CREST VERTICAL CURVE DESIGN GUIDANCE FOR BIKEWAYS (30 mph)

V = speed, mph		**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**
f = .25 due to braking		**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**
g = grade descending		0	-0.01	-0.02	-0.03	-0.04	-0.05	-0.06	-0.07	-0.08	-0.083
f + g		0.25	0.24	0.23	0.22	0.21	0.2	0.19	0.18	0.17	0.167
V*V/[30**(f+g)**]		120.00	125.00	130.43	136.36	142.86	150.00	157.89	166.67	176.47	179.64
3.67*V		110.10	110.10	110.10	110.10	110.10	110.10	110.10	110.10	110.10	110.10
S = V*V / [30(f + g)] + 3.67V		230.10	235.10	240.53	246.46	252.96	260.10	267.99	276.77	286.57	289.74
S = Stopping Sight Distance, ft											
2S		460.20	470.20	481.07	492.93	505.91	520.20	535.99	553.53	573.14	579.48
S*S / 900		58.83	61.41	64.29	67.49	71.10	75.17	79.80	85.11	91.25	93.28
A* = algebraic difference between grades	**A***	Length of Curve (Minimum 60 feet)									
When S>L, L = 2S - 900 / A	2	60	60	60	60	60	70	86	104	123	129
	2.5	100	110	121	133	146	160	176	194	213	219
	3	160	170	181	193	206	220	236	254	273	279
	3.5	203	213	224	236	249	263	279	298	319	326
When L>S, L = A*S*S / 900	4	235	246	257	270	284	301	319	340	365	373
	4.5	265	276	289	304	320	338	359	383	411	420
	5	294	307	321	337	355	376	399	426	456	466
	5.5	324	338	354	371	391	413	439	468	502	513
	6.00	353	368	386	405	427	451	479	511	547	560
	6.5	382	399	418	439	462	489	519	553	593	606
	7	412	430	450	472	498	526	559	596	639	653
	7.5	441	461	482	506	533	564	599	638	684	700
	8	471	491	514	540	569	601	638	681	730	746
	8.5	500	522	546	574	604	639	678	723	776	793
	9	529	553	579	607	640	677	718	766	821	839
	9.5	559	583	611	641	675	714	758	809	867	886
	10	588	614	643	675	711	752	798	851	912	933
	11	647	676	707	742	782	827	878	936	1004	1026
	12	706	737	771	810	853	902	958	1021	1095	1119
	13	765	798	836	877	924	977	1037	1106	1186	1213
	14	824	860	900	945	995	1052	1117	1192	1277	1306
	15	882	921	964	1012	1066	1128	1197	1277	1369	1399
	16	941	983	1029	1080	1138	1203	1277	1362	1460	1492
	16.6	977	1019	1067	1120	1180	1248	1325	1413	1515	1548