

ORIGINATION FORM

Proposed Revisions to a Standard Plans Index
(Please provide all information – Incomplete forms will be returned)

Contact Information:

Date: July 25, 2018
Originator: **Derwood Sheppard**
Phone: (850) 414-4334
Email:

Standard Plans:

Index Number: 000-510
Sheet Number (s): All
Index Title: Superelevation-High Speed Highways

Summary of the changes:

All: Changed Title.
Sheet 1: Deleted DESIGN SPEED table and RADIUS OF CURVE table; Deleted subtitle.
Sheet 2: Updated Notes.

Commentary / Background:

Other Affected Offices / Documents: (Provide name of responsible personnel)

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	Other Standard Plans –
<input type="checkbox"/>	<input type="checkbox"/>	FDOT Design Manual –
<input type="checkbox"/>	<input type="checkbox"/>	Basis of Estimates Manual –
<input type="checkbox"/>	<input type="checkbox"/>	Standard Specifications –
<input type="checkbox"/>	<input type="checkbox"/>	Approved Product List –
<input type="checkbox"/>	<input type="checkbox"/>	Construction –
<input type="checkbox"/>	<input type="checkbox"/>	Maintenance –

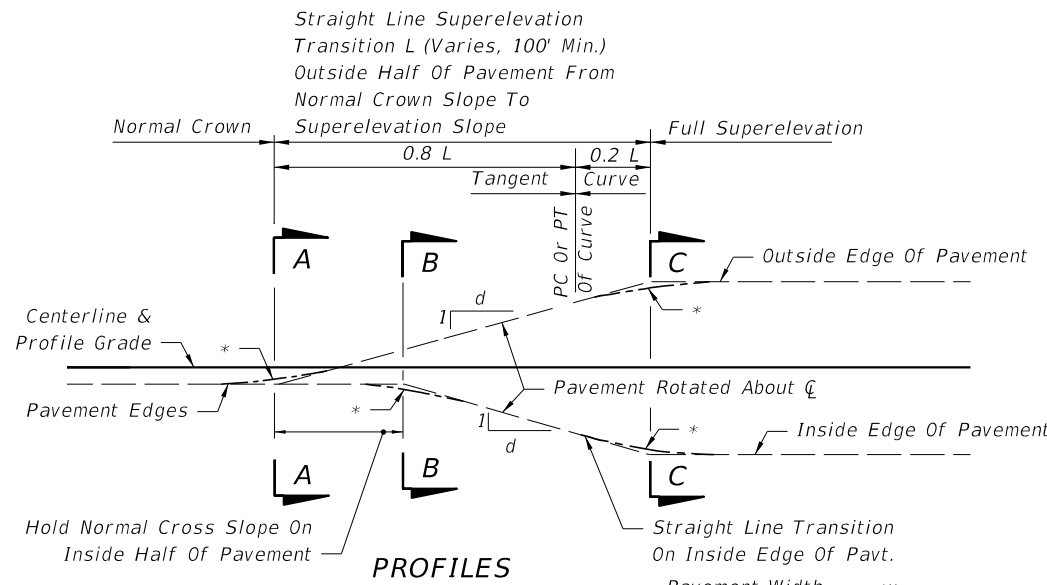
Origination Package Includes: (Email or hand deliver package to Derwood Sheppard)

Yes	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Redline Mark-ups
<input type="checkbox"/>	<input type="checkbox"/>	Proposed Standard Plan Instructions (SPI)
<input type="checkbox"/>	<input type="checkbox"/>	Revised SPI
<input type="checkbox"/>	<input type="checkbox"/>	Other Support Documents

Implementation:

Design Bulletin (Interim) DCE Memo Program Mgmt. Bulletin FY-Standard Plans (Next Release)

————— **Contact the Roadway Design Office for assistance in completing this form** —————

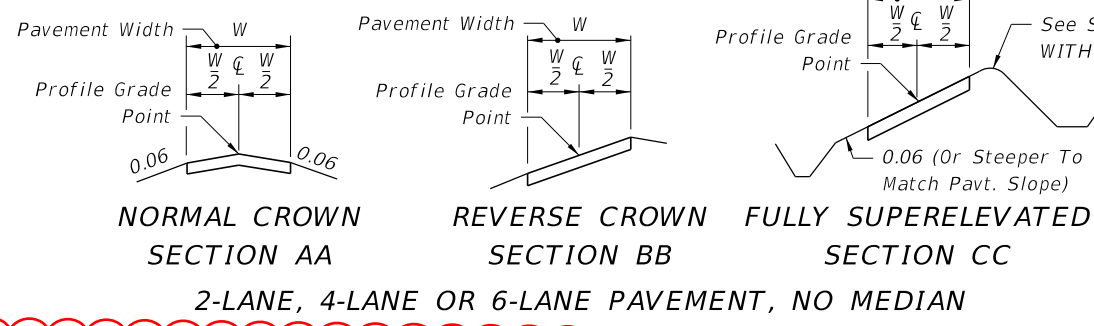
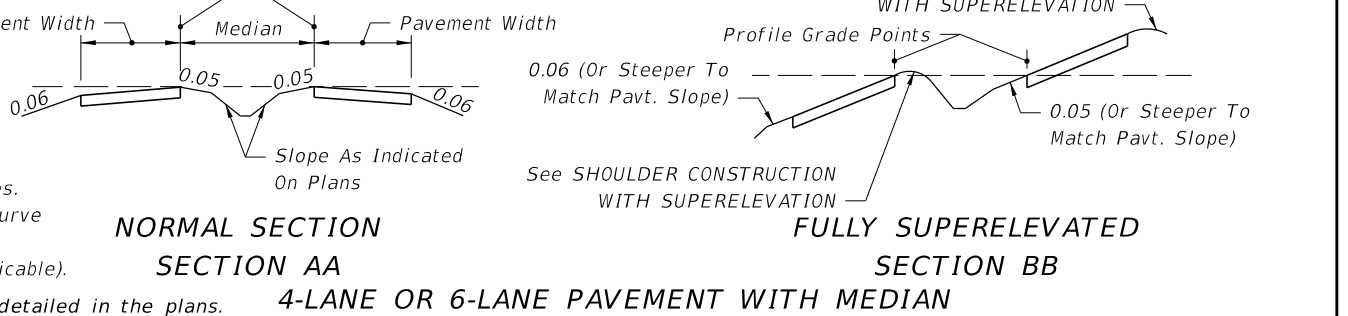
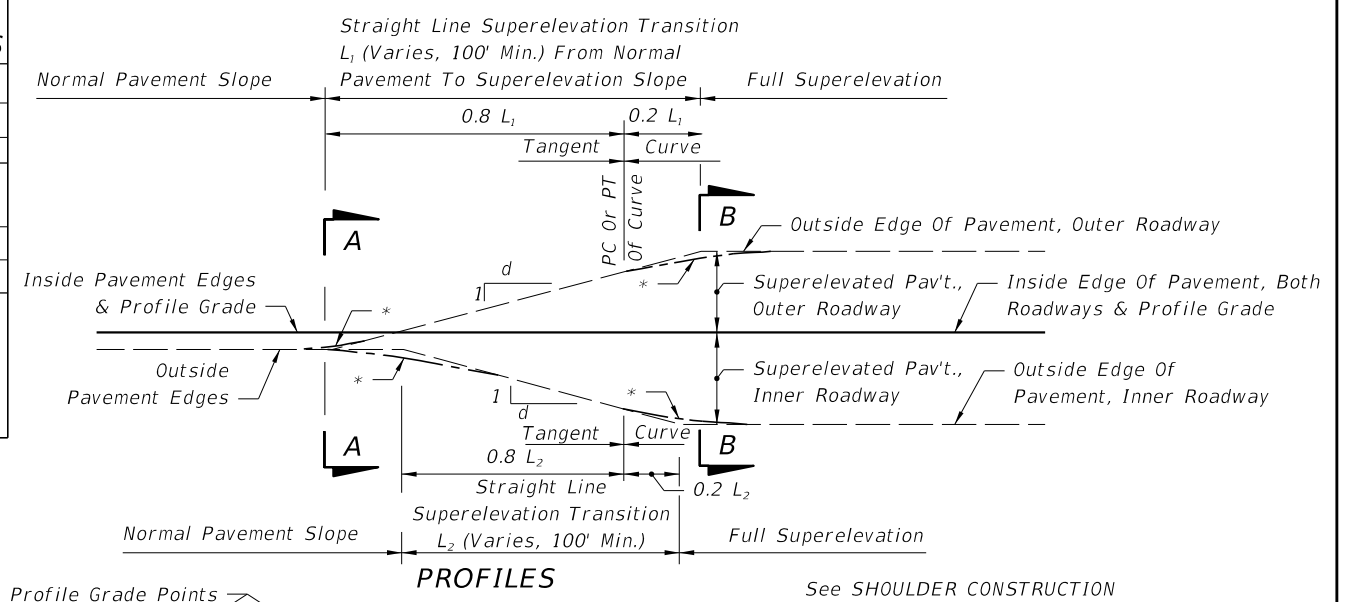


SLOPE RATIOS FOR SUPERELEVATION TRANSITIONS

SECTION	DESIGN SPEED, MPH		
	45-50	55-60	65-70
2 Lane & 4 Lane	1:200	1:225	1:250
6 Lane	1:160	1:180	1:200
8 Lane	1:150	1:170	1:190

The length of superlevation transition is to be determined by the relative slope between the travel way edge of pavement and the profile grade, except that the minimum length of transition shall be 100 ft.

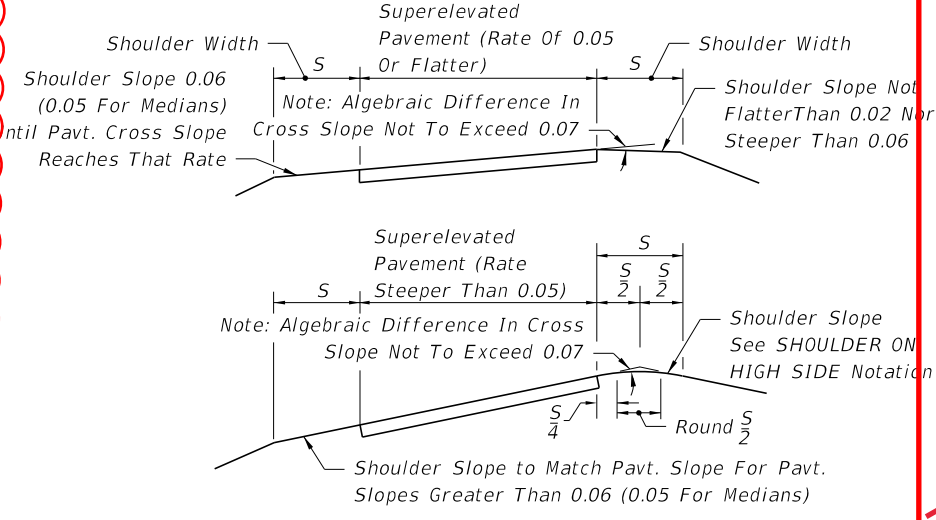
* Short Vertical Curves Are To Be Used On Construction To Avoid Angular Breaks In Edge Profiles



- THESE TRANSITION DETAILS ARE TO APPLY IN ALL CASES, EXCEPT UNDER THE FOLLOWING CONDITIONS:
1. Curves of insufficient length.
 2. Insufficient tangent length between curves.
 3. Deficient transition distance between a curve and other control point(s).
 4. At PCC's or PRC's (Runoff rates are applicable).

Transitions for these exceptions are to be as detailed in the plans.

DEGREE OF CURVE (D)	DESIGN SPEED, V MPH						
	30	40	45/50	55	60	65	70
0°15'	NC	NC	NC	NC	NC	NC	NC
0°30'	NC	NC	NC	NC	RC	RC	RC
0°45'	NC	NC	RC	RC	0.023	0.025	0.028
1°00'	NC	NC	0.021	0.025	See Table To Right		
1°30'	NC	0.021					
2°00'	RC						

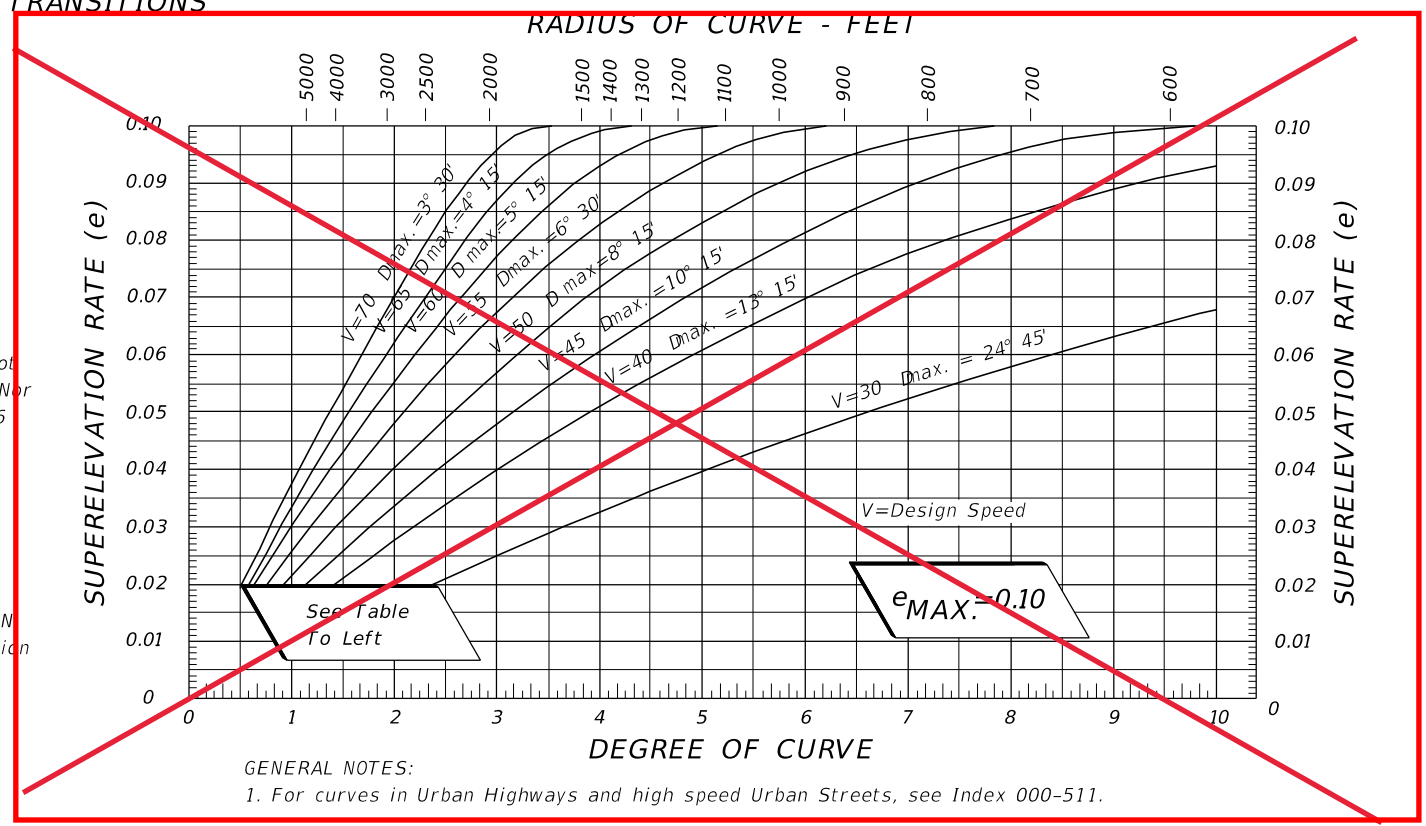


SHOULDER ON HIGH SIDE: A shoulder slope of 0.06 downward from the edge of travel way will be maintained until a 0.07 break in slope at the pavement edge is reached due to superlevation of the pavement. As the pavement superlevation increases, the 0.07 break in slope will be maintained and the shoulder flattened until the shoulder slope reaches the minimum of 0.02 downward from the edge of travel way. Any further increase in pavement superlevation will necessitate sloping the inside half of the shoulder toward the travel way and the outer half outward, both at 0.02 for superelevations 0.06-0.09 and both at 0.03 for superlevation 0.10. For shoulders with paved widths 5 feet or less see Special Shoulder Break Over Details on Sheet 2 of 2.

SHOULDER ON LOW SIDE: A 0.06 drop across inside shoulder until pavement cross slope reaches 0.06. For pavement cross slopes greater than 0.06, shoulder to have same slope as pavement.

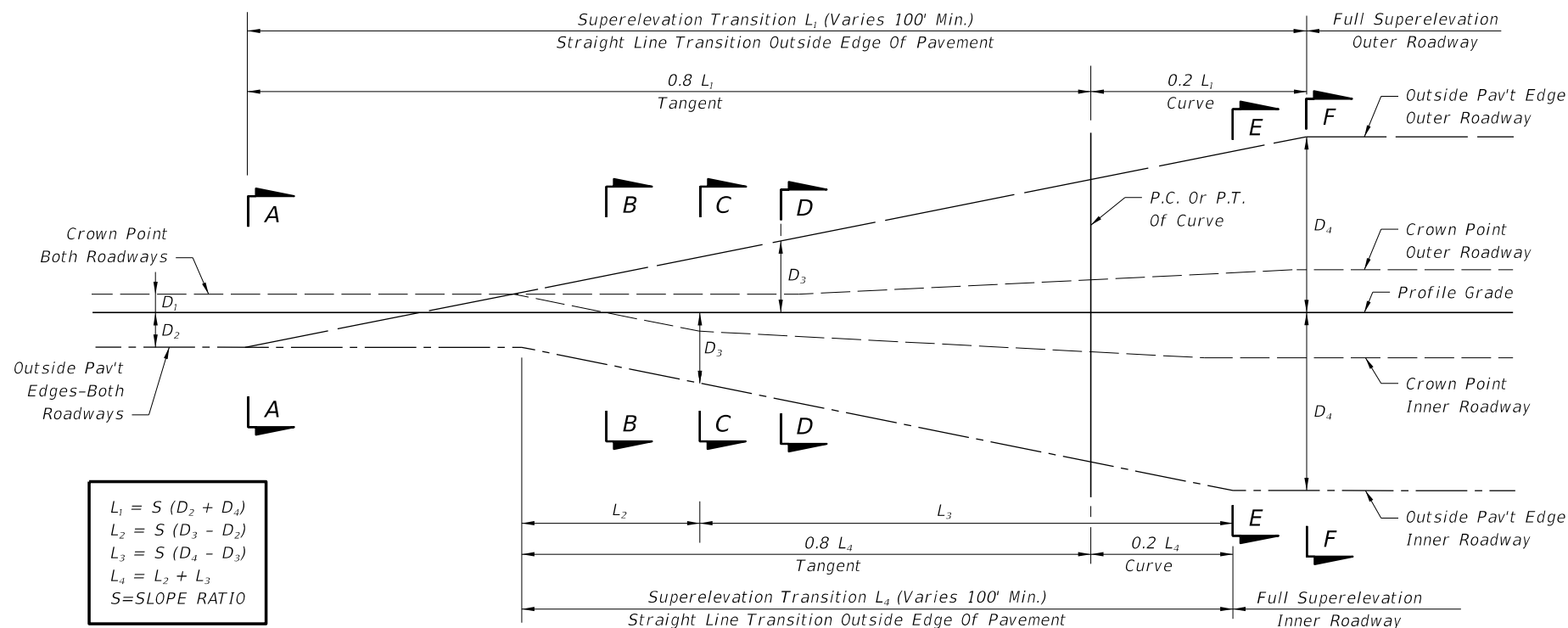
These slopes are the same as those shown pictorially on Sheet 2 of 2.

NOTE: These details apply to both paved and grassed shoulders. For median shoulders use 0.05 in lieu of 0.06.



~~DESIGN SUPERELEVATION RATES FOR RURAL HIGHWAYS, URBAN FREEWAYS AND HIGH SPEED URBAN HIGHWAYS~~

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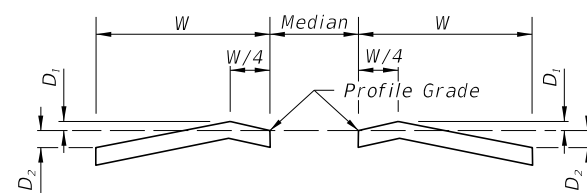
$$L_1 = S (D_2 + D_4)$$

$$L_2 = S (D_3 - D_2)$$

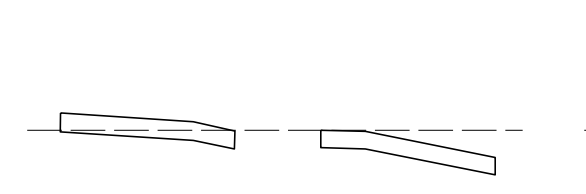
$$L_3 = S (D_4 - D_3)$$

$$L_4 = L_2 + L_3$$

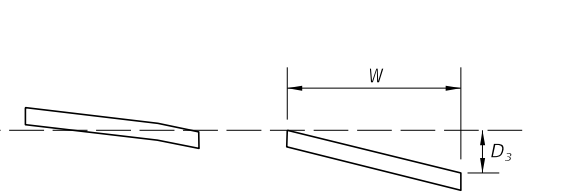
$$S = \text{SLOPE RATIO}$$



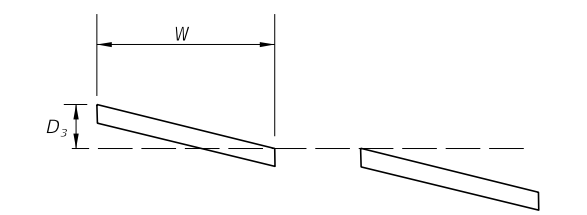
SECTION A-A
NORMAL CROWNED SECTION



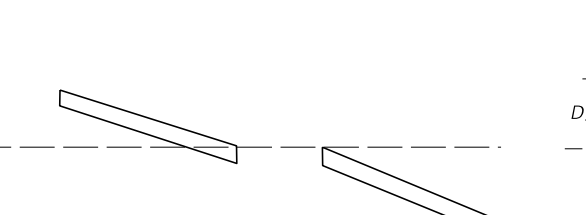
SECTION B-B
SUPERELEVATION SECTION LT. & RT.



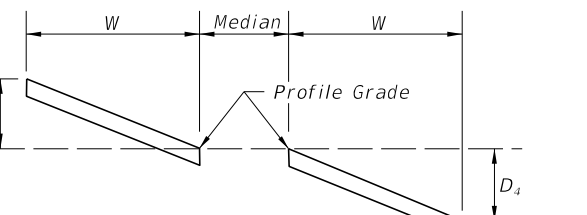
SECTION C-C
SUPERELEVATION SECTION LT.
PLANE INCLINED SECTION RT.



SECTION D-D
PLANE INCLINED SECTION LT.
SUPERELEVATION TRANSITION RT.

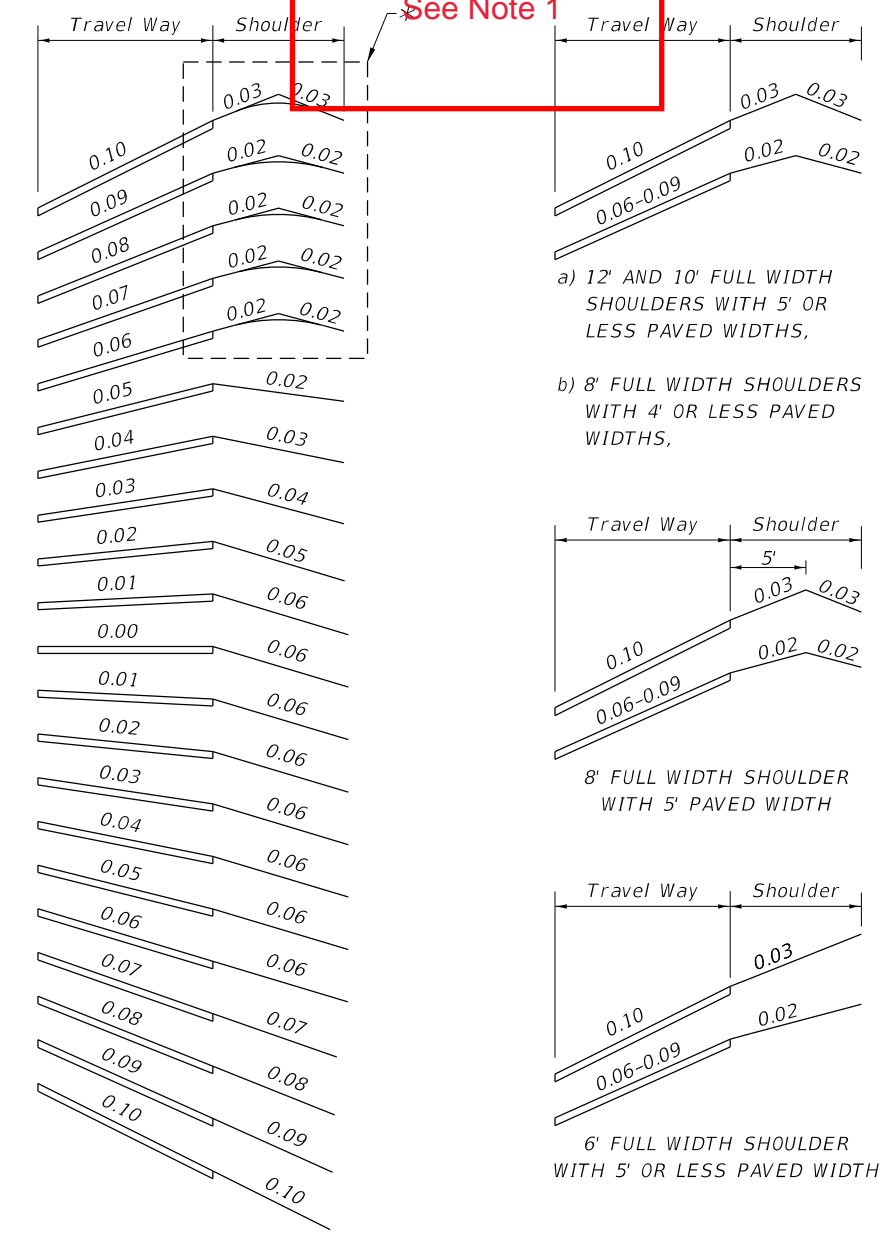


SECTION E-E
SUPERELEVATION TRANSITION LT.
FULL SUPERELEVATION RT.



SECTION F-F
FULL SUPERELEVATION LT. & RT.

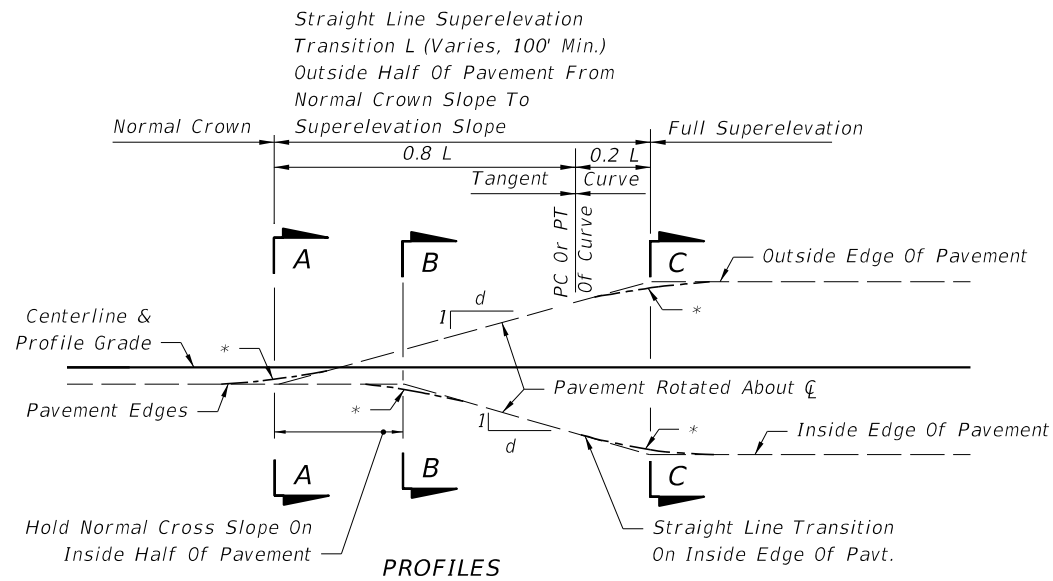
8-LANE PAVEMENT WITH ONE LANE SLOPED TO MEDIAN



SLOPES OF TRAVELED WAY AND ABUTTING SHOULDERS
SHOULDER SLOPES ON SUPERELEVATION SECTIONS

- * FOR SHOULDERS WITH PAVED WIDTHS 5 FEET OR LESS SEE SPECIAL SHOULDER BREAK OVER DETAILS
- For concrete pavement the first 1'-0" of the outside shoulder is cast with the outside travel lane and will have the same cross slope as the outside lane. The shoulder break over will occur at the outside edge of the outside slab.

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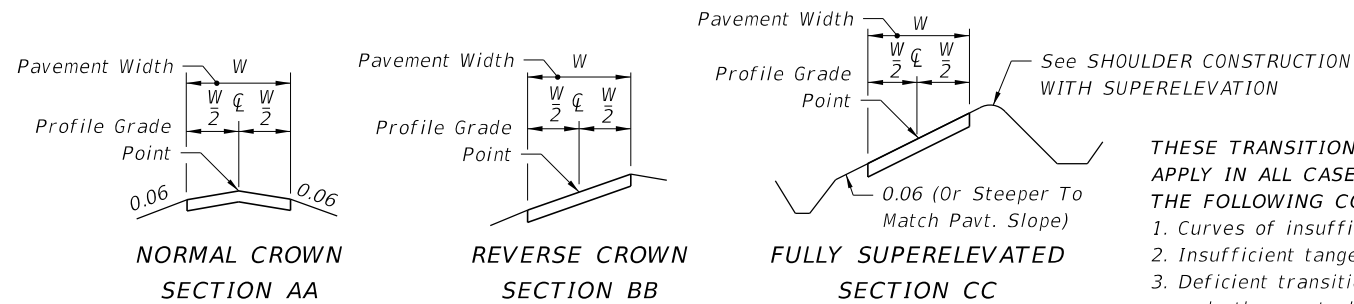
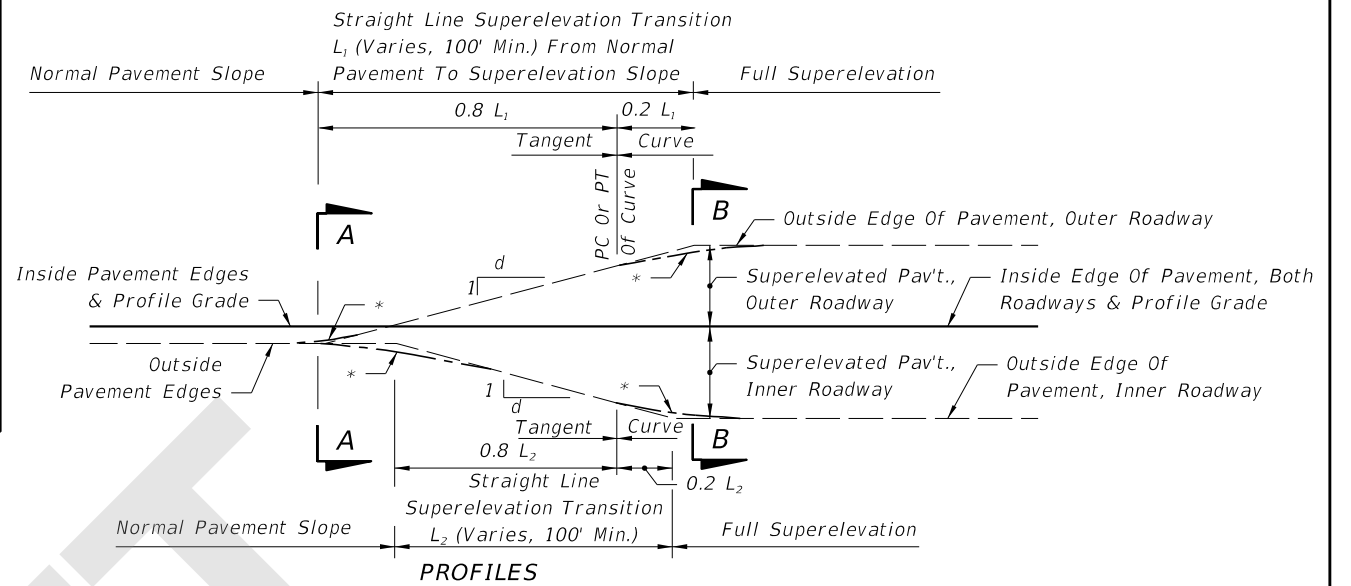


SLOPE RATIOS FOR SUPERELEVATION TRANSITIONS

SECTION	DESIGN SPEED, MPH		
	45-50	55-60	65-70
2 Lane & 4 Lane	1:200	1:225	1:250
6 Lane	1:160	1:180	1:200
8 Lane	1:150	1:170	1:190

The length of superelevation transition is to be determined by the relative slope between the travel way edge of pavement and the profile grade, except that the minimum length of transition shall be 100 ft.

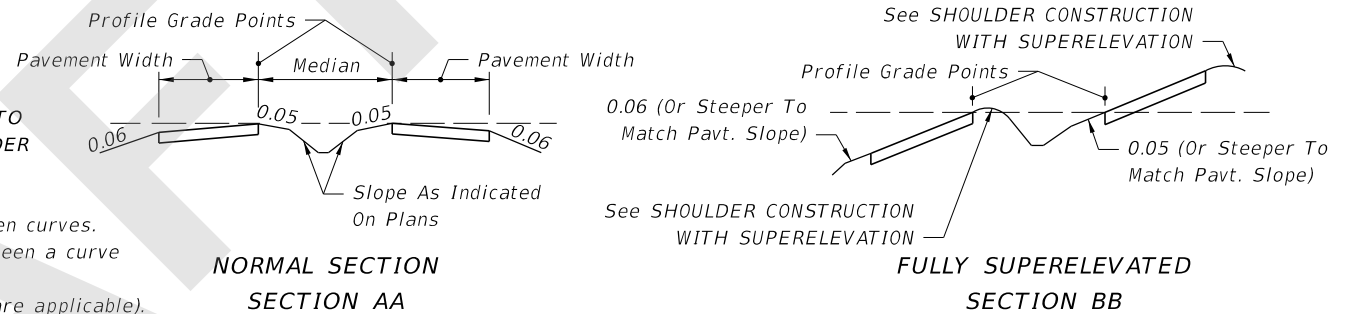
* Short Vertical Curves Are To Be Used On Construction To Avoid Angular Breaks In Edge Profiles



2-LANE, 4-LANE OR 6-LANE PAVEMENT, NO MEDIAN

- THESE TRANSITION DETAILS ARE TO APPLY IN ALL CASES, EXCEPT UNDER THE FOLLOWING CONDITIONS:
1. Curves of insufficient length.
 2. Insufficient tangent length between curves.
 3. Deficient transition distance between a curve and other control point(s).
 4. At PCC's or PRC's (Runoff rates are applicable).

Transitions for these exceptions are to be as detailed in the plans.

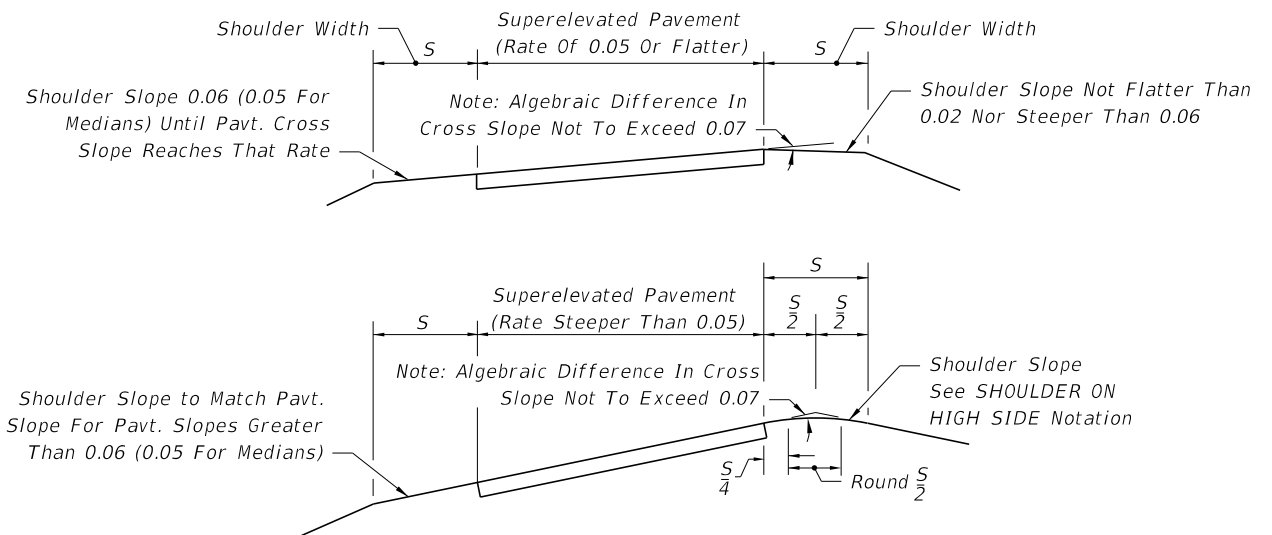


4-LANE OR 6-LANE PAVEMENT WITH MEDIAN

SUPERELEVATION TRANSITIONS

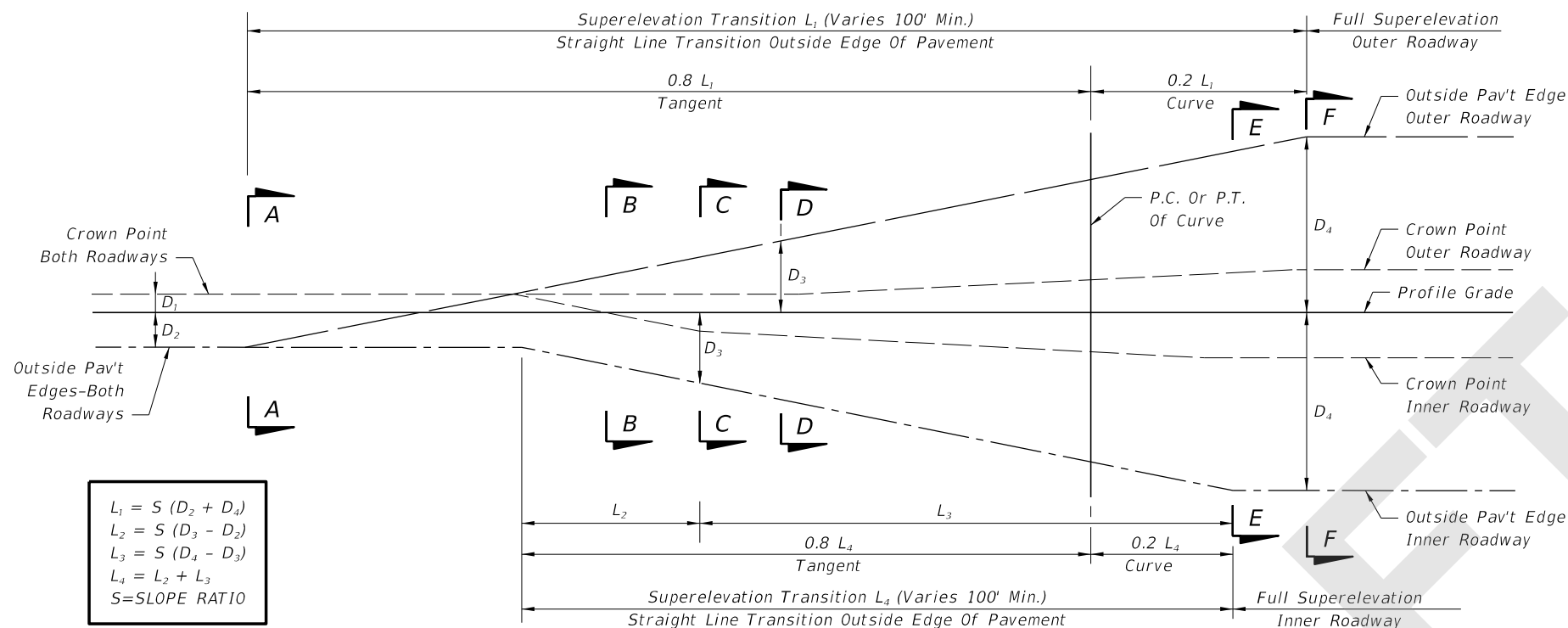
NOTES:

1. These details apply to both paved and grassed shoulders. For median shoulders use 0.05 in lieu of 0.06.
2. **SHOULDER ON HIGH SIDE:** A shoulder slope of 0.06 downward from the edge of travel way will be maintained until a 0.07 break in slope at the pavement edge is reached due to superlevation of the pavement. As the pavement superlevation increases, the 0.07 break in slope will be maintained and the shoulder flattened until the shoulder slope reaches the minimum of 0.02 downward from the edge of travel way. Any further increase in pavement superlevation will necessitate sloping the inside half of the shoulder toward the travel way and the outer half outward, both at 0.02 for superelevations 0.06-0.09 and both at 0.03 for superlevation 0.10. For shoulders with paved widths 5 feet or less see Special Shoulder Break Over Details on Sheet 2 of 2.
3. **SHOULDER ON LOW SIDE:** Maintain 0.06 cross slope across shoulder until pavement cross slope reaches 0.06. For pavement cross slopes greater than 0.06, shoulder to have same slope as pavement. See **SHOULDER SLOPES ON SUPERELEVATION SECTION** (Sheet 2).



SHOULDER CONSTRUCTION WITH SUPERELEVATION

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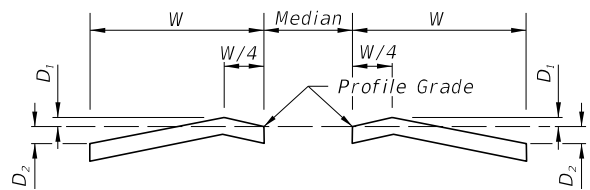
$$L_1 = S (D_2 + D_4)$$

$$L_2 = S (D_3 - D_2)$$

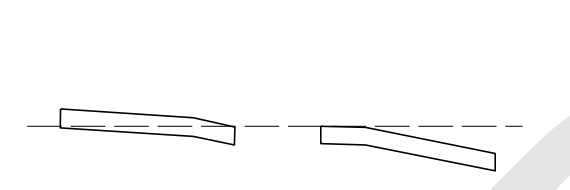
$$L_3 = S (D_4 - D_3)$$

$$L_4 = L_2 + L_3$$

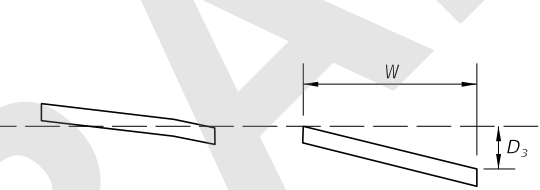
$$S = \text{SLOPE RATIO}$$



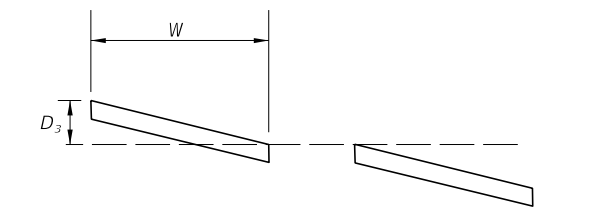
SECTION A-A
NORMAL CROWNED SECTION



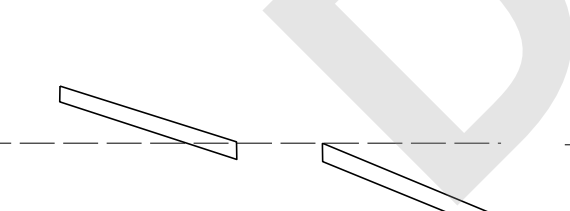
SECTION B-B
SUPERELEVATION SECTION LT. & RT.



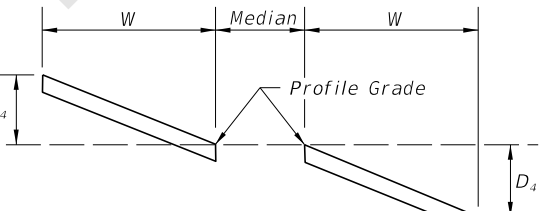
SECTION C-C
SUPERELEVATION SECTION LT.
PLANE INCLINED SECTION RT.



SECTION D-D
PLANE INCLINED SECTION LT.
SUPERELEVATION TRANSITION RT.

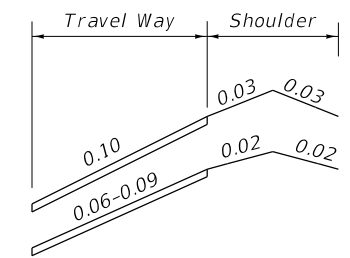
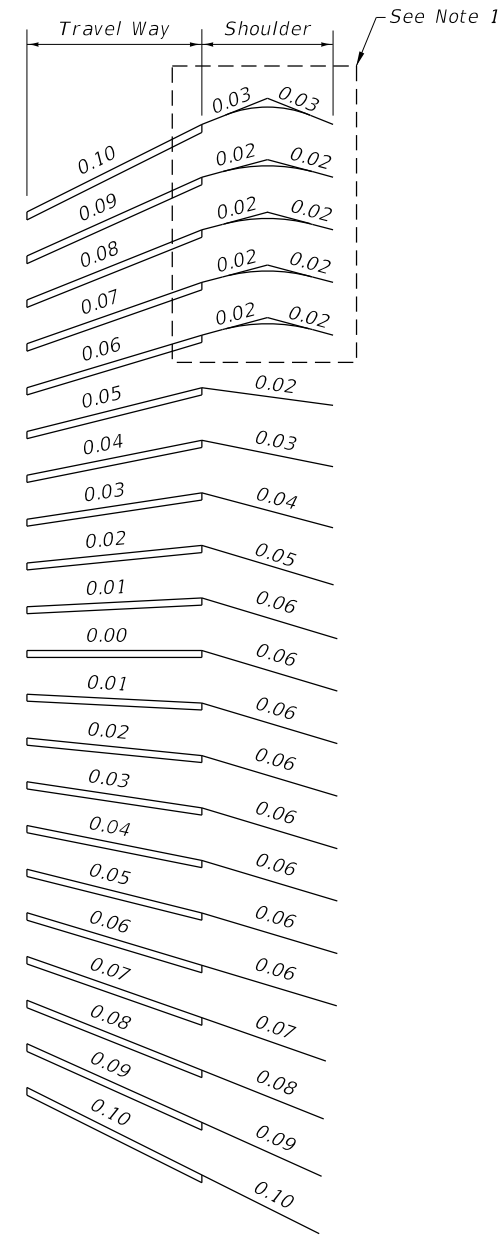


SECTION E-E
SUPERELEVATION TRANSITION LT.
FULL SUPERELEVATION RT.



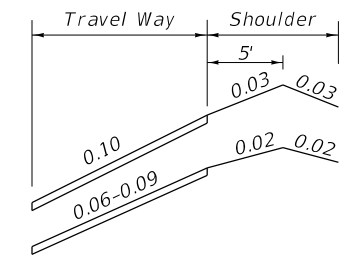
SECTION F-F
FULL SUPERELEVATION LT. & RT.

8-LANE PAVEMENT WITH ONE LANE SLOPED TO MEDIAN

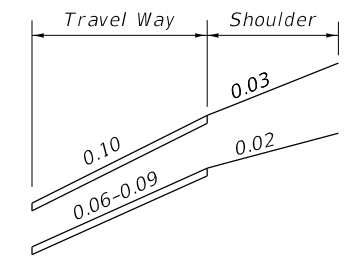


a) 12' AND 10' FULL WIDTH SHOULDERS WITH 5' OR LESS PAVED WIDTHS,

b) 8' FULL WIDTH SHOULDERS WITH 4' OR LESS PAVED WIDTHS,



8' FULL WIDTH SHOULDER WITH 5' PAVED WIDTH



6' FULL WIDTH SHOULDER WITH 5' OR LESS PAVED WIDTH

SPECIAL SHOULDER BREAK OVER DETAILS

SLOPES OF TRAVELED WAY AND ABUTTING SHOULDERS
SHOULDER SLOPES ON SUPERELEVATION SECTIONS

1. For shoulders with paved widths 5 feet or less see special shoulder break over details.
2. For Concrete pavement, the first 1'-0" of the outside shoulder is cast with the outside travel lane and will have the same cross slope as the outside lane. The shoulder break over will occur at the outside edge of the outside slab.

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LAST REVISION 11/01/18	DESCRIPTION:
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