

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

DESIGN VELOCITY +20	DESIGN SOFTWARE EQUIVALENTS (NUMBER OF LANES AT LANE WIDTH)										INTERCHANGE RAMPS						
	WIDTH+ 18 FT			WIDTH+20 FT			WIDTH+24 FT			WIDTH+48 FT			16 FT		18 FT		
	DESIGN SOFTWARE EQUIVALENTS (NUMBER OF LANES AT LANE WIDTH)			DESIGN SOFTWARE EQUIVALENTS (NUMBER OF LANES AT LANE WIDTH)			DESIGN SOFTWARE EQUIVALENTS (NUMBER OF LANES AT LANE WIDTH)			DESIGN SOFTWARE EQUIVALENTS (NUMBER OF LANES AT LANE WIDTH)			2 @ 12'		2 @ 12'		
	1 @ 9'	1 @ 10'	1 @ 11'	1 @ 12'	1 @ 12'	1 @ 12'	1 @ 12'	1 @ 12'	1 @ 12'	1 @ 12'	1 @ 12'	1 @ 12'	1 @ 12'	Lr	Lt	Lr	Lt
1640	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1210	2	28	28	2.2	28	28	0	30	30	0	33	33	0	49	49	0	39
1180	2.1	28	29	2.3	28	29	0	30	32	0	33	35	0	49	52	0	39
1100	2.2	29	31	2.3	28	30	0	30	33	0	33	36	0	49	54	0	39
1020	2.3	28	32	2.4	28	32	0	30	35	0	33	38	0	49	56	0	39
1008	2.4	29	34	2.4	28	33	0	30	36	0	33	39	0	49	59	0	39
960	2.5	28	35	2.5	28	34	0	30	38	0	33	41	0	49	61	0	39
880	2.6	29	37	2.6	28	36	0	30	39	0	33	43	0	49	64	0	39
840	2.7	29	38	2.6	28	37	0	30	41	0	33	44	0	49	66	0	39
810	2.8	29	40	2.7	28	38	0	30	42	0	33	46	0	49	69	0	39
774	2.9	29	41	2.7	28	40	0	30	44	0	33	48	0	49	71	0	39
720	3	28	42	2.7	28	41	0	30	45	0	33	49	0	49	73	0	39
760	3.1	29	44	2.8	28	42	0	30	47	0	33	51	0	49	76	0	39
680	3.2	29	46	2.9	28	44	0	30	48	0	33	52	0	49	78	0	39
658	3.3	29	47	2.9	28	45	0	30	50	0	33	54	0	49	81	0	39
641	3.4	29	49	3	30	51	2	30	51	0	33	56	0	49	83	0	39
617	3.5	29	50	3	30	53	2	30	53	0	33	57	0	49	86	0	39
595	3.6	29	52	3.1	30	54	2.1	30	54	0	33	59	0	49	88	0	39
574	3.7	29	53	3.2	30	56	2.2	30	55	0	33	60	0	49	90	0	39
548	3.8	29	55	3.2	30	57	2.2	30	57	0	33	62	0	49	93	0	39
528	3.9	30	57	3.3	31	59	2.3	30	58	0	33	64	0	49	95	0	39
499	4	29	58	3.4	31	61	2.4	30	60	0	33	65	0	49	98	0	39
484	4.1	30	60	3.5	31	63	2.5	30	61	0	33	67	0	49	100	0	39
468	4.2	30	62	3.5	31	64	2.5	30	63	0	33	69	0	49	103	0	39
451	4.3	30	63	3.6	31	66	2.6	30	64	0	33	70	0	49	105	0	39
435	4.4	30	65	3.7	31	68	2.7	30	66	0	33	72	0	49	108	0	39
418	4.5	30	67	3.8	32	70	2.8	30	67	0	33	73	0	49	110	0	39
402	4.6	30	69	3.9	31	71	2.9	30	69	0	33	75	0	49	112	0	39
373	4.7	31	71	4.1	32	74	3.1	33	71	2.1	33	77	0	49	115	0	39
366	4.8	30	72	4.1	32	75	3.1	33	79	2.1	33	78	0	49	117	0	39
342	4.9	31	74	4.3	32	78	3.3	33	81	2.3	33	80	0	49	120	0	39
330	5	31	76	4.4	32	80	3.4	33	83	2.4	33	82	0	49	122	0	39
309	5.1	31	78	4.6	33	82	3.6	34	85	2.6	33	83	0	49	125	0	39
298	5.2	31	80	4.7	33	84	3.7	34	87	2.7	33	85	0	49	127	0	39
276	5.3	32	83	4.9	33	86	3.9	34	90	2.9	33	86	0	49	129	0	39
268	5.4	32	84	5	33	88	4	34	92	3	36	95	2	53	143	4	39
252	5.5	32	87	5.2	33	90	4.2	35	94	3.2	36	98	2.2	54	147	4.4	39
244	5.6	32	89	5.4	34	93	4.4	35	97	3.4	36	100	2.4	54	150	4.8	39
235	5.7	32	91	5.5	34	95	4.5	35	99	3.5	36	103	2.5	55	154	5	39
226	5.8	33	93	5.6	34	97	4.6	35	101	3.6	36	105	2.6	55	157	5.2	39
214	5.9	33	96	5.9	34	100	4.9	36	104	3.9	37	108	2.9	55	161	5.8	39
204	6	33	98	6.1	34	102	5.1	36	106	4.1	37	110	3.1	55	165	6.2	39
199	6.1	33	100	6.2	35	104	5.2	36	108	4.2	37	113	3.2	56	169	6.4	39
192	6.2	33	102	6.3	35	106	5.3	36	111	4.3	37	115	3.3	56	172	6.6	39
181	6.3	34	105	6.6	35	109	5.6	37	114	4.6	38	118	3.6	57	177	7.2	39
174	6.4	34	108	6.8	35	112	5.8	37	116	4.8	38	121	3.8	57	181	7.6	39
167	6.5	34	110	7	36	115	6	37	119	5	38	123	4	57	185	8	39
160	6.6	35	113	7.2	36	117	6.2	37	122	5.2	39	126	4.2	58	189	8.4	39
156	6.7	35	115	7.4	36	120	6.4	38	125	5.4	39	129	4.4	58	193	8.8	39
149	6.8	35	118	7.6	37	123	6.6	38	127	5.6	39	132	4.6	59	198	9.2	39
145	6.9	36	121	7.8	37	125	6.8	38	130	5.8	40	135	4.8	59	202	9.6	39
140	7	36	123	8	37	128	7	38	133	6	40	138	5	59	206	10	39
134	7.1	36	127	8.3	37	131	7.3	39	136	6.3	40	141	5.3	60	211	10.6	39
128	7.2	37	130	8.6	38	135	7.6	39	140	6.6	40	144	5.6	60	216	11.2	39
124	7.3	37	133	8.8	38	138	7.8	40	143	6.8	41	147	5.8	61	221	11.6	39
120	7.4	37	135	9	38	140	8	40	145	7	41	150	6	61	225	12	39
114	7.5	38	140	9.5	39	145	8.5	40	150	7.5	42	155	6.5	62	232	13	39
107	7.6	38	144	9.9	40	149	8.9	41	154	7.9	42	159	6.9	63	239	13.8	39
102	7.7	39	148	10.4	40	153	9.4	42	158	8.4	43	164	7.4	64	246	14.8	39
96	7.8	39	152	10.8	41	158	9.8	42	163	8.8	44	168	7.8	65	252	15.6	39
90	7.9	40	158	11.5	42	163	10.5	43	169	9.5	45	174	8.5	67	261	17	39
77	8	43	169	13.1	44	174	12.1	45	179	11.1	47	185	10.1	70	277	20.2	39

NOTE: Lr, Lt & w VALUES IN FEET. LISTED RADIUS IS THE MINIMUM ALLOWABLE RADIUS FOR THE CORRESPONDING E, Lt, Lr, AND w VALUES. WIDENING SHOWN IS BASED ON A SU-40 DESIGN VEHICLE.



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1

REVISION DATE

803.32

01/13

TRANSITION CURVES - RURAL
20 MPH DESIGN SPEED

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE