

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: **000-511**
Sheet Number (s): All
Index Title: Superelevation-Low Speed Highways

Summary of the changes:

All: Changed Title, Subtitles, and renumbered.
Sheet 1: Deleted sheet; moved General Notes to Sheet 2.
Sheet 2: Added and Updated General Notes; Deleted all Call Outs for "CHARTED VALUES".
Sheet 3: New Sheet 2.

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

SUPERELEVATION RATES (e) FOR URBAN HIGHWAYS AND HIGH SPEED URBAN STREETS

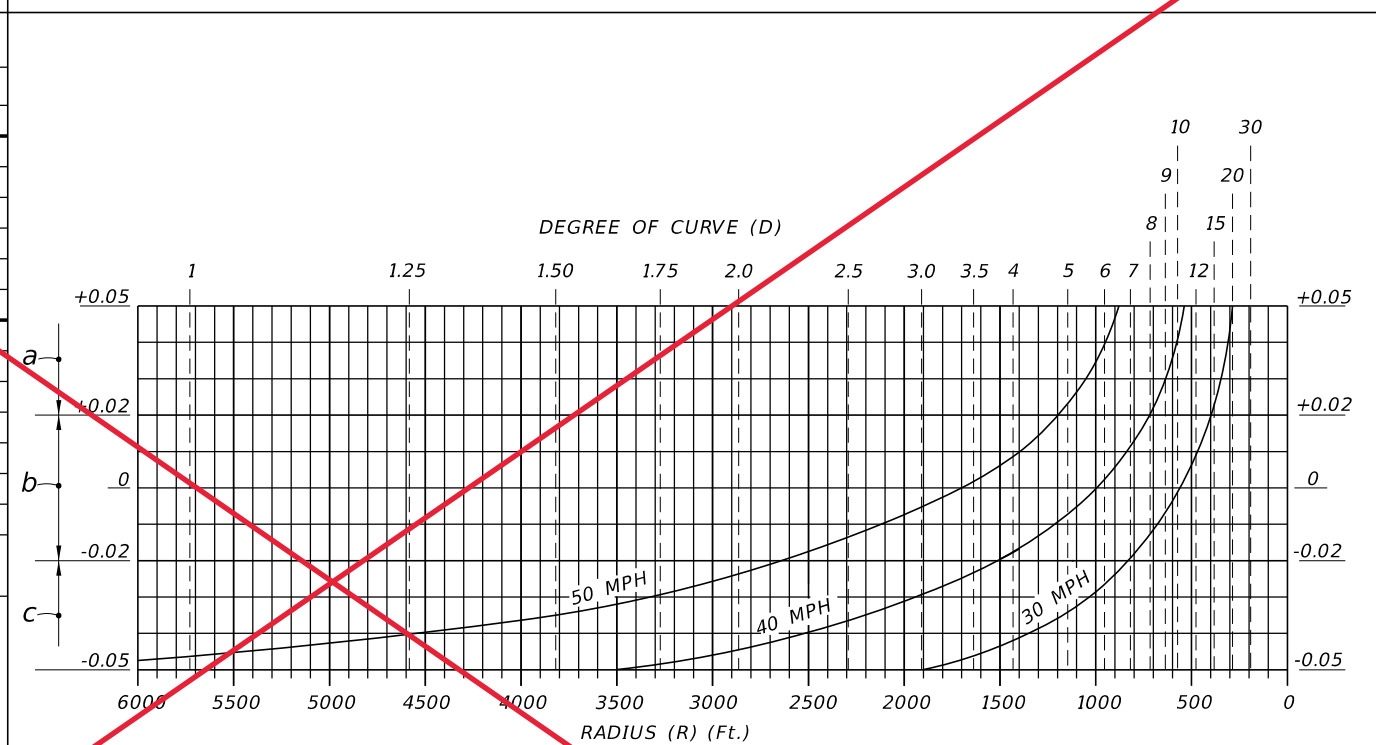
$e_{max.} = 0.05$

TABULATED VALUES

Degree Of Curve (D)	Radius (R) (Ft.)	Design Speed (mph)				
		30	35	40	45	50
2° 00'	2,865	NC	NC	NC	NC	NC
2° 15'	2,546					RC
2° 45'	2,083				NC	
3° 00'	1,910				RC	
3° 45'	1,528			NC		
4° 00'	1,432			RC		
4° 45'	1,206					RC
5° 00'	1,146		NC			0.023
5° 15'	1,091		RC			0.027
5° 30'	1,042					0.030
5° 45'	996					0.035
6° 00'	955				RC	0.040
6° 15'	917				0.022	0.045
6° 30'	881				0.024	0.050
6° 45'	849				0.027	Dmax.= 6° 30'
7° 00'	819	NC			0.030	
7° 15'	790	RC			0.033	
7° 30'	764				0.037	
7° 45'	739				0.041	
8° 00'	716			RC	0.045	
8° 15'	694			0.022	0.050	
8° 30'	674			0.025	Dmax.= 8° 15'	
8° 45'	655			0.027		
9° 00'	637			0.030		
9° 30'	603			0.034		
10° 00'	573			0.040		
10° 30'	546		RC	0.047		
11° 00'	521		0.023	Dmax.= 10° 45'		
11° 30'	498		0.026			
12° 00'	477		0.030			
13° 00'	441		0.036			
14° 00'	409	RC	0.045			
15° 00'	382	0.023	Dmax.= 14° 15'			
16° 00'	358	0.027				
17° 00'	337	0.032				
18° 00'	318	0.038				
19° 00'	302	0.043				
20° 00'	286	0.050				
		Dmax.= 20° 00'				

NC = Normal Crown
RC = Reverse Crown (+0.02 Superelevation)

CHARTED VALUES



- a: When the speed curves and the degree of curve or radius lines intersect above this line, the pavement is to be superelevated (positive slope) at the rates indicated at the lines intersecting points.
- b: When the speed curves and the degree of curve or radius lines intersect between these limits, the pavement is to be superelevated at the rate of 0.02 (positive slope).
- c: When the speed curves and the degree of curve or radius lines intersect below this line. The pavement is to have normal crown (typically 0.02 and 0.03 downward slopes).

GENERAL NOTES

1. ~~Maximum rate of superelevation for urban highways and high speed urban streets shall be 0.05.~~
2. Superelevation shall be obtained by rotating the plane successively about the break points of the section until the plane has attained a slope equal to that required by the chart. Should the rotation traverse the entire section and further superelevation be required, the remaining rotation of the plane shall be about the low edge of the inside travel lane. Crown is to be removed in the auxiliary lane to the outside of the curve only when the adjoining travel lanes require positive superelevation. **Plans**
3. When positive superelevation is required, the slope of the gutter on the high side shall be a continuation of the slope of the superelevated pavement.
4. In construction, short vertical curves shall be placed at all angular profile breaks within the limits of the superelevation transition.
5. The variable superelevation transition length "L" shall have a minimum value of 50 feet for design speeds under 40 MPH and 75 feet for design speeds of 40 MPH or greater.
6. Roadway sections having lane arrangements different from those shown, but composed of a series of planes, shall be superelevated in a similar manner.
7. ~~For superelevation of lower speed urban streets, see the FDOT 'Manual Of Uniform Minimum Standards For Design, Construction And Maintenance For Streets And Highways'. For superelevation of curves on rural highways, urban freeways and high speed urban highways, see Index 000-510.~~

Moved to Sheet 2

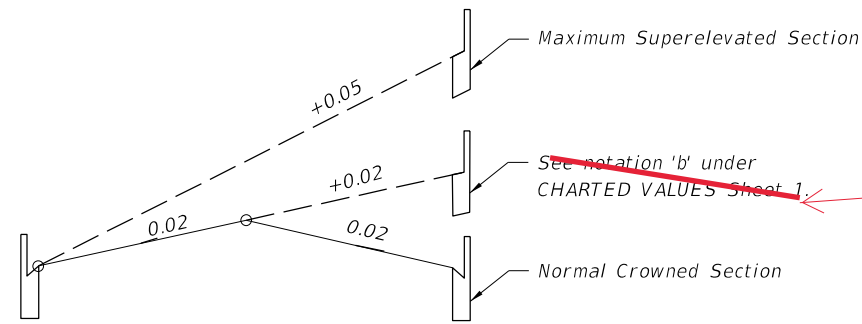
$e_{max.} = 0.05$

SUPERELEVATION FOR URBAN HIGHWAYS AND HIGH SPEED URBAN STREETS

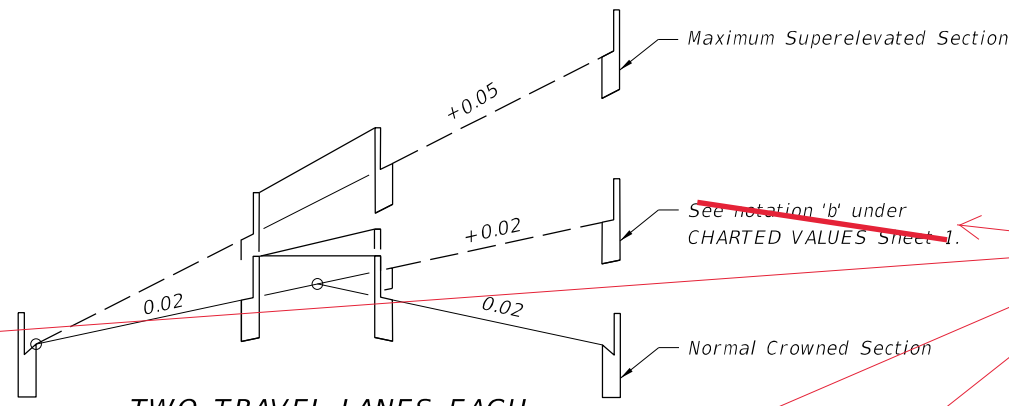
DELETED SHEET

10/23/2017 3:36:28 PM

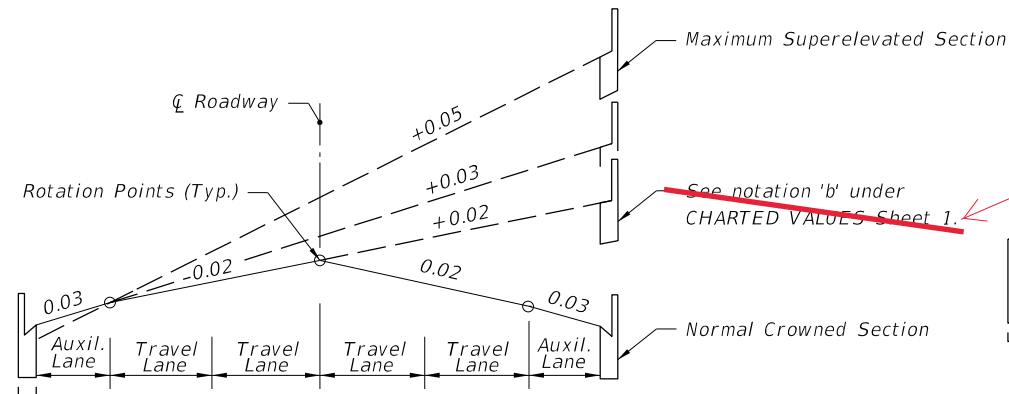
TWO TRAVEL LANES EACH DIRECTION



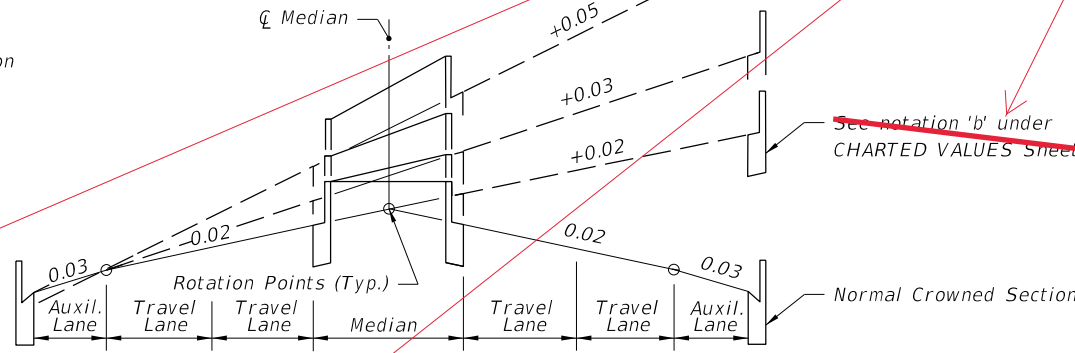
TWO TRAVEL LANES EACH DIRECTION WITH MEDIAN



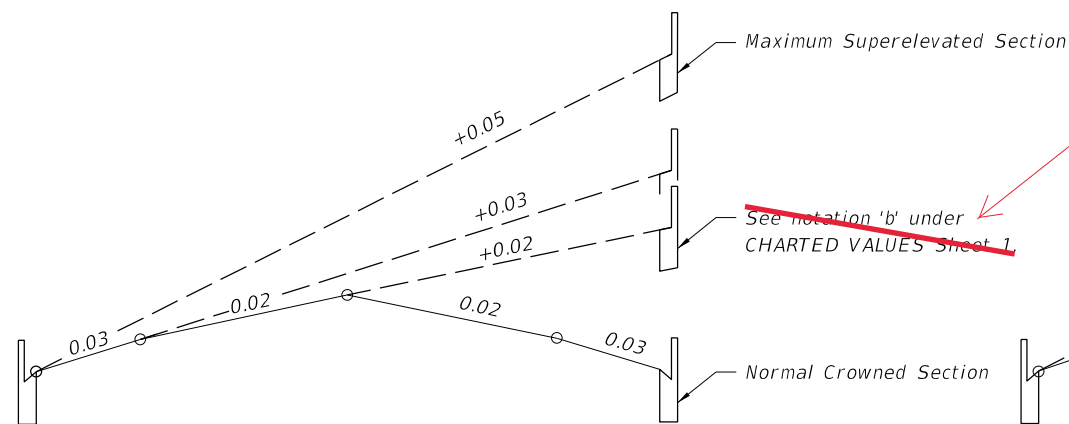
Deleted



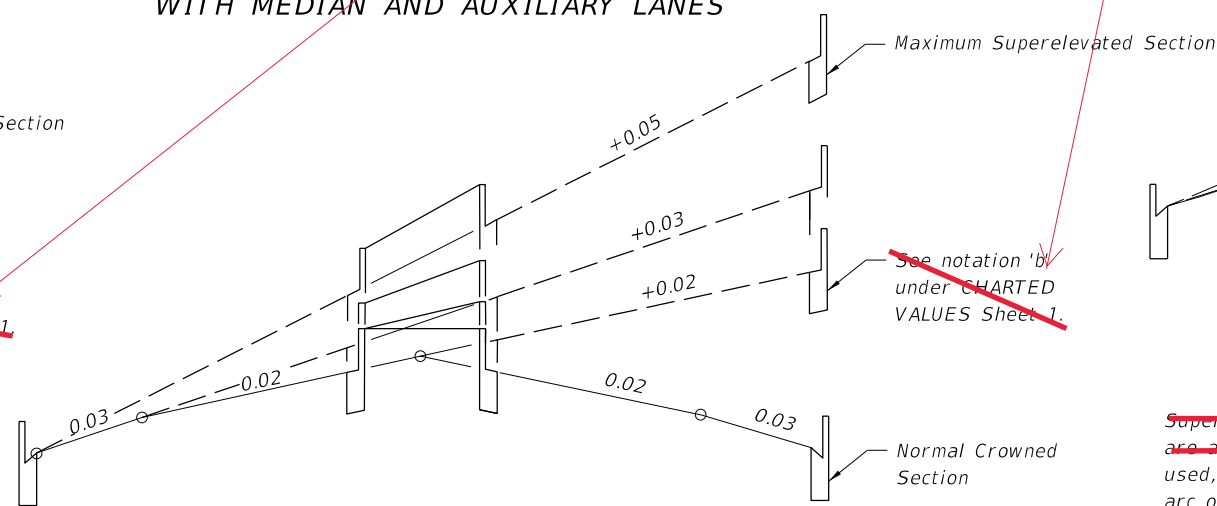
TWO TRAVEL LANES EACH DIRECTION WITH AUXILIARY LANES



TWO TRAVEL LANES EACH DIRECTION WITH MEDIAN AND AUXILIARY LANES

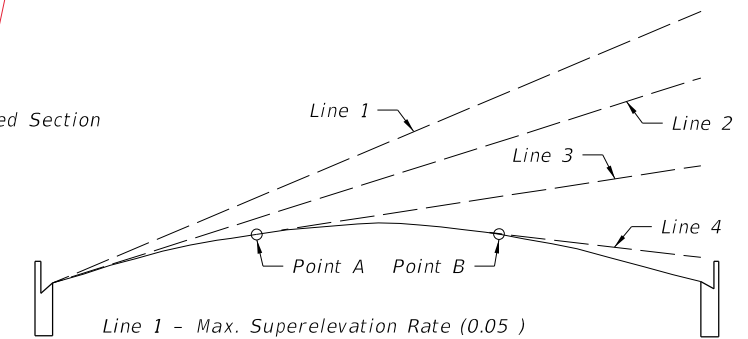


UNDIVIDED FACILITIES



THREE TRAVEL LANES EACH DIRECTION WITH MEDIAN

DIVIDED FACILITIES



- Line 1 - Max. Superelevation Rate (0.05)
- Line 2 - Slope Of Parabola At Inside Edge Of Pavt.
- Line 3 - Positive Superelevation Rate Less Than Max. Slope Of Parabola.
- Line 4 - Adverse Superelevation.

~~Superelevation rates obtained from the chart or table on Sheet 1 are also applicable to a parabolic crown section.~~ When this section is used, superelevation is established by rotating a tangent about the arc of the parabolic crown until the desired slope is attained (points A & B on sketch). The normal parabolic crown will be maintained outside the limits of the plane thus formed.

SUPERELEVATION TRANSITION SECTIONS
~~FOR URBAN HIGHWAYS AND HIGH SPEED URBAN STREETS~~
LOW SPEED HIGHWAYS

TRANSITIONS

1 of 2

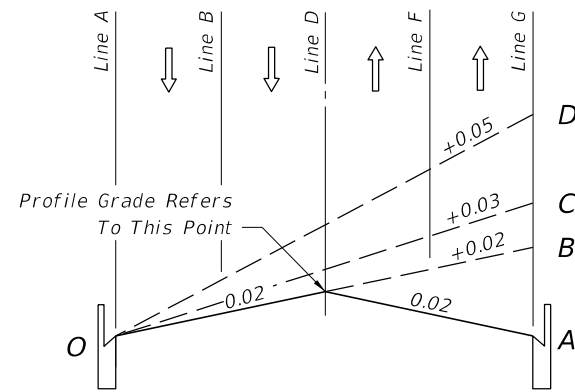
10/23/2017 3:36:29 PM

LAST REVISION 11/01/17	DESCRIPTION: 11/01/18
---------------------------	--------------------------

	FY 2018-19 STANDARD PLANS
--	------------------------------

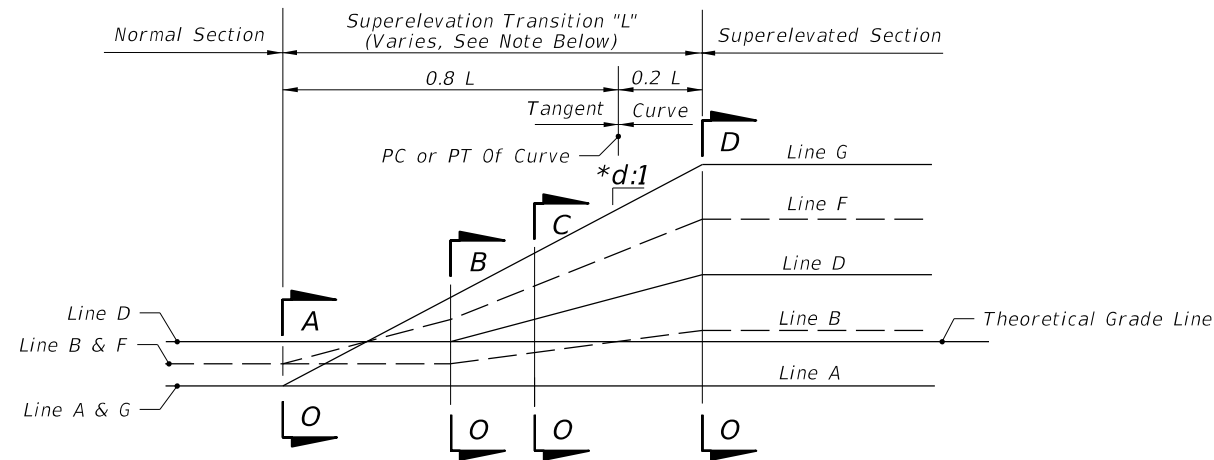
SUPERELEVATION - LOW SPEED HIGHWAYS

INDEX 000-511	SHEET 2 of 3
------------------	----------------------------



SECTION 0-A to 0-D

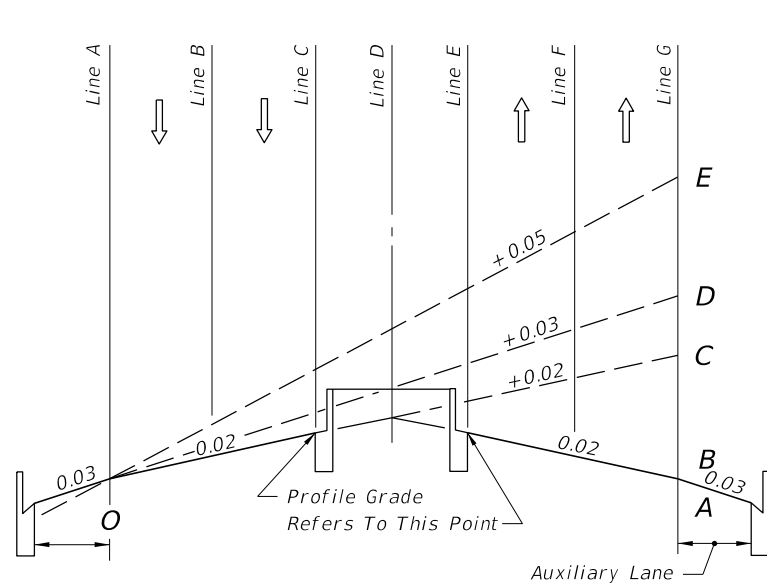
TWO LANES EACH DIRECTION



PROFILE

LINE	DESCRIPTION
A	Inside Travel Lane
B	Inside Lane Line
C	Inside Median Edge Pavement
D	℄ Construction
E	Outside Median Edge Pavement
F	Outside Lane Line
G	Outside Travel Lane

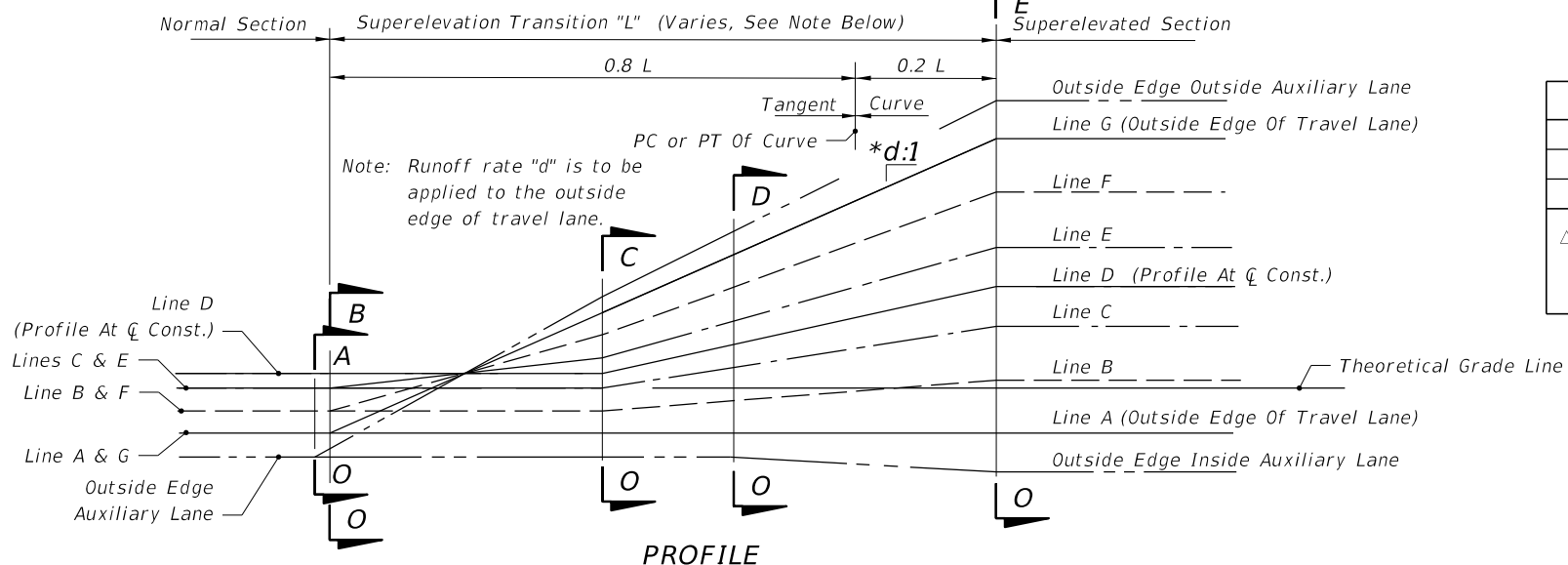
Inside And Outside Are Relative To Curve Center



SECTION 0-A to 0-E

TWO LANES EACH DIRECTION WITH MEDIAN AND AUXILIARY LANE

Note:
The sections and profiles shown are examples of superelevation transitions.
Similar schemes should be used for roadways having other sections.



PROFILE

*d (Slope Ratio)	
30 MPH	1: 100
40 MPH	1: 125
45-50 MPH Δ	1: 150

Δ 1: 125 May Be Used For 45 MPH Under Restricted Conditions.

**EXAMPLE SUPERELEVATION SECTIONS AND PROFILES
FOR ~~URBAN HIGHWAYS AND HIGH SPEED URBAN STREETS~~
LOW SPEED HIGHWAYS**

2 of 2

TRANSITIONS

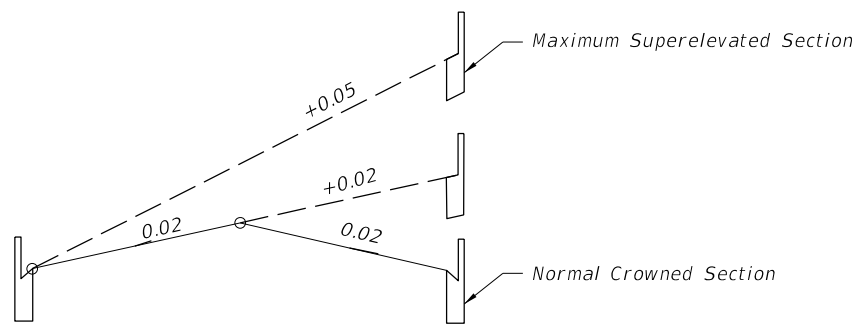
10/23/2017 3:36:29 PM

LAST REVISION	DESCRIPTION:
11/01/17	

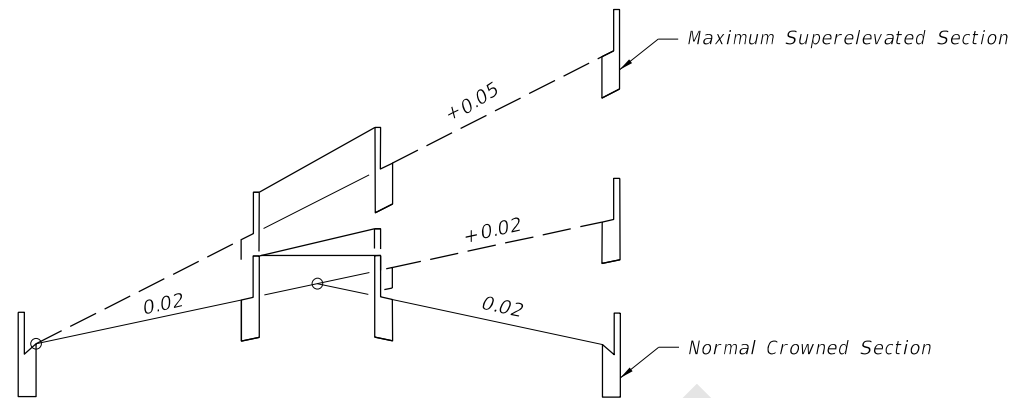
FDOT
FY 2018-19
STANDARD PLANS

SUPERELEVATION - LOW SPEED HIGHWAYS

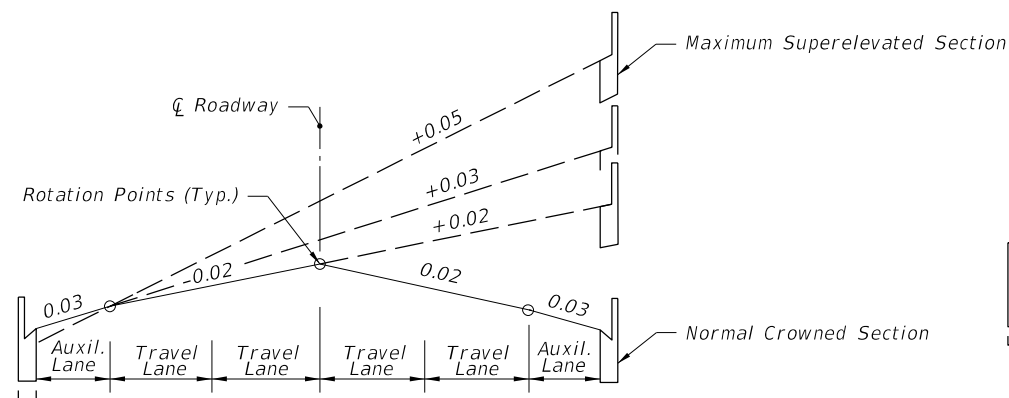
INDEX	SHEET
000-511	3 of 3



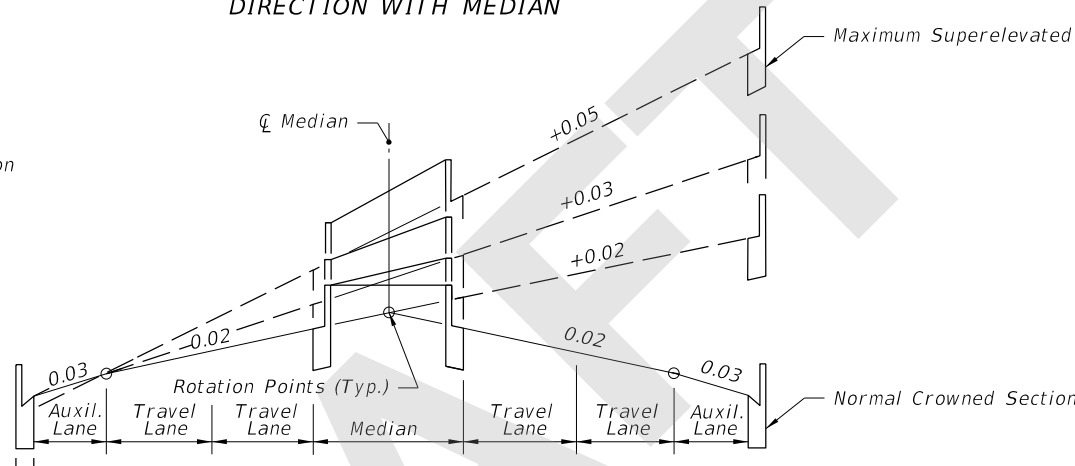
TWO TRAVEL LANES EACH DIRECTION



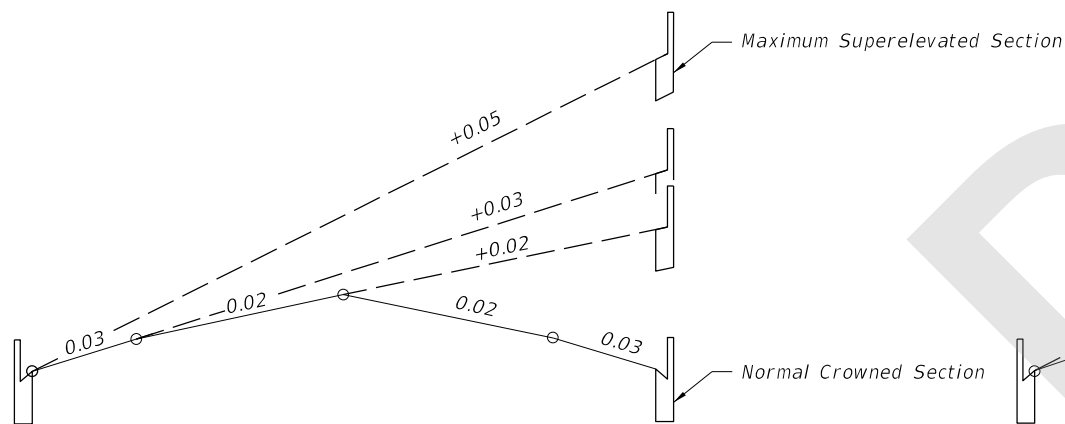
TWO TRAVEL LANES EACH DIRECTION WITH MEDIAN



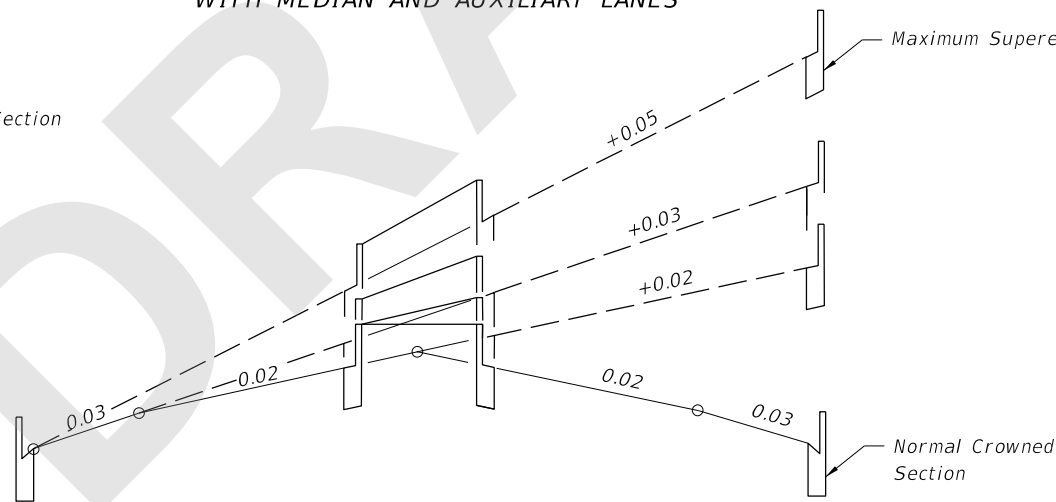
TWO TRAVEL LANES EACH DIRECTION WITH AUXILIARY LANES



TWO TRAVEL LANES EACH DIRECTION WITH MEDIAN AND AUXILIARY LANES

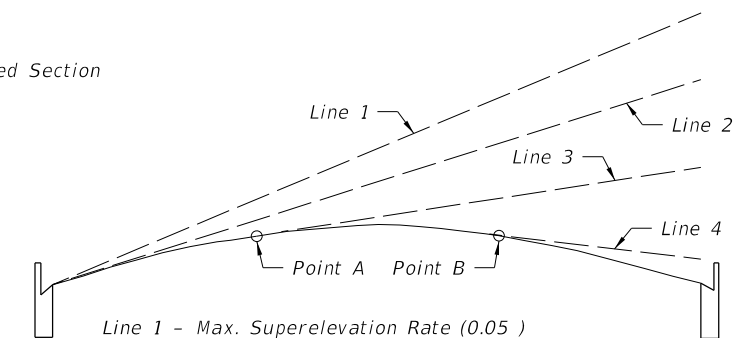


UNDIVIDED FACILITIES



THREE TRAVEL LANES EACH DIRECTION WITH MEDIAN

DIVIDED FACILITIES



Line 1 - Max. Superelevation Rate (0.05)
 Line 2 - Slope Of Parabola At Inside Edge Of Pavt.
 Line 3 - Positive Superelevation Rate Less Than Max. Slope Of Parabola.
 Line 4 - Adverse Superelevation.

When this section is used, superelevation is established by rotating a tangent about the arc of the parabolic crown until the desired slope is attained (points A & B on sketch). The normal parabolic crown will be maintained outside the limits of the plane thus formed.

PARABOLIC SECTION

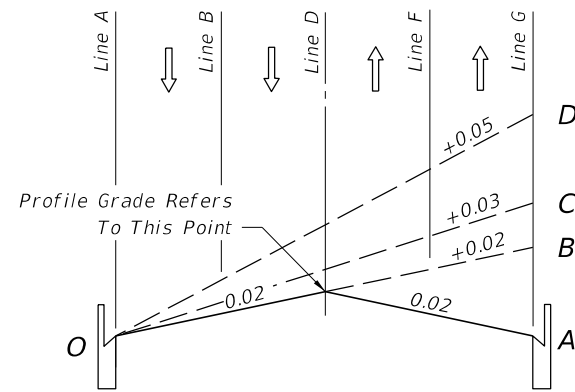
GENERAL NOTES:

1. Obtain Superelevation by rotating the plane successively about the break points of the section until the plane has attained a slope equal to that required by the Plans. Should the rotation traverse the entire section and further superelevation be required, the remaining rotation of the plane shall be about the low edge of the inside travel lane. Crown is to be removed in the auxiliary lane to the outside of the curve only when the adjoining travel lanes require positive superelevation.
2. When positive superelevation is required, continue the slope of the pavement across the gutter on the high side.
3. Place short vertical curves at all angular profile breaks within the limits of the superelevation transition.
4. The variable superelevation transition length "L" has a minimum value of 50 feet for design speeds under 40 MPH and 75 feet for design speeds of 40 MPH or greater.
5. Roadway sections having lane arrangements different from those shown, but composed of a series of planes, are superelevation in a similar manner.

SUPERELEVATION TRANSITION SECTIONS FOR LOW SPEED HIGHWAYS

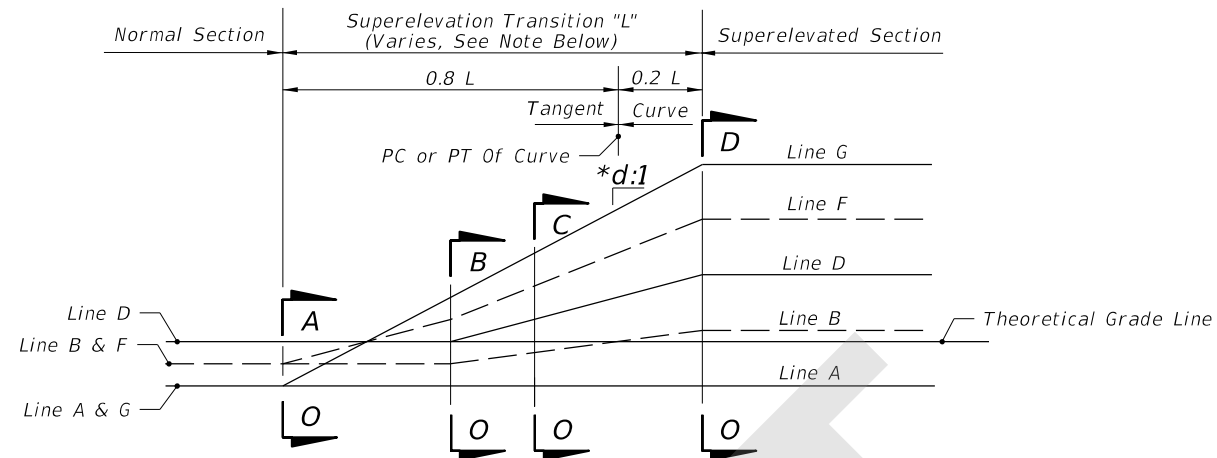
8/6/2018 2:56:13 PM

LAST REVISION 11/01/18	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	SUPERELEVATION TRANSITIONS - LOW SPEED HIGHWAYS	INDEX 000-511	SHEET 1 of 2
---------------------------	--------------	------	------------------------------	--	------------------	-----------------



SECTION 0-A to 0-D

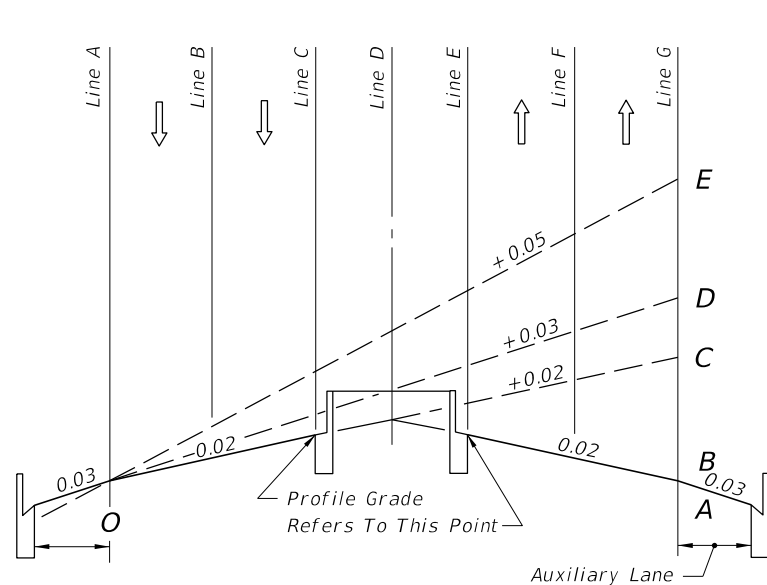
TWO LANES EACH DIRECTION



PROFILE

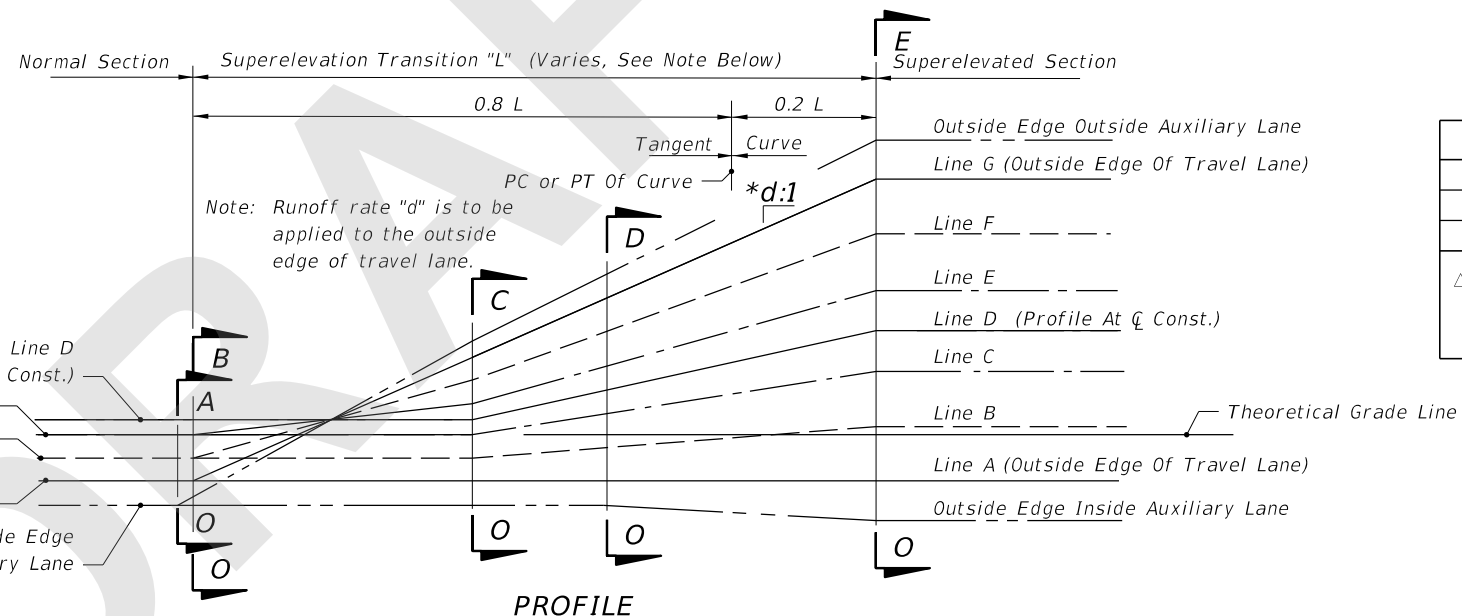
LINE	DESCRIPTION
A	Inside Travel Lane
B	Inside Lane Line
C	Inside Median Edge Pavement
D	℄ Construction
E	Outside Median Edge Pavement
F	Outside Lane Line
G	Outside Travel Lane

Inside And Outside Are Relative To Curve Center



SECTION 0-A to 0-E

TWO LANES EACH DIRECTION WITH MEDIAN AND AUXILIARY LANE



PROFILE

*d (Slope Ratio)	
30 MPH	1: 100
40 MPH	1: 125
45-50 MPH Δ	1: 150

Δ 1: 125 May Be Used For 45 MPH Under Restricted Conditions.

Note:
The sections and profiles shown are examples of superelevation transitions.
Similar schemes should be used for roadways having other sections.

EXAMPLE SUPERELEVATION SECTIONS AND PROFILES FOR LOW SPEED HIGHWAYS

8/6/2018 2:56:13 PM

LAST REVISION 11/01/18	DESCRIPTION:
---------------------------	--------------



FY 2019-20
STANDARD PLANS

SUPERELEVATION TRANSITIONS -
LOW SPEED HIGHWAYS

INDEX
000-511

SHEET
2 of 2