

**DESIGN FACTORS FOR A DESIGN SPEED OF 45 MPH  
(URBAN) USING E- 4% MAX.**

RADIUS (FEET)	E (%)	PAVEMENT WIDTH												
		24 FT		36 FT		48 FT		60 FT		66 FT		72 FT		
		DESIGN SOFTWARE EQUIVALENTS (NUMBER OF LANES AT LANE WIDTH)												
		1 @ 12'		1.5 @ 12'		2 @ 12'		3 @ 10'		3 @ 11'		3 @ 12'		
Lt	Lr	Lt	Lr	Lt	Lr	Lt	Lr	Lt	Lr	Lt	Lr	Lt	Lr	
6000	NC	0	0	0	0	0	0	0	0	0	0	0	0	0
4076	2.0	45	45	56	56	67	67	75	75	82	82	89	89	
3790	2.1	45	47	56	59	67	70	75	78	82	86	89	94	
3523	2.2	45	49	56	62	67	74	75	82	82	90	89	98	
3271	2.3	45	52	56	64	67	77	75	86	82	94	89	103	
3029	2.4	45	54	56	67	67	80	75	89	82	98	89	107	
2790	2.5	45	56	56	70	67	84	75	93	82	102	89	112	
2552	2.6	45	58	56	73	67	87	75	97	82	106	89	116	
2341	2.7	45	60	56	75	67	90	75	100	82	110	89	120	
2155	2.8	45	63	56	78	67	94	75	104	82	115	89	125	
1990	2.9	45	65	56	81	67	97	75	108	82	119	89	129	
1843	3.0	45	67	56	84	67	100	75	112	82	123	89	134	
1710	3.1	45	69	56	87	67	104	75	115	82	127	89	138	
1589	3.2	45	72	56	89	67	107	75	119	82	131	89	143	
1477	3.3	45	74	56	92	67	110	75	123	82	135	89	147	
1374	3.4	45	76	56	95	67	114	75	126	82	139	89	152	
1276	3.5	45	78	56	98	67	117	75	130	82	143	89	156	
1184	3.6	45	80	56	100	67	120	75	134	82	147	89	160	
1093	3.7	45	83	56	103	67	124	75	138	82	151	89	165	
1003	3.8	45	85	56	106	67	127	75	141	82	155	89	169	
905	3.9	45	87	56	109	67	130	75	145	82	159	89	174	
730	4.0	45	89	56	112	67	134	75	149	82	163	89	178	

**NOTE:**

Lt AND Lr VALUES IN FEET.

FOR PAVEMENT WIDTHS GREATER THAN 72 FEET USE Lr VALUES DEVELOPED BY THE DESIGN SOFTWARE.

LISTED RADIUS IS THE MINIMUM ALLOWABLE RADIUS FOR THE CORRESPONDING E, Lt, AND Lr VALUES.

**TRANSITION CURVES - URBAN  
45 MPH DESIGN SPEED**

VIRGINIA DEPARTMENT OF TRANSPORTATION