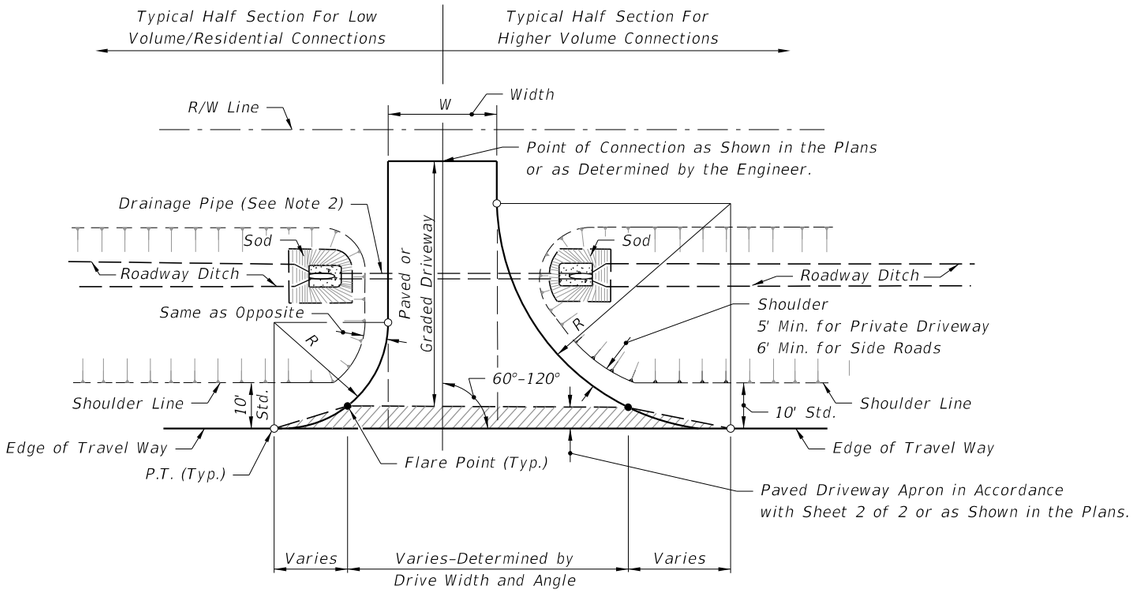
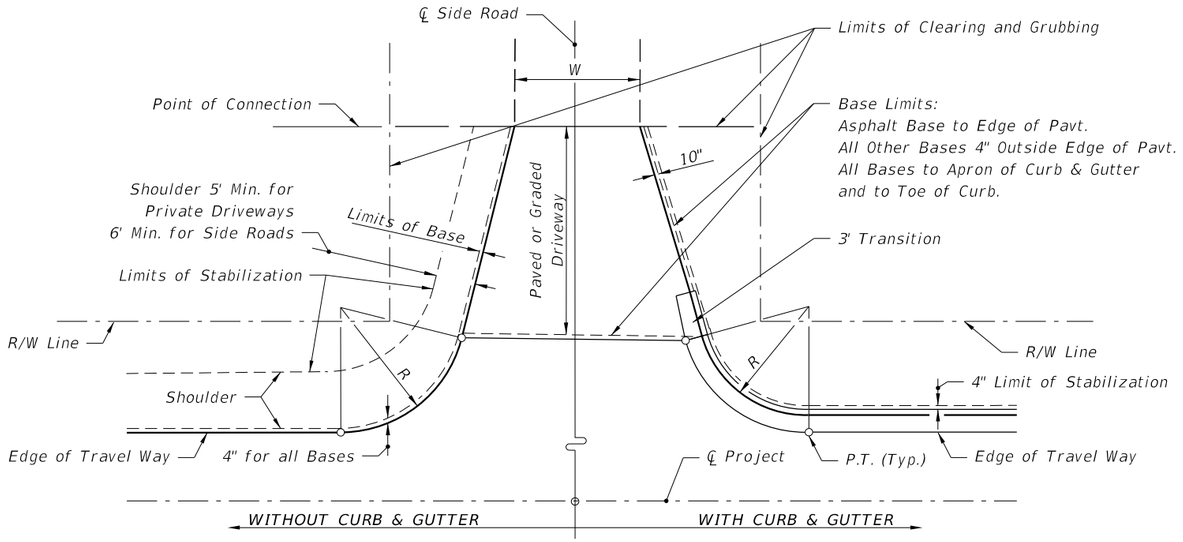
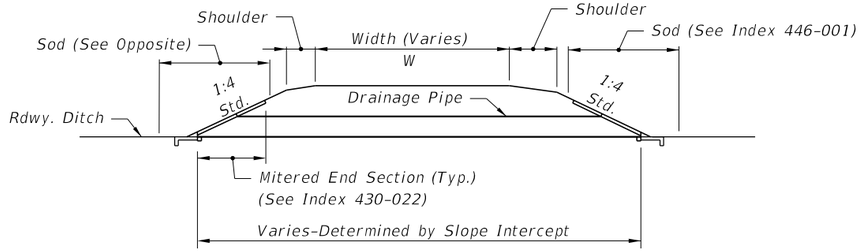


PLAN

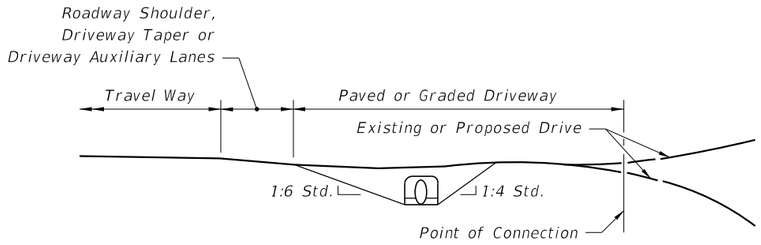


PLAN

LIMITS OF CLEARING & GRUBBING, STABILIZING AND BASE AT DRIVEWAYS



DRAINAGE SECTION



DRIVEWAY PROFILE AND END VIEW

FLUSH SHOULDER ROADWAY - DRIVEWAY CONSTRUCTION

DRIVEWAY ENTRANCES NOTES:

1. See Plans for Driveway Width (W) and Return Radius (R).

2. See the Plans for drainage pipe size and length or as determined by the Engineer. The size will be no less than 15" diameter or equivalent.

3. Stable material may be required for graded driveways to private property as directed by the Engineer in accordance with Specification 102-8.

4. The driveway pavement requirement at graded connections may be waived for connections serving one or two homes or field entrances with less than 20 trips per day, or 5 trips per hour as approved by the Engineer, or when not shown in the Plans.

5. Point of Connection:

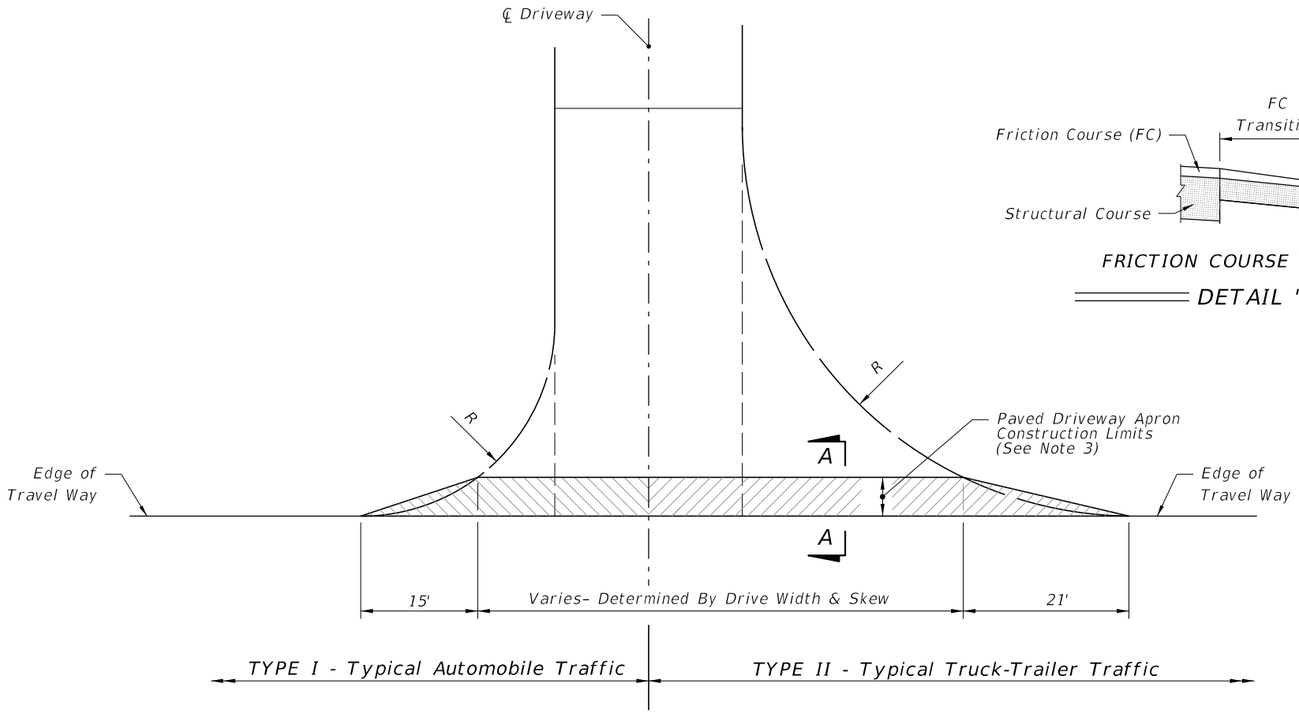
   a. Construct paved driveways for all paved connecting facilities. The connecting point will be determined by the Engineer.

   b. Construct paved driveways for all business, commercial, industrial or high volume residential graded connecting facilities. Construct the connecting point 30'-0' from edge of travel way or at R/W line, whichever is less.

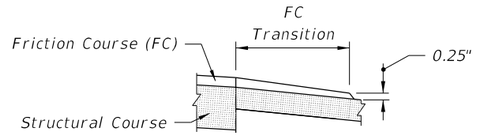
   c. Construct paved driveways for all side road connections. The R/W is the connecting point.

10/20/2022 8:46:05 AM

LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/18			FY 2023-24 STANDARD PLANS	PAVED AND GRADED DRIVEWAYS	330-001	1 of 2

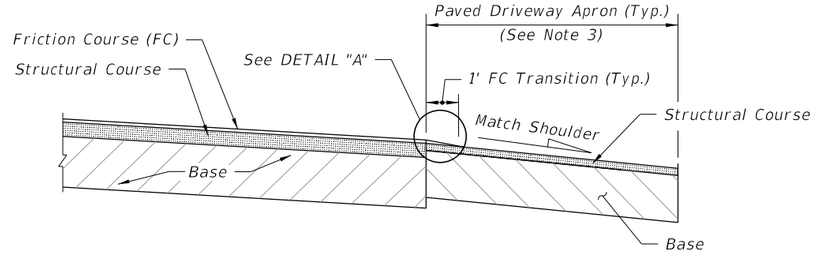


DRIVEWAY TYPES

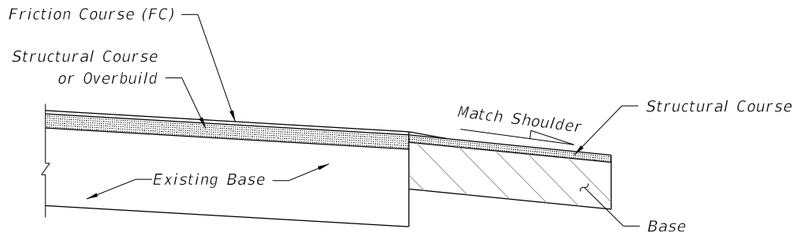


FRICTION COURSE TRANSITION

DETAIL "A"



SECTION AA - NEW CONSTRUCTION



SECTION AA - RESURFACING

NEW DRIVEWAY

AREAS FOR ONE 5' DEEP DRIVEWAY APRON (SY)

Drive Width (Ft.)	Intersection			
	Normal		Skewed	
	Type I	Type II	Type I	Type II
12	26	51	31	60
14	27	52	33	61
16	28	53	34	63
18	29	54	35	64
20	31	55	37	65
22	32	56	38	67
24	33	57	39	68
26	34	58	40	69
28	35	59	42	70
30	36	61	43	72
32	37	62	44	73
34	38	63	46	74
36	39	64	47	76
38	41	65	48	77
40	42	66	49	78
42	43	67	51	79
44	44	68	52	81
46	45	69	53	82
48	46	71	55	83
50	47	72	56	85
52	48	73	57	86
54	49	74	58	87
56	51	75	60	88
58	52	76	61	90
60	53	77	62	91

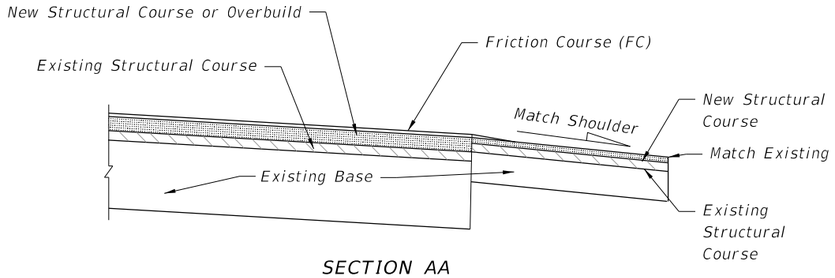
MATERIAL TYPES AND THICKNESSES FOR PAVED CONNECTIONS

Course	Materials	Minimum Thickness (in.)	
		Connections	Roadway*
Structural	Asphaltic Concrete	1½"	1½"
Bases	Optional Base (See Specification 285)	O.B.G. 2	O.B.G. 3

* Travel way flares (bypass lanes), auxiliary lanes serving more than a single connection, and all median crossovers including their auxiliary lanes and/or transition tapers.

NOTES

1. Use same material for driveway structural course and roadway overbuild or structural course, except as approved by the Engineer for graded connections. Other Department-approved equivalent pavements may be used at the discretion of the Engineer.
2. Auxiliary lanes and their transition tapers shall be the same structure as the abutting travel way pavement thickness or any of the roadway structures tabulated above, whichever is thicker.
3. If an asphalt base course is used for a driveway, its thickness may be increased to match the edge of travel way pavement thickness in lieu of a separate structural course. 6" of Portland cement concrete will be acceptable in lieu of the asphalt base and structural courses. See Notes 4 and 5 below.
4. A structural course is required for flexible pavements when they are used for auxiliary lanes serving more than a single connection.
5. Use Class NS concrete at least 6" thick for driveways paved with Portland Cement Concrete. Construct in accordance with Specifications 347, 350, and 522.
6. The Department may require other pavement criteria where local conditions warrant.



SECTION AA

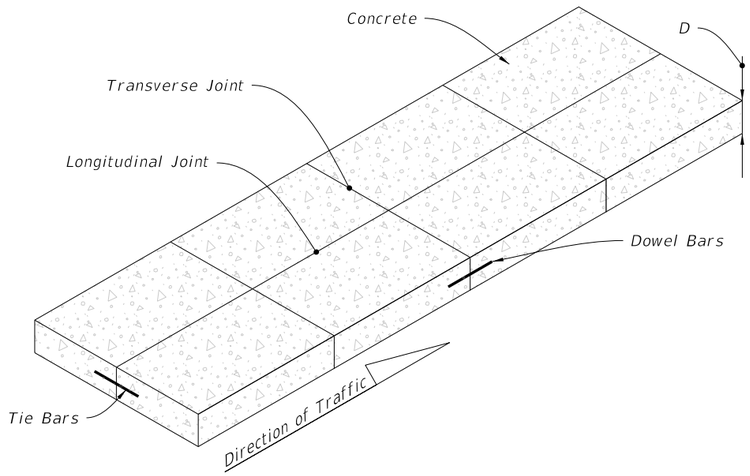
RESURFACING EXISTING DRIVEWAY

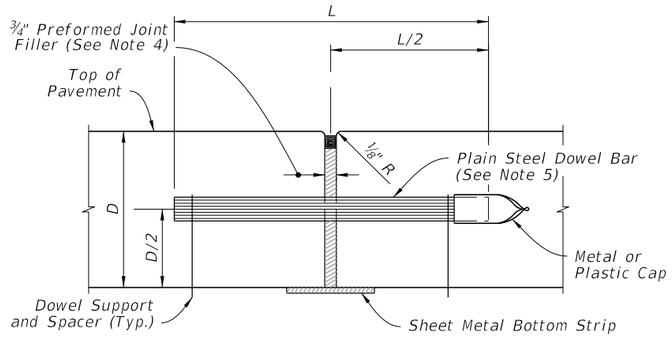
GENERAL NOTES:

1. Driveways are to be constructed or resurfaced for low volume (single family, duplex, farm, etc.) residential connections as directed by the Engineer.
2. Driveways construction is not required for low volume residential connections where roadway shoulders are paved.
3. Match existing paved shoulder widths ≥ 4'. For all other shoulders conditions, construct at 5' wide.
4. Connections beyond the shoulder width are to be constructed as directed by the Engineer.
5. Construct Driveway Base in accordance with Specification 286.
6. Payment for structural course and friction course is to be included in roadway pavement pay item.

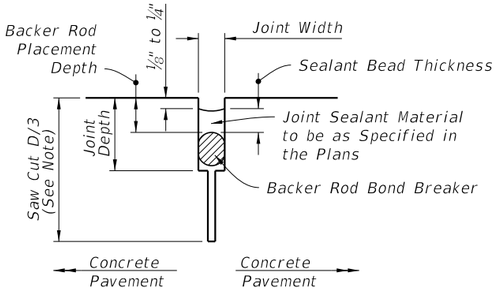
10/20/2022 8:46:06 AM

LAST REVISION	REVISION	DESCRIPTION:			
11/01/18			FY 2023-24 STANDARD PLANS	PAVED AND GRADED DRIVEWAYS	INDEX 330-001 / SHEET 2 of 2





EXPANSION JOINT
(See General Notes 4 and 7)



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

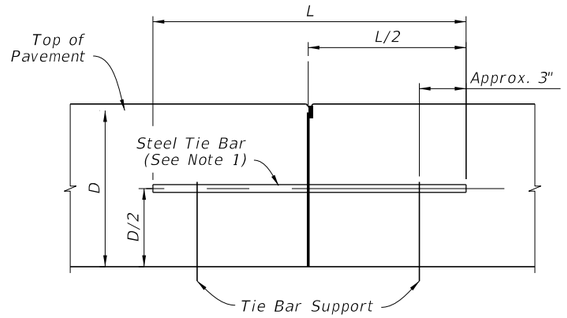
BACKER ROD BOND BREAKER (CONCRETE-CONCRETE JOINTS)

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

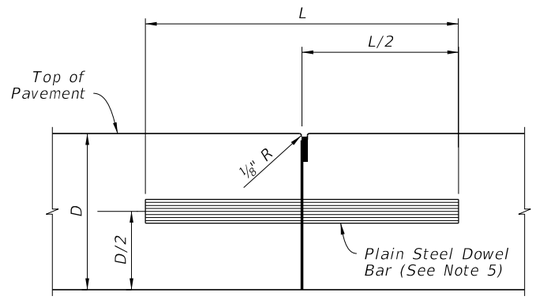
Unless otherwise indicated on the plans the joint width for new construction will be 1/4" for construction joints, 3/8" for all other joints.

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

CONCRETE-CONCRETE JOINTS



BUTT CONSTRUCTION JOINT



BUTT CONSTRUCTION JOINT
(Used At Discontinuance Of Work)

GENERAL NOTES:

1. 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. 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.

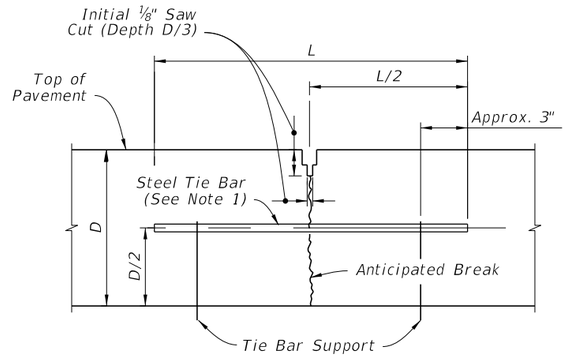
3. For bridge expansion joints, see Index 370-001.

4. Punch clean holes in preformed joint filler greater than bar diameter.

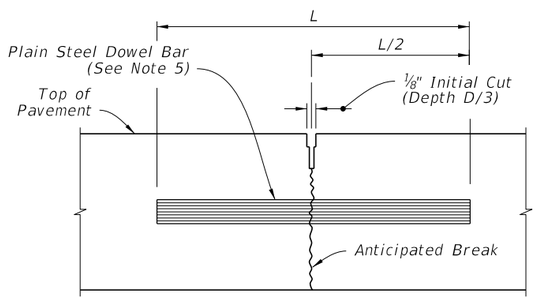
5. Coat plain steel dowel bars and welded wire basket assemblies in accordance with Specification 931. Lubricate dowel bars in accordance with Specification 350.

6. New and rehabilitation projects, backer rod bond breaker is required. Shoulder must be repaired if proper joint shape can not be attained.

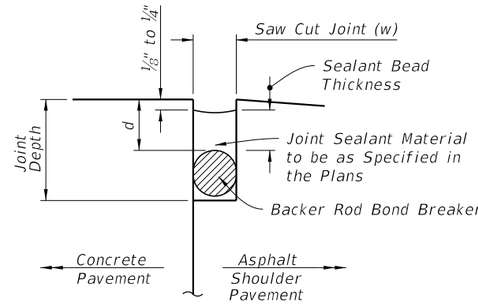
7. Sheet metal bottom strips in accordance with Specification 931. Not required with asphalt base.



LANE-TIE JOINT



CONTRACTION JOINT
(Sawed Method)



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

CONCRETE-ASPHALT SHOULDER JOINTS

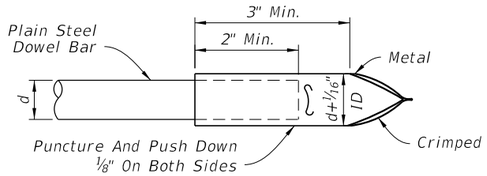
LONGITUDINAL JOINTS

TRANSVERSE JOINTS

JOINT SEAL DIMENSIONS

10/20/2022 8:46:33 AM

LAST REVISION	REVISION	DESCRIPTION:				
11/01/22			FY 2023-24 STANDARD PLANS	CONCRETE PAVEMENT JOINTS	INDEX 350-001	SHEET 1 of 5



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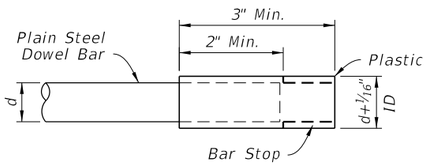
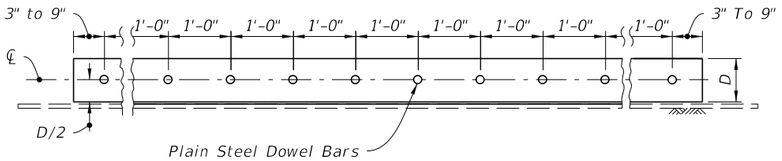
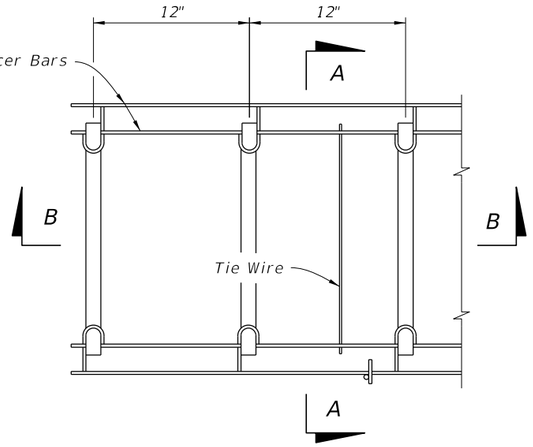


PLASTIC

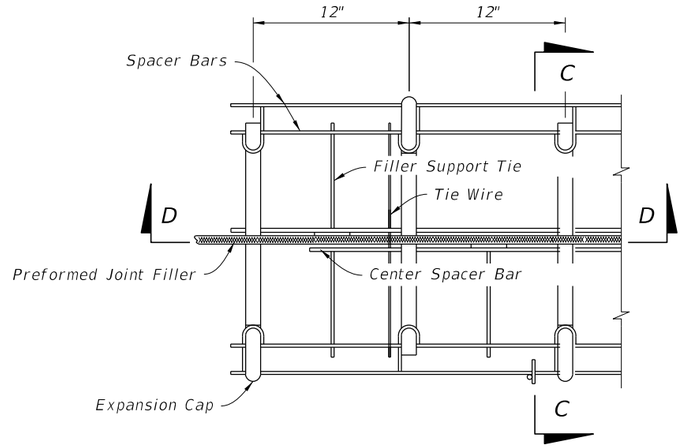
DOWEL BARS CAPS



DOWEL BAR LAYOUT

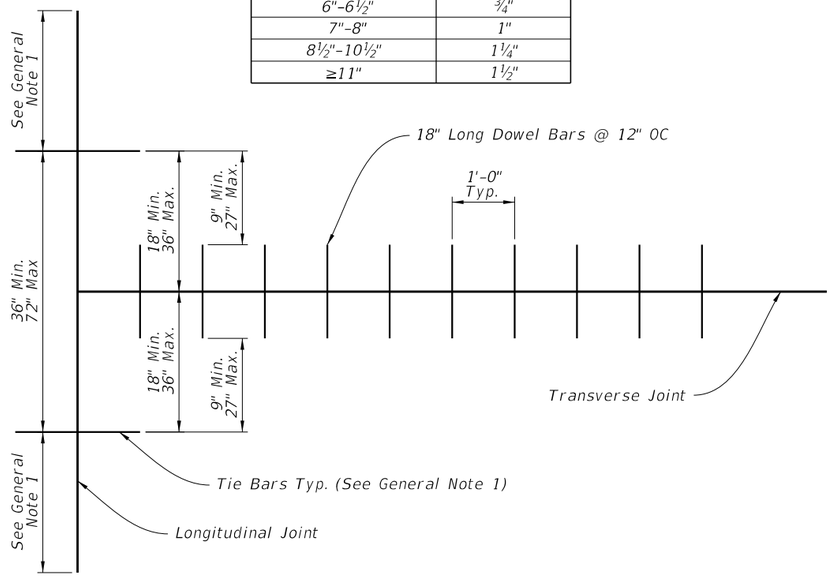


PLAN VIEW

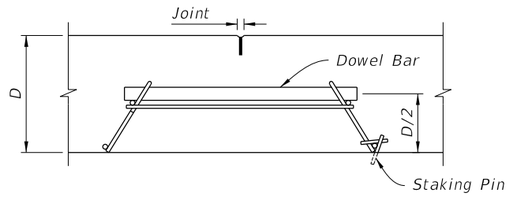


PLAN VIEW

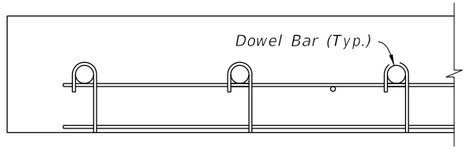
DOWEL BARS (LENGTH 18")	
Pavement Thickness "D"	Diameter
6"-6½"	¾"
7"-8"	1"
8½"-10½"	1¼"
≥11"	1½"



RELATION OF TIE BARS TO DOWEL BARS

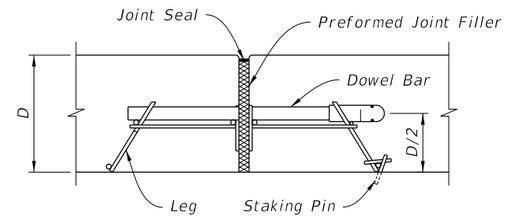


SECTION A-A

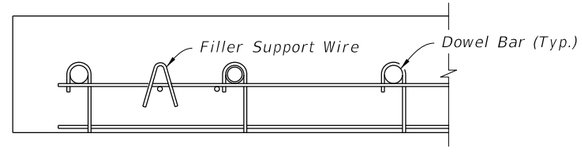


SECTION B-B

CONTRACTION ASSEMBLY



SECTION C-C



SECTION D-D

EXPANSION ASSEMBLY

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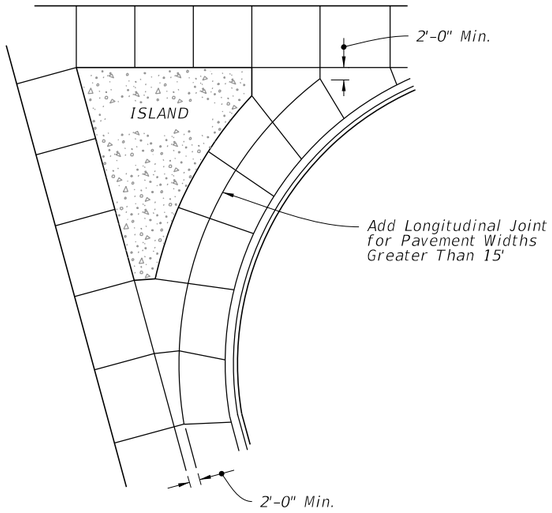
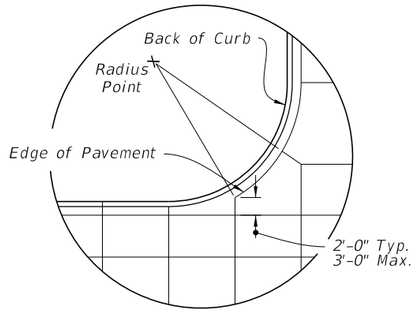
10/20/2022

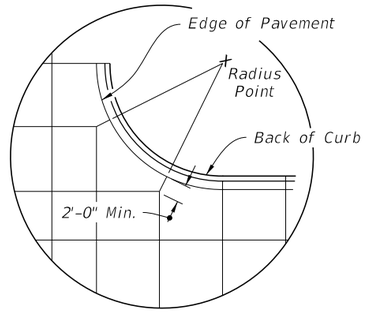
LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/22			FY 2023-24 STANDARD PLANS	CONCRETE PAVEMENT JOINTS	350-001	2 of 5



LARGE RIGHT TURN



DETAIL "A"



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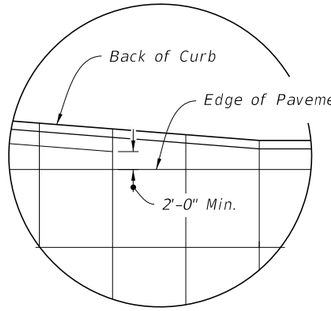
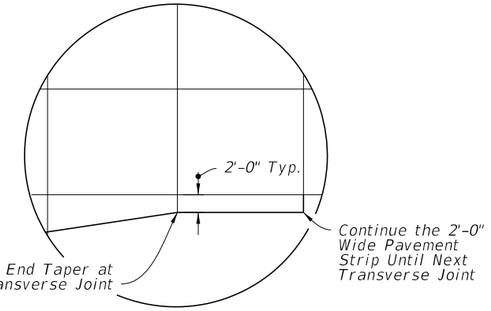


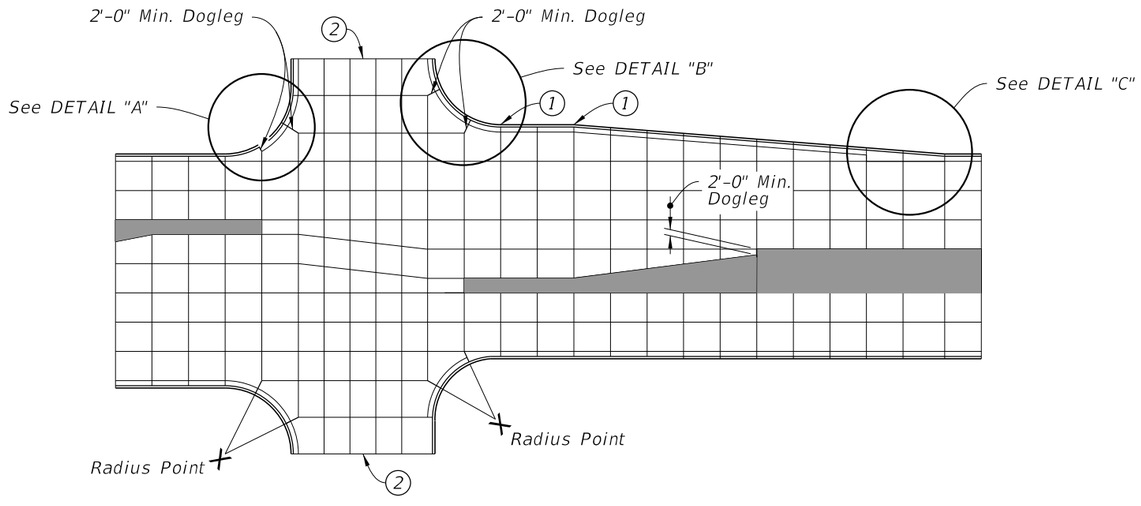
DETAIL "C"



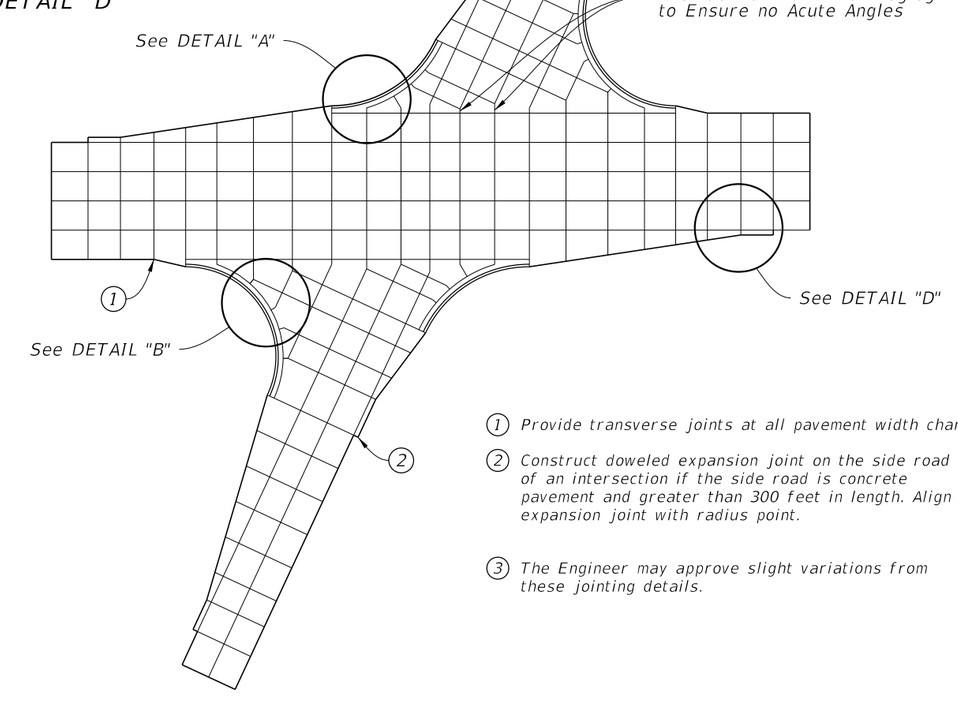
DETAIL "D"

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.



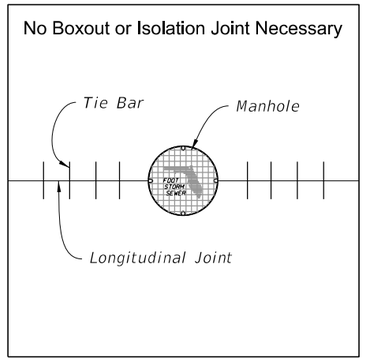
STANDARD INTERSECTION



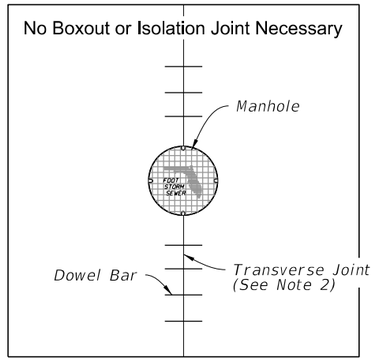
1. Provide transverse joints at all pavement width changes.
2. Construct doweled expansion joint on the side road of an intersection if the side road is concrete pavement and greater than 300 feet in length. Align expansion joint with radius point.
3. The Engineer may approve slight variations from these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

SKEWED INTERSECTION

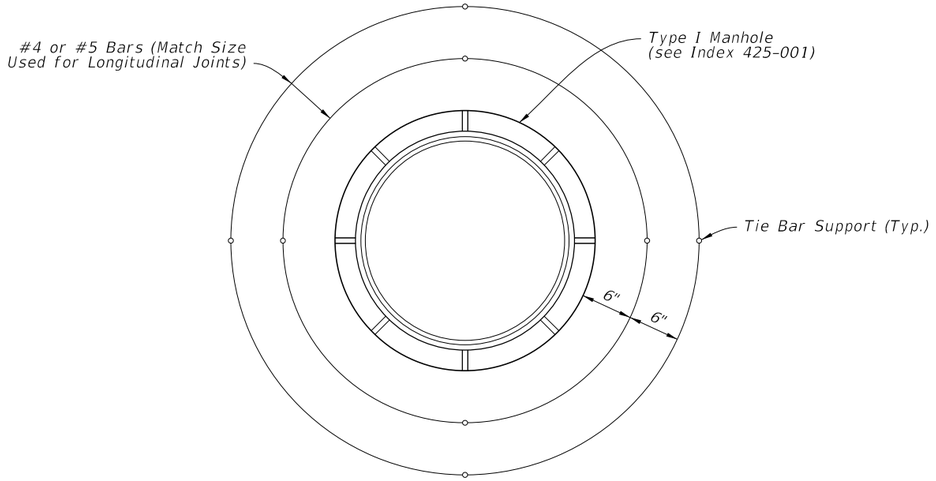
JOINT LAYOUTS FOR INTERSECTIONS



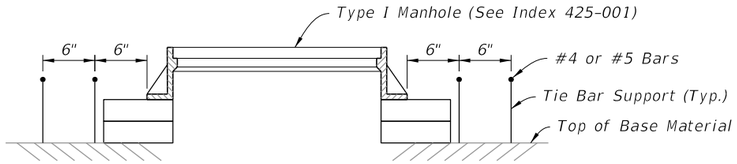
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT

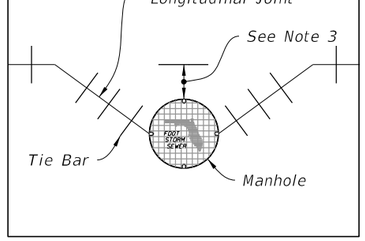


PLAN

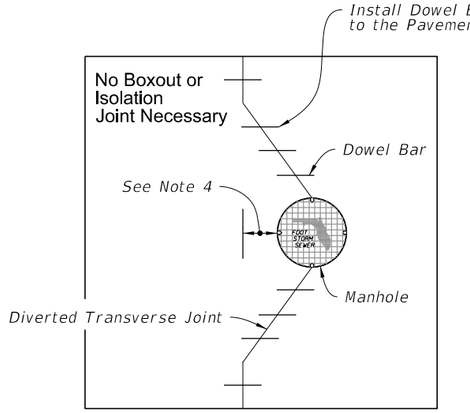


ELEVATION

MANHOLE REINFORCEMENT
(See Notes 3 and 4)



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

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.

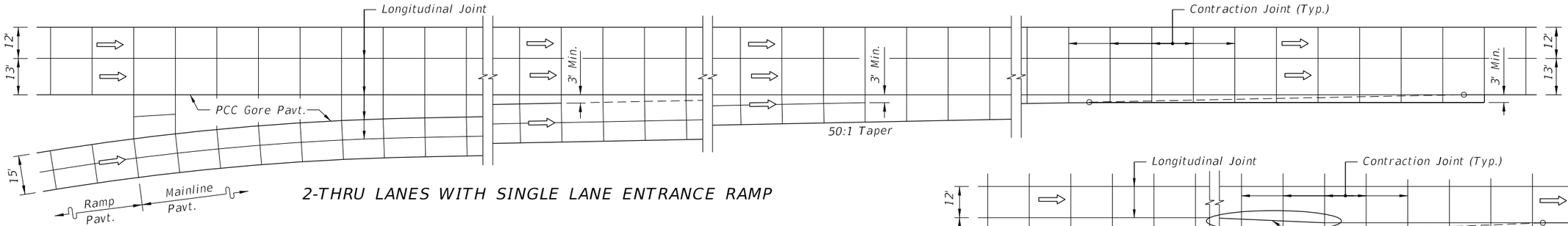
3. If distance between the longitudinal joint and the edge of manhole is 2 feet or less, divert the longitudinal joint at a 2:1 taper rate to the center of the manhole. If the distance is greater than 2 feet, do not divert the joint, saw as normal, and place reinforcement rebar around the manhole.

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.

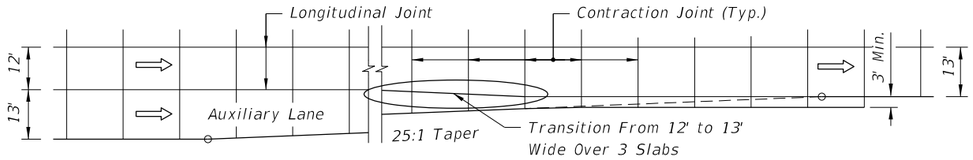
5. Align transverse joint with one edge of inlet when practical.

6. All manholes, meter boxes and other projections into the pavement shall be boxed-in with ½" preformed expansion joint material.

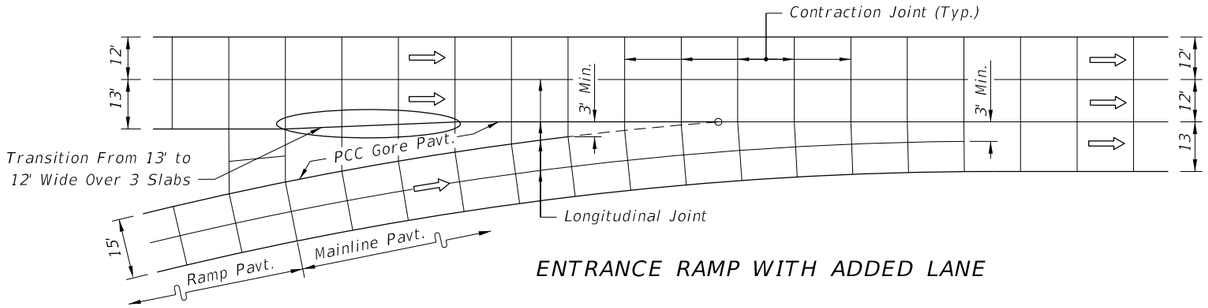
ISOLATION JOINT DETAILS



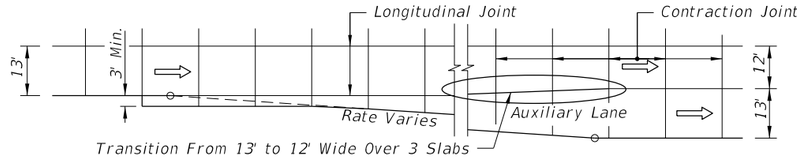
2-THRU LANES WITH SINGLE LANE ENTRANCE RAMP



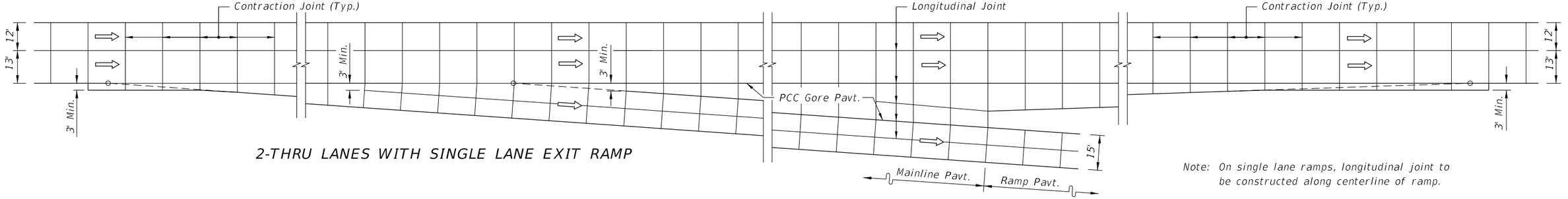
ENTRANCE TAPER WITH AUXILIARY LANE



ENTRANCE RAMP WITH ADDED LANE

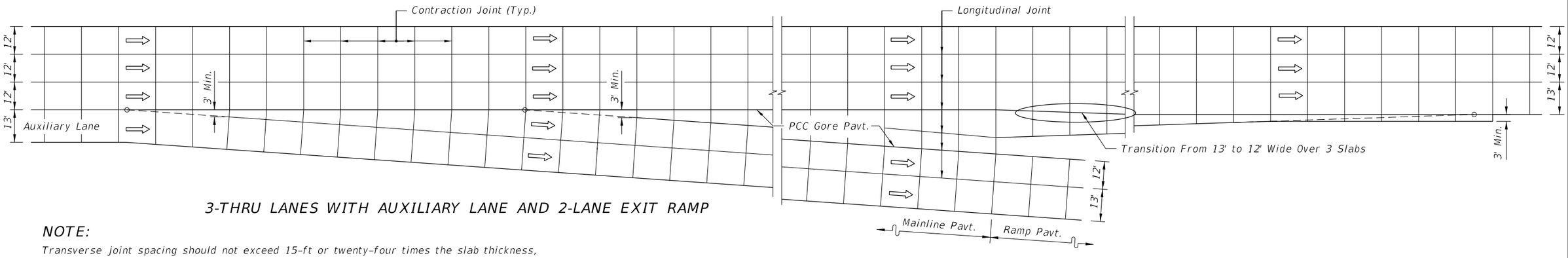


EXIT TAPER WITH AUXILIARY LANE



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

LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/22			FY 2023-24 STANDARD PLANS	CONCRETE PAVEMENT JOINTS	350-001	5 of 5

10/20/2022 8:46:36 AM

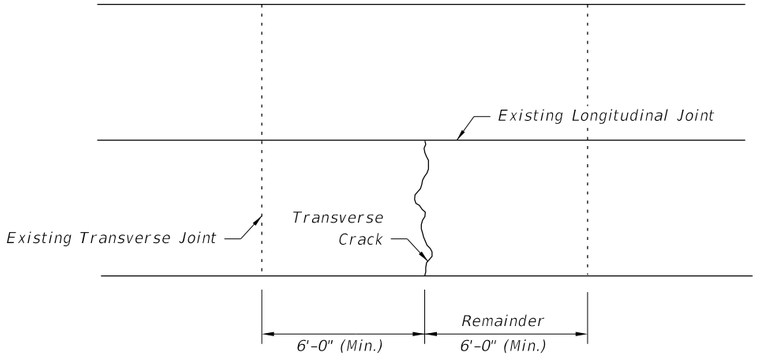


FIGURE 10.2 - REPAIR METHOD: NONE OR CLEAN AND SEAL

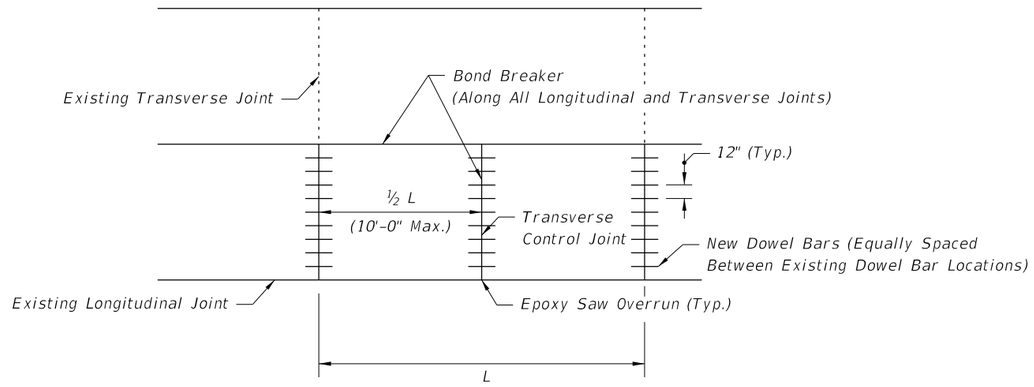


FIGURE 10.3 - FULL SLAB FULL DEPTH REPLACEMENT

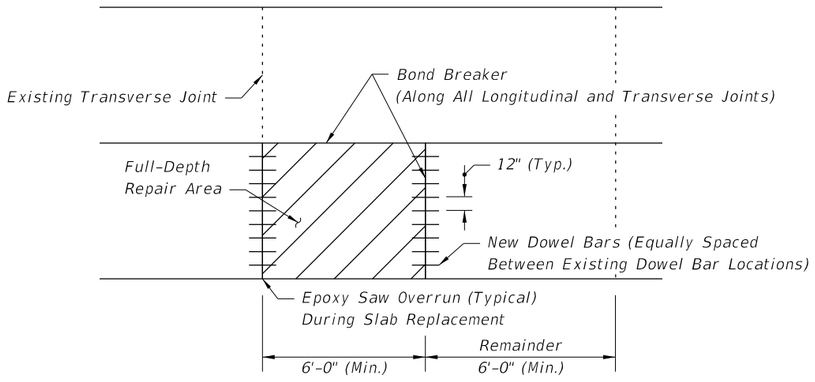


FIGURE 10.4 - PARTIAL SLAB FULL DEPTH REPLACEMENT

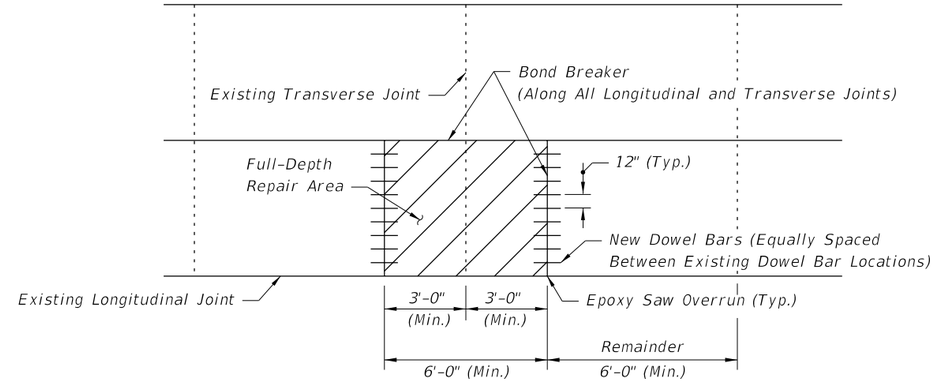


FIGURE 10.5 - FULL-DEPTH REPAIR ON BOTH SIDES OF THE JOINT

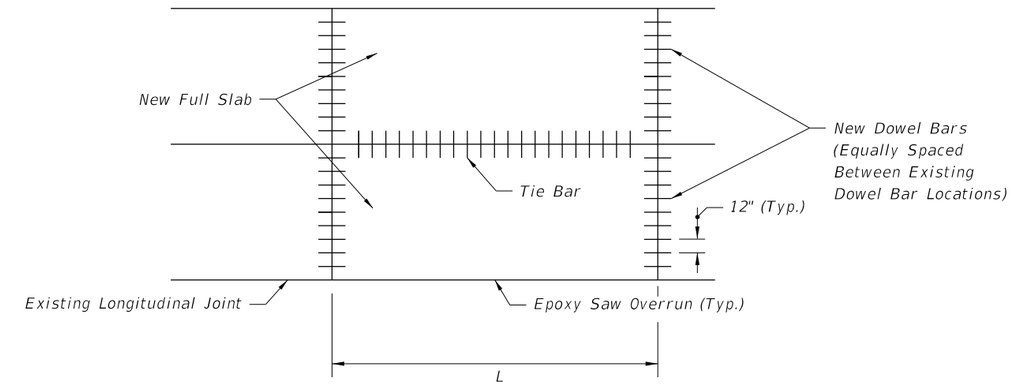


FIGURE 10.6 - MULTIPLE SLAB FULL DEPTH REPLACEMENT

GENERAL NOTES

1. For Repair and Replacement Criteria see Sheet 2.
2. Full depth repairs consist of removing and replacing at least a portion of the existing slab to the bottom of the concrete.
3. Repair boundaries shall be sawed full-depth with diamond saw blades. On hot days, it may not be possible to make this cut without first making a wide, pressure relief cut within the repair boundaries. A carbide-tipped wheel saw may be used for this purpose, but the wheel saw must not intrude on the adjacent lane, unless the lane is slated for repair. The wheel saw cuts produce a ragged edge that promotes excessive spalling along joints. Hence, if wheel saw cuts are made, diamond saw cuts must be made 18 in. outside the wheel saw cuts. To prevent damage to the base, the wheel saw must not be allowed to penetrate more than 0.5 in. into the base.
4. No additional base or subgrade material shall be added and all loose base or subgrade material shall be removed prior to placement of the new concrete slab. The concrete slab shall be placed to the full depth of the material removed. No additional compensation will be allowed for additional concrete required to bring proposed concrete slab up to finished grade.
5. Removal of the damaged concrete pavement shall be by lifting. Any good concrete pavement which is damaged during removal of damaged areas shall be removed and replaced by the contractor at his expense.
6. If the roadway contract includes grinding, then the slab replacement shall be performed first.
7. During slab replacement operations, fill any saw cut over runs into adjacent slabs with epoxy.
8. Install tie bars at longitudinal joints when two full adjacent or multiple replaced slabs.

10/20/2022 8:46:38 AM

LAST REVISION	REVISION	DESCRIPTION:	FY 2023-24 STANDARD PLANS	CONCRETE SLAB REPLACEMENT	INDEX	SHEET
11/01/17					353-001	1 of 2

SLAB REPAIR AND REPLACEMENT CRITERIA

DISTRESS PATTERN	SEVERITY/DESCRIPTION		REPAIR METHOD	REFERENCE
CRACKING				
Longitudinal	Light	<⅛", no faulting, spalling <½" wide	None	Figure 10.2
	Moderate	⅛" <width <½", spalling <3" wide	Clean and Seal	Figure 10.2
	Severe	width >½", spalling >3" faulting >½"	Replace	Figure 10.3
Transverse	Light	<⅛", no faulting, spalling <½" wide	None	Figure 10.2
	Moderate	⅛" <width <½", spalling <3" wide	Clean and Seal	
	Severe	width >½", spalling >3" faulting >½"	Replace	Figure 10.3, 10.4 and 10.5
Corner Breaks	A corner of the slab is separated by a crack that intersects the adjacent longitudinal and transverse joint, describing an approximate 45° angle with the direction of traffic.		Full Depth	Figure 10.4 and 10.5
Intersecting Random Cracks (Shattered Slab)	Cracking patterns that divide the slab into three or more segments.		Full Depth	Figure 10.3 and 10.4
JOINT DEFICIENCIES				
Spall Nonwheel Path	Light	spall width <1½", < ⅓ slab depth, <12" in length	None	Figure 10.4 and 10.5
	Moderate	1½" <spall width <3", < ⅓ slab depth, <12" in length	None	Figure 10.4 and 10.5
	Severe	spall width >3" or length >12"	Full Depth	Figure 10.4 and 10.5
Spall Wheel Path	Light	spall width <1½", <than ⅓ slab depth, <12" in length	None	Figure 10.4 and 10.5
	Moderate	1½" <spall width <3", < ⅓ slab depth, <12" in length	Full Depth	Figure 10.4 and 10.5
	Severe	spall width >3" or length >12"	Full Depth	Figure 10.4 and 10.5
SURFACE DETERIORATION				
Pop Outs Nonwheel Path	Small pieces of surface pavement broken loose, normally ranging from 1 to 4 in. diameter and ½ to 2 in. in depth.			
	Light	Not deemed to be a traffic hazard	Keep under observation	
	Severe	Flying debris deemed a traffic hazard	Full Depth	Figure 10.4
Pop Outs Wheel Path	Small pieces of surface pavement broken loose, normally >3" diameter and 2" in depth.			
	Light	Deemed to be a traffic hazard	Full Depth	Figure 10.4
	Severe	Flying debris deemed a traffic hazard	Full Depth	Figure 10.4
MISCELLANEOUS DISTRESS				
Faulting	Elevation differences across joints or cracks.			
	Light	Faulting <4/32"	None	
	Moderate	4 <Faulting <16/32"	Grind	
	Severe	Faulting >16/32"	Grind	
Lane To Shoulder Drop-Off	Light	0 <drop-off <1"	None	N/A
	Moderate	1" <drop-off <3"	Build Up	
	Severe	drop-off >3 "	Build Up	
Water Bleeding Or Pumping	Seeping or ejection of water through joints or cracks.		Install appropriate drainage, edge drain, permeable subbase, reseal joints, etc.	N/A
Blowups	Upward movement at transverse joints or cracks often accompanied by shattering of the concrete.		Full Depth	Figure 10.3 and 10.4

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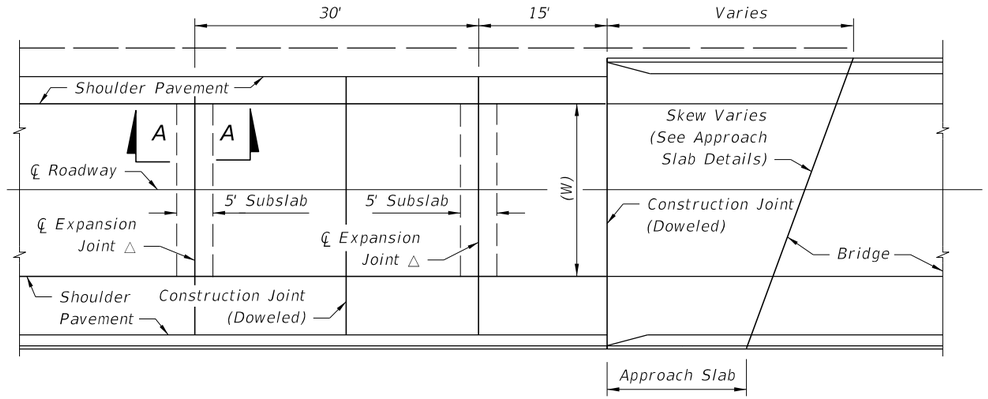
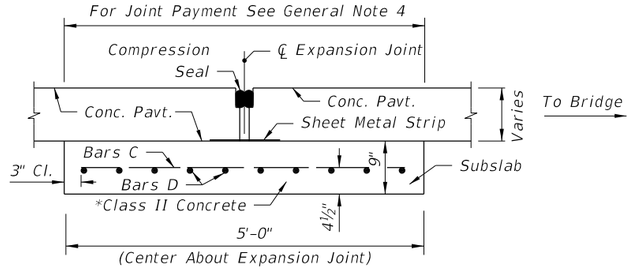


△ Construct Expansion Joints Parallel To The Existing Transverse Pavement Joints On Rehabilitation Projects, And Parallel To The Standard Transverse Pavement Joints Shown In The Plans For New Construction.

PLAN



REINFORCING STEEL				
Mark	Size	Spac.	No. Reqd.	Length
C	5	6"	Varies	4'-6"
D	5	6"	10	W Minus 6"

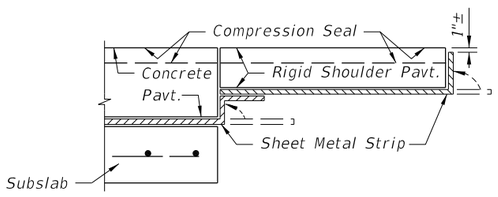
* Finish surface smooth. Cure with heavy coating of wax base white pigmented curing compound. Apply second application immediately prior to placing pavement.

SECTION A-A

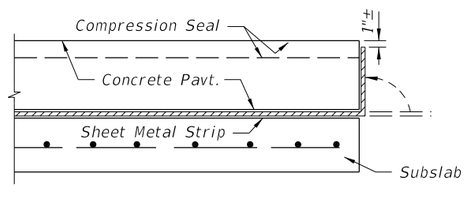
GENERAL NOTES:

1. For asphalt base, use four expansion joints, spaced at 15 feet, per Index 350-001.
2. The centerline of roadway and the centerline of bridge do not necessarily coincide. Determine the centerline of the roadway pavement prior to the placement of the expansion joint.
3. For information on other types of concrete pavement joints see Index 350-001.
4. Pay quantity for expansion joint is the length of joint to be constructed across the roadway and shoulder pavements, measured at right angles to the centerline of the roadway. Payment for expansion joint is full compensation for joint construction, including reinforced concrete subslab, sheet metal strip and compression seal, but, not including roadway pavement reconstruction associated with joint replacement or reconstruction. Expansion joint to be paid for under the contract unit price for Bridge Approach Expansion Joint, LF.

EXPANSION JOINT



RIGID SHOULDER PAVEMENT

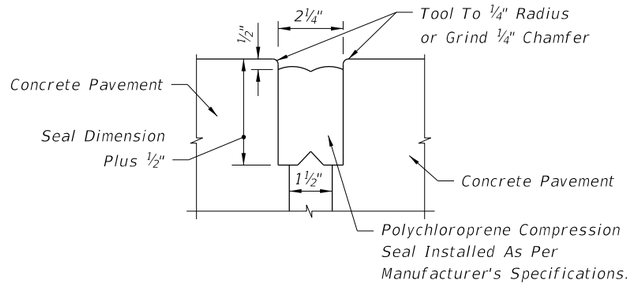


SODDED SHOULDER OR FLEXIBLE SHOULDER PAVEMENT

NOTES:

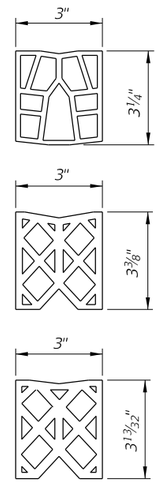
1. Immediately prior to placing the seal, thoroughly clean the joint of all foreign material. Immediately after the seal is placed, bend up the sheet metal strip against the pavement edge.
2. Use a minimum 16 gage steel, 12" wide sheet metal strip, Galvanized in accordance with ASTM A-526, Coating Designation G90.

SHEET METAL STRIP DETAILS



NOTE:
Thoroughly coat all contacting surfaces between the compression seal and concrete with a lubricant-adhesive.

JOINT DIMENSIONS



OPTIONAL SEALS

COMPRESSION SEAL DETAIL

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10/20/2022

LAST REVISION	REVISION	DESCRIPTION:				
11/01/21			FDOT	FY 2023-24 STANDARD PLANS	BRIDGE APPROACH EXPANSION JOINT CONCRETE PAVEMENT WITH SPECIAL SELECT SOIL BASE	INDEX 370-001 / SHEET 1 of 1