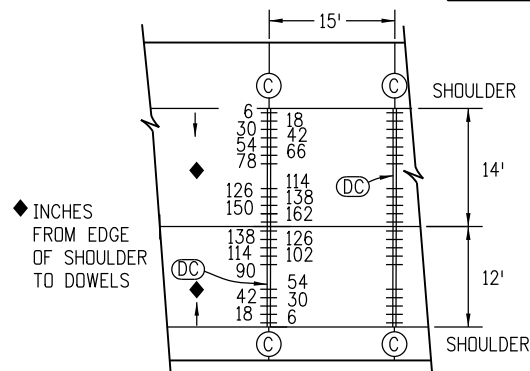


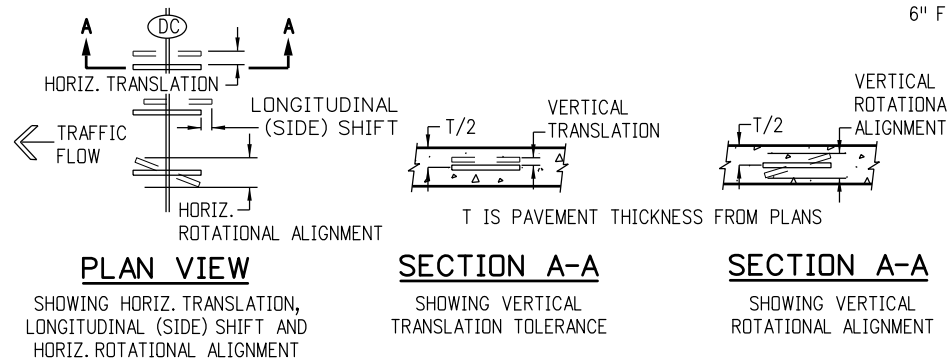
**TYPICAL JOINT LAYOUT FOR CONCRETE ROADWAY WITH CONCRETE SHOULDERS**

**GENERAL NOTES**

1. THIS STANDARD PLAN DOES NOT APPLY TO THIN CONCRETE OVERLAYS (WHITETOPPING).
2. LOCATE (T) JOINT AT A (C) JOINT OR A MINIMUM OF 6 FT. FROM A (C) JOINT.
3. 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 14 FT. IN WIDTH SHALL BE CONSTRUCTED ONLY WHERE DESIGNATED ON THE PLANS.
4. ON MULTILANE DIVIDED HIGHWAYS, THE MULTILANE DIRECTIONAL PAVEMENT AND BOTH SHOULDERS SHALL BE PLACED WITH (E) LONGITUDINAL SAWED CONTRACTION JOINTS.
5. ON MULTILANE DIVIDED HIGHWAYS SEPARATED BY A CONCRETE BARRIER, A (D) JOINT SHALL BE CONSTRUCTED AT ONE OF THE BARRIER FACES.
6. (D) JOINTS SHALL BE CONSTRUCTED BETWEEN THE TWO OPPOSING DIRECTIONS OF TRAVEL ON A MULTILANE UNDIVIDED HIGHWAY WHEN ALL OF THE FOLLOWING APPLY:
  - A. PAVEMENT IS CONTINUOUS ACROSS BOTH DIRECTIONS OF TRAVEL.
  - B. THERE IS NO MEDIAN BARRIER.
  - C. THE WIDTH OF THE PAVEMENT IN ONE DIRECTION IS GREATER THAN 80 FEET.
7. ON VARIABLE WIDTH SLABS, THE 2 FT. OR 4 FT. END OF SLAB WIDTH DIMENSION MAY VARY  $\pm 6$  INCHES.
8. (L) JOINTS ARE TO BE USED WHEN A TRAFFIC LANE IS ADDED SEPARATELY, OR FOR TAPERS, OR FOR SPEED CHANGE LANES. ALTERNATIVE LONGITUDINAL JOINT LOCATIONS AT SPEED CHANGE LANES MAY BE USED IF APPROVED.
9. WHERE (DC) JOINTS ARE SHOWN IN THE SHOULDER, THE DOWEL BARS WILL BE PLACED ON 12" CENTERS STARTING 6" FROM THE ROADWAY (E) JOINT.



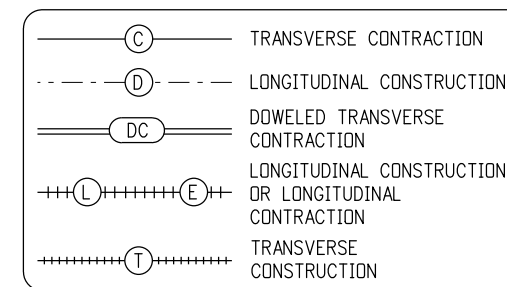
**DOWEL BAR DETAIL FOR (DC) JOINT WITH 14 FT. AND 12 FT. LANES**



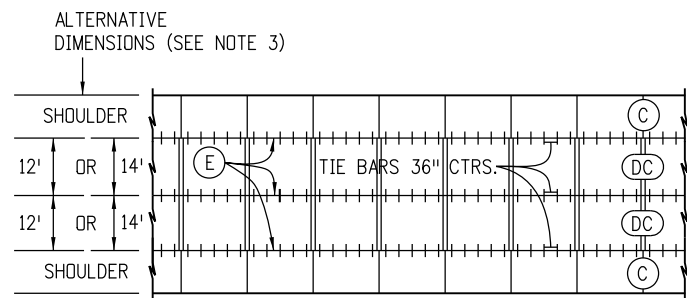
**DETAILS ILLUSTRATING DOWEL PLACEMENT TOLERANCES**  
SEE SUBSECTION 412.13(b)2 FOR ALLOWED TOLERANCE VALUES.

**JOINT LEGEND**

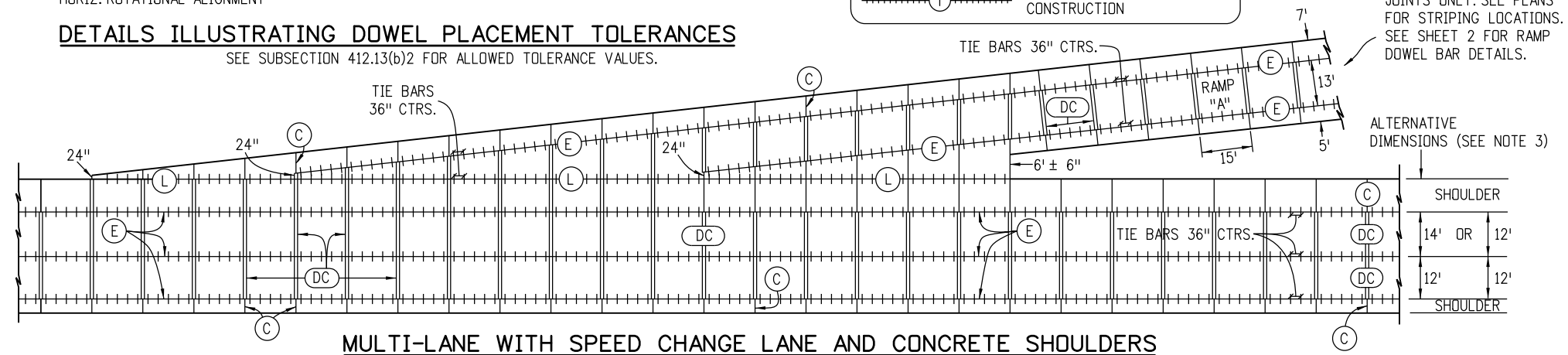
(SEE SHEET 5 FOR JOINT DETAILS)



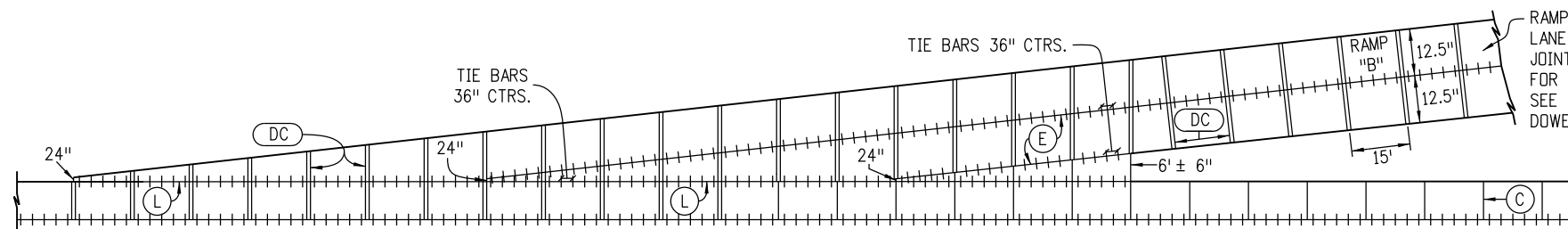
RAMP AND SPEED CHANGE LANE DIMENSIONING FOR JOINTS ONLY. SEE PLANS FOR STRIPING LOCATIONS. SEE SHEET 2 FOR RAMP DOWEL BAR DETAILS.



**RURAL TWO-LANE**



**MULTI-LANE WITH SPEED CHANGE LANE AND CONCRETE SHOULDERS**



**OPTIONAL LONGITUDINAL JOINT IN CENTER FOR SINGLE LANE SPEED CHANGE LANE**

**Computer File Information**

Creation Date: 07/04/12	Initials: DD
Last Modification Date: 07/24/12	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 412010105.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

**Sheet Revisions**

Date:	Comments
07/24/12	Changed Tie Bar spacing from 30" to 36".

**Colorado Department of Transportation**

4201 East Arkansas Avenue  
Denver, Colorado 80222  
Phone: (303) 757-9083  
Fax: (303) 757-9820

Project Development Branch DD/LTA

**CONCRETE PAVEMENT JOINTS**

Issued By: Project Development Branch on July 4, 2012

**STANDARD PLAN NO.**

M-412-1

Sheet No. 1 of 5