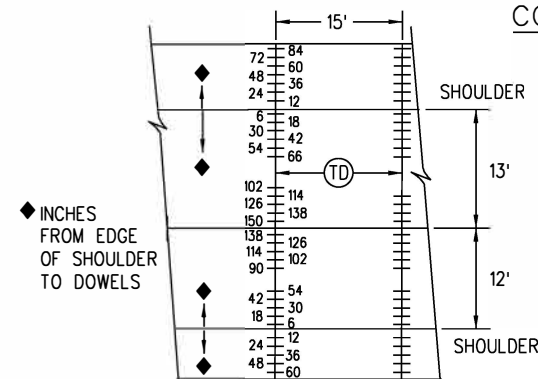
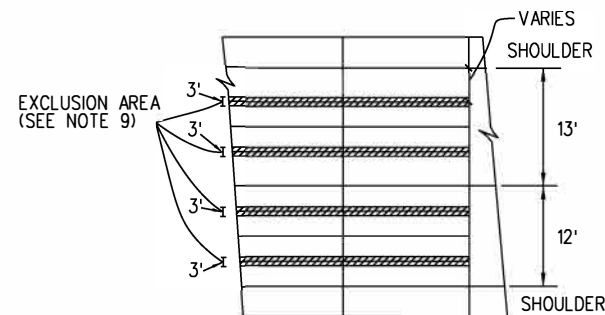


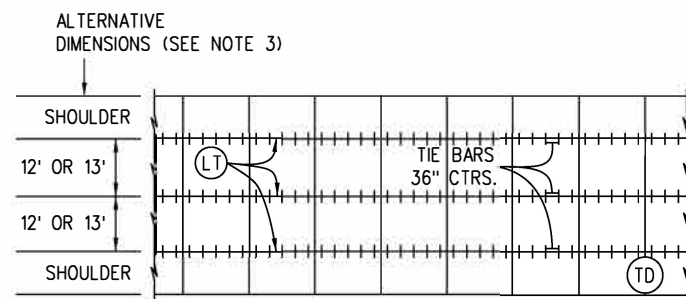
TYPICAL JOINT LAYOUT FOR  
CONCRETE ROADWAY WITH CONCRETE SHOULDERS



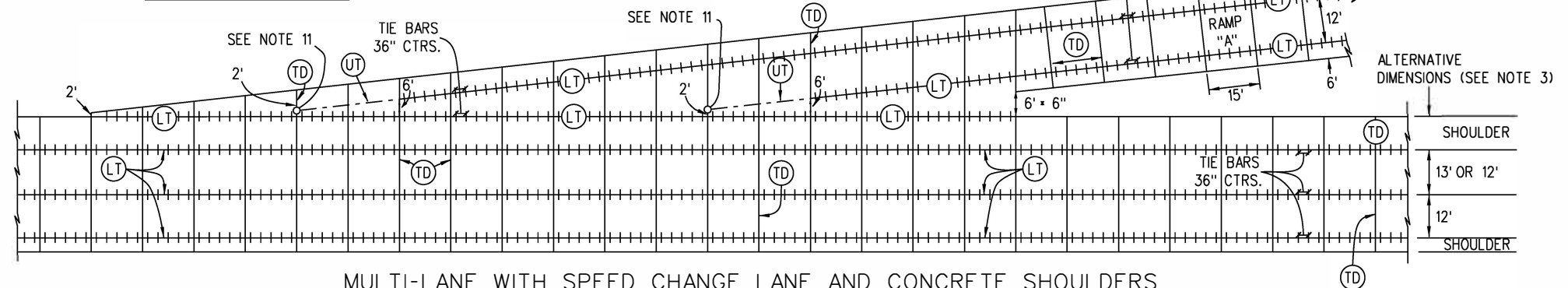
TD JOINT WITH 13 FT. AND 12 FT. WIDE SLABS



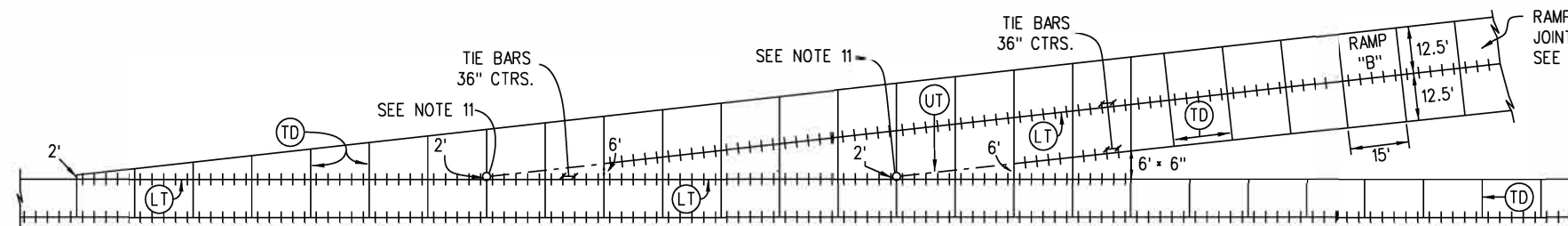
JOINT EXCLUSION AREA  
FOR WHEEL PATH



RURAL TWO-LANE



MULTI-LANE WITH SPEED CHANGE LANE AND CONCRETE SHOULDERS



OPTIONAL LONGITUDINAL JOINT IN CENTER FOR SINGLE LANE SPEED CHANGE LANE

## GENERAL NOTES

- THIS STANDARD PLAN DOES NOT APPLY TO THIN CONCRETE OVERLAYS (WHITETOPPING).
- LONGITUDINAL JOINT SHALL BE PLACED ADJACENT TO LANE MARKINGS WHEN POSSIBLE AND HAVE A MAXIMUM SPACING OF 13 FT.
- THIS JOINT LAYOUT SHALL BE USED AS A STANDARD OF THE JOINT LAYOUT FOR THE PROJECT. IF THE CONTRACTOR PROPOSES VARIATIONS FROM THIS STANDARD OR THE PROJECT HAS UNUSUAL OR IRREGULAR CONDITIONS NOT COVERED HEREIN, THE CONTRACTOR SHALL PREPARE A PAVEMENT JOINT LAYOUT FOR APPROVAL BY THE ENGINEER. SLABS 13 FEET IN WIDTH SHALL BE CONSTRUCTED ONLY WHERE DESIGNATED ON THE PLANS.
- ON MULTILANE DIVIDED HIGHWAYS, THE MULTILANE DIRECTIONAL PAVEMENT AND BOTH SHOULDERS SHALL BE PLACED WITH (LT) LONGITUDINAL CONTRACTION JOINTS.
- ON MULTILANE DIVIDED HIGHWAYS SEPARATED BY A CONCRETE BARRIER, A (UT) JOINT SHALL BE CONSTRUCTED AT ONE OF THE BARRIER FACES.
- (UT) JOINTS SHALL BE CONSTRUCTED BETWEEN THE TWO OPPOSING DIRECTIONS OF TRAVEL ON A MULTILANE UNDIVIDED HIGHWAY WHEN ALL OF THE FOLLOWING APPLY:
  - PAVEMENT IS CONTINUOUS ACROSS BOTH DIRECTIONS OF TRAVEL.
  - THERE IS NO MEDIAN BARRIER.
  - THE WIDTH OF THE PAVEMENT IN ONE DIRECTION IS GREATER THAN 80 FEET.
- ON VARIABLE WIDTH SLABS, THE 2 FEET OR 4 FEET END OF SLAB WIDTH DIMENSION MAY VARY  $\pm 6$  INCHES.
- ON GORE PANEL WIDTHS LESS THAN 6 FEET TIE BARS SHALL BE ELIMINATED ON THE SIDE ADJACENT TO THE RAMP.
- NO JOINTS SHALL BE PLACED WITHIN 1.5 FEET OF EITHER SIDE OF THE CENTER OF THE WHEEL PATH. WHEELPATH IS DEFINED PER SUBSECTION 101.02.
- THE TICK MARKS FOR TIE BAR LINE TYPE ARE FOR ILLUSTRATIVE PURPOSES ONLY AND DO NOT REPRESENT ACTUAL TIE BAR LOCATIONS. SEE M-412-1 SHEET 5 OF 9 FOR TIE BAR PLACEMENT LOCATIONS.
- IF A JOINT IS NOT CONTINUOUS INTO AN ADJACENT SLAB, A JOINT TERMINATION CORE (SEE SHEET 5) SHALL BE CONSTRUCTED USING 4 INCH PVC PIPE FILLED WITH AN APPROVED NON-SHRINK GROUT OR BOND BREAKER FILLED WITH AN APPROVED NON-SHRINK GROUT.

RAMP AND SPEED CHANGE  
LANE DIMENSIONING FOR  
JOINTS ONLY. SEE PLANS  
FOR STRIPING LOCATIONS.  
SEE SHEET 2 FOR RAMP  
DOWEL BAR DETAILS.

ALTERNATIVE  
DIMENSIONS (SEE NOTE 3)

## JOINT LEGEND (SEE SHEET 5 FOR JOINT DETAILS)

- TD TRANSVERSE DOWELED
- UT UNTIED
- LT LONGITUDINAL TIED

## Computer File Information

Creation Date: 07/31/19  
Designer Initials: JBK  
Last Modification Date: 01/31/22  
Detailer Initials: LTA/HMG  
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

## Sheet Revisions

Date:	Comments
01/31/22	Revised all sheets.
(R-X)	
(R-X)	
(R-X)	
(R-X)	

Colorado Department of Transportation

2829 West Howard Place  
CDOT HQ, 3rd Floor  
Denver, CO 80204  
Phone: 303-757-9021 FAX: 303-757-9868

Construction Engineering Services JBK

# CONCRETE PAVEMENT JOINTS

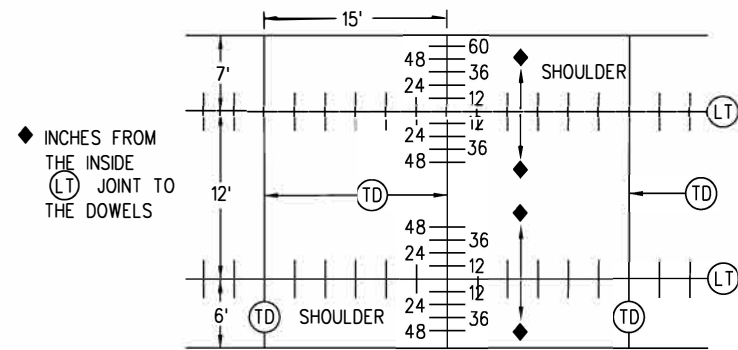
Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.

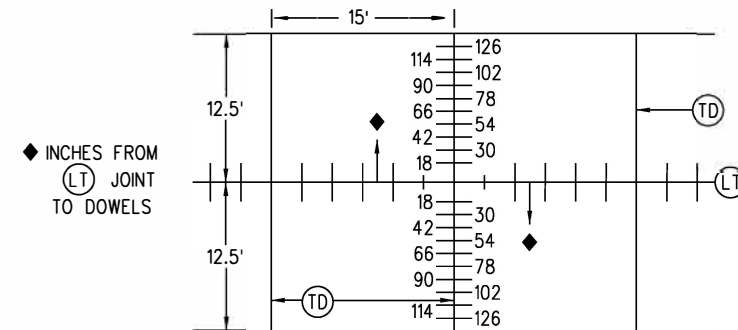
M-412-1

Standard Sheet No. 1 of 9

Project Sheet Number:

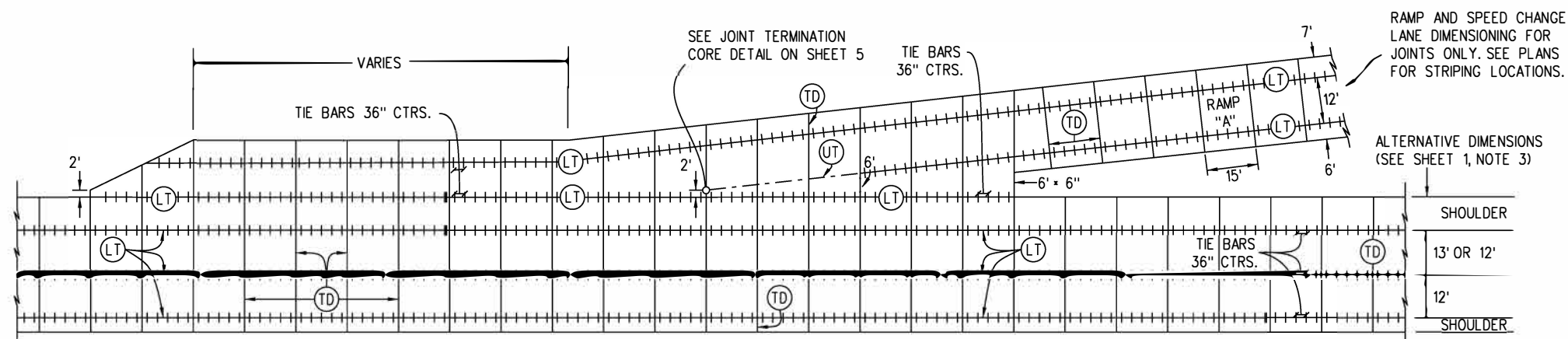
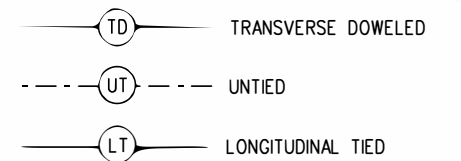


RAMP "A" DOWEL BAR DETAIL  
FOR (TD) JOINT WITH A 12 FT. LANE

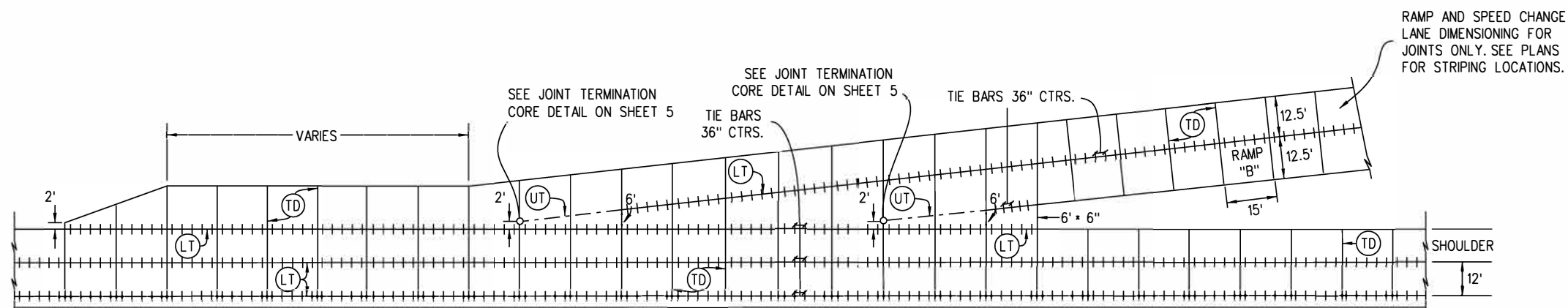


RAMP "B" DOWEL BAR DETAIL FOR (TD) JOINT  
WITH CENTER LONGITUDINAL SPLIT LANE

JOINT LEGEND  
(SEE SHEET 5 FOR JOINT DETAILS)



MULTI-LANE WITH ACCELERATION AND DECELERATION LANES AND CONCRETE SHOULDERS



OPTIONAL LONGITUDINAL JOINT IN CENTER FOR SINGLE LANE ACCELERATION AND DECELERATION LANE

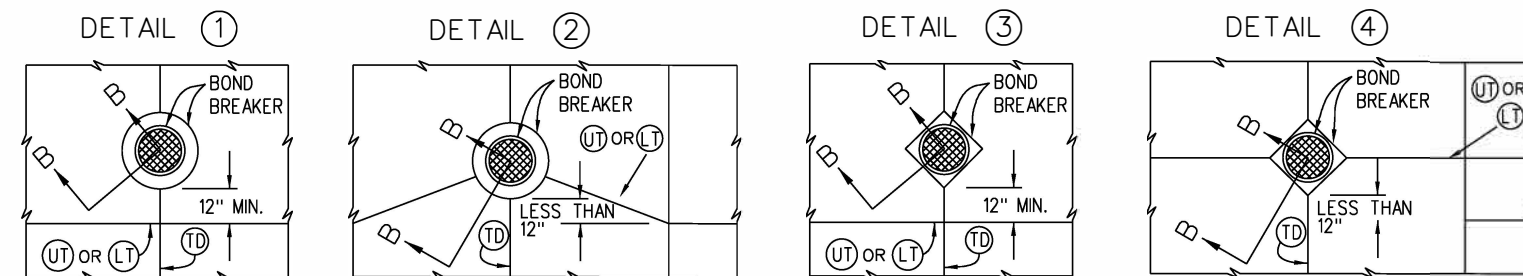
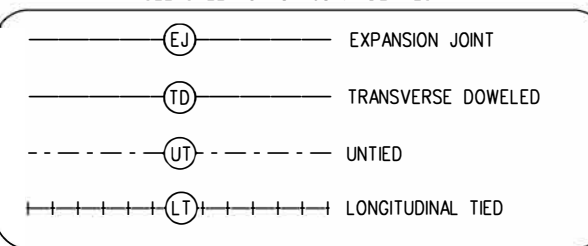
Computer File Information		Sheet Revisions		Colorado Department of Transportation  2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868 Construction Engineering Services JBK	<b>CONCRETE PAVEMENT JOINTS</b> Issued by the Project Development Branch: July 31, 2019	STANDARD PLAN NO.
Creation Date: 07/31/19		Date: 01/31/22	Comments: Revised all sheets.			M-412-1
Designer Initials: JBK	(R-X)					Standard Sheet No. 2 of 9
Last Modification Date: 01/31/22	(R-X)					
Detailer Initials: LTA/HMG	(R-X)					
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)					Project Sheet Number:

# NOTES

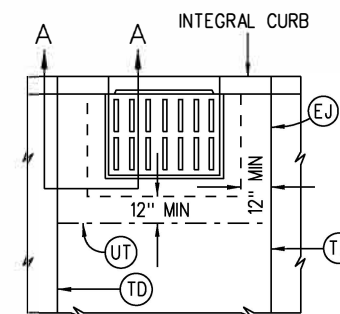
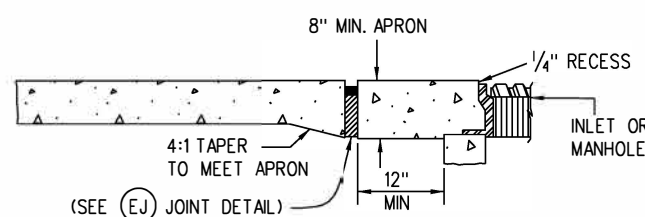
- LONGITUDINAL JOINTS SHALL BE PLACED ADJACENT TO LANE MARKINGS WHEN POSSIBLE AND HAVE A MAXIMUM SPACING OF 13 FEET (15 FEET IS PERMITTED WITH MONOLITHIC CURB AND GUTTER).
- CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE CENTERLINE OF PAVEMENT AND EXTEND THROUGH THE CURB OR CURB AND GUTTER.
- PLACE 1/2 INCH MINIMUM EXPANSION JOINT FILLER IN FULL DEPTH CURB JOINT AT INTERSECTION RETURN RADIUS POINTS.
- THE CONTRACTOR SHALL, UNLESS OTHERWISE SHOWN ON THE PLANS, SELECT AND USE A BOND BREAKER AT INLETS, MANHOLES AND SIMILAR SIZE STRUCTURES. SMALLER STRUCTURES SUCH AS VALVE AND MONUMENT BOXES SHALL NOT REQUIRE A BOND BREAKER.
- WHERE A LONGITUDINAL JOINT PASSES LESS THAN 1 FOOT FROM A CAST-IN-PAVEMENT MANHOLE OR SIMILAR SIZE STRUCTURE, INSTALL JOINT AS SHOWN IN DETAILS 1 THROUGH 4.
- TRANSVERSE JOINTS SHALL EITHER INTERSECT THE CENTER OF CIRCULAR MANHOLES AND INLETS OR BE AT LEAST 4 FEET AWAY FROM THE EDGE OF CIRCULAR MANHOLES. SEE CURB INLET BOXOUT DETAIL.
- WHEN THE SHORT RUN OF THE TRANSVERSE JOINT IS LESS THAN THREE FEET WIDE, ELIMINATE DOWELS.
- THE TICK MARKS FOR TIE BAR LINE TYPE ARE FOR ILLUSTRATIVE PURPOSES ONLY AND DO NOT REPRESENT ACTUAL TIE BAR LOCATIONS. SEE M-412-1 SHEET 5 OF 9 FOR TIE BAR PLACEMENT LOCATIONS.
- IF A JOINT IS NOT CONTINUOUS INTO AN ADJACENT SLAB, A JOINT TERMINATION CORE (SEE SHEET 5) SHALL BE CONSTRUCTED USING 4" PVC PIPE FILLED WITH AN APPROVED NON-SHRINK GROUT OR BOND BREAKER FILLED WITH AN APPROVED NON-SHRINK GROUT.

## JOINT LEGEND

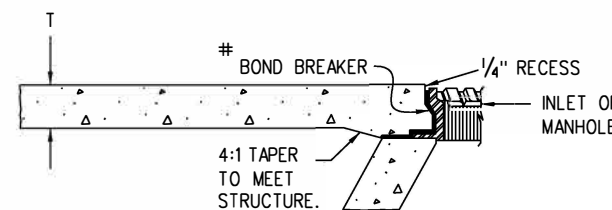
(SEE SHEET 5 FOR JOINT DETAILS)



INLET OR MANHOLE  
CAST IN PAVEMENT

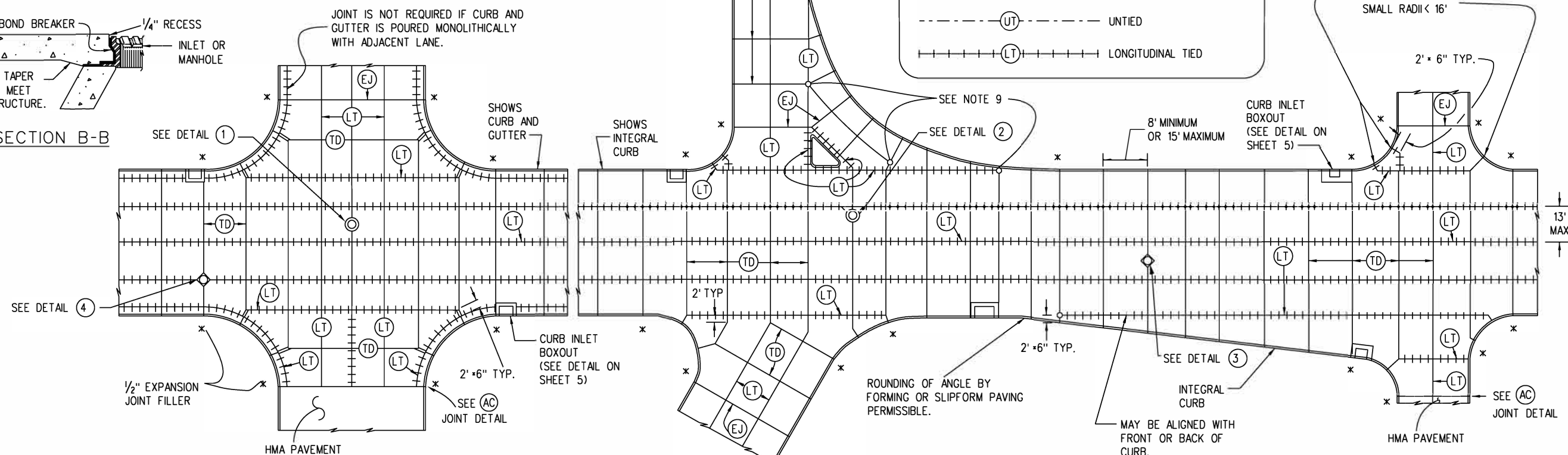


INSTALL TRANSVERSE JOINT AT BOTH BOXOUT CORNERS IF BOXOUT IS 8 FT. OR LONGER.



# BOND BREAKER SHALL BE COMPOSED OF PLASTIC SHEET, BUILDING PAPER OR OTHER APPROVED MATERIAL THAT PREVENTS BONDING.

SECTION B-B



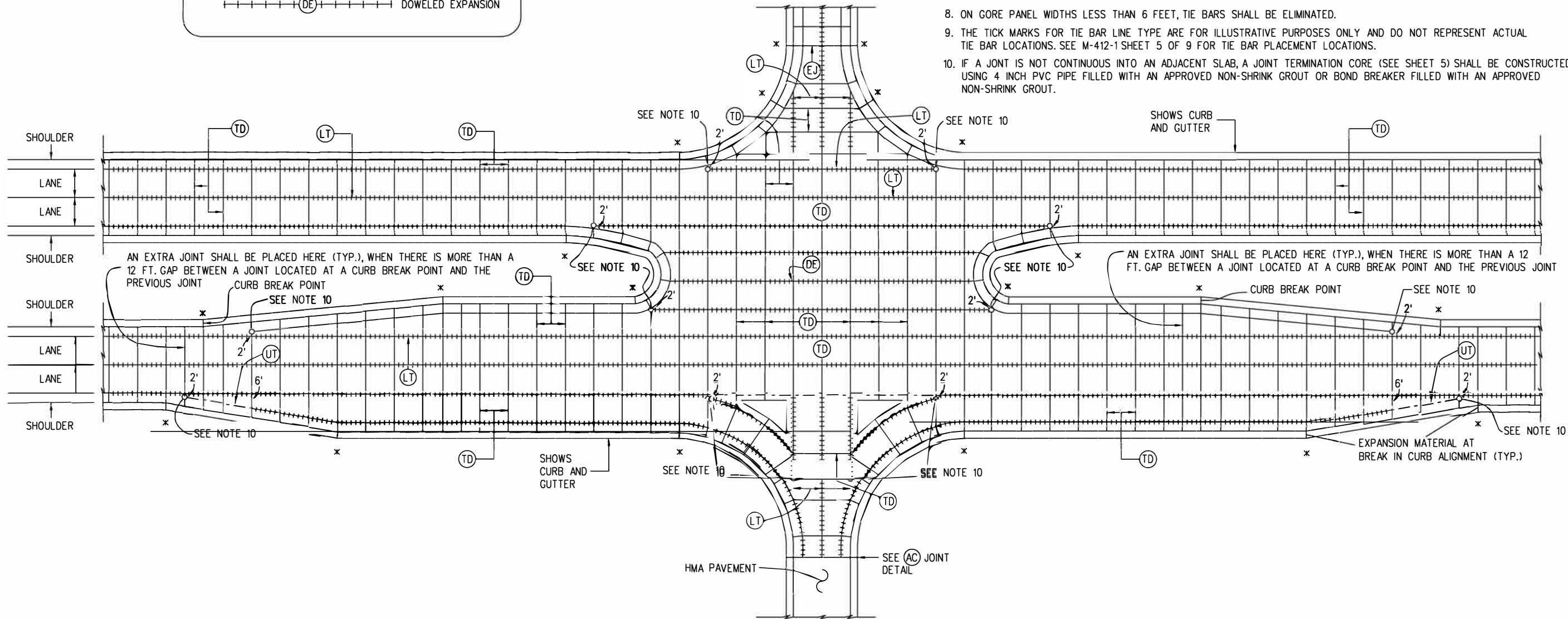
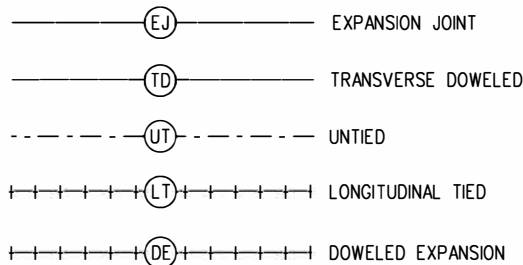
TYPICAL CURBED PAVEMENT JOINT LAYOUT

Computer File Information		Sheet Revisions		<div> <div>Colorado Department of Transportation</div> <div> 2829 West Howard Place  CDOT HQ, 3rd Floor  Denver, CO 80204  Phone: 303-757-9021 FAX: 303-757-9868 </div> </div> <div> Construction Engineering Services JBK </div>	CONCRETE PAVEMENT JOINTS		STANDARD PLAN NO.
Creation Date: 07/31/19		Date: 01/31/22	Comments: Revised all sheets.		M-412-1		
Designer Initials: JBK	(R-X)				Standard Sheet No. 3 of 9		
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Detailer Initials: LTA/HMG	(R-X)						
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)				Issued by the Project Development Branch: July 31, 2019		Project Sheet Number:


NOTES

1. LONGITUDINAL JOINTS SHALL BE PLACED ADJACENT TO LANE MARKINGS WHEN POSSIBLE AND HAVE A MAXIMUM SPACING OF 13 FEET (15 FEET IS PERMITTED WITH MONOLITHIC CURB AND GUTTER).
2. CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE CENTERLINE OF PAVEMENT AND EXTEND THROUGH THE CURB OR CURB AND GUTTER.
- \* 3. PLACE 1/2 INCH MINIMUM EXPANSION JOINT FILLER IN FULL DEPTH OF CURB JOINT AT INTERSECTION RETURN RADIUS POINTS.
4. THE CONTRACTOR SHALL, UNLESS OTHERWISE SHOWN ON THE PLANS, SELECT AND USE A BOND BREAKER AT INLETS, MANHOLES, AND SIMILAR SIZE STRUCTURES. SMALLER STRUCTURES SUCH AS VALVE AND MONUMENT BOXES DO NOT REQUIRE A BOND BREAKER.
5. WHERE A LONGITUDINAL JOINT WOULD PASS LESS THAN 1 FOOT FROM A CAST-IN-PAVEMENT MANHOLE OR SIMILAR SIZE STRUCTURE, CONSTRUCT JOINT AS SHOWN IN DETAILS 1 AND 2 ON PAGE 3.
6. TRANSVERSE JOINTS SHALL EITHER INTERSECT THE CENTER OF CIRCULAR MANHOLES AND INLETS OR BE AT LEAST 4 FEET AWAY FROM THE EDGE OF CIRCULAR MANHOLES. SEE CURB INLET BOXOUT DETAIL ON SHEET 3.
7. WHEN THE SHORT RUN OF THE TRANSVERSE JOINT IS LESS THAN THREE FEET WIDE, ELIMINATE THE DOWELS.
8. ON GORE PANEL WIDTHS LESS THAN 6 FEET, TIE BARS SHALL BE ELIMINATED.
9. THE TICK MARKS FOR TIE BAR LINE TYPE ARE FOR ILLUSTRATIVE PURPOSES ONLY AND DO NOT REPRESENT ACTUAL TIE BAR LOCATIONS. SEE M-412-1 SHEET 5 OF 9 FOR TIE BAR PLACEMENT LOCATIONS.
10. IF A JOINT IS NOT CONTINUOUS INTO AN ADJACENT SLAB, A JOINT TERMINATION CORE (SEE SHEET 5) SHALL BE CONSTRUCTED USING 4 INCH PVC PIPE FILLED WITH AN APPROVED NON-SHRINK GROUT OR BOND BREAKER FILLED WITH AN APPROVED NON-SHRINK GROUT.

JOINT LEGEND  
(SEE SHEET 5 FOR JOINT DETAILS)



MULTI-LANE INTERSECTION WITH SPEED CHANGE LANE AND CONCRETE SHOULDERS

Computer File Information		<div><div>(R-X)</div><div>(R-X)</div><div>(R-X)</div><div>(R-X)</div></div>	Sheet Revisions		<div>Colorado Department of Transportation</div> <div><div></div><div>2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868</div></div> <div>Construction Engineering Services      JBK</div>	CONCRETE		STANDARD PLAN NO.	
Creation Date: 07/31/19			Date:	Comments		M-412-1			
Designer Initials: JBK			01/31/22	Revised all sheets.				Standard Sheet No. 4 of 9	
Last Modification Date: 01/31/22									
Detailer Initials: LTA/HMG									
CAD Ver.: MicroStation V8    Scale: Not to Scale    Units: English								Issued by the Project Development Branch: July 31, 2019	

NOTE

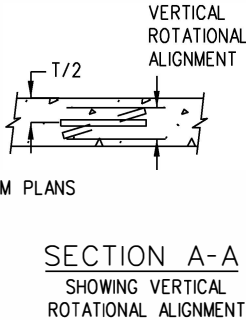
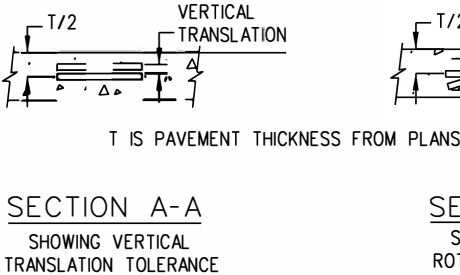
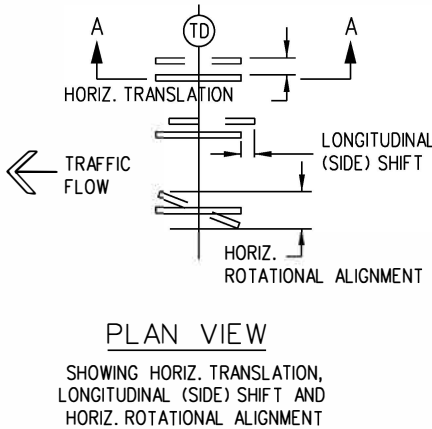
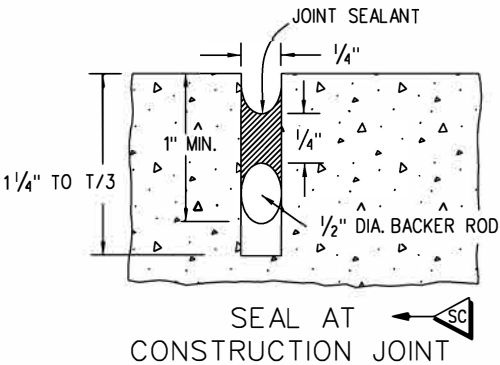
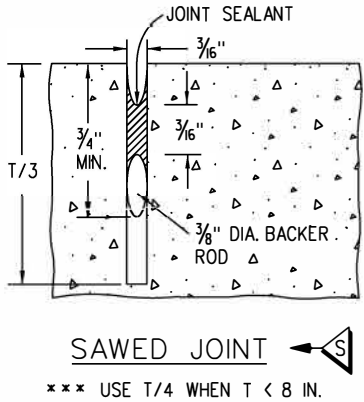
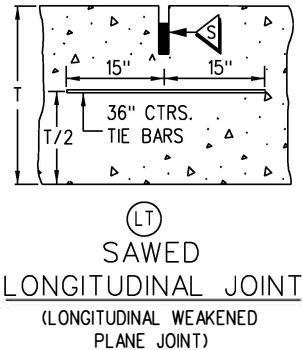
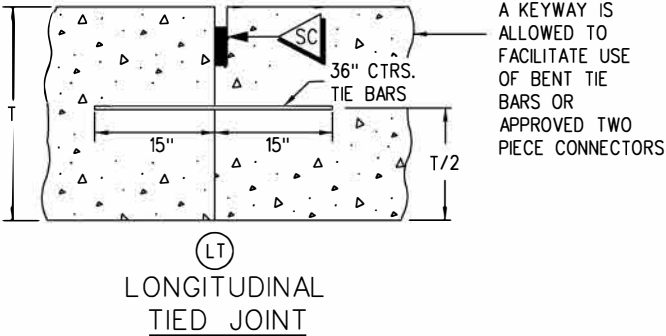
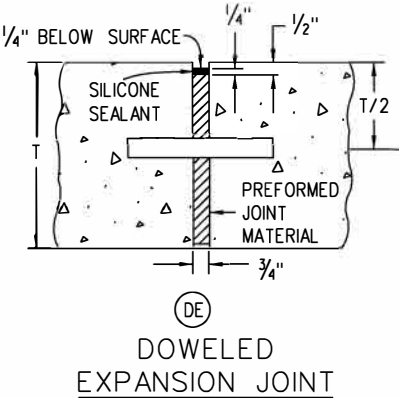
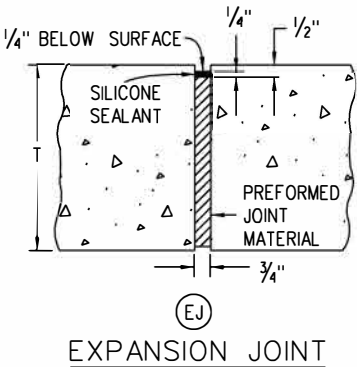
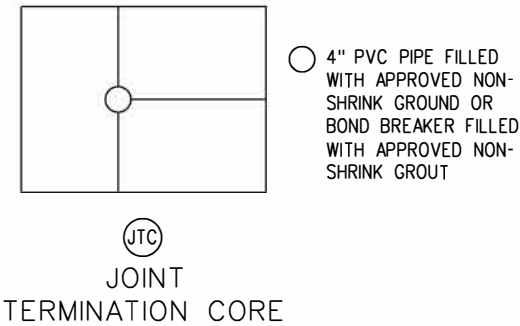
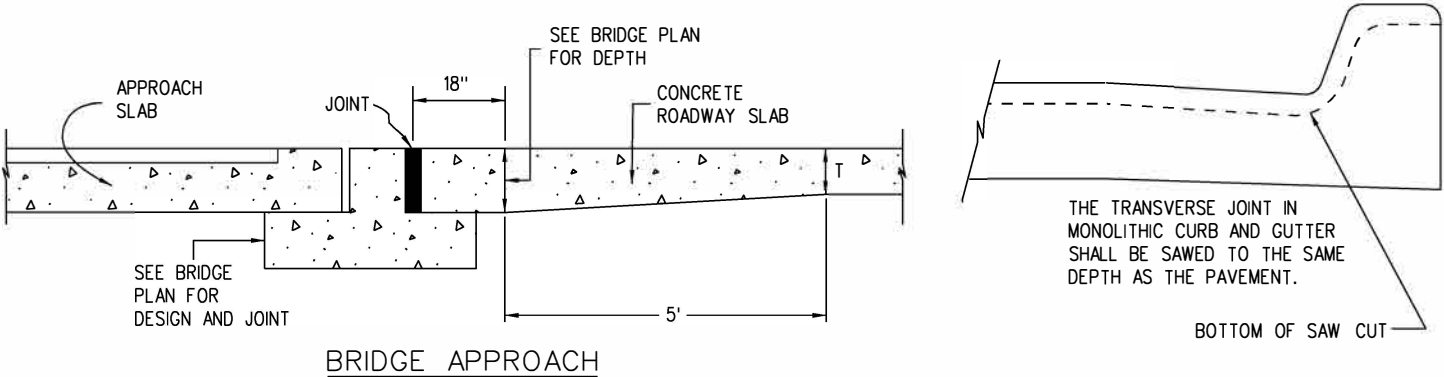
1. PAVEMENT THICKNESS (T), SHALL BE AS SHOWN ON THE PLANS.

REINFORCING SIZE TABLE

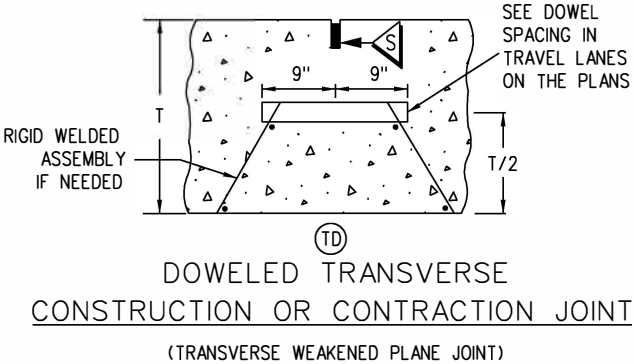
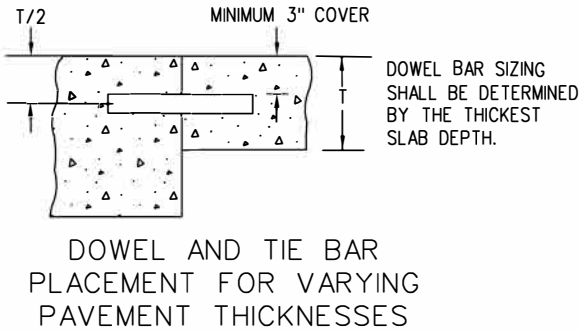
TIE BAR SIZE IS NO. 5 WHEN PAVEMENT IS PLACED ON UNBOUND BASES.

TIE BAR IS NO. 6 WHEN PAVEMENT IS PLACED ON LIME TREATED SOIL, ASPHALT OR CEMENT TREATED, MILLED ASPHALT, OR RECYCLED ASPHALT BASES.

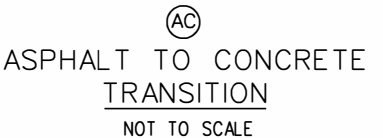
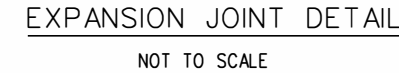
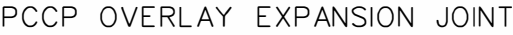
PAVEMENT THICKNESS (T)	DOWEL BAR DIAMETER
7 IN. * T < 8 IN.	1 IN.
8 IN. * T * 10 IN.	1.25 IN.
10 IN. < T * 15 IN.	1.50 IN.



DETAILS ILLUSTRATING DOWEL PLACEMENT TOLERANCES  
SEE SUBSECTION 412.13(b)2 FOR ALLOWED TOLERANCE VALUES.




Computer File Information		Sheet Revisions		Colorado Department of Transportation 2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868 Construction Engineering Services JBK	CONCRETE PAVEMENT JOINTS	STANDARD PLAN NO.	
Creation Date: 07/31/19		Date:	Comments			M-412-1	
Designer Initials: JBK	(R-X)	01/31/22	Revised all sheets.			Standard Sheet No. 5 of 9	
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Detailer Initials: LTA/HMG	(R-X)						
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)				Issued by the Project Development Branch: July 31, 2019		

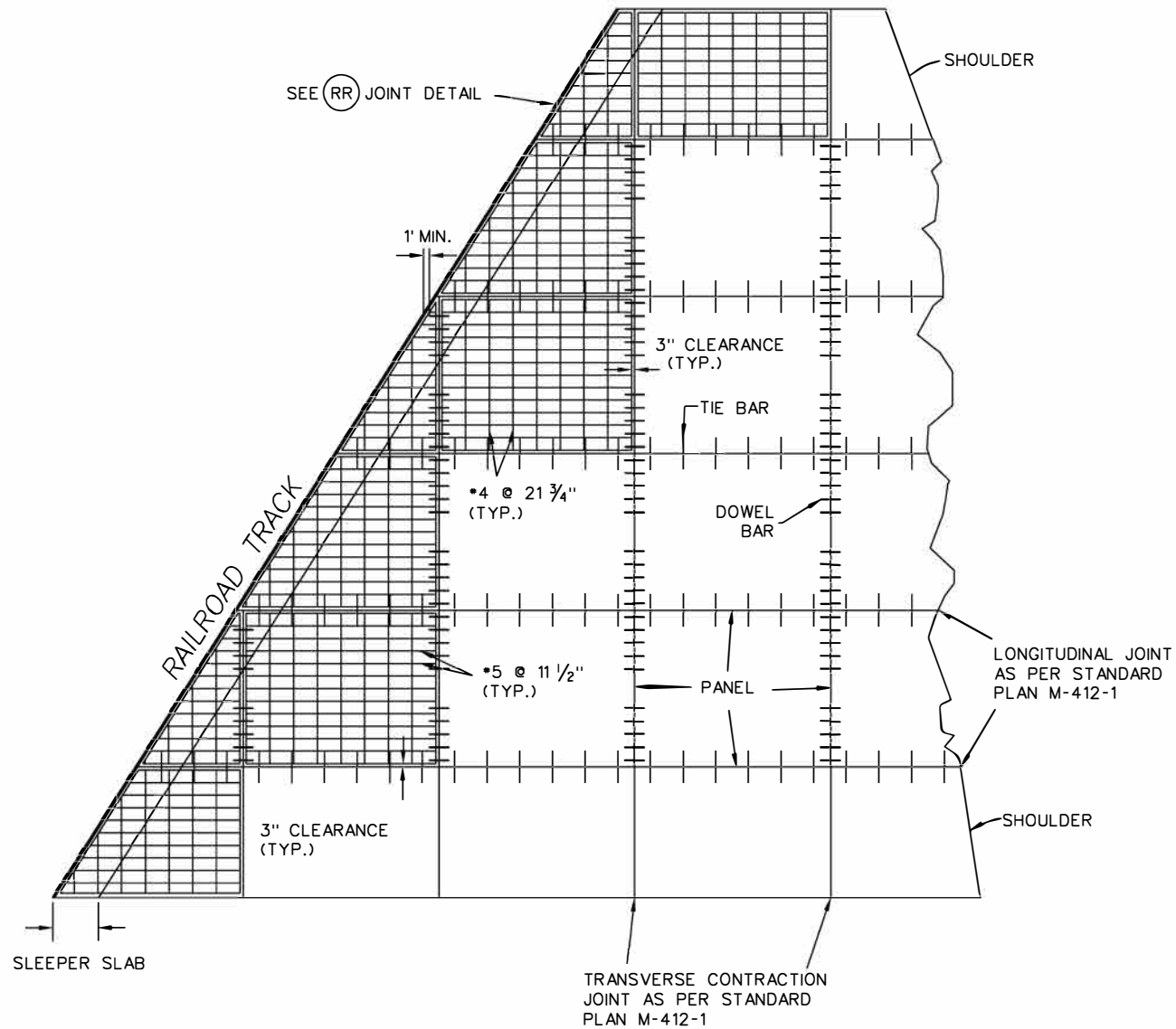


1. CONCRETE EXPANSION JOINTS SHALL BE REQUIRED AT THE LOCATIONS SHOWN. SLEEPER SLABS FOR THE CONCRETE EXPANSIONS SHALL BE CLASS D OR P CONCRETE. REINFORCING STEEL SHALL BE GRADE 60 EPOXY COATED. THE COST OF THE CONCRETE, REINFORCING STEEL, AND GALVANIZED STEEL SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF ITEM 412 CONCRETE PAVEMENT BID ITEM.
2. AT EACH OF THE RECONSTRUCTION EXPANSION JOINTS A PIPE EDGE DRAIN SHALL BE INSTALLED PER M-605-1 OF THE M&S STANDARD PLANS. THE EDGE DRAIN SHALL CONTINUE 2 FEET BEYOND BOTH SIDES OF THE EXPANSION JOINT AND INCLUDE A TRANSVERSE UNDERDRAIN AT EACH END ON THE EDGE DRAIN. IF THE UNDERDRAIN PIPE CANNOT DRAIN OUTSIDE OF THE ROADWAY PRISM, THE PIPE EDGE DRAIN SHALL NOT BE INSTALLED. THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE PRICE OF ITEM 412 CONCRETE PAVEMENT.
3. \* 4 INCH WIDE PRECOMPRESSED CHEMICALLY RESISTANT FOAM TOPPED WITH A TRAFFIC-GRADE SILICONE SEALANT SUCH AS WILLSEAL 250, WABO HSEAL, EMSEAL BEJS SYSTEM, OR AN ALTERNATIVE AS APPROVED BY THE ENGINEER AND REGION MATERIALS ENGINEER. EXPANSION JOINTS SHALL BE PLACED AT APPROXIMATELY ONE MILE INCREMENTS AS DIRECTED BY THE ENGINEER. THE COST SHALL BE INCLUDED IN ITEM 412 - PLACE CONCRETE PAVEMENT. DEPTH OF SEALANT SHALL BE BASED ON THE TABLE BELOW.
- | PAVEMENT THICKNESS (T) | SEALANT DEPTH (INCHES) |
|------------------------|------------------------|
| * 11 IN.               | 4                      |
| > 11 IN.               | 6                      |
4. \*\* STYROFOAM OR OTHER MATERIAL AS APPROVED BY THE ENGINEER AND REGION MATERIALS ENGINEER.

PAVEMENT THICKNESS (T)	SEALANT DEPTH (INCHES)
≤ 11 IN.	4
> 11 IN.	6

4. \*\* STYROFOAM OR OTHER MATERIAL AS APPROVED BY THE ENGINEER AND REGION MATERIALS ENGINEER.

Computer File Information		<div><div>(R-X)</div><div>(R-X)</div><div>(R-X)</div><div>(R-X)</div></div>	Sheet Revisions		Colorado Department of Transportation		CONCRETE PAVEMENT JOINTS		STANDARD PLAN NO.	
Creation Date: 07/31/19			Date:	Comments	<div><div></div><div>2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868</div></div>				M-412-1	
Designer Initials: JBK			01/31/22	Revised all sheets.					Standard Sheet No. 6 of 9	
Last Modification Date: 01/31/22							Issued by the Project Development Branch: July 31, 2019			
Detailer Initials: LTA/HMG										
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English										
Construction Engineering Services JBK							Project Sheet Number:			



SKEWED RAILROAD  
PLAN VIEW

NOTE ON SKEWED RAILROAD DETAILS:

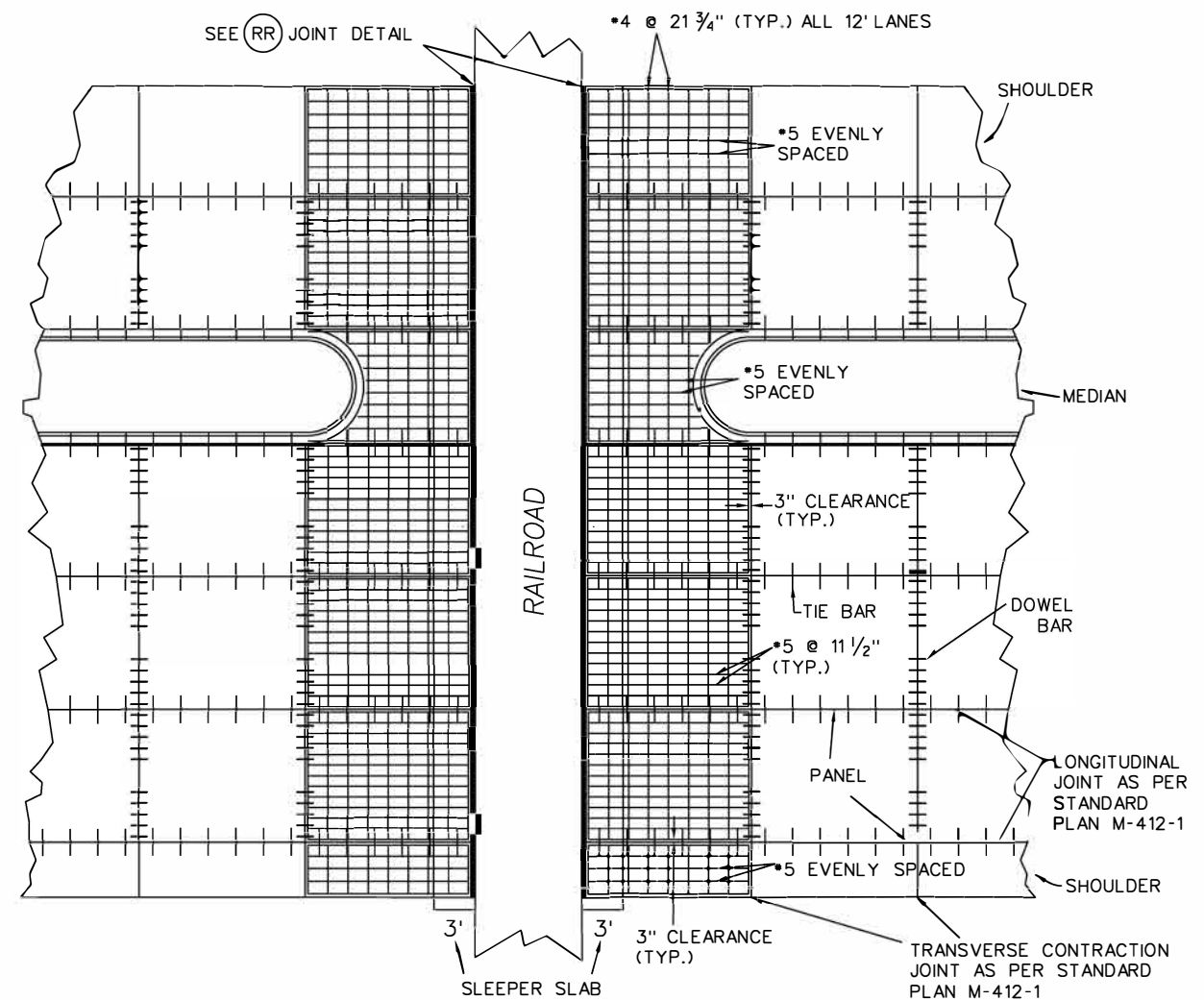
1. IF THE FIRST PANEL ADJACENT TO THE RAIL ROAD CROSSING IS LESS THAN ONE HALF THE AREA OF A NORMAL FULL PANEL, THEN THE FIRST PARTIAL PANEL AND THE NEXT FULL PANEL SHALL BE LONGITUDINALLY AND TRANSVERSLY REINFORCED AS SHOWN IN THE DETAILS. IF THE AREA OF THE FIRST PANEL ADJACENT TO THE RAIL ROAD CROSSING IS GREATER THAN ONE HALF THE AREA OF A NORMAL FULL PANEL, THEN JUST THE FIRST PARTIAL PANEL SHALL BE REINFORCED.

NOTES ON ALL RAILROAD DETAILS:

1. CONCRETE CLASS P OR CLASS D SHALL BE USED FOR THE SLEEPER SLAB.
2. GRADE 60 EPOXY COATED REINFORCING STEEL IS REQUIRED, OTHER THAN TIE AND DOWEL BARS.
3. ALL COST ASSOCIATED WITH THE REQUIREMENTS OF THESE DETAILS SHALL BE INCLUDED IN THE COST OF ITEM 412 - CONCRETE PAVEMENT ( \_ INCH).
4. THE CONTRACTOR SHALL PROVIDE, FOR APPROVAL, TO THE ENGINEER A DETAILED PLAN SHOWING THE JOINT CONFIGURATION A MINIMUM OF TWO WEEKS PRIOR TO THE START OF REINFORCING STEEL FABRICATION.
5. THESE DETAILS SHALL APPLY TO BOTH SIDES OF THE RAIL ROAD CROSSING, IF CONCRETE PAVEMENT IS REQUIRED.

NOTE ON PERPENDICULAR RAILROAD DETAILS:

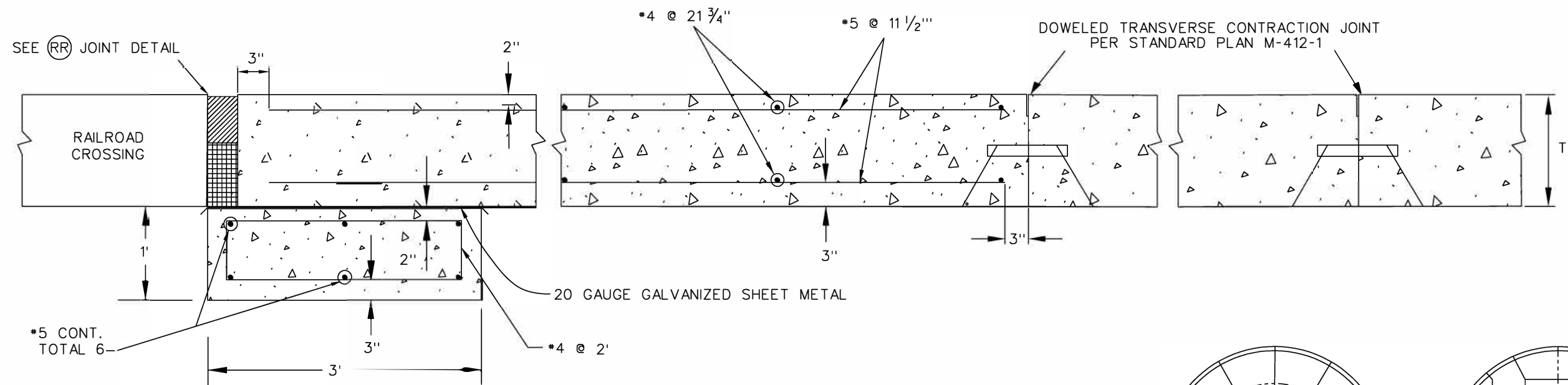
1. THE LENGTH OF THE FIRST PANEL ADJACENT TO THE RAIL ROAD SHALL BE BETWEEN 12 AND 15 FEET.



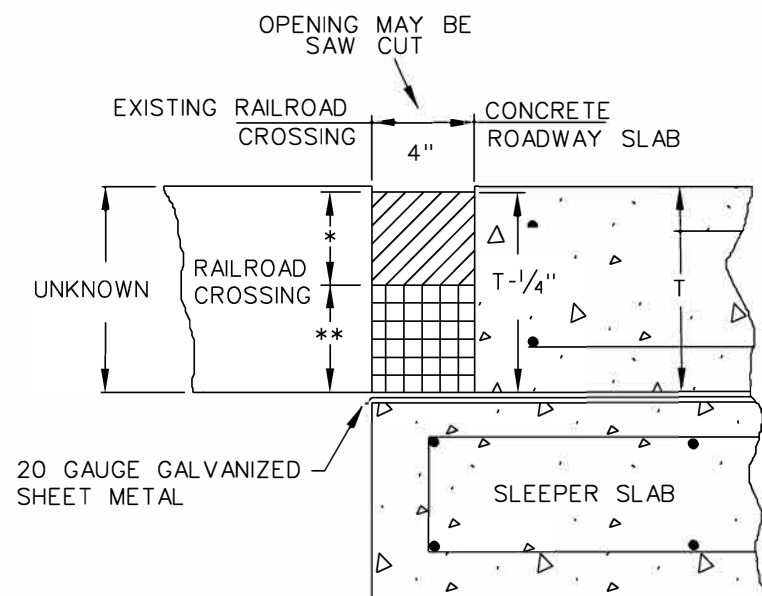
PERPENDICULAR RAILROAD PLAN VIEW

Computer File Information		Sheet Revisions		<div>Colorado Department of Transportation</div> <div>2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868</div> <div>Construction Engineering Services    JBK</div>	CONCRETE PAVEMENT JOINTS		STANDARD PLAN NO.	
Creation Date: 07/31/19	(R-X)	Date:	Comments		M-412-1		Standard Sheet No. 7 of 9	
Designer Initials: JBK		01/31/22	Revised all sheets.		Project Sheet Number:		Issued by the Project Development Branch: July 31, 2019	
Last Modification Date: 01/31/22								
Detailer Initials: LTA/HMG								
CAD Ver.: MicroStation V8    Scale: Not to Scale    Units: English		(R-X)						





RAILROAD PROFILE VIEW



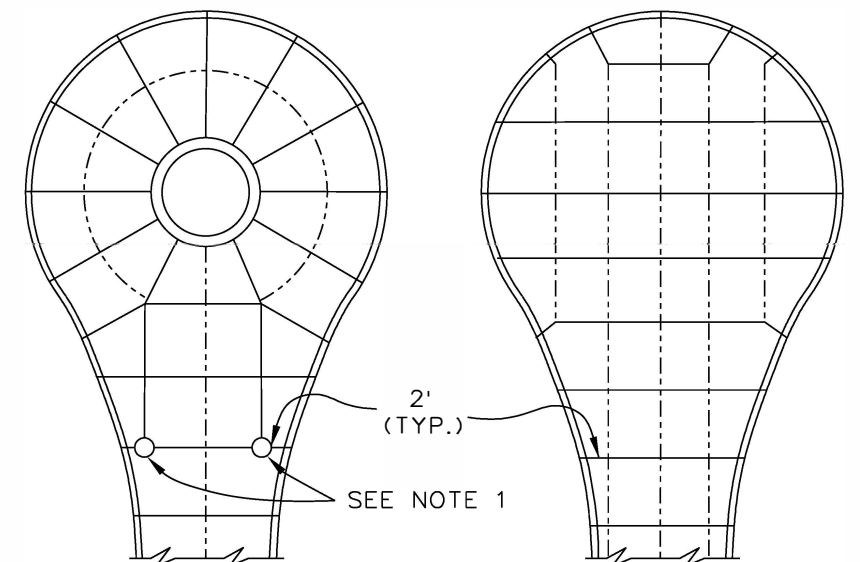
(RR)  
RAILROAD JOINT DETAILS

NOTES ON RAILROAD JOINTS:

1. \* FOR SKEWED RAILROADS: 2" WIDE X 3" DEEP CHEMICALLY RESISTANT NEOPRENE JOINT SEAL.

FOR PERPENDICULAR RAILROADS: PREFORMED COMPRESSION SEALS MEETING THE REQUIREMENTS OF SECTION 412 FOR THE OPENING SHOWN.

2. \*\* PREFORMED EXPANSION JOINT FILLER AS APPROVED BY THE ENGINEER.



OPEN CENTER

CLOSED CENTER

CUL-DE-SAC

NOTE ON CUL-DE-SACS:

1. IF A JOINT IS NOT CONTINUOUS INTO AN ADJACENT SLAB, A JOINT TERMINATION CORE (SEE SHEET 5) SHALL BE CONSTRUCTED USING 4" PVC PIPE FILLED WITH AN APPROVED NON-SHRINK GROUT OR BOND BREAKER FILLED WITH AN APPROVED NON-SHRINK GROUT.

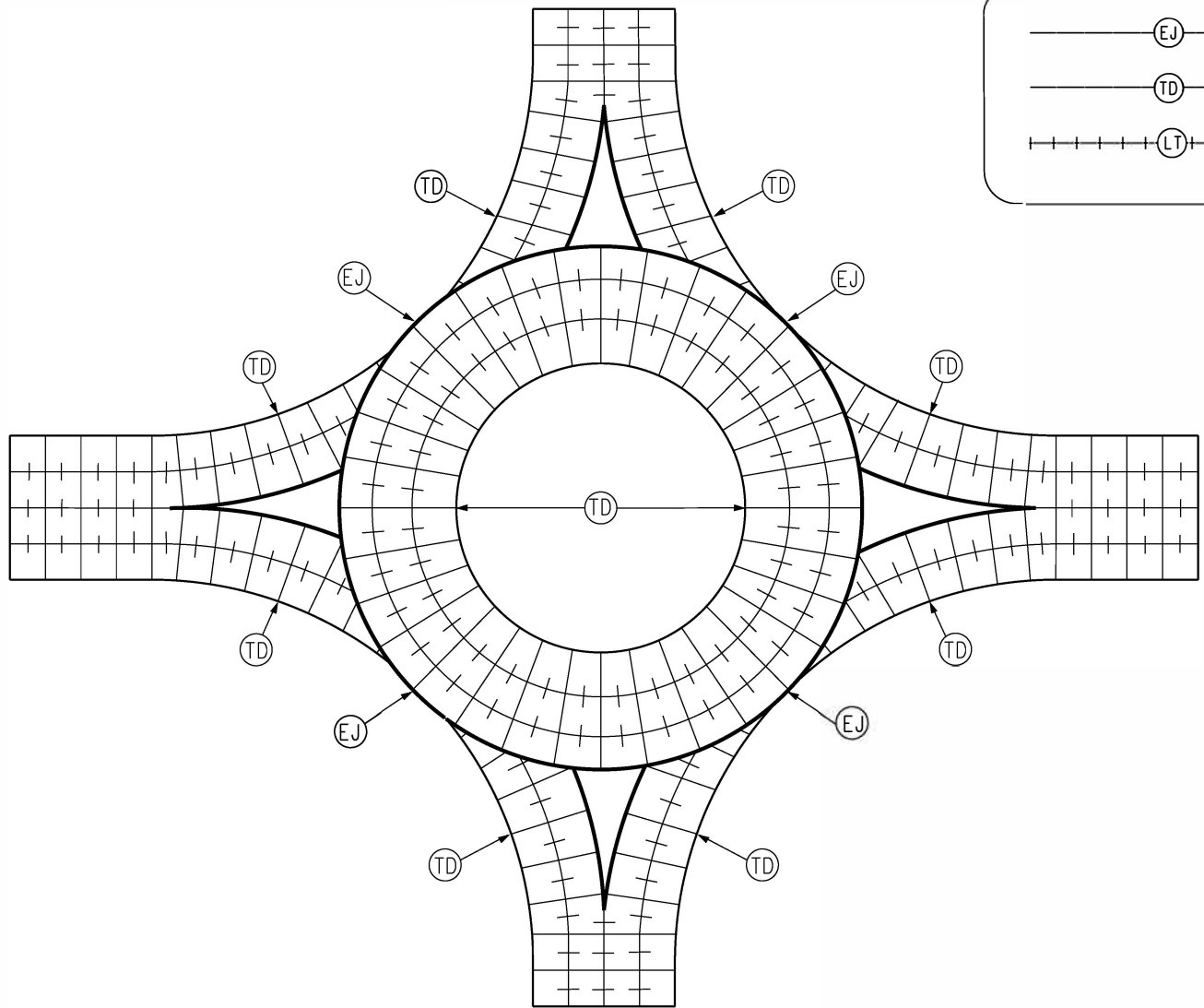
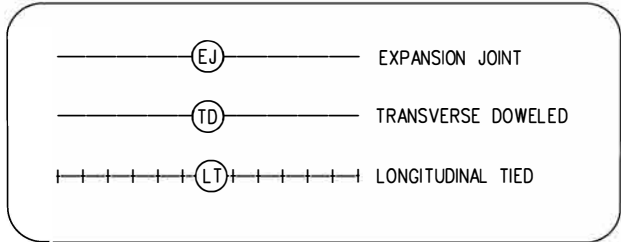
Computer File Information		Sheet Revisions		Colorado Department of Transportation 2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868 Construction Engineering Services JBK	CONCRETE PAVEMENT JOINTS	STANDARD PLAN NO. M-412-1 Standard Sheet No. 8 of 9	
Creation Date: 07/31/19		Date: 01/31/22	Comments: Revised all sheets.			Project Sheet Number:	
Designer Initials: JBK	(R-X)						
Last Modification Date: 01/31/22	(R-X)						
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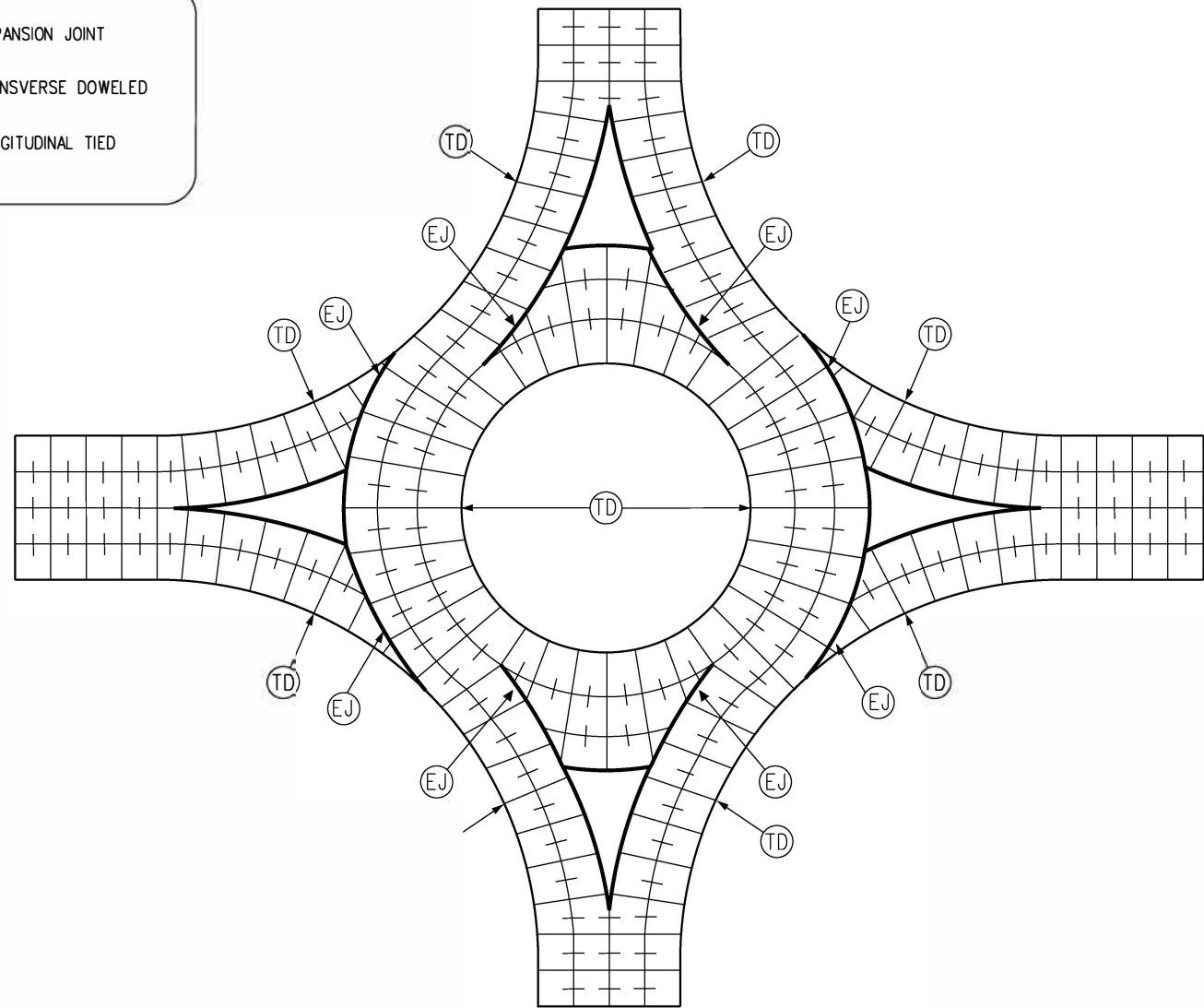
NOTES

- 1. ALL RADIAL AND TRANSVERSE JOINTS SHALL BE (TD) JOINTS.
- 2. (EJ) JOINTS SHALL BE CONSTRUCTED WITH PREFORMED EXPANSION JOINT FILLER AS APPROVED BY THE ENGINEER.
- 3. THE TICK MARKS FOR TIE BAR LINE TYPE ARE FOR ILLUSTRATIVE PURPOSES ONLY AND DO NOT REPRESENT ACTUAL TIE BAR LOCATIONS. SEE M-412-1 SHEET 5 OF 9 FOR TIE BAR PLACEMENT LOCATIONS.
- 4. EXPANSION JOINTS SHALL BE INSTALLED BETWEEN CONCRETE CURB AND ANY FIXED STRUCTURE OR BRIDGE. EXPANSION JOINT MATERIAL SHALL EXTEND THE FULL DEPTH OF THE CONTACT SURFACE.
- 5. JOINT CONFIGURATIONS SHOWN ARE FOR SIMPLE ROUNDABOUTS AND DO NOT REPRESENT ALL ROUNDABOUT DESIGNS. THE CONTRACTOR SHALL SUBMIT A JOINT LAYOUT FOR APPROVAL BY THE ENGINEER PRIOR TO CONSTRUCTION. THE PAVEMENT JOINT LAYOUT SHALL CONSIDER, AT A MINIMUM, CONSTRUCTION STAGING AND LANE DELINEATION.

JOINT LEGEND  
(SEE SHEET 5 FOR JOINT DETAILS)



ISOLATED CIRCLE ROUNDABOUT



PAVE-THROUGH ROUNDABOUT

Computer File Information		Sheet Revisions		Colorado Department of Transportation 2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021 FAX: 303-757-9868 Construction Engineering Services JBK	CONCRETE PAVEMENT JOINTS	STANDARD PLAN NO.	
Creation Date: 07/31/19	(R-X)	Date:	Comments			M-412-1	
Designer Initials: JBK		01/31/22	Revised all sheets.			Standard Sheet No. 9 of 9	
Last Modification Date: 01/31/22						Project Sheet Number:	
Detailer Initials: LTA/HMG							
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)				Issued by the Project Development Branch: July 31, 2019		