



When S > L	When S < L
$L = 2S - \left[\frac{(400 + 3.5 \times S)}{A} \right]$	$L = \frac{(A \times S^2)}{(400 + 3.5 \times S)}$

L = Length of Vertical Curve (feet)

S = Sight Distance (feet) (either SSD or DSD required, depending on category)

A = Algebraic Grade Difference (Percent)

K = L/A ; L= KA

Sag Vertical Curves - Sight Distance and Minimum Length Requirements ^E

Design Speed (V) (mph)	Category ^A	Desirable			Minimum			Min. VC L= 3 x V (feet) ^D	Category ^A	Design Speed (V) (mph)
		Basis ^B	Sight Distance (feet) ^C	K _{SAG}	Basis	Sight Distance (feet) ^C	K _{SAG}			
25	1	SSD	155	26	SSD	155	26	75	1	25
	2	DSD	375	83	SSD	155	26	75	2	
	3	DSD	375	83	SSD	155	26	75	3	
30	1	SSD	200	37	SSD	200	37	90	1	30
	2	DSD	450	103	SSD	200	37	90	2	
	3	DSD	450	103	SSD	200	37	90	3	
35	1	SSD	250	49	SSD	250	49	105	1	35
	2	DSD	525	124	SSD	250	49	105	2	
	3	DSD	525	124	SSD	250	49	105	3	
40	1	SSD	305	64	SSD	305	64	120	1	40
	2	DSD	600	144	SSD	305	64	120	2	
	3	DSD	600	144	SSD	305	64	120	3	
45	1	SSD	360	79	SSD	360	79	135	1	45
	2	DSD	675	165	SSD	360	79	135	2	
	3	DSD	675	165	SSD	360	79	135	3	
50	1	SSD	425	96	SSD	425	96	150	1	50
	2	DSD	750	186	SSD	425	96	150	2	
	3	DSD	750	186	SSD	425	96	150	3	
55	1	SSD	495	115	SSD	495	115	165	1	55
	2	DSD	865	219	SSD	495	115	165	2	
	3	DSD	865	219	SSD	495	115	165	3	
60	1	SSD	570	136	SSD	570	136	180	1	60
	2	DSD	990	254	SSD	570	136	180	2	
	3	DSD	990	254	SSD	570	136	180	3	
65	1	SSD	645	157	SSD	645	157	195	1	65
	2	DSD	1050	271	SSD	645	157	195	2	
	3	DSD	1050	271	SSD	645	157	195	3	
70	1	SSD	730	181	SSD	730	181	210	1	70
	2	DSD	1105	287	SSD	730	181	210	2	
	3	DSD	1105	287	SSD	730	181	210	3	

A See section "Stopping Sight Distance (SSD); Decision Sight Distance (DSD)" in text, and Attachment 5.2 for definitions and criteria for Sight Distance Categories

B SSD = Stopping Sight Distance
DSD = Decision Sight Distance for Avoidance Maneuver C

C See page 1 of Attachment 5.1