REVISED 3-03 REVISED 1-04

TC-5.01

NEW. 1/04

802.34

TRANSITION CURVES - RURAL

20 MPH DESIGN SPEED

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

DESIGN FACTORS FOR A DESIGN SPEED OF 20 MPH (RURAL) USING E= 8% MAX.

DESIGN VELOCITY =20		WIDTH= 18 FT			WIDTH=20 FT			WIDTH=22 FT			WIDTH=24 FT			WIDTH=48 FT			INTERCHANGE RAMPS WIDTH			
		DESIGN SOFTWARE EQUIVALENTS (NUMBER OF LANES AT LANE WIDTH)															16 FT		18 FT	
		1 @ 9'			1 @ 10'			1 @ 11'			1 @ 12'			2 @ 12'						
RADIUS(FT)	E(%)	CR	LS	w	CR	LS	w	CR	LS	w	CR	LS	w	CR	LS	w	CR	LS	CR	LS
1800	NC	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0	0
1213	2.0	59	59	2.0	28	28	0.0	30	30	0.0	33	33	0.0	49	49	0.0	39	39	41	41
1148	2.1	57	59	2.1	28	29	0.0	30	32	0.0	33	35	0.0	49	52	0.0	39	40	41	43
1090	2.2	54	59	2.1	28	30	0.0	30	33	0.0	33	36	0.0	49	54	0.0	39	42	41	45
1036	2.3	52	59	2.1	28	32	0.0	30	35	0.0	33	38	0.0	49	56	0.0	39	44	41	47
987	2.4	50	59	2.2	28	33	0.0	30	36	0.0	33	39	0.0	49	59	0.0	39	46	41	49
941	2.5	48	59	2.2	28	34	0.0	30	38	0.0	33	41	0.0	49	61	0.0	39	48	41	51
899	2.6	46	59	2.3	28	36	0.0	30	39	0.0	33	43	0.0	49	64	0.0	39	50	41	53
860	2.7	44	59	2.3	28	37	0.0	30	41	0.0	33	44	0.0	49	66	0.0	39	52	41	55
824	2.8	43	59	2.3	28	38	0.0	30	42	0.0	33	46	0.0	49	69	0.0	39	54	41	57
790	2.9	41	59	2.4	28	40	0.0	30	44	0.0	33	48	0.0	49	71	0.0	39	56	41	59
759	3.0	40	59	2.4	28	41	0.0	30	45	0.0	33	49	0.0	49	73	0.0	39	58	41	61
729	3.1	39	59	2.5	28	42	0.0	30	47	0.0	33	51	0.0	49	76	0.0	39	60	41	63
701	3.2	37	59	2.5	28	44	0.0	30	48	0.0	33	52	0.0	49	78	0.0	39	61	41	65
674	3.3	36	59	2.5	28	45	0.0	30	50	0.0	33	54	0.0	49	81	0.0	39	63	41	67
650	3.4	35	59	2.6	28	46	0.0	30	51	0.0	33	56	0.0	49	83	0.0	39	65	41	69
626	3.5	34	59	2.6	28	48	0.0	30	53	0.0	33	57	0.0	49	86	0.0	39	67	41	71
604	3.6	33	59	2.7	28	49	0.0	30	54	0.0	33	59	0.0	49	88	0.0	39	69	41	73
582	3.7	32	59	2.7	28	50	0.0	30	55	0.0	33	60	0.0	49	90	0.0	39	71	41	75
562	3.8	32	59	2.8	28	52	0.0	30	57	0.0	33	62	0.0	49	93	0.0	39	73	41	77
543	3.9	31	59	2.8	28	53	0.0	30	58	0.0	33	64	0.0	49	95	0.0	39	75	41	79
524	4.0	30	59	2.9	28	55	0.0	30	60	0.0	33	66	0.0	49	98	0.0	39	77	41	81
506	4.1	29	59	2.9	28	56	0.0	30	61	0.0	33	67	0.0	49	100	0.0	39	79	41	83
489	4.2	29	60	3.0	30	63	2.0	30	63	0.0	33	69	0.0	49	103	0.0	39	80	41	85
473	4.3	29	62	3.0	30	64	2.0	30	64	0.0	33	70	0.0	49	105	0.0	39	82	41	87
457	4.4	29	63	3.0	30	66	2.0	30	66	0.0	33	72	0.0	49	108	0.0	39	84	41	89
442	4.5	29	65	3.1	31	68	2.1	30	67	0.0	33	73	0.0	49	110	0.0	39	86	41	92
427	4.6	29	66	3.2	30	69	2.2	30	69	0.0	33	75	0.0	49	112	0.0	39	88	41	94
413	4.7	29	68	3.2	31	71	2.2	30	70	0.0	33	77	0.0	49	115	0.0	39	90	41	96
399	4.8	30	70	3.3	31	73	2.3	30	72	0.0	33	78	0.0	49	117	0.0	39	92	41	98
385	4.9	29	71	3.3	31	74	2.3	30	73	0.0	33	80	0.0	49	120	0.0	39	94	41	100
372	5.0	30	73	3.4	31	76	2.4	30	75	0.0	33	82	0.0	49	122	0.0	39	96	41	102
358	5.1	30	75	3.5	31	78	2.5	30	76	0.0	33	83	0.0	49	125	0.0	39	98	41	104
345	5.2	30	76	3.5	31	80	2.5	30	78	0.0	33	85	0.0	49	127	0.0	39	100	41	106
332	5.3	30	78	3.6	31	81	2.6	30	79	0.0	33	86	0.0	49	129	0.0	39	101	41	108
320	5.4	30	80	3.7	31	83	2.7	30	81	0.0	33	88	0.0	49	132	0.0	39	103	41	110
308	5.5	30	82	3.8	31	85	2.8	30	82	0.0	33	90	0.0	49	134	0.0	39	105	41	112
297	5.6	30	83	3.9	32	87	2.9	30	84	0.0	33	91	0.0	49	137	0.0	39	107	41	114
286	5.7	30	85	3.9	32	89	2.9	30	85	0.0	33	93	0.0	49	139	0.0	39	109	41	116
276	5.8	30	87	4.0	32	91	3.0	33	95	2.0	33	95	0.0	53	153	2.0	39	111	41	118
266	5.9	31	89	4.1	32	93	3.1	33	97	2.1	33	96	0.0	54	157	2.2	39	113	41	120
258	6.0	30	90	4.2	32	95	3.2	33	99	2.2	33	98	0.0	54	161	2.4	39	115	41	122
248	6.1	31	92	4.3	32	97	3.3	34	101	2.3	33	99	0.0	55	165	2.6	39	117	41	124
240	6.2	31	94	4.4	32	99	3.4	34	103	2.4	33	101	0.0	55	169	2.8	39	119	41	126
232	6.3	31	96	4.5	33	101	3.5	34	105	2.5	33	103	0.0	55	173	3.0	39	120	41	128
225	6.4	31	98	4.6	33	103	3.6	34	107	2.6	33	104	0.0	56	177	3.2	39	122	41	130
217	6.5	31	100	4.7	33	105	3.7	34	109	2.7	33	106	0.0	56	181	3.4	39	124	41	132
209	6.6	31	102	4.8	33	107	3.8	34	111	2.8	33	108	0.0	57	185	3.6	39	126	41	134
202	6.7	32	104	4.9	33	109	3.9	34	113	2.9	33	109	0.0	57	189	3.8	39	128	41	136
196	6.8	32	106	5.0	33	111	4.0	34	115	3.0	36	120	2.0	57	193	4.0	39	130	41	138
189	6.9	32	108	5.1	33	113	4.1	35	118	3.1	36	122	2.1	58	198	4.2	39	132	41	140
183	7.0	32	110	5.2	33	115	4.2	35	120	3.2	36	124	2.2	58	202	4.4	39	134	41	142
176	7.1	32	112	5.3	33	117	4.3	35	122	3.3	36	127	2.3	59	206	4.6	39	136	41	144
170	7.2	32	115	5.5	34	120	4.5	35	125	3.5	36	129	2.5	59	212	5.0	39	138	41	146
164	7.3	33	117	5.6	34	122	4.6	35	127	3.6	37	132	2.6	60	217	5.2	39	140	41	148
158	7.4	33	119	5.8	34	124	4.8	35	129	3.8	37	134	2.8	60	222	5.6	39	141	41	150
152	7.5	33	122	5.9	34	127	4.9	36	132	3.9	37	137	2.9	61	227	5.8	39	143	41	152
146	7.6	33	124	6.1	34	129	5.1	36	135	4.1	37	140	3.1	62	233	6.2	39	145	41	154
139	7.7	33	127	6.3	35	132	5.3	36	137	4.3	38	143	3.3	63	239	6.6	39	147	41	156
132	7.8	34	130	6.5	35	135	5.5	36	140	4.5	38	145	3.5	64	246	7.0	39	149	41	158
124	7.9	34	133	6.8	35	138	5.8	37	144	4.8	38	149	3.8	65	254	7.6	39	151	41	160
108	8.0	35	139	7.6	36	144	6.6	38	150	5.6	39	155	4.6	68	270	9.2	39	153	41	162

NOTE:
CR, LS & w VALUES IN FEET. LISTED RADIUS IS THE MINIMUM ALLOWABLE RADIUS FOR THE CORRESPONDING E, CR, LS, AND w VALUES.

REVISED 3-03 REVISED 1-04

SPECIFICATION REFERENCE

TRANSITION CURVES - RURAL
25 MPH DESIGN SPEED

VIRGINIA DEPARTMENT OF TRANSPORTATION

NEW: 1/04

802.35

DESIGN FACTORS FOR A DESIGN SPEED OF 25 MPH (RURAL) USING E= 8% MAX.

DESIGN VELOCITY =25		WIDTH= 18 FT			WIDTH=20 FT			WIDTH=22 FT			WIDTH=24 FT			WIDTH=48 FT			INTERCHANGE RAMPS WIDTH			
		DESIGN SOFTWARE EQUIVALENTS (NUMBER OF LANES AT LANE WIDTH)																		
		1 @ 9'			1 @ 10'			1 @ 11'			1 @ 12'			2 @ 12'			16 FT		18 FT	
RADIUS(FT)	E(%)	CR	LS	w	CR	LS	w	CR	LS	w	CR	LS	w	CR	LS	w	CR	LS	CR	LS
2500	NC	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0	0
1756	2.0	26	26	0.0	29	29	0.0	32	32	0.0	35	35	0.0	52	52	0.0	40	40	43	43
1664	2.1	71	74	2.0	29	30	0.0	32	33	0.0	35	36	0.0	52	54	0.0	40	42	43	45
1579	2.2	68	74	2.0	29	32	0.0	32	35	0.0	35	38	0.0	52	57	0.0	40	44	43	48
1502	2.3	65	74	2.0	29	33	0.0	33	37	0.0	35	40	0.0	52	60	0.0	40	46	43	50
1431	2.4	62	74	2.1	29	35	0.0	32	38	0.0	35	42	0.0	52	62	0.0	40	48	43	52
1366	2.5	60	74	2.1	29	36	0.0	32	40	0.0	35	43	0.0	52	65	0.0	40	50	43	54
1306	2.6	57	74	2.1	29	38	0.0	32	41	0.0	35	45	0.0	52	67	0.0	40	52	43	56
1250	2.7	55	74	2.1	29	39	0.0	32	43	0.0	35	47	0.0	52	70	0.0	40	54	43	58
1198	2.8	53	74	2.2	29	40	0.0	32	44	0.0	35	48	0.0	52	72	0.0	40	56	43	60
1149	2.9	52	74	2.2	29	42	0.0	32	46	0.0	35	50	0.0	52	75	0.0	40	58	43	63
1104	3.0	50	74	2.2	29	43	0.0	32	48	0.0	35	52	0.0	52	78	0.0	40	60	43	65
1061	3.1	48	74	2.3	29	45	0.0	32	49	0.0	35	54	0.0	52	80	0.0	40	62	43	67
1021	3.2	47	74	2.3	29	46	0.0	32	51	0.0	35	55	0.0	52	83	0.0	40	64	43	69
983	3.3	45	74	2.3	29	48	0.0	32	52	0.0	35	57	0.0	52	85	0.0	40	66	43	71
948	3.4	44	74	2.4	29	49	0.0	32	54	0.0	35	59	0.0	52	88	0.0	40	68	43	73
914	3.5	43	74	2.4	29	50	0.0	32	55	0.0	35	60	0.0	52	90	0.0	40	70	43	75
882	3.6	42	74	2.4	29	52	0.0	32	57	0.0	35	62	0.0	52	93	0.0	40	72	43	78
852	3.7	40	74	2.5	29	53	0.0	32	59	0.0	35	64	0.0	52	96	0.0	40	74	43	80
823	3.8	39	74	2.5	29	55	0.0	32	60	0.0	35	66	0.0	52	98	0.0	40	76	43	82
795	3.9	38	74	2.6	29	56	0.0	32	62	0.0	35	67	0.0	52	101	0.0	40	78	43	84
769	4.0	37	74	2.6	29	58	0.0	32	63	0.0	35	69	0.0	52	103	0.0	40	80	43	86
744	4.1	37	74	2.6	29	59	0.0	32	65	0.0	35	71	0.0	52	106	0.0	40	82	43	88
720	4.2	36	74	2.7	29	60	0.0	32	66	0.0	35	72	0.0	52	108	0.0	40	84	43	90
696	4.3	35	74	2.7	29	62	0.0	32	68	0.0	35	74	0.0	52	111	0.0	40	86	43	93
674	4.4	34	74	2.7	29	63	0.0	32	70	0.0	35	76	0.0	52	114	0.0	40	88	43	95
652	4.5	33	74	2.8	29	65	0.0	32	71	0.0	35	78	0.0	52	116	0.0	40	90	43	97
632	4.6	33	74	2.8	29	66	0.0	32	73	0.0	35	79	0.0	52	119	0.0	40	92	43	99
612	4.7	32	74	2.9	29	68	0.0	32	74	0.0	35	81	0.0	52	121	0.0	40	94	43	101
592	4.8	31	74	2.9	29	69	0.0	32	76	0.0	35	83	0.0	52	124	0.0	40	96	43	103
573	4.9	31	75	2.9	29	70	0.0	32	77	0.0	35	84	0.0	52	126	0.0	40	98	43	105
555	5.0	30	75	3.0	32	79	2.0	32	79	0.0	35	86	0.0	52	129	0.0	40	100	43	108
537	5.1	31	77	3.0	32	81	2.0	32	81	0.0	35	88	0.0	52	132	0.0	40	102	43	110
519	5.2	31	79	3.1	32	83	2.1	32	82	0.0	35	90	0.0	52	134	0.0	40	104	43	112
502	5.3	31	80	3.1	32	84	2.1	32	84	0.0	35	91	0.0	52	137	0.0	40	106	43	114
485	5.4	31	82	3.2	32	86	2.2	32	85	0.0	35	93	0.0	52	139	0.0	40	108	43	116
468	5.5	31	84	3.2	32	88	2.2	32	87	0.0	35	95	0.0	52	142	0.0	40	110	43	118
452	5.6	31	86	3.3	33	90	2.3	32	88	0.0	35	96	0.0	52	144	0.0	40	112	43	120
437	5.7	31	88	3.4	33	92	2.4	32	90	0.0	35	98	0.0	52	147	0.0	40	114	43	123
423	5.8	31	89	3.4	33	93	2.4	32	92	0.0	35	100	0.0	52	150	0.0	40	116	43	125
409	5.9	31	91	3.5	33	95	2.5	32	93	0.0	35	102	0.0	52	152	0.0	40	118	43	127
396	6.0	31	93	3.5	33	97	2.5	32	95	0.0	35	103	0.0	52	155	0.0	40	120	43	129
383	6.1	32	95	3.6	33	99	2.6	32	96	0.0	35	105	0.0	52	157	0.0	40	122	43	131
371	6.2	32	97	3.7	33	101	2.7	32	98	0.0	35	107	0.0	52	160	0.0	40	124	43	133
359	6.3	32	98	3.7	33	103	2.7	32	99	0.0	35	108	0.0	52	162	0.0	40	126	43	135
347	6.4	32	100	3.8	33	105	2.8	32	101	0.0	35	110	0.0	52	165	0.0	40	128	43	138
336	6.5	32	102	3.9	33	103	2.9	32	103	0.0	35	112	0.0	52	168	0.0	40	130	43	140
326	6.6	32	104	3.9	33	108	2.9	32	104	0.0	35	114	0.0	52	170	0.0	40	132	43	142
315	6.7	32	106	4.0	34	111	3.0	35	115	2.0	35	115	0.0	56	187	2.0	40	134	43	144
305	6.8	32	108	4.1	34	113	3.1	35	118	2.1	35	117	0.0	57	191	2.2	40	136	43	146
295	6.9	32	110	4.2	34	115	3.2	35	120	2.2	35	119	0.0	57	196	2.4	40	138	43	148
286	7.0	32	111	4.2	34	116	3.2	35	121	2.2	35	120	0.0	57	198	2.4	40	140	43	150
276	7.1	33	114	4.3	34	119	3.3	35	124	2.3	35	122	0.0	58	203	2.6	40	142	43	153
267	7.2	33	116	4.4	34	121	3.4	35	126	2.4	35	124	0.0	58	207	2.8	40	144	43	155
258	7.3	33	118	4.5	34	123	3.5	36	128	2.5	35	126	0.0	59	212	3.0	40	146	43	157
248	7.4	33	120	4.6	34	125	3.6	36	131	2.6	35	127	0.0	59	216	3.2	40	148	43	159
239	7.5	33	122	4.7	34	127	3.7	36	133	2.7	35	129	0.0	59	221	3.4	40	150	43	161
229	7.6	33	124	4.8	35	130	3.8	36	135	2.8	35	131	0.0	60	225	3.6	40	152	43	163
219	7.7	33	127	5.0	35	132	4.0	36	138	3.0	38	143	2.0	60	231	4.0	40	154	43	165
209	7.8	34	129	5.1	35	135	4.1	36	140	3.1	38	146	2.1	61	236	4.2	40	156	43	168
196	7.9	34	132	5.3	35	138	4.3	37	143	3.3	38	149	2.3	62	243	4.6	40	158	43	170
171	8.0	34	136	5.8	36	142	4.8	37	148	3.8	39	154	2.8	64	254	5.6	40	160	43	172

NOTE:
CR, LS & w VALUES IN FEET. LISTED RADIUS IS THE MINIMUM ALLOWABLE RADIUS FOR THE CORRESPONDING E, CR, LS, AND w VALUES.

TC-5.01