REV. 11-1-95: CHANGED TO METRIC.

STANDARD RATES OF SUPERELEVATION AND MINIMUM LENGTH OF RUNOFF FOR URBAN HIGHWAYS

E MAX=4.0 % DESIRABLE

R (m)	V_d =30 km/h				V_d =40 km/h				V_d =50 km/h				V_d =60 km/h				V_d =70 km/h				V_d =80 km/h				V_d =90 km/h				V_d=100 km/h				V_d=110 km/h				V_d=120 km/h			
	e %	L(m)			e %	L(m)			e %	L(m)			e %	L(m)			e %	L(m)			e %	L(m)			e %	L(m)			e %	L(m)			e %	L(m)			e %	L(m)		
		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN
7000	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0
5000	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0
3000	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	60	60	64	RC	65	65	69	2.1	70	70	74				
2500	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	55	55	60	RC	60	60	64	2.1	65	65	70	2.4	70	70	79
2000	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	50	50	58	RC	55	55	60	2.2	60	60	67	2.4	65	65	75	2.8	70	70	86
1500	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	40	40	52	RC	50	50	58	2.3	55	55	65	2.6	60	60	74	2.9	65	65	84	3.3	70	72	95
1400	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	40	40	52	2.1	50	50	59	2.4	55	55	67	2.7	60	60	75	3.0	65	65	86	3.5	70	74	99
1300	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	40	40	52	2.2	50	50	60	2.5	55	55	68	2.8	60	60	77	3.1	65	66	87	3.6	70	76	101
1200	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	35	36	48	RC	40	40	52	2.3	50	50	62	2.6	55	55	70	2.9	60	60	78	3.3	65	68	91	3.7	70	77	103
1000	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	35	36	48	2.2	40	41	55	2.5	50	50	65	2.8	55	55	73	3.2	60	62	83	3.6	65	72	96	3.9	70	80	106
900	NC	0	0	0	NC	0	0	0	RC	30	32	43	RC	35	36	48	2.4	40	43	58	2.7	50	51	68	3.0	55	57	76	3.4	60	65	86	3.7	65	73	98	4.0	70	81	108
800	NC	0	0	0	NC	0	0	0	RC	30	32	43	2.1	35	37	49	2.5	40	44	59	2.8	50	52	69	3.2	55	59	79	3.5	60	66	88	3.9	65	76	101	R min=870			
700	NC	0	0	0	NC	0	0	0	RC	30	32	43	2.3	35	39	52	2.7	40	46	62	3.0	50	54	72	3.4	55	61	82	3.7	60	68	91	4.0	65	77	103				
600	NC	0	0	0	RC	25	31	41	2.1	30	33	44	2.5	35	41	54	2.9	40	48	64	3.2	50	56	75	3.6	55	64	85	3.9	60	71	94	R min=635							
500	NC	0	0	0	RC	25	31	41	2.3	30	35	46	2.7	35	42	57	3.1	40	50	67	3.5	50	59	79	3.8	55	66	88	4.0	60	72	96								
400	NC	0	0	0	2.1	25	32	42	2.5	30	36	49	2.9	35	44	59	3.4	40	53	71	3.7	50	62	82	4.0	55	68	91	R min=490											
300	RC	20	29	38	2.4	25	34	45	2.8	30	39	52	3.3	35	48	64	3.8	40	57	76	4.0	50	65	86	R min=375															
250	RC	20	29	38	2.6	25	36	47	3.0	30	41	54	3.6	35	51	67	3.9	40	58	77	R min=280																			
200	2.3	21	31	41	2.8	25	37	49	3.3	30	43	57	3.8	35	52	70	R min=215																							
175	2.4	21	32	42	2.9	25	38	50	3.5	30	45	59	3.9	35	53	71																								
150	2.5	22	32	43	3.1	26	39	53	3.7	31	46	62	4.0	36	54	72																								
140	2.6	22	33	44	3.2	27	40	54	3.8	31	47	63	R min=150																											
130	2.6	22	33	44	3.3	27	41	55	3.8	31	47	63																												
120	2.7	23	34	45	3.4	28	42	56	3.9	32	48	64																												
110	2.8	23	34	46	3.5	28	42	57	4.0	32	49	65																												
100	2.9	23	35	47	3.6	29	43	58	4.0	32	49	65																												
90	3.0	24	36	48	3.7	29	44	59	R min=100																															
80	3.2	25	37	50	3.8	30	45	60																																
70	3.3	25	38	51	3.9	30	46	61																																
60	3.5	26	40	53	4.0	31	46	62																																
50	3.7	27	41	55	R min =60																																			
40	3.9	28	42	56																																				
30	R min =35																																							

E MAX=6.0 % ALLOWABLE

R (m)	V_d =30 km/h				V_d =40 km/h				V_d =50 km/h				V_d =60 km/h				V_d =70 km/h				V_d =80 km/h				V_d =90 km/h				V_d=100 km/h				V_d=110 km/h				V_d=120 km/h			
	e %	L(m)			e %	L(m)			e %	L(m)			e %	L(m)			e %	L(m)			e %	L(m)			e %	L(m)			e %	L(m)			e %	L(m)			e %	L(m)		
		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN		2-LN	4-LN	6-LN
7000	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0
5000	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0
3000	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	60	60	64	RC	65	65	69
2500	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	55	55	60	RC	60	60	64	2.3	65	65	74
2000	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	50	50	58	2.1	55	55	62	2.5	60	60	72	2.8	65	65	82
1500	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	40	40	52	2.2	50	50	60	2.7	55	55	71	3.1	60	61	82	3.6	65	72	96
1400	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	40	40	52	2.4	50	50	63	2.8	55	55	73	3.3	60	64	85	3.8	65	75	99
1300	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	35	36	48	2.1	40	40	54	2.5	50	50	65	3.0	55	57	76	3.5	60	66	88	4.0	65	77	103
1200	NC	0	0	0	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	35	36	48	2.2	40	41	55	2.7	50	51	68	3.2	55	59	79	3.7	60	68	91	4.2	65	80	106
1000	NC	0	0	0	NC	0	0	0	NC	0	0	0	RC	30	32	43	2.1	35	37	49	2.6	40	45	60	3.1	50	55	73	3.6	55	64	85	4.2	60	74	99	4.8	65	87	117
900	NC	0	0	0	NC	0	0	0	RC	30	32	43	RC	30	32	43	2.3	35	39	52	2.8	40	47	63	3.4	50	58	78	3.9	55	67	89	4.5	60	78	104	5.1	65	91	122
800	NC	0	0	0	NC	0	0	0	RC	30	32	43	RC	30	32	43	2.5	35	41	54	3.1	40	50	67	3.6	50	60	81	4.2	55	70	94	4.9	60	83	110	5.4	65	95	127
700	NC	0	0	0	RC	25	31	41	2.1	30	33	44	2.8	35	43	58	3.4	40	53	71	4.0	50	65	86	4.6	55	75	100	5.2	60	86	115	5.7	66	99	132	R min=755			
600	NC	0	0	0	RC	25	31	41	2.4	30	36	48	3.1	35	46	61	3.8	40	57	76	4.3	50	68	91	5.0	55	79	106	5.6	61	91	121	6.0	69	103	137				
500	NC	0	0	0	2.1	25	32	42	2.8	30	39	52	3.5	35	50	66	4.2	41	61	81	4.8	50	73	98	5.4	56	84	112	5.9	63	95	126	R min=560							
400	RC	20	29	38	2.5	25	35	46	3.3	30	43	57	4.0	36	54	72	4.7	44	66	88	5.3	53	79	105	5.9	60	90	119	R min=435											
300	RC	20	29	38	3.1	26	39	53	3.9	32	48	64	4.6	40	60	79	5.4	48	73	97	5.9	57	85	114	R min=335															
250	2.3	21	31	41	3.5	28	42	57	4.2	33	50	67	5.0	42	63	84	5.7	50	76	101	6.0	58	86	115																
200	2.8	23	34	46	3.9	30	46	61	4.7	36	54	72	5.5	45	68	90	6.0	52	79	105	R min=250																			
175	3.0	24	36	48	4.1	31	47	63	5.0	38	57	76	5.8	47	70	94	R min=195																							
150	3.3	25	38	51	4.4	33	49	66	5.3	39	59	79	5.9	47	71	95																								
140	3.5	26	40	53	4.5	33	50	67	5.4	40	60	80	6.0	48	72	96																								
130	3.6	27	40	54	4.6	34	51	68	5.6	41	62	82	R min=135																											
120	3.8	28	42	56	4.8	35	53	70	5.7	42	62	83																												
110	3.9	28	42	56	5.0	36	54	72	5.8	42	63	84																												
100	4.1	29	44	58	5.2	37	56	74	5.9	43	64	85																												
90	4.2	30	45	59	5.4	38	57	76	6.0	43	65	86																												
80	4.5	31	47	62	5.6	39	59	78	R min =90																															
70	4.7	32	48	64	5.8	40	60	80																																
60	5.0	34	50	67	6.0	41	62	82																																
50	5.4	35	53	71	R min =55																																			
40	5.8	37	56	75																																				
30	6.0	38	57	77																																				
	R min =30																																							

LEGEND

R	RADIUS OF CURVE
V	ASSUMED DESIGN SPEED
e	RATE OF SUPERELEVATION
L	MINIMUM LENGTH OF RUNOFF
NC	NORMAL CROWN
RC	REMOVE ADVERSE CROWN, SUPERELEVATE AT NORMAL CROWN SLOPE

GENERAL NOTES

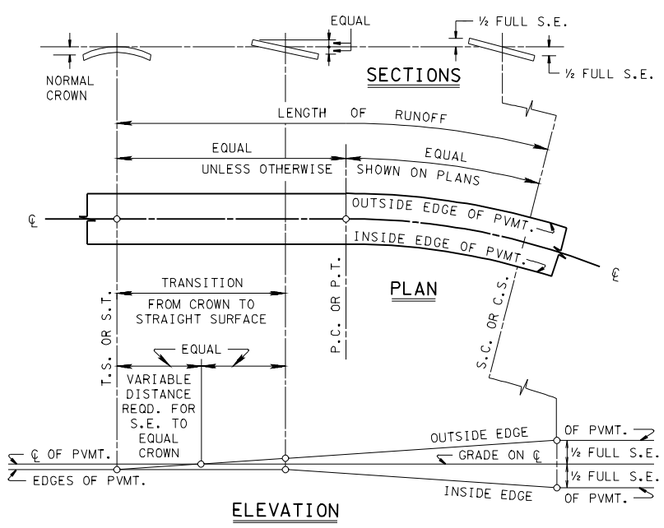
Ⓐ ALL HORIZONTAL CURVES SHALL BE SUPERELEVATED IN ACCORDANCE WITH THIS TABULATION, UNLESS OTHERWISE SHOWN ON THE PLANS.

Ⓑ SPIRALS ARE NOT REQUIRED BELOW 80 km/h AND ABOVE THE HEAVY LINE FOR HIGHER SPEEDS.

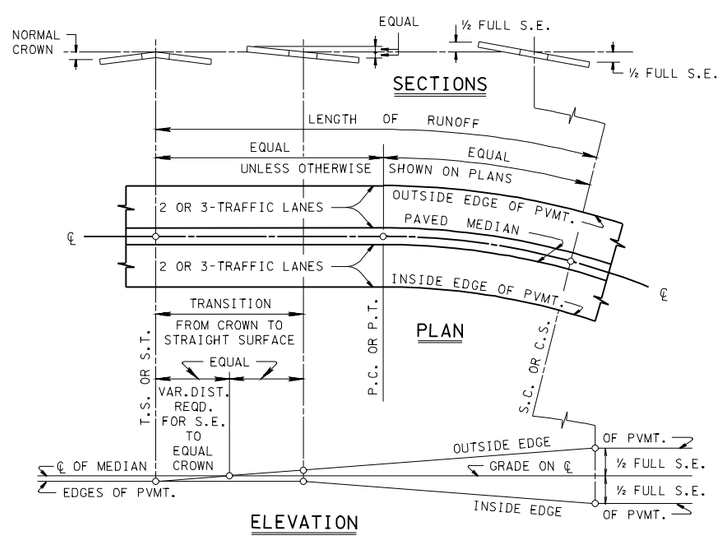
Ⓒ LENGTHS ROUNDED IN MULTIPLES OF 5 m OR 10 m SIMPLER CALCULATIONS.

Ⓓ ALIGNMENT DESIGNS SHOULD BE SO ARRANGED AS TO AVOID SUPERELEVATION TRANSITIONS ON BRIDGE DECKS, IN ORDER TO PREVENT PONDING IN THE AREAS OF ZERO SUPERELEVATION IN THE CROWN CHANGE ZONE.

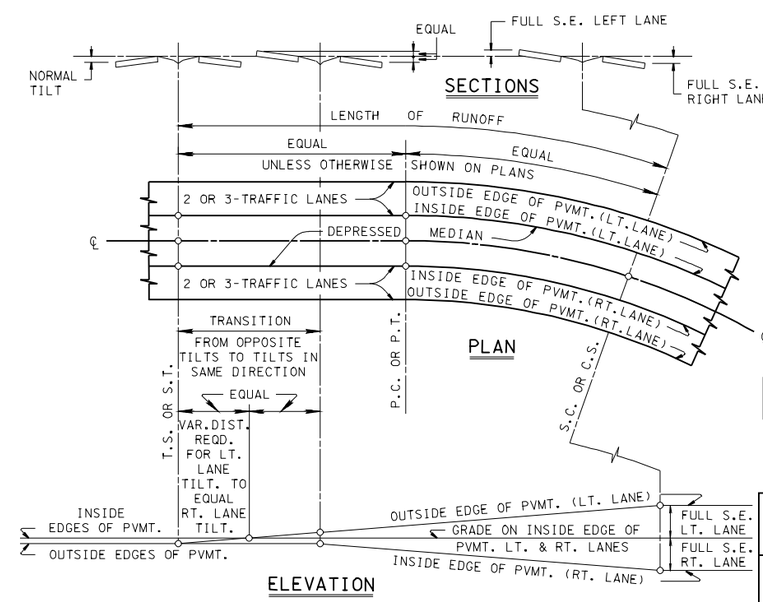
Ⓔ USE RURAL SUPERELEVATION RATES ON ALL URBAN FREEWAYS AND EXPRESSWAYS EXCEPT VIADUCTS.



TYPICAL TRANSITION IN SUPERELEVATION
2-LANE HIGHWAY



TYPICAL TRANSITION IN SUPERELEVATION
4 OR 6-LANE HIGHWAY WITH PAVED MEDIAN



TYPICAL TRANSITION IN SUPERELEVATION
4 OR 6-LANE HIGHWAY WITH DEPRESSED MEDIAN

TENNESSEE METRIC D.O.T.

ALL UNITS ARE IN METERS UNLESS NOTED OTHERWISE.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

URBAN SUPERELEVATION DETAILS

11-1-95 | RDM-SE-2