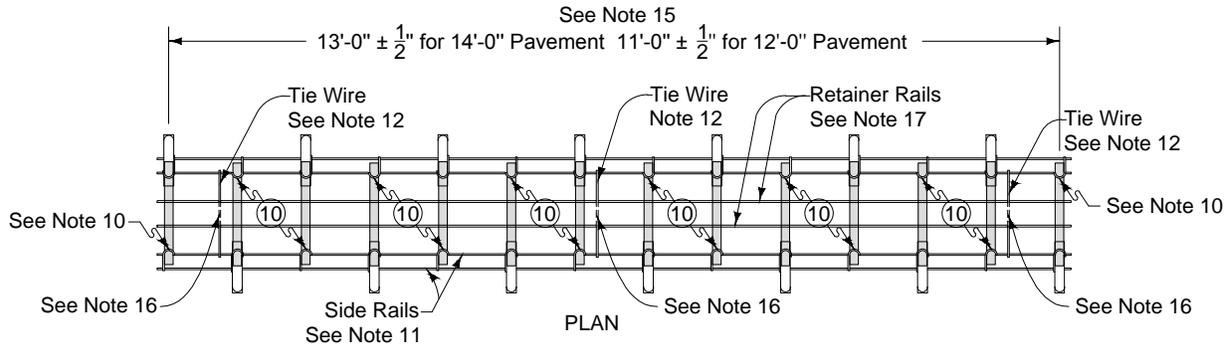
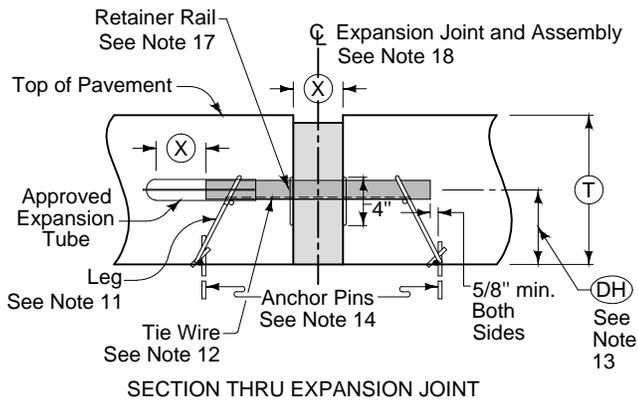
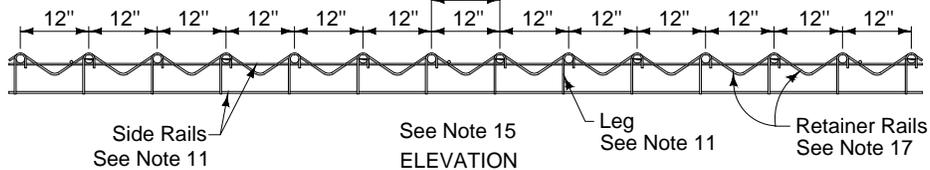


**EXPANSION JOINTS**



Spaces between dowel bars are nominal dimensions with a  $\frac{1}{4}$ " allowable tolerance.



**NOTES:**

1. Dowels for the 'ED', 'EE' and 'EF' joints shall be properly positioned using a specified support assembly.
2. Install all preformed joint material perpendicular to the pavement surface. Exercise care throughout the construction of the pavement to ensure joint material remains in proper position upon completion of paving operation.
3. Place free moving ends of dowel support assembly alternately across joints, per expansion joint plan.
4. Refer to dowel height and diameter table.
5. Coat free end of dowel bar prior to placement of second slab to prevent bond.
6. Pre-drill or pre-form holes in joint material for appropriate dowel size. Material shall meet requirements of current standard specification for joint material.
7. Edge with 1/4" tool for length of joint indicated if formed; edging not required when cut with diamond blade saw.
8. Use 18 inch long dowel bars with a tolerance of  $\pm 1/8$  inch. Ensure the centerlines of individual dowels are parallel to the other dowels in the assembly within  $\pm 1/8$  inch.
9. Wire sizes shown are the minimum required. Use wires with a minimum tensile strength of 50 KSI.
10. Weld alternately throughout.
11. #1/0 gauge (0.306 inch diameter) wire.
12. #10 gauge (0.135 inch diameter) wire, welded or friction fit to upper side rail, both sides.
13. Measured from the centerline of dowel bar to bottom of lower side rail + 1/4 inch.
14. Per lane width, install a minimum of 8 anchor pins evenly spaced (4 per side), to prevent movement of assembly during construction. Anchor assemblies placed on pavement or PCC base with devices approved by the Engineer.
15. If dowel basket assemblies are required for curbed pavements, the assembly length is based on the jointing layout.
16. Clip and remove center portion of tie during field assembly.
17. 1/4 inch diameter wire.
18. Ensure dowel basket assembly centerline is within 2 inches of the intended joint location longitudinally and has no more than 1/4 inch horizontal skew from end of basket to end of basket.

JOINT OPENING AND EXPANSION TUBE EXTENSION		
Joint Type	(X)	Minimum Tube Length
"ED"	1"	6"
"EE"	2"	7"
"EF"	$3\frac{1}{2}$ "	9"

See Notes 8 and 9

DOWEL HEIGHT AND DIAMETER		
(T)	(DH)*	Diameter
7" to $7\frac{1}{2}$ "	$3\frac{1}{2}$ "	$\frac{3}{4}$ "
8" to $9\frac{1}{2}$ "	$4\frac{1}{4}$ "	$1\frac{1}{4}$ "
10" to $11\frac{1}{2}$ "	$5\frac{1}{4}$ "	$1\frac{1}{2}$ "
12" to 13"	$6\frac{1}{4}$ "	$1\frac{1}{2}$ "

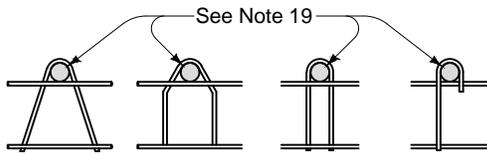
\*See Note 13

FILE NO.: 2700-023
APPROVAL DATE: APRIL 2003
REVISION NO.: 1
REVISION DATE: MAY 2014

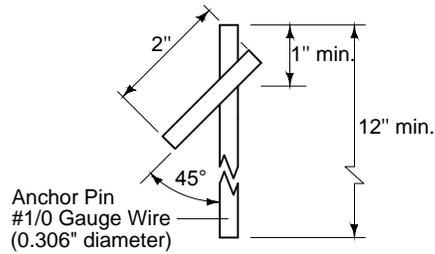
**CEDAR RAPIDS METROPOLITAN AREA  
STANDARD DETAILS FOR PUBLIC IMPROVEMENTS**

**EXPANSION JOINTS  
SHEET 1 OF 2**

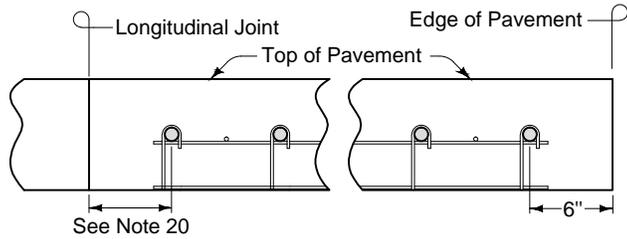
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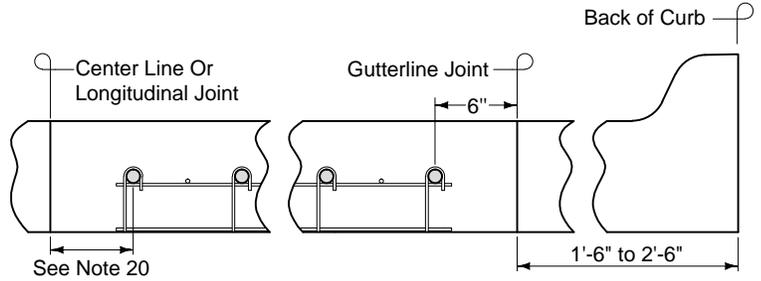
OPTIONAL LEG SHAPES



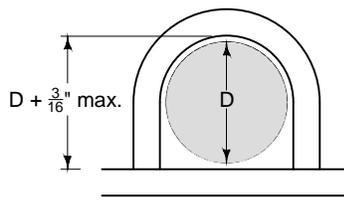
ANCHOR PIN



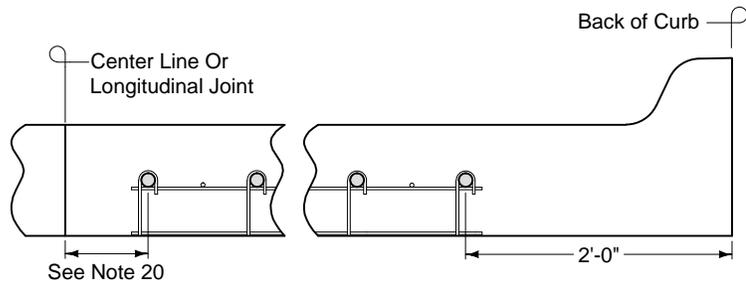
PLACEMENT LIMITS  
(Rural Section)



PLACEMENT LIMITS  
(Curb and Gutter - Gutterline Jointing)

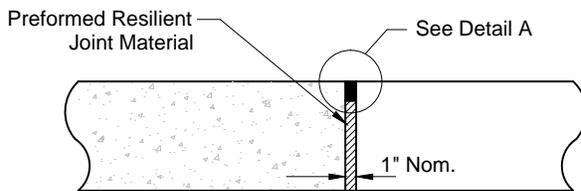


See Note 19  
BEND AROUND DOWEL

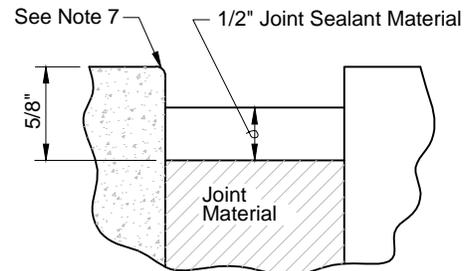


PLACEMENT LIMITS  
(No Gutterline Jointing)

See Notes 8, 9 and 21  
**DOWEL ASSEMBLIES**



**TYPE "E"**  
1" Expansion Joint Without Dowels  
See Note 21



**DETAIL 'A'**

**NOTES:**

19. Diameter of bend around dowel is dowel diameter + 1/8 to 3/16 inches.
20. For uniform lane widths: 3" - 6". For taper and variable width pavements: 3" - 12".
21. Extend joint material across full width of pavement.

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CEDAR RAPIDS METROPOLITAN AREA  
STANDARD DETAILS FOR PUBLIC IMPROVEMENTS

EXPANSION JOINTS  
SHEET 2 OF 2

NO.  
2700-023