

SUPERELEVATION RATE TABLES

DEGREE OF CURVE	e max = 0.06																	
	LOW SPEED									HIGH SPEED								
	V=30		V=35		V=40		V=45		V=50		V=55		V=60		V=65		V=70	
	D _{MAX} =21°00'		D _{MAX} =15°00'		D _{MAX} =11°15'		D _{MAX} =8°45'		D _{MAX} =6°45'		D _{MAX} =5°15'		D _{MAX} =4°15'		D _{MAX} =3°30'		D _{MAX} =2°45'	
	S	L2	S	L2	S	L2	S	L2	S	L2	S	L2	S	L2	S	L2	S	L2
	f/f	ft	f/f	ft	f/f	ft	f/f	ft	f/f	ft	f/f	ft	f/f	ft	f/f	ft	f/f	ft
0° 15'	NC	0	NC	0	NC	0	NC	0	NC	0	NC	0	NC	0	NC	0	NC	0
0° 30'	NC	0	NC	0	NC	0	NC	0	NC	0	NC	0	NC	0	RC	59*	RC	60*
0° 45'	NC	0	NC	0	NC	0	NC	0	NC	0	RC	52*	RC	56*	.024	71*	.026	78*
1° 00'	NC	0	NC	0	NC	0	RC	46*	RC	48*	.023	59*	.027	72*	.030	88*	.033	99*
1° 15'	NC	0	NC	0	RC	42*	RC	46*	.024	58*	.028	72*	.032	86*	.036	106*	.040	120*
1° 30'	NC	0	RC	40*	RC	42*	.024	55*	.028	68*	.032	82*	.037	99*	.041	121*	.046	138*
1° 45'	NC	0	RC	40*	.023	49*	.027	61*	.032	77*	.036	93*	.041	110*	.046	135*	.051	153*
2° 00'	RC	36*	.021	42*	.025	53*	.030	68*	.035	84*	.040	103*	.045	120*	.050	147*	.055	165*
2° 15'	RC	36*	.023	45*	.028	59*	.033	75*	.038	92*	.043	110*	.048	128*	.053	156*	.057	171*
2° 30'	RC	36*	.025	49*	.030	63*	.035	79*	.040	96*	.045	116*	.051	136*	.056	164*	.059	177*
2° 45'	.022	40*	.027	53*	.032	68*	.038	86*	.042	101*	.048	123*	.053	142*	.058	170*	.060	180*
3° 00'	.023	42*	.029	57*	.034	72*	.040	91*	.045	108*	.050	128*	.055	147*	.059	173*		
3° 15'	.025	45*	.030	59*	.036	76*	.041	93*	.046	111*	.052	133*	.057	152*	.060	176*		
3° 30'	.026	47*	.032	63*	.038	80*	.043	98*	.048	116*	.054	139*	.058	155*				
3° 45'	.028	51*	.034	67*	.039	82*	.045	102*	.050	120*	.055	141*	.059	158*				
4° 00'	.029	53*	.035	69*	.041	87*	.046	104*	.052	125*	.057	146*	.060	160*				
4° 30'	.031	56*	.038	75*	.043	91*	.049	111*	.054	130*	.059	151*						
5° 00'	.034	62*	.040	79*	.046	97*	.051	116*	.056	135*	.060	154*						
5° 30'	.036	65*	.042	83*	.048	101*	.054	122*	.058	140*								
6° 00'	.038	69*	.044	87*	.050	105*	.055	125*	.059	142*								
6° 30'	.039	71*	.045	89*	.052	110*	.057	129*	.060	144*								
7° 00'	.041	74*	.047	92*	.053	112*	.058	131*										
7° 30'	.042	76*	.049	96*	.055	116*	.059	134*										
8° 00'	.043	78*	.050	98*	.056	118*	.060	136*										
8° 30'	.045	81*	.051	100*	.057	120*	.060	136*										
9° 00'	.046	83*	.053	104*	.058	122*												
9° 30'	.047	85*	.054	106*	.059	124*												
10° 00'	.048	87*	.055	108*	.059	124*												
10° 30'	.049	89*	.056	110	.060	126												
11° 00'	.050	90*	.057	112	.060	126												
11° 30'	.051	92*	.058	114														
12° 00'	.052	94*	.058	114														
13° 00'	.054	98*	.059	116														
14° 00'	.055	99*	.060	118														
15° 00'	.056	101																
16° 00'	.058	105																
17° 00'	.058	105																
18° 00'	.059	107																
19° 00'	.060	108																
20° 00'	.060	108																

DEGREE OF CURVE	e max = 0.08																	
	LOW SPEED									HIGH SPEED								
	V=30		V=35		V=40		V=45		V=50		V=55		V=60		V=65		V=70	
	D _{MAX} =21°00'		D _{MAX} =16°30'		D _{MAX} =12°15'		D _{MAX} =9°30'		D _{MAX} =7°30'		D _{MAX} =6°00'		D _{MAX} =4°45'		D _{MAX} =3°45'		D _{MAX} =3°00'	
	S	L2	S	L2	S	L2	S	L2	S	L2	S	L2	S	L2	S	L2	S	L2
	f/f	ft	f/f	ft	f/f	ft	f/f	ft	f/f	ft	f/f	ft	f/f	ft	f/f	ft	f/f	ft
0° 15'	NC	0	NC	0	NC	0	NC	0	NC	0	NC	0	NC	0	NC	0	NC	0
0° 30'	NC	0	NC	0	NC	0	NC	0	NC	0	NC	0	RC	48*	RC	52*	.022	59*
0° 45'	NC	0	NC	0	NC	0	NC	0	NC	0	NC	0	RC	48*	RC	52*	.022	59*
1° 00'	NC	0	NC	0	NC	0	RC	46*	.021	51*	.025	64*	.029	78*	.032	94*	.036	108*
1° 15'	NC	0	NC	0	NC	0	RC	42*	.021	48*	.026	63*	.030	77*	.035	94*	.039	115*
1° 30'	NC	0	RC	40*	.021	45*	.025	57*	.030	72*	.035	90*	.041	110*	.046	135*	.051	153*
1° 45'	NC	0	RC	40*	.024	51*	.029	66*	.034	82*	.040	103*	.046	123*	.052	153*	.058	174*
2° 00'	RC	36*	.022	44*	.027	57*	.033	75*	.038	92*	.045	116*	.051	136*	.058	170*	.065	195*
2° 15'	RC	36*	.024	47*	.030	63*	.036	82*	.042	101*	.049	126*	.056	150*	.063	185*	.071	213
2° 30'	.021	38*	.027	53*	.033	70*	.039	88*	.046	111*	.053	136*	.061	163*	.068	200	.075	225
2° 45'	.023	42*	.029	57*	.035	74*	.042	95*	.049	118*	.057	146*	.065	174*	.072	211	.078	234
3° 00'	.025	45*	.031	61*	.038	80*	.045	102*	.053	128*	.060	154*	.068	182	.075	220		
3° 15'	.026	47*	.033	65*	.041	87*	.048	109*	.056	135*	.064	164	.071	190	.078	229		
3° 30'	.028	51*	.035	69*	.043	91*	.051	116*	.058	140*	.066	169	.074	198	.079	232		
3° 45'	.030	54*	.037	73*	.045	95*	.053	120*	.061	147*	.069	177	.076	203	.080	235		
4° 00'	.031	56*	.039	77*	.047	99*	.056	127*	.063	152	.071	182	.078	208				
4° 30'	.035	63*	.043	85*	.052	110*	.060	136*	.068	164	.075	192	.080	214				
5° 00'	.038	69*	.047	92*	.055	116*	.064	145	.071	171	.078	200						
5° 30'	.041	74*	.050	98*	.059	124*	.067	152	.074	178	.080	205						
6° 00'	.043	78*	.053	104*	.062	131	.070	158	.077	185								
6° 30'	.046	83*	.055	108*	.064	135	.073	165	.079	190								
7° 00'	.048	87*	.058	114	.067	141	.075	170	.080	192								
7° 30'	.050	90*	.060	118	.069	145	.077	174	.080	192								
8° 00'	.053	96*	.062	122	.071	150	.078	176										
8° 30'	.054	98*	.064	126	.073	154	.079	179										
9° 00'	.056	101	.066	130	.075	158	.080	181										
9° 30'	.058	105	.068	134	.076	160	.080	181										
10° 00'	.060	108	.070	137	.078	164												
10° 30'	.061	110	.071	139	.078	164												
11° 00'	.063	114	.073	143	.079	166												
11° 30'	.064	116	.074	145	.080	168												
12° 00'	.065	117	.075	147	.080	168												
13° 00'	.068	123	.077	151														
14° 00'	.070	126	.079	155														
15° 00'	.072	130	.079	155														
16° 00'	.074	134	.080	157														
17° 00'	.076	137																
18° 00'	.077	139																
19° 00'	.078	141																
20° 00'	.079	143																
21° 00'	.080	144																
22° 00'	.080	144																

FOR CHARTS : e max = 0.06 & e max = 0.08
 NC = NORMAL PAVEMENT CROSS SECTION AS SHOWN ON PLANS;
 NOM. 0.0156 (▲) TO 0.0208 (■) R/R CROSS SLOPE.
 RC = REMOVE ADVERSE SLOPE; SUPERELEVATE ROADWAY
 AT NORMAL CROSS SLOPE.
 (▲ = 3/16"; ■ = 1/4" PER FOOT SLOPE)

* L MIN = MINIMUM ALLOWABLE RUNOFF LENGTHS REGARDLESS OF ROADWAY WIDTH AND SUPERELEVATION:									
V (MPH)	30	35	40	45	50	55	60	65	70
FEET	100	110	125	137	150	160	175	190	200

GENERAL NOTES
 THE REQUIRED SUPERELEVATION RATES ARE CALCULATED BASED ON THE DISTRIBUTION OF SUPERELEVATION (e) AND SIDE FRICTION FACTOR (f) OVER A RANGE OF CURVES; METHOD NO. 5 AS DESCRIBED IN "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS", AASHTO 1990.

APPROVED BY ROADWAY ENGINEER *C. M. Sumboski* DATE 9/1/99