AA**

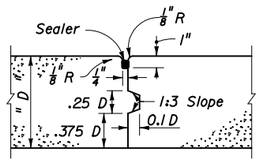



**SECTION AA**

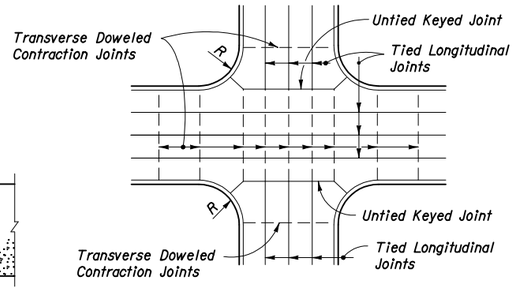
## CONTRACTION ASSEMBLY

## EXPANSION ASSEMBLY

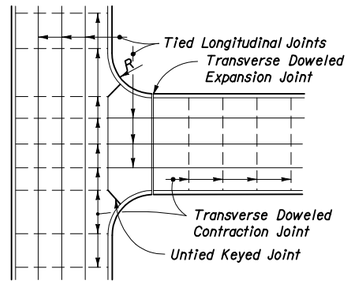
Note:
Proprietary contraction and expansion assemblies may be used. Products shall be introduced to the State Construction Office in accordance with section (C) of the Product Evaluation Procedure.




**KEYED JOINT**




**JOINT LAYOUT AT THRU INTERSECTION**

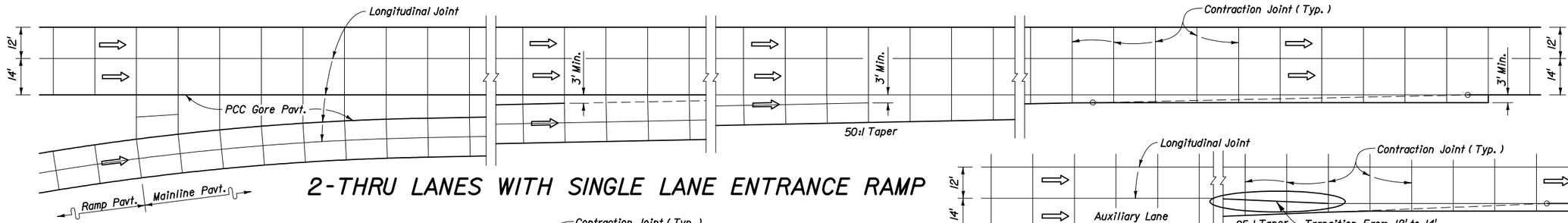



**JOINT LAYOUT AT 'T' INTERSECTIONS**

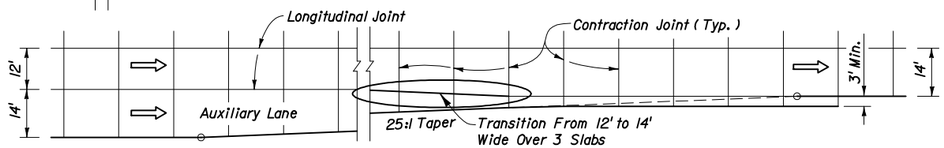
NOTES

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 of 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.

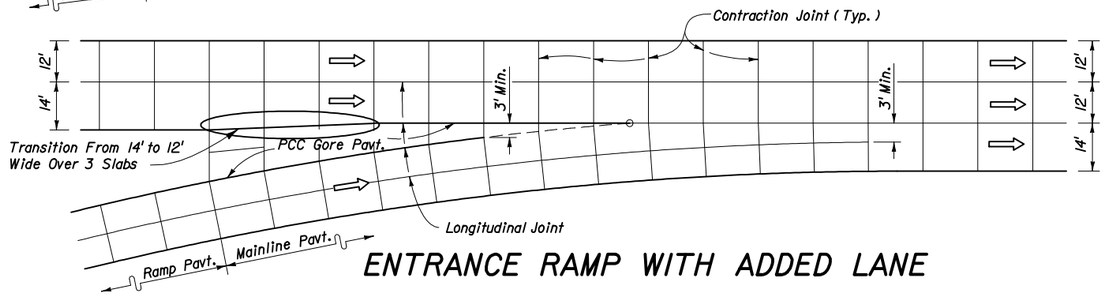
# JOINT ARRANGEMENT



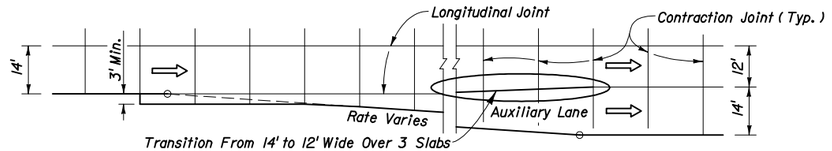

## 2-THRU LANES WITH SINGLE LANE ENTRANCE RAMP



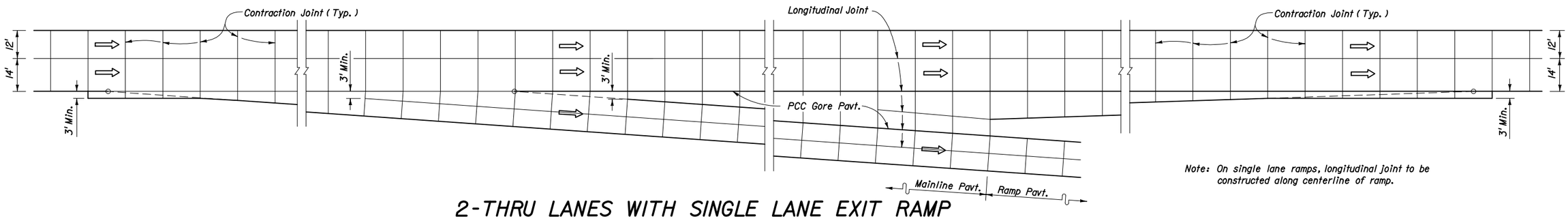

## ENTRANCE TAPER WITH AUXILIARY LANE




## ENTRANCE RAMP WITH ADDED LANE

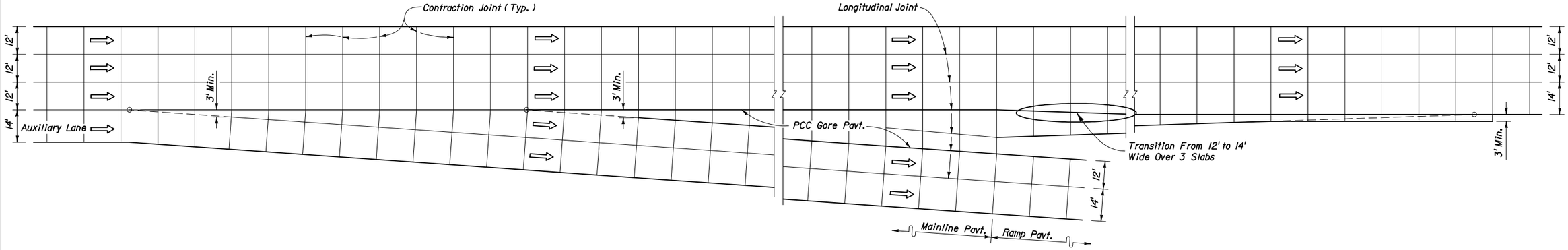



## EXIT TAPER WITH AUXILIARY LANE




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

## 2-THRU LANES WITH SINGLE LANE EXIT RAMP




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

# JOINT LAYOUT AT ENTRANCE AND EXIT RAMP TERMINALS

| | | | |
|---|---|---|---|
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| | CONCRETE PAVEMENT JOINTS | | Index No. 305 |