
ORIGINATION FORM

Proposed Revisions to a Standard Plans Index

(Please provide all information — Incomplete forms will be returned)

Contact Information:

Date: July 14, 2022

Originator: Mary Jane Hayden

Phone: (850) 414-4783

Email: maryjane.hayden@dot.state.fl.us

Standard Plans:

Index Number: 350-001

Sheet Number (s): All

Index Title: Concrete Pavement Joints

Summary of the changes:

Sheet 1: Deleted Notes 1 and 2; Added Note from Sheet 2; Deleted Contraction Joint (Vibro Case Method); Moved the Dowel Bars Cap, Dowel Bar Layout, and Relation of the Tie Bars to Dowel Bars details to New Sheet 2.

Sheet 2: Moved the Joint Seal Dimensions details to Sheet 1.

Sheet 3: New Sheet 2- Added the Dowel Bars Cap, Dowel Bar Layout, and Relation of the Tie Bars to Dowel Bars details.

New Sheet 3: Large Right Turn, Standard Intersection, and Skewed Intersection Details.

Sheet 4: New Sheet 5-Changed Note.

New Sheet 4: Isolation Joint Details.

Commentary / Background:

Redeveloped Index:
Index 350-001 was in need of update - there were several items in the Index that were outdated or not used. To perform this update, the State Pavement Design Office has been working with a task team consisting of FDOT staff (design, materials, and construction) and industry partners (suppliers, CEI, and contractors). This task team looked at items that were no longer necessary to remain, items that should remain, and items that should be added. Several of the new details were found to be best practices that are already in use by other State DOTs.

General cleanup/simplification of all sheets. Elimination of outdated or unused details (e.g., steel hook bolt assembly, vibro case method contraction joint detail). Addition of new joint layout details for intersections. Addition of isolation joint details. This update is for clarification and addition of new helpful details. No new or addi

Other Affected Offices / Documents: (Provide name of person contacted)

- | Yes | No | |
|-------------------------------------|-------------------------------------|---|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Other Standard Plans – |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | FDOT Design Manual – |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Basis of Estimates Manual – |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Standard Specifications – |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Approved Product List – |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Construction – Rich Hewitt participated on the developmen Task Team |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Maintenance – |

Origination Package Includes: (Submit package to Rick Jenkins)

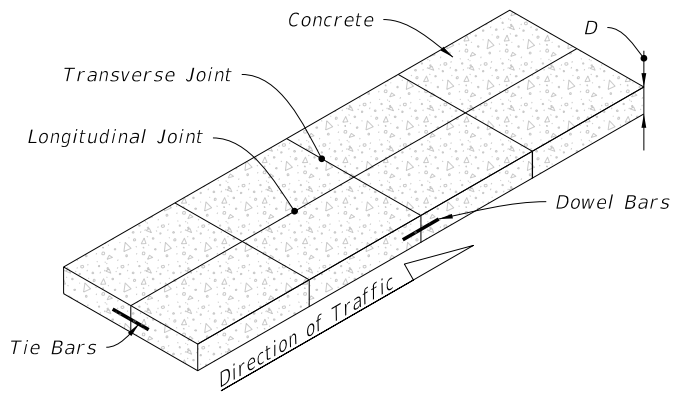
- | Yes | N/A | |
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| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Revised or Proposed Standard Plan Instruction (SPI) |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Other Support Documents |

Implementation:

- | | |
|-------------------------------------|----------------------------------|
| <input type="checkbox"/> | Design Bulletin (Interim) |
| <input type="checkbox"/> | DCE Memo |
| <input type="checkbox"/> | Program Mgmt. Bulletin |
| <input checked="" type="checkbox"/> | FY-Standard Plans (Next Release) |

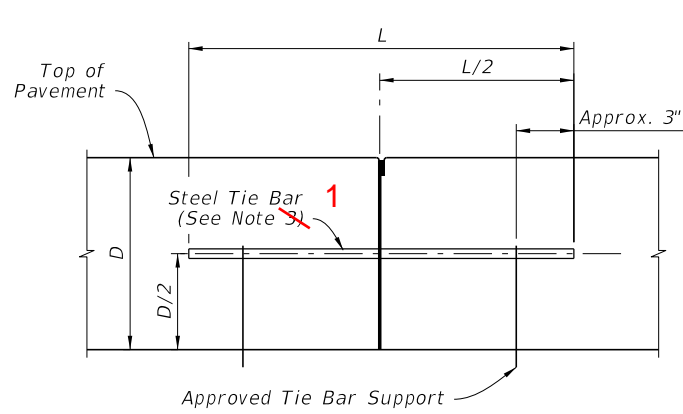
Contact the Roadway Design Office for assistance in completing this form

Email to: Rick Jenkins rick.jenkins@dot.state.fl.us and Darren Martin darren.martin@dot.state.fl.us

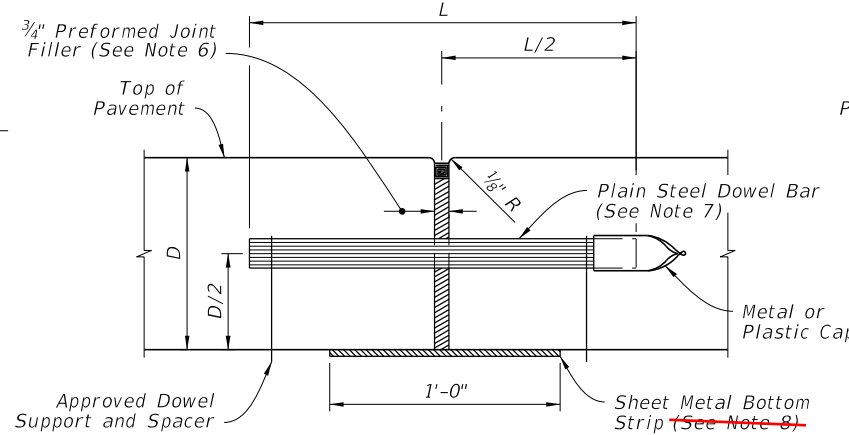


NOTES:

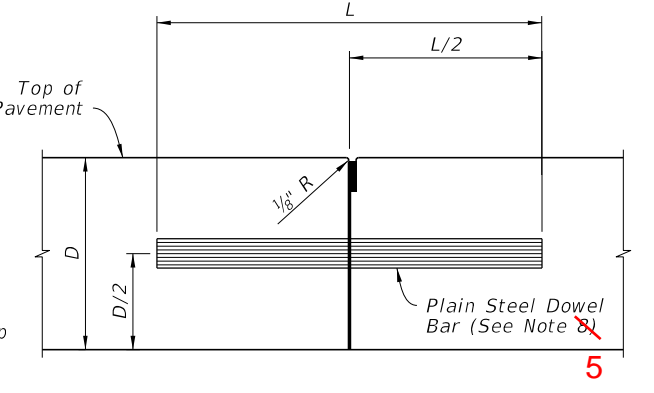
- ~~1. For joint seal dimensions see Sheet 2.~~
- ~~2. For slabs poured simultaneously, tie bars may be inserted in the plastic concrete by means approved by the Engineer.~~
- ~~1. 3. For Longitudinal Joints:~~
 - A. Tie bars are deformed #4 or #5 reinforcing steel bars meeting the requirements of Specification 931.
 - B. Provide a tied joint with #4 bars 25" in length at 24" spacing or #5 bars 30" in length at 36" spacing.
- ~~2. 4. Transverse joints are to be spaced at a maximum of 15'. Dowel Bars are required at all transverse joints unless otherwise noted in the plans.~~
- ~~3. 5. Expansion joints to be placed at street intersections and other locations as indicated in the Plans. For bridge expansion joints, see Index 370-001.~~
- ~~4. 6. Punch clean holes in preformed joint filler greater than bar diameter.~~
- ~~5. 7. Coat plain steel dowel bars and welded wire basket assemblies in accordance with Specification 931. Lubricate dowel bars in accordance with Specification 350.~~
- ~~7. 8. Sheet metal bottom strips in accordance with Specification 931. Not required with asphalt base.~~



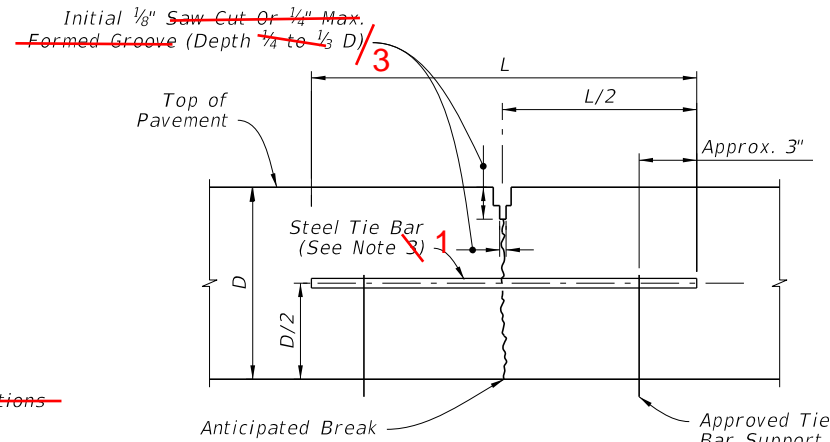
BUTT CONSTRUCTION JOINT



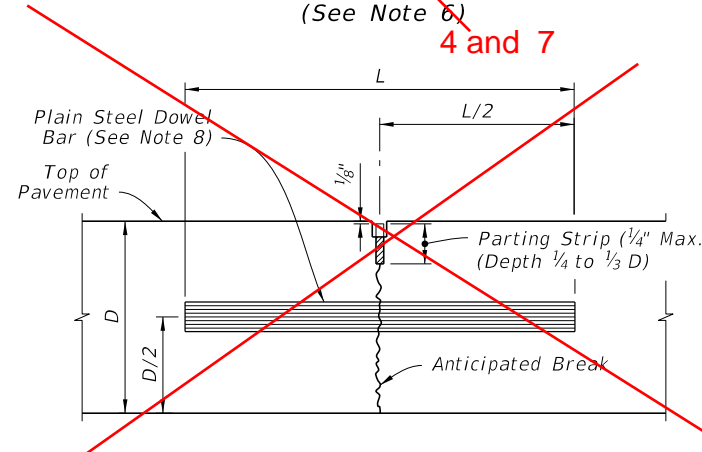
EXPANSION JOINT
(See Note 6)



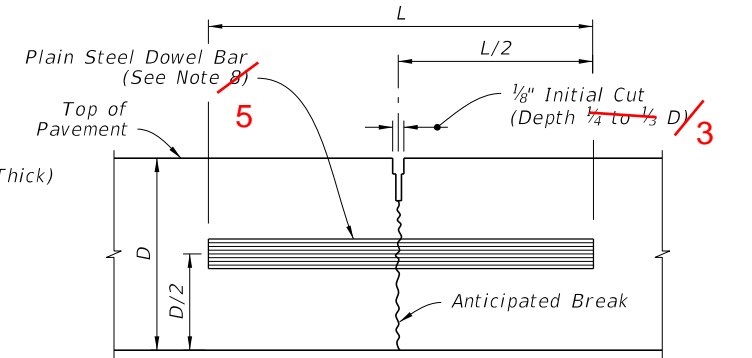
BUTT CONSTRUCTION JOINT
(Used At Discontinuance Of Work)



LANE-TIE JOINT
(See Note 2)



CONTRACTION JOINT
(Vibro Case Method)



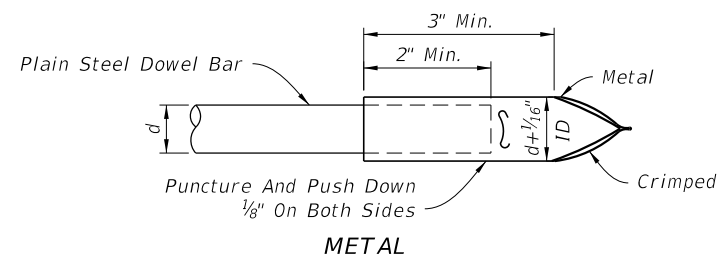
CONTRACTION JOINT
(Sawed Method)

LONGITUDINAL JOINTS

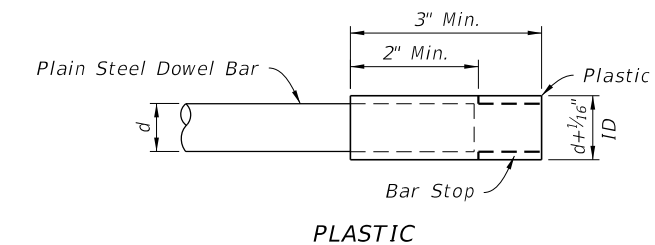
TRANSVERSE JOINTS

← **ADDED Note from Sheet 2**

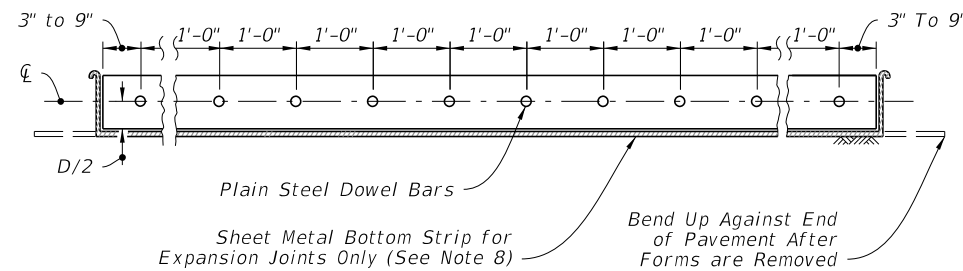
Moved to Sheet 2



METAL

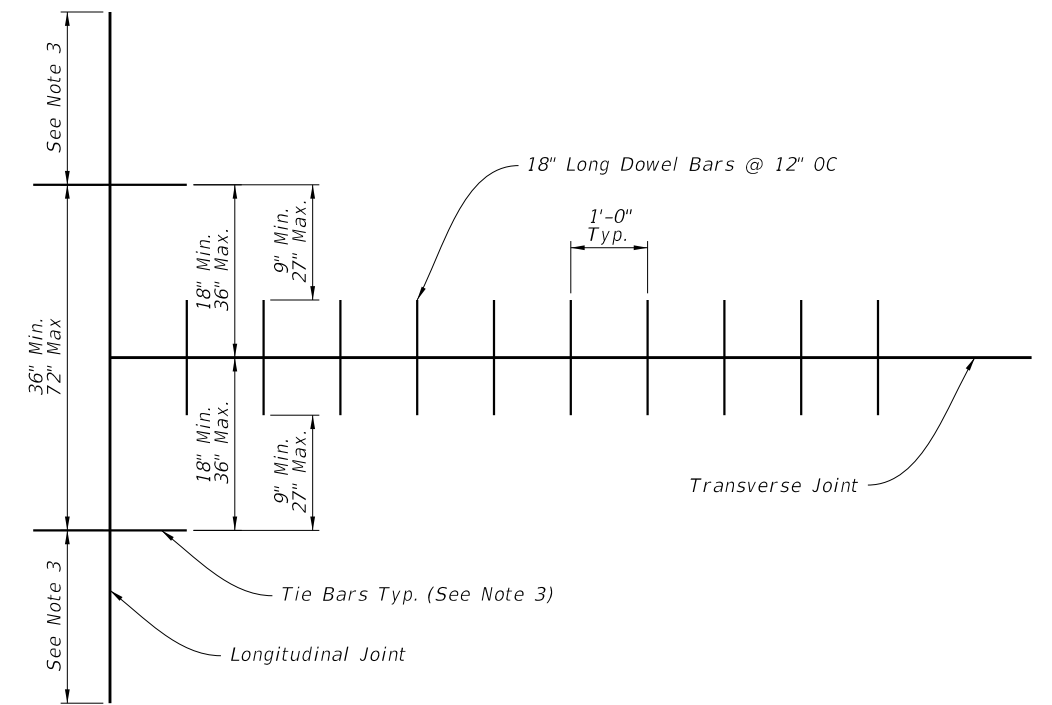


PLASTIC



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

DOWEL BAR LAYOUT



RELATION OF TIE BARS TO DOWEL BARS

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5/25/2022

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| 11/01/21 | 11/01/22 |



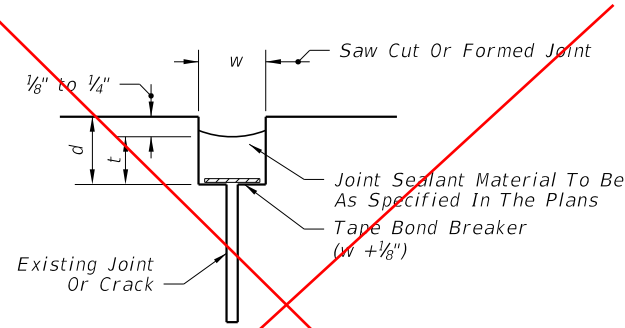
**FY 2022-23
STANDARD PLANS**

CONCRETE PAVEMENT JOINTS

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350-001

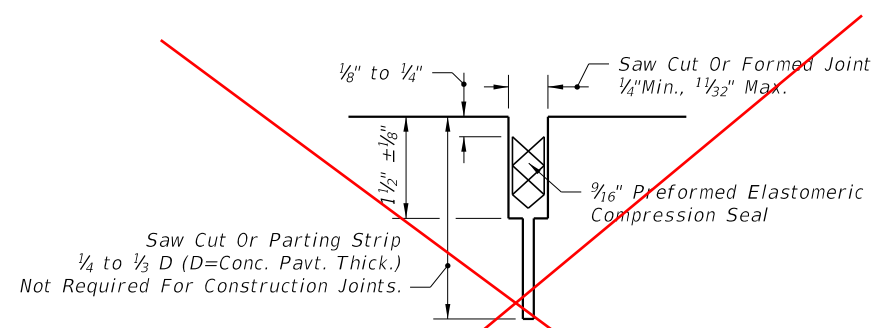
SHEET
1 of 4

5



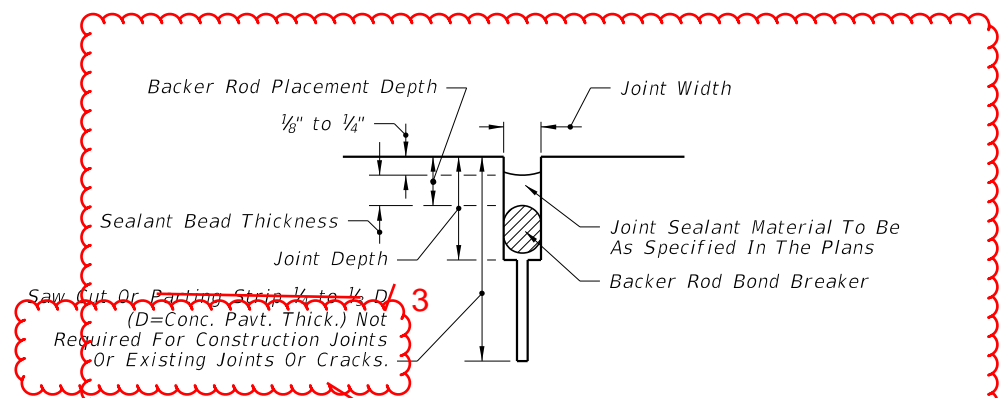
Note: Dimension w will be shown in the plans or established by the Engineer based on field conditions. Dimension d will be constructed so that the shape factor w/t has a maximum value of 2.0 and a minimum value of 1.0.

FOR REHABILITATION PROJECTS
Tape Bond Breaker



FOR NEW PROJECTS
Preformed Elastomeric Compression Seal

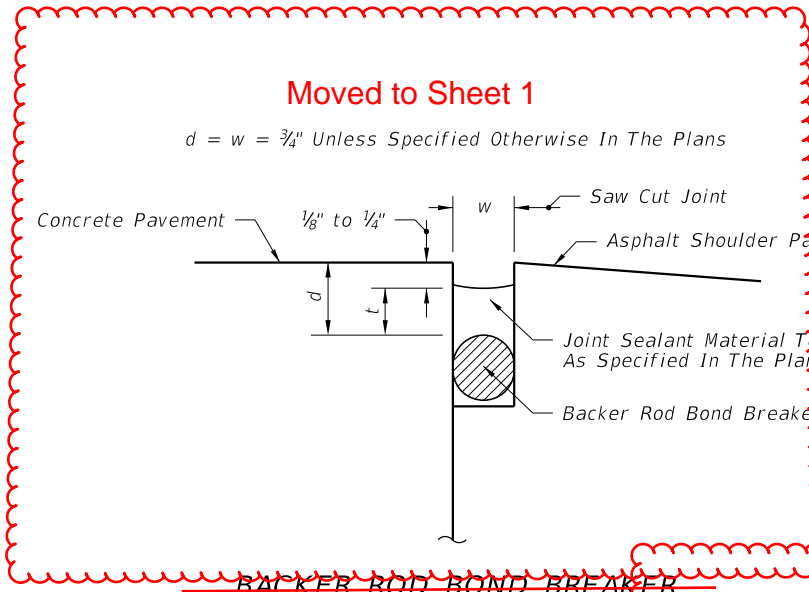
CONCRETE-CONCRETE JOINTS



Moved to a Note

FOR NEW AND REHABILITATION PROJECTS
~~Backer Rod Bond Breaker~~

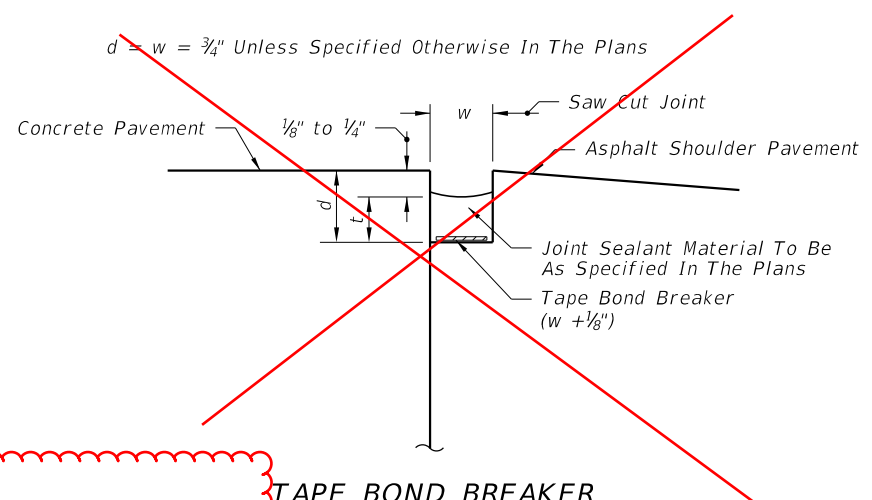
Moved to Sheet 1



Moved to Sheet 1

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

CONCRETE TO ASPHALT



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

Tape Bond Breaker

Moved to General Notes

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~~

| 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.

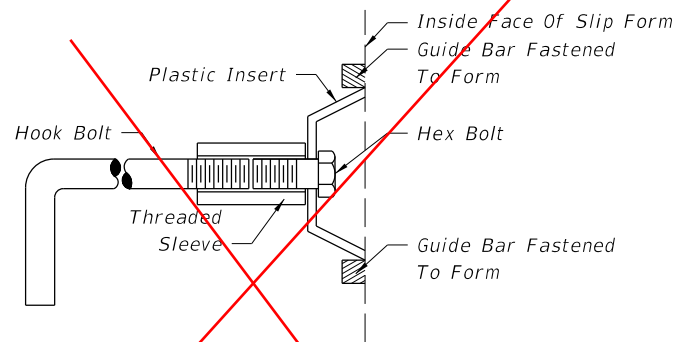
For rehabilitation projects the joint width will be shown on the plans or established by the Engineer based on field conditions.

CONCRETE TO CONCRETE

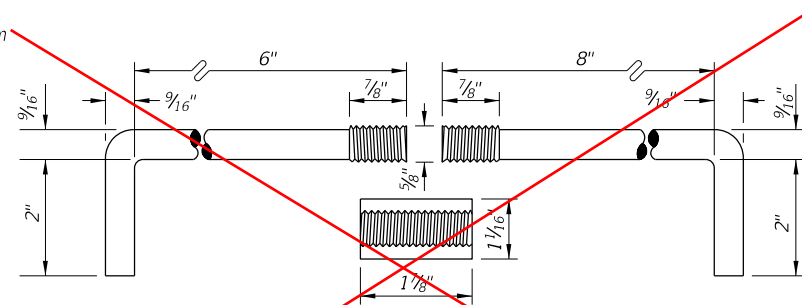
JOINT SEAL DIMENSIONS

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| 11/01/17 | 11/01/22 |



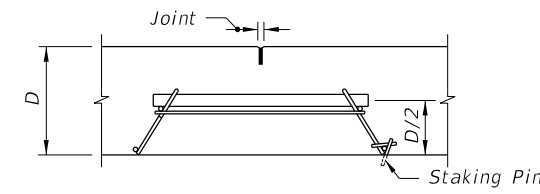
Note: After the concrete has set to the extent that the keyway will retain its shape, the hex bolt and plastic insert shall be removed. The remaining portion of the hook bolt assembly shall be installed immediately prior to placing of concrete in the adjacent lane.



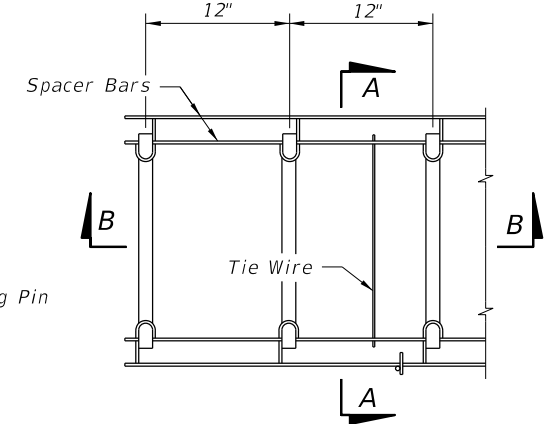
Anchor bolts shall be Grade C in accordance with ASTM A 307.
Threaded sleeves shall develop the full strength of the bolt and meet the material and thread requirements of ASTM A 563.

ALTERNATE KEYWAY AND HOOK BOLT

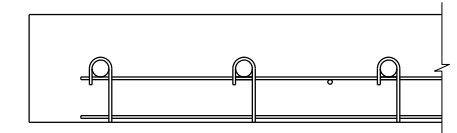
STEEL HOOK BOLT ASSEMBLY



SECTION AA

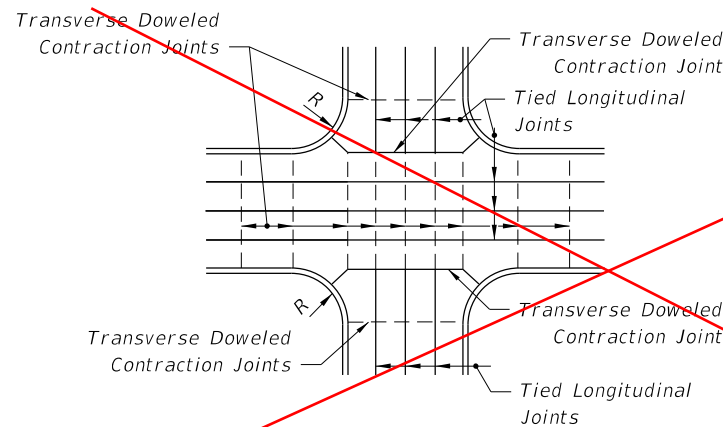


TOP VIEW

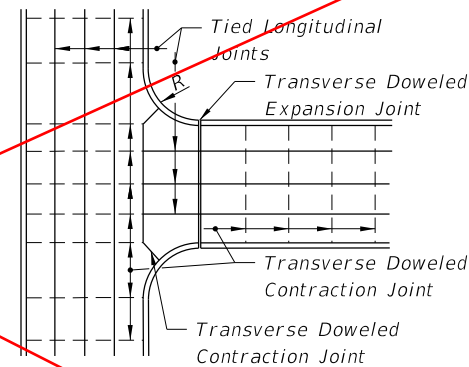


SECTION BB

CONTRACTION ASSEMBLY



JOINT LAYOUT AT THRU INTERSECTIONS



JOINT LAYOUT AT 'T' INTERSECTIONS

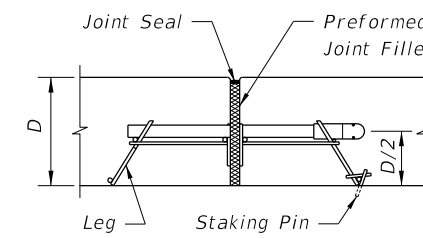
JOINT ARRANGEMENT

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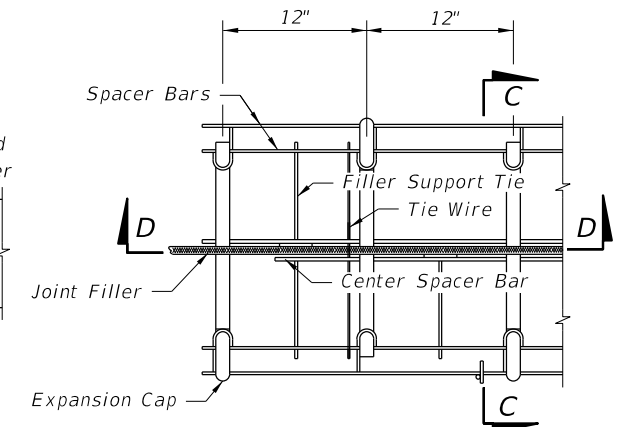
NOTES

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 5
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.

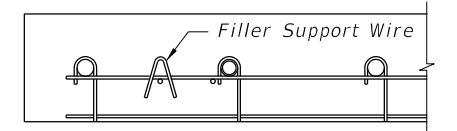
Moved to Sheet 4



SECTION CC



TOP VIEW



SECTION DD

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.

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| LAST REVISION | DESCRIPTION: |
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| 11/01/18 | 4 |
| 11/01/22 | 5 |



FY 2022-23
STANDARD PLANS

CONCRETE PAVEMENT JOINTS

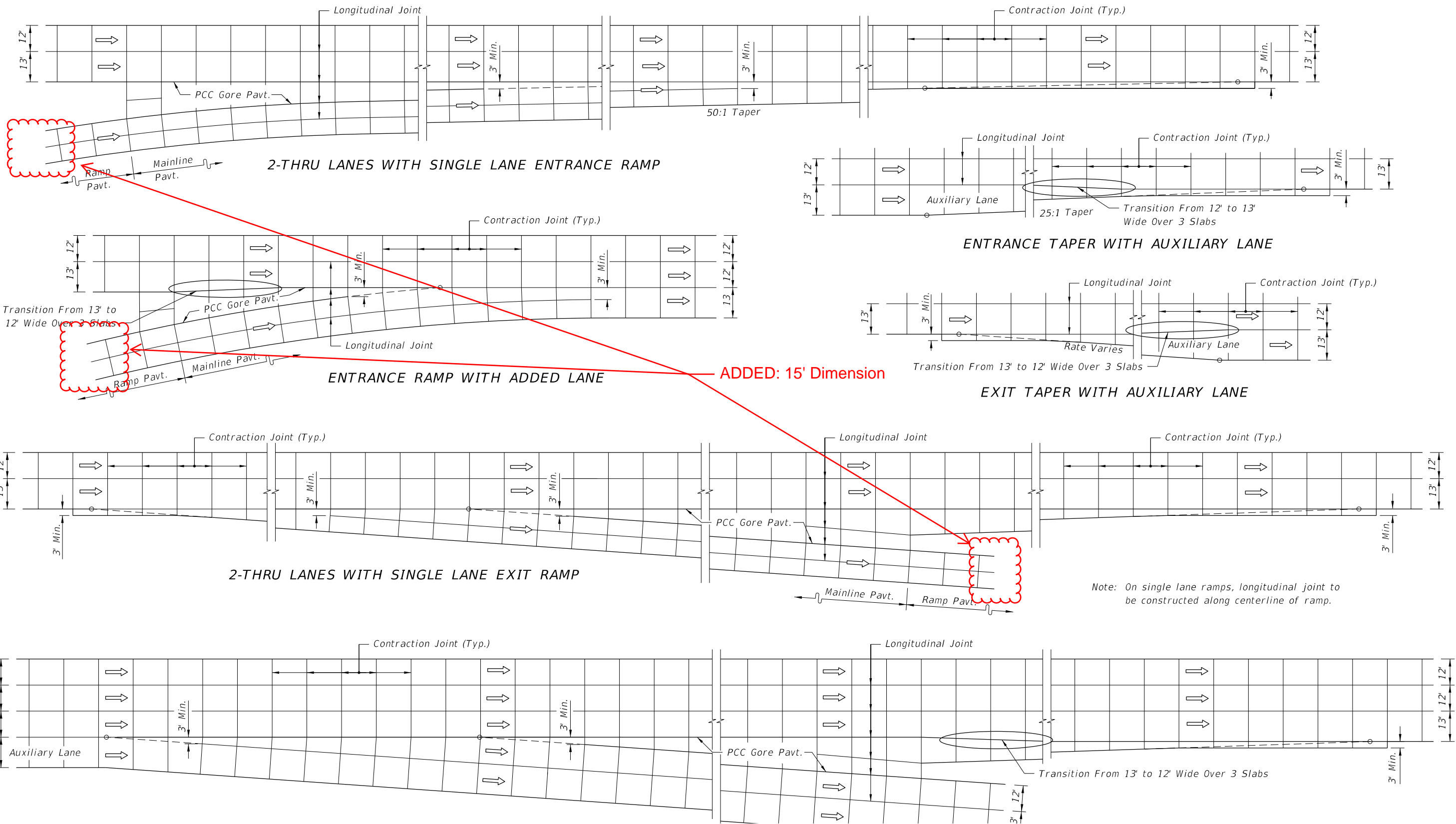
INDEX
350-001

SHEET
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NEW SHEET 3

LARGE RIGHT TURN, STANDARD INTERSECTION, AND SKEWED INTERSECTION DETAILS

NEW SHEET 4
ISOLATION JOINT DETAILS



ADDED: 15' Dimension

CHANGED TO:
Construct a longitudinal joint in the center of single-lane ramps.

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

Note: Transverse joint spacing should not exceed 15-ft or twenty-four times the slab thickness, whichever is less. ~~If a lane exceeds 15 ft width, such as single lane ramps and weigh stations, longitudinal joint to be constructed in centerline of lane.~~

JOINT LAYOUT AT ENTRANCE AND EXIT RAMP TERMINALS

5 of 5

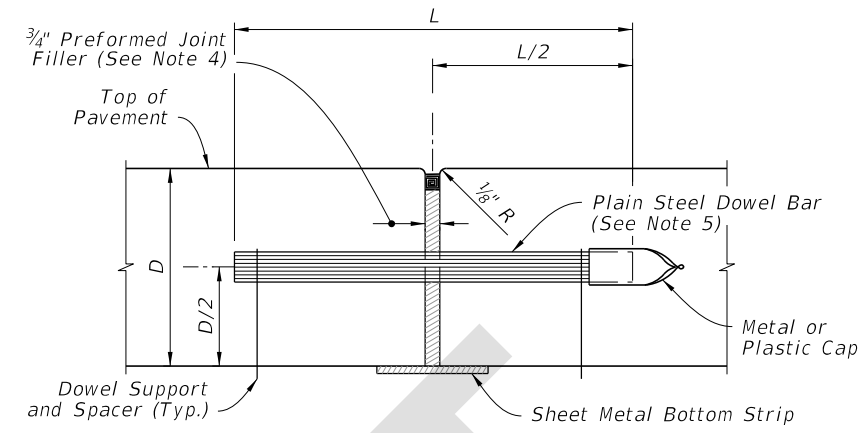
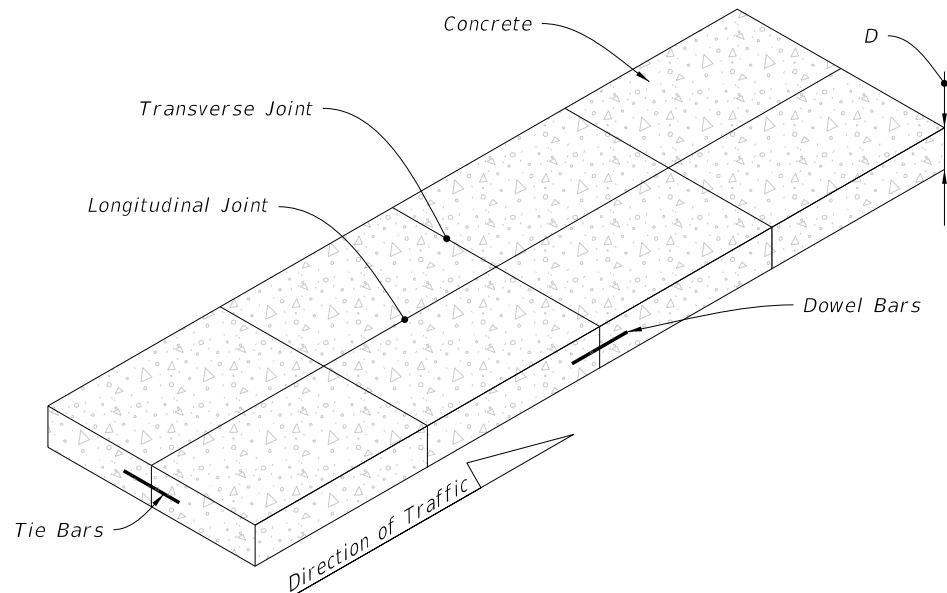
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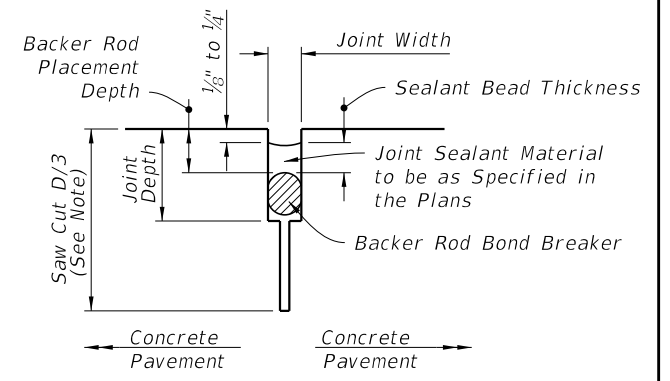

 FY 2022-23
 STANDARD PLANS

CONCRETE PAVEMENT JOINTS

| | |
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| INDEX | SHEET |
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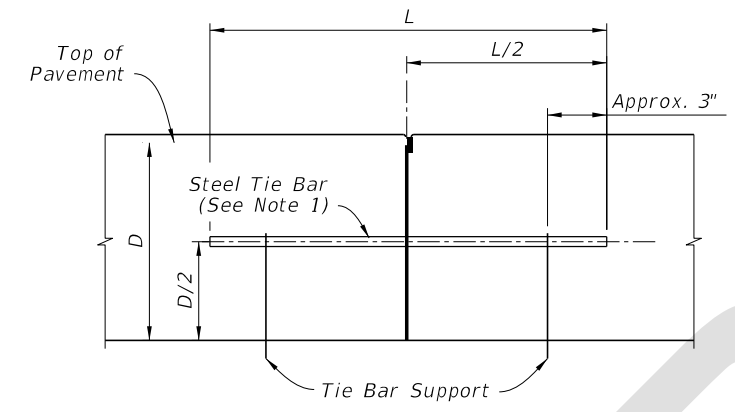
EXPANSION JOINT
(See General Notes 4 and 7)



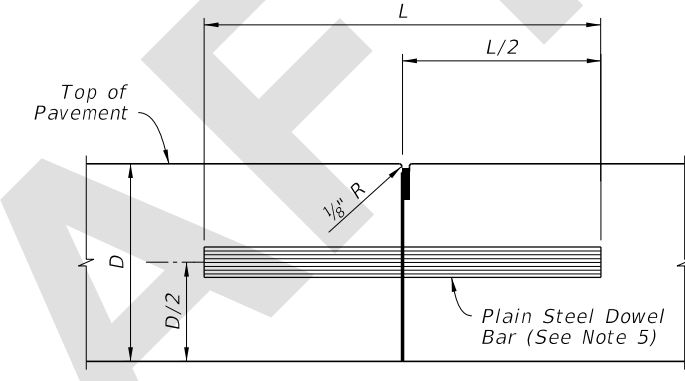
NOTE:
(D=Conc. Pavt. Thick.) Not required for construction joints, existing joints, or cracks.

| 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 |

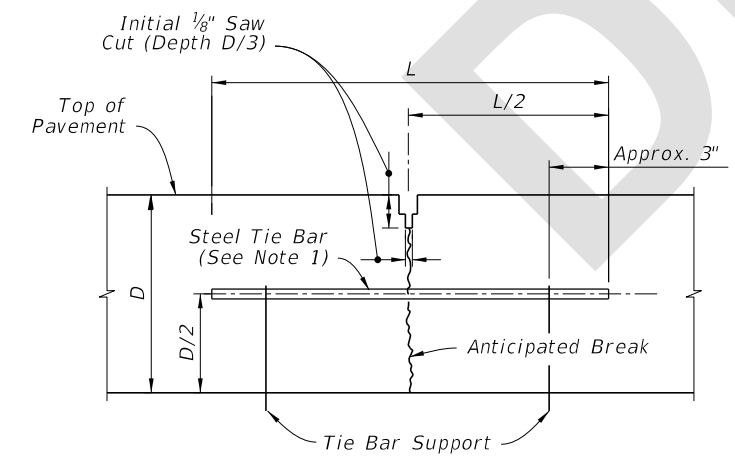
Unless otherwise indicated on the plans the joint width for new construction will be 1/4" for construction joints, 3/8" for all other joints.
For rehabilitation projects the joint width will be shown on the plans or established by the Engineer based on field conditions.



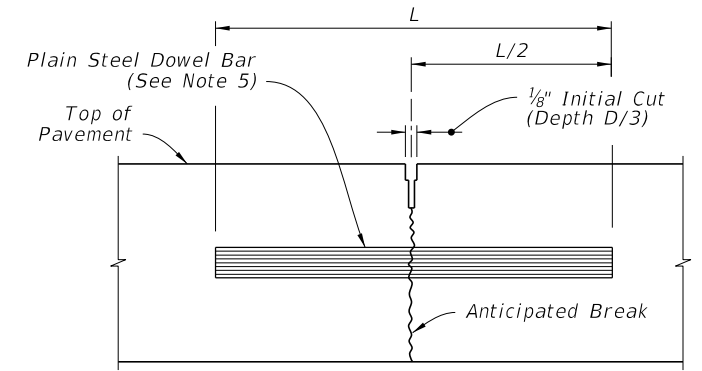
BUTT CONSTRUCTION JOINT



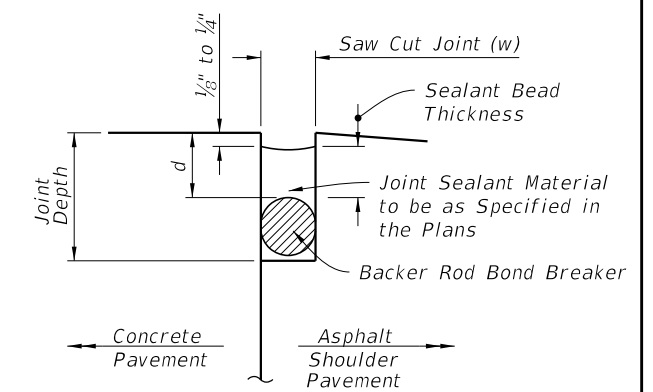
BUTT CONSTRUCTION JOINT
(Used At Discontinuance Of Work)



LANE-TIE JOINT



CONTRACTION JOINT
(Sawed Method)



NOTE:
"d" and "w" = 3/4", unless specified in the Plans.

CONCRETE-ASPHALT SHOULDER JOINTS

GENERAL NOTES:

- For Longitudinal Joints:
 - Tie bars are deformed #4 or #5 reinforcing steel bars meeting the requirements of Specification 931.
 - Provide a tied joint with #4 bars 25" in length at 24" spacing or #5 bars 30" in length at 36" spacing.
- Transverse joints are to be spaced at a maximum of 15'. Dowel Bars are required at all transverse joints unless otherwise noted in the plans.
- For bridge expansion joints, see Index 370-001.
- Punch clean holes in preformed joint filler greater than bar diameter.
- Coat plain steel dowel bars and welded wire basket assemblies in accordance with Specification 931. Lubricate dowel bars in accordance with Specification 350.
- New and rehabilitation projects, backer rod bond breaker is required. Shoulder must be repaired if proper joint shape can not be attained.
- Sheet metal bottom strips in accordance with Specification 931. Not required with asphalt base.

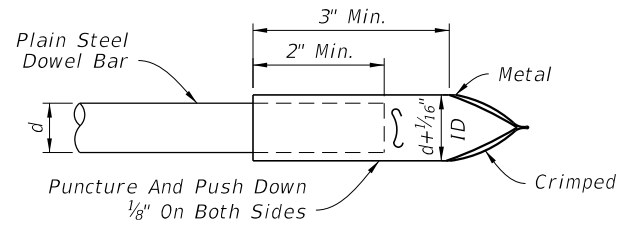
LONGITUDINAL JOINTS

TRANSVERSE JOINTS

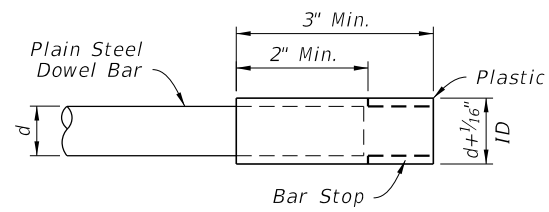
JOINT SEAL DIMENSIONS

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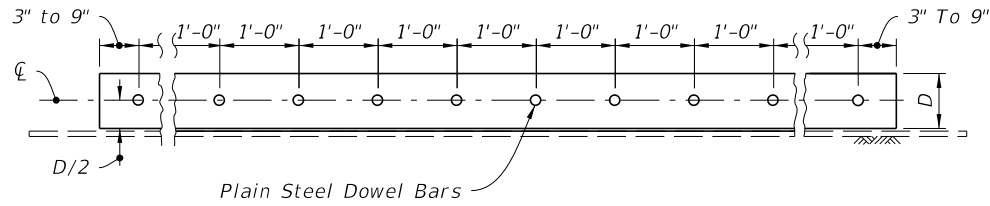


METAL



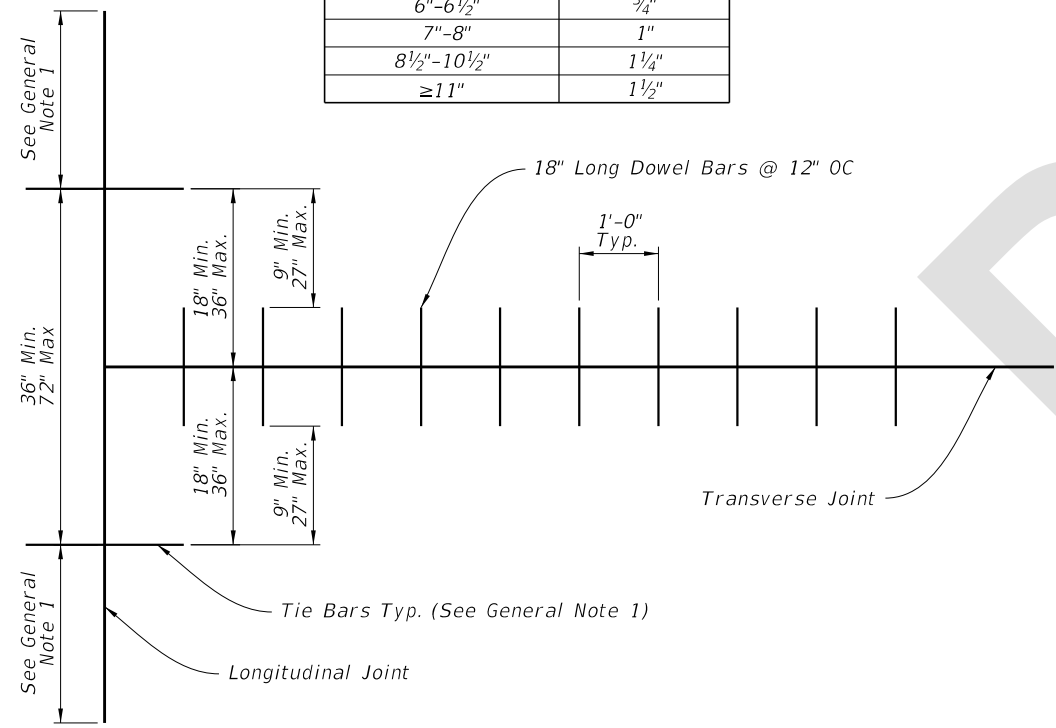
PLASTIC

DOWEL BARS CAPS

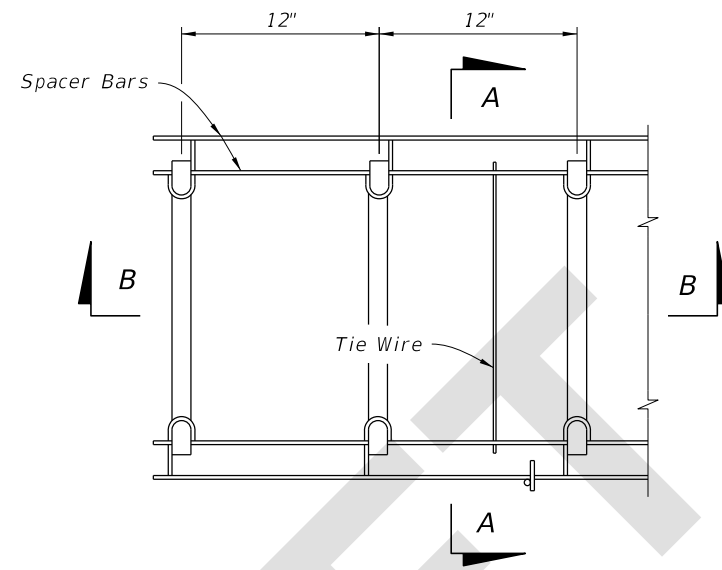


DOWEL BAR LAYOUT

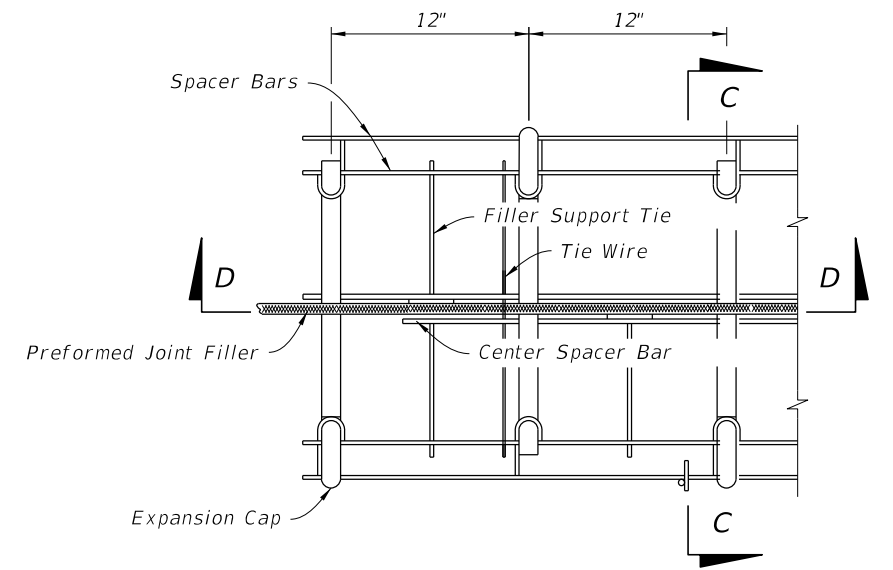
| DOWEL BARS (LENGTH 18") | |
|----------------------------|----------|
| Pavement Thickness "D" | Diameter |
| 6"-6 1/2" | 3/4" |
| 7"-8" | 1" |
| 8 1/2"-10 1/2" | 1 1/4" |
| ≥ 11" | 1 1/2" |



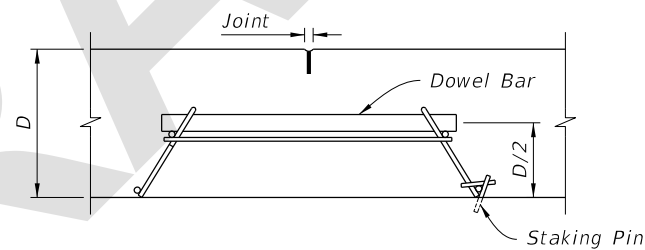
RELATION OF TIE BARS TO DOWEL BARS



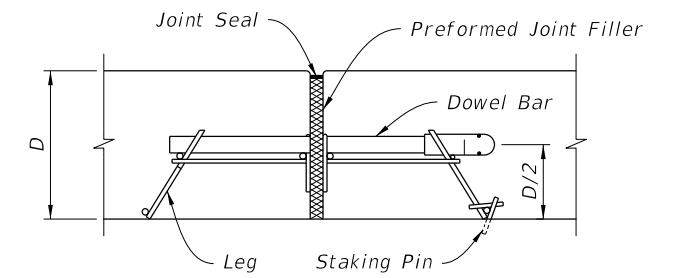
PLAN VIEW



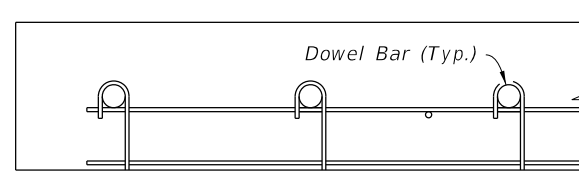
PLAN VIEW



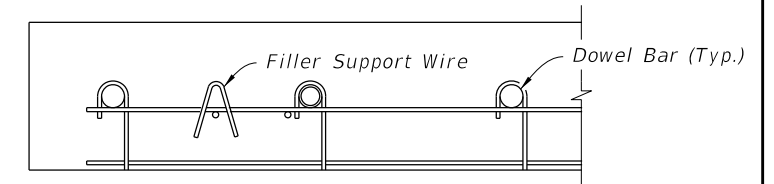
SECTION A-A



SECTION C-C



SECTION B-B



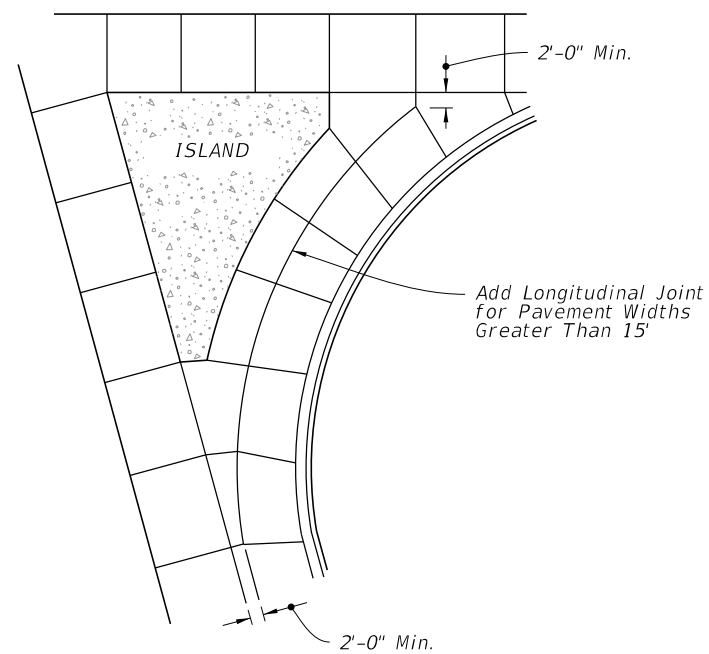
SECTION D-D

CONTRACTION ASSEMBLY

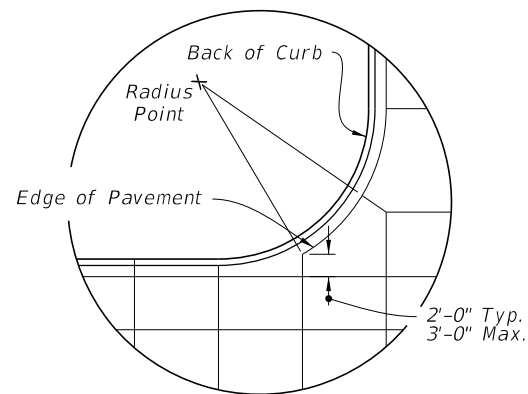
EXPANSION ASSEMBLY

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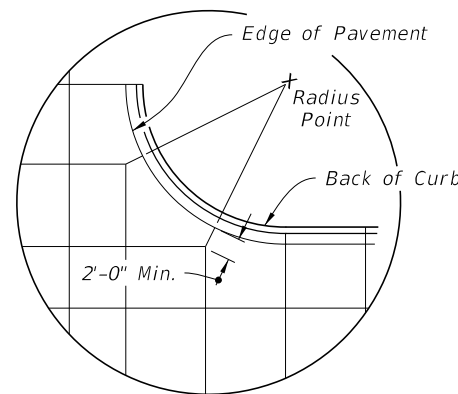
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| 11/01/22 | |



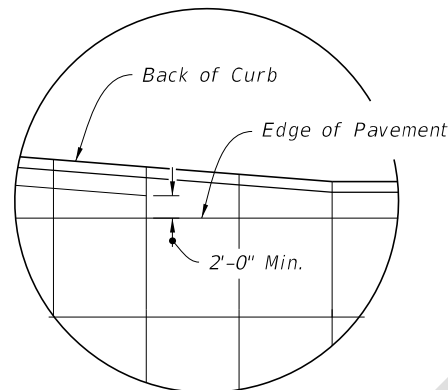
LARGE RIGHT TURN



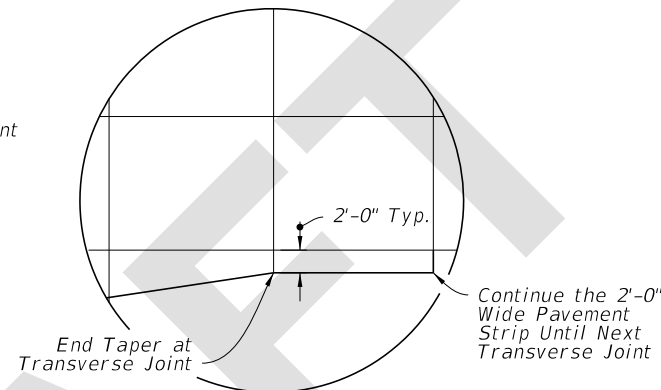
DETAIL "A"



DETAIL "B"



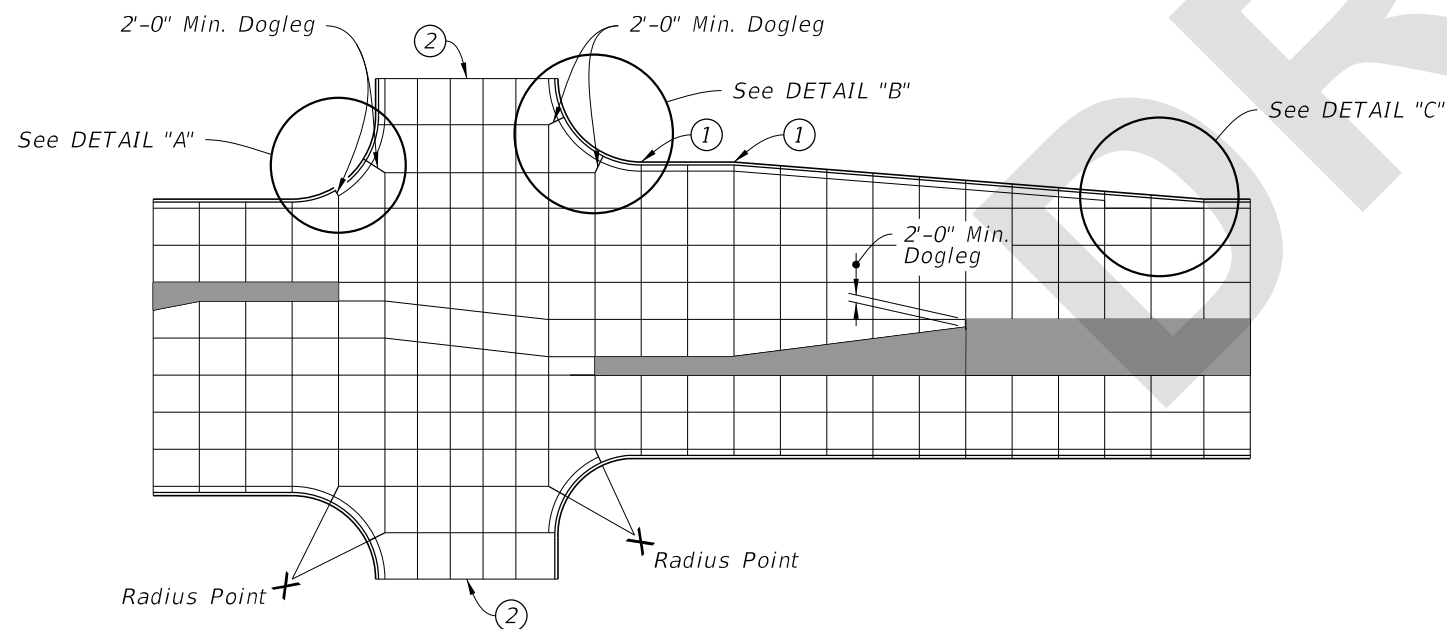
DETAIL "C"



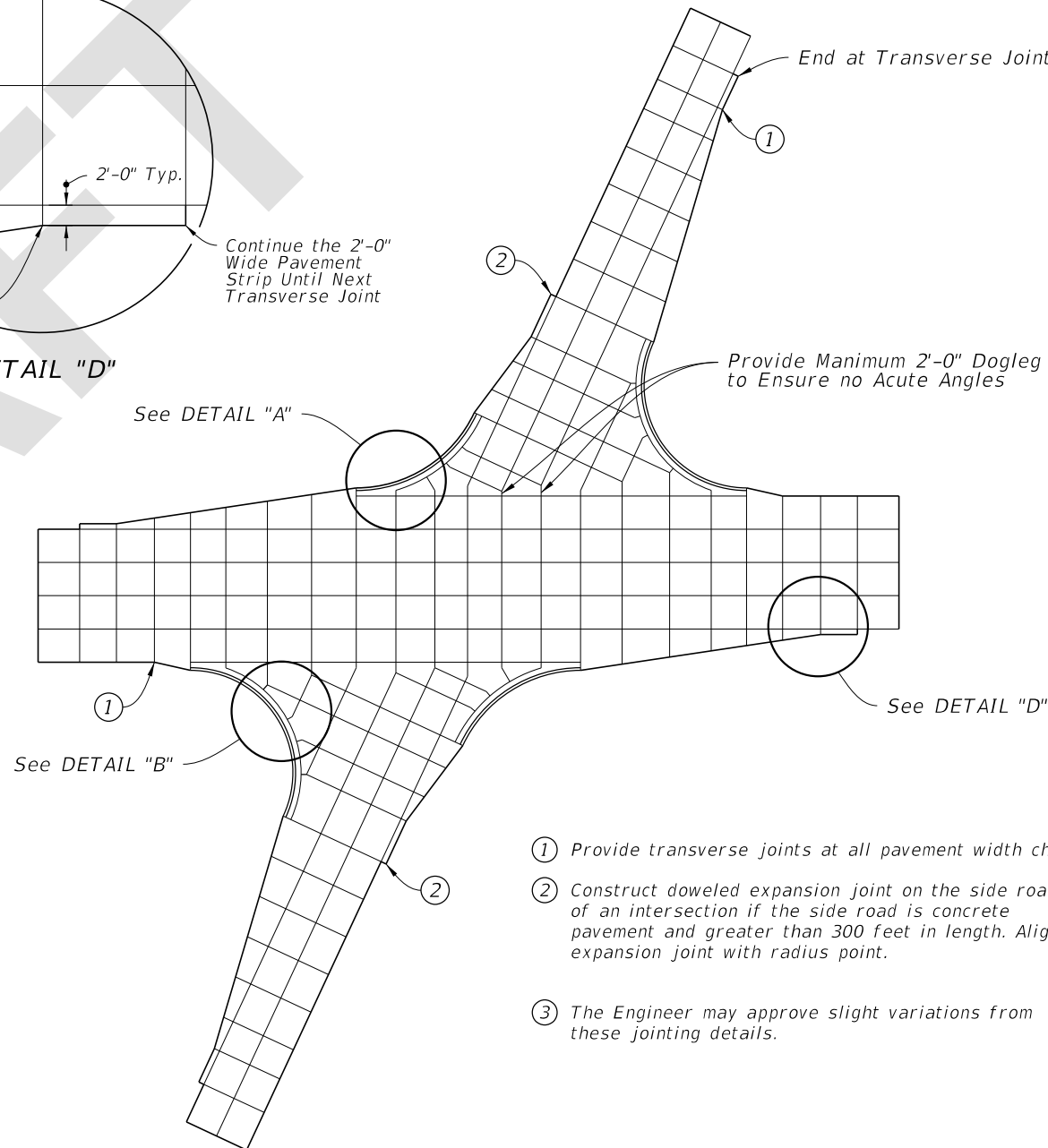
DETAIL "D"

NOTES:

1. The primary roadway controls the transverse joint pattern.
2. Align new joints with existing joints or cracks.
3. Construct transverse joints perpendicular to the roadway.
4. Adjust transverse joints to align with utility fixtures (e.g., manholes and inlets) in the pavement structure when possible.
5. Avoid slabs less than 2 feet wide or greater than 15 feet wide.
6. Avoid angles less than 60° by doglegging joints through curve radius points. Use 90° angles when possible.
7. Correlate longitudinal joints with lane lines when possible.
8. Longitudinal joints are not required for single lane pavement 14' or less in width. For entrance and exit ramp joint details, see sheet 5.



STANDARD INTERSECTION



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- ① Provide transverse joints at all pavement width changes.
- ② Construct doweled expansion joint on the side road of an intersection if the side road is concrete pavement and greater than 300 feet in length. Align expansion joint with radius point.
- ③ The Engineer may approve slight variations from these jointing details.

JOINT LAYOUTS FOR INTERSECTIONS

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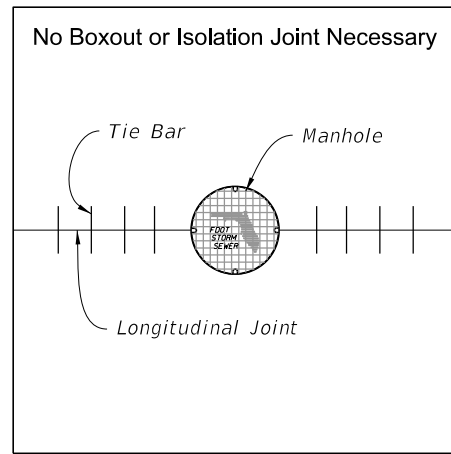


FY 2023-24
STANDARD PLANS

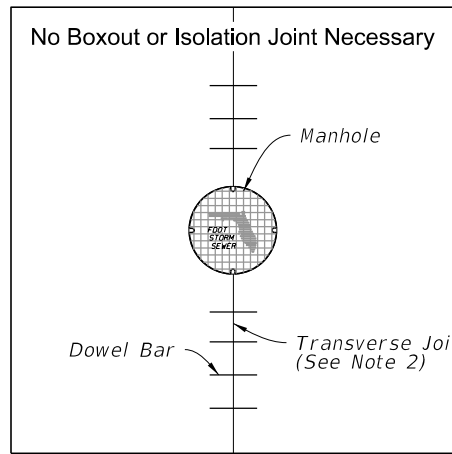
CONCRETE PAVEMENT JOINTS

INDEX
350-001

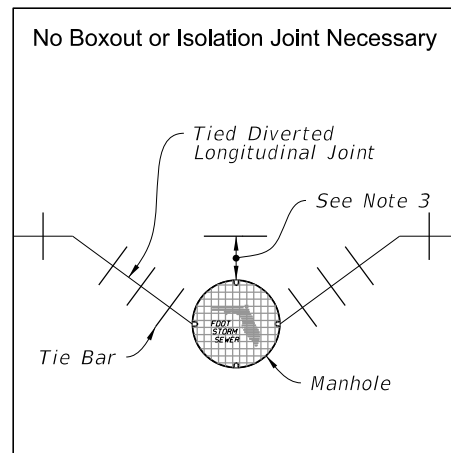
SHEET
3 of 5



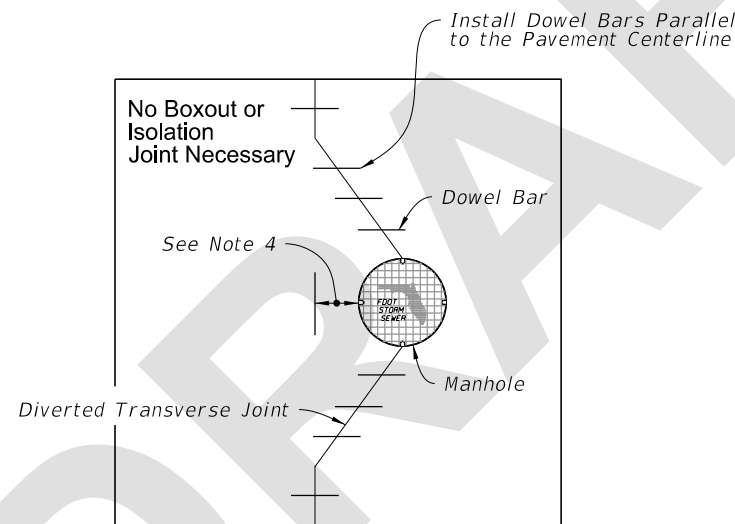
MANHOLE WITH LONGITUDINAL JOINT



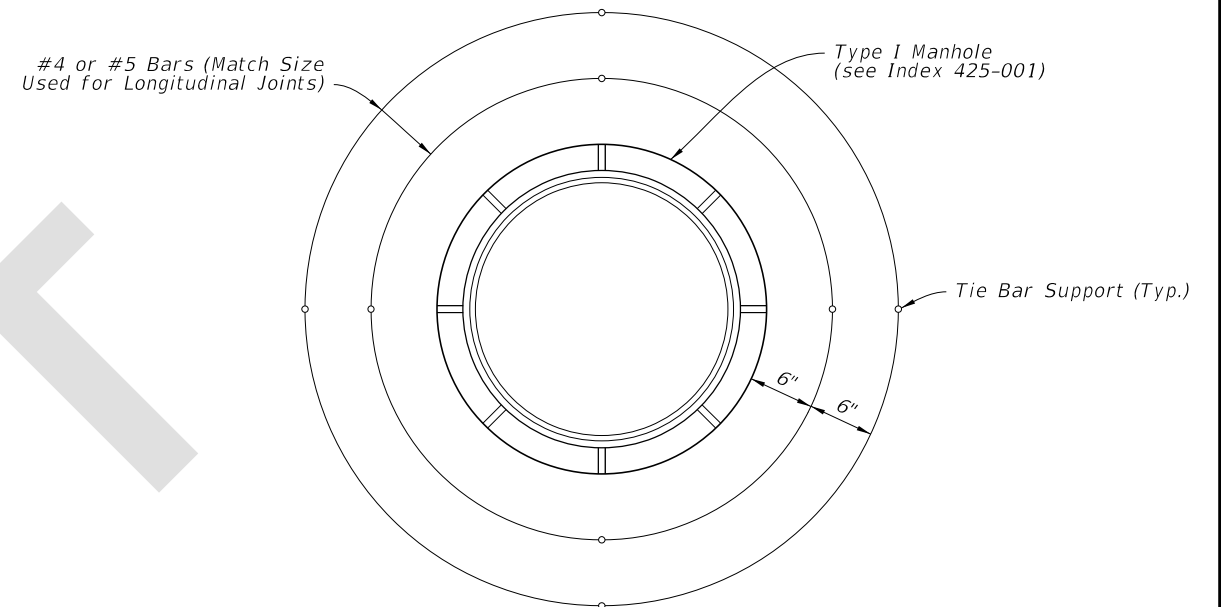
MANHOLE WITH TRANSVERSE JOINT



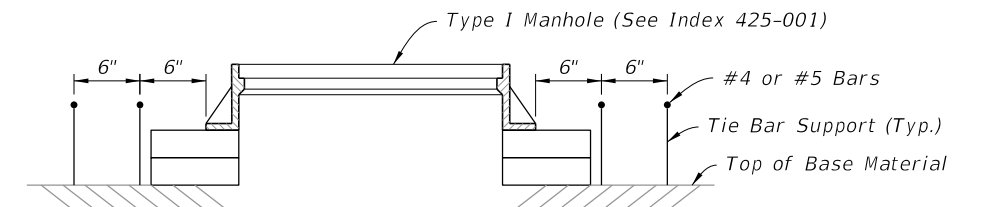
MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT



PLAN



ELEVATION

MANHOLE REINFORCEMENT (See Notes 3 and 4)

NOTES:

1. Use boxouts when utility structure is in the path of construction joints. Provide a 1 foot minimum clearance between the exterior limit of the structure to the diamond boxout.
2. Adjust transverse joint to intersect manhole, if possible.
3. If distance between the longitudinal joint and the edge of manhole is 2 feet or less, divert the longitudinal joint at a 2:1 taper rate to the center of the manhole. If the distance is greater than 2 feet, do not divert the joint, saw as normal, and place reinforcement rebar around the manhole.
4. If the distance from the edge of the manhole to the nearest transverse joint is 4 feet or less, redirect joint at 2:1 taper to intersect the center of the manhole. If distance is greater than 4 feet, do not divert the joint, saw as normal, and place reinforcement rebar around the manhole.
5. Align transverse joint with one edge of inlet when practical.
6. All manholes, meter boxes and other projections into the pavement shall be boxed-in with 1/2" preformed expansion joint material.

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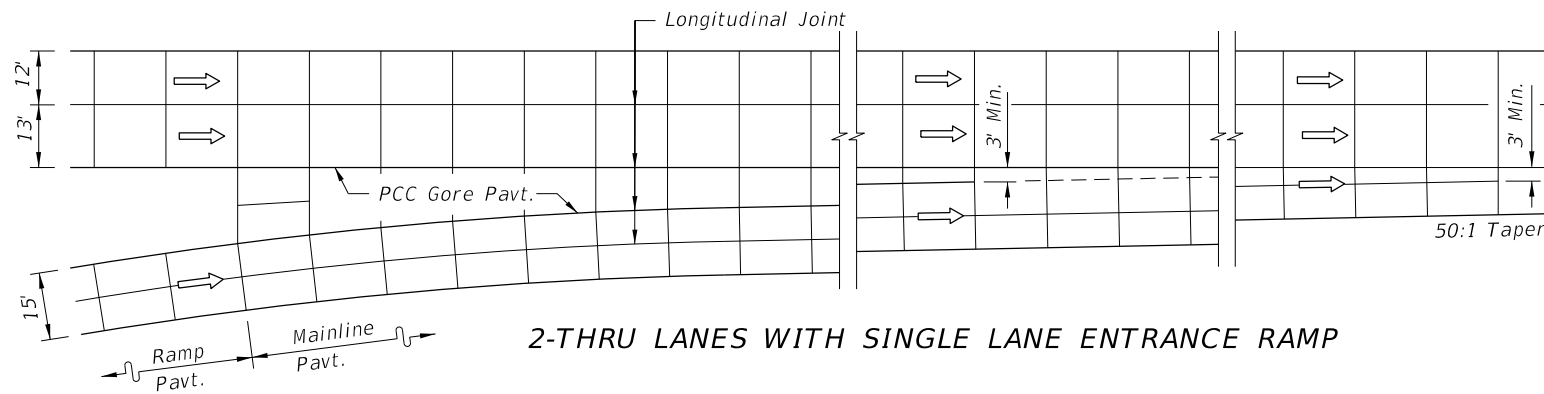


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STANDARD PLANS

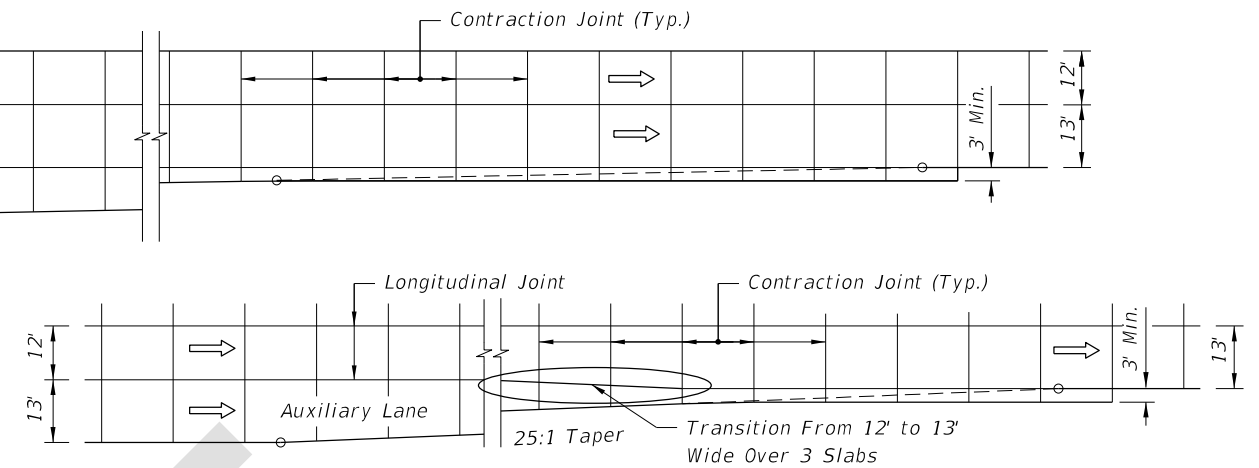
CONCRETE PAVEMENT JOINTS

ISOLATION JOINT DETAILS

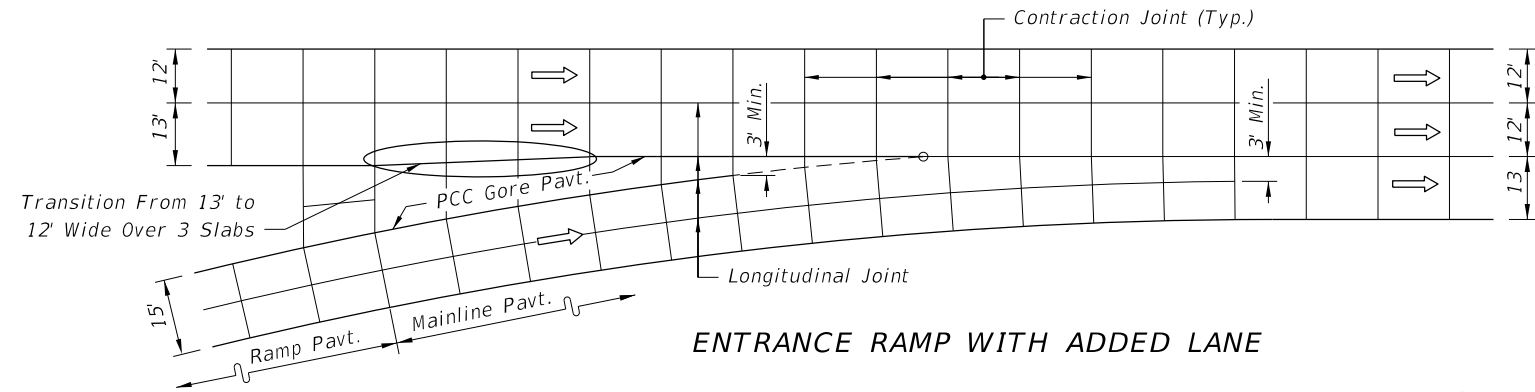
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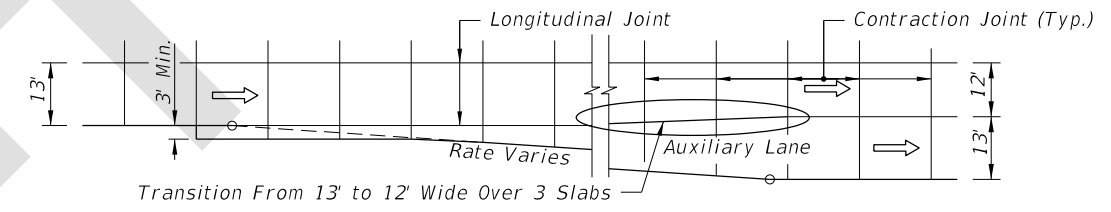
2-THRU LANES WITH SINGLE LANE ENTRANCE RAMP



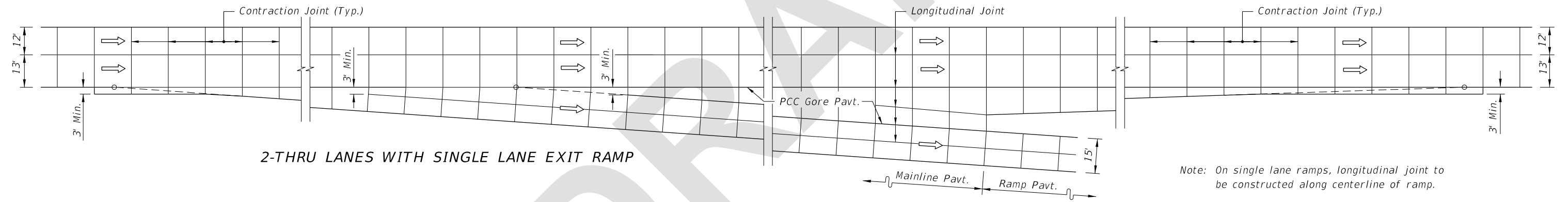
ENTRANCE TAPER WITH AUXILIARY LANE



ENTRANCE RAMP WITH ADDED LANE

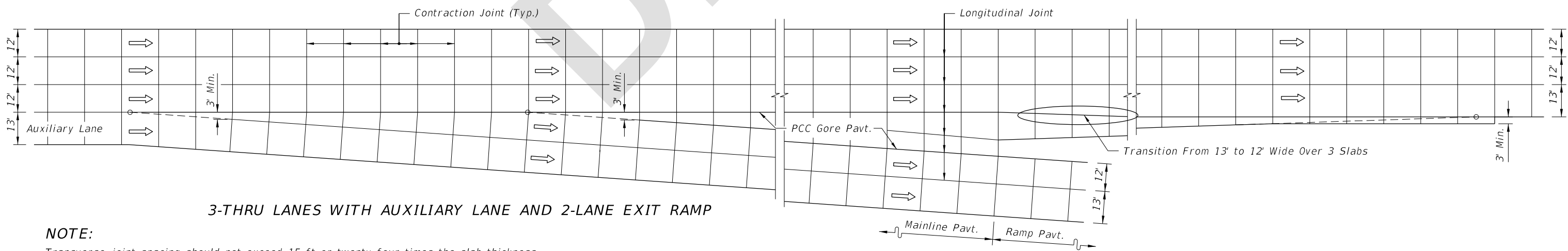


EXIT TAPER WITH AUXILIARY LANE



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

NOTE:
 Transverse joint spacing should not exceed 15-ft or twenty-four times the slab thickness, whichever is less. Construct a longitudinal joint in the center of single-lane ramps.

JOINT LAYOUT AT ENTRANCE AND EXIT RAMP TERMINALS

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| REVISION | | | | | | |