

2.11 Horizontal Clearances

Table 2.11.9 Clear Zone Widths

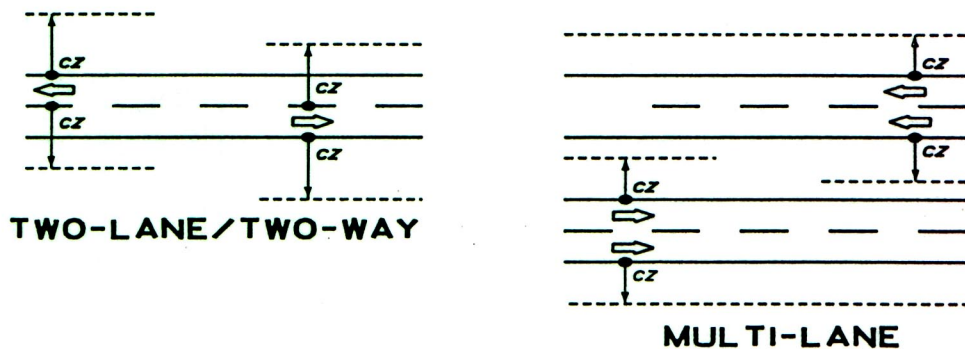
CLEAR ZONE WIDTH (FEET)				
DESIGN SPEED (mph)	≥ 1500 AADT		< 1500 AADT	
	TRAVEL LANES & MULTI-LANE RAMPS	AUXILIARY LANES & SINGLE LANE RAMPS	TRAVEL LANES & MULTI-LANE RAMPS	AUXILIARY LANES & SINGLE LANE RAMPS
< 45	18	10	16	10
45	24	14	20	14
50	24	14	20	14
55	30	18	24	14
> 55	36	24	30	18

Above clear zone widths are for side slopes of 1:4 or flatter. Applies to highways with flush shoulders only. May be in rural or urban locations.

AADT=Mainline 20 years projected annual average daily traffic.

Where accident history indicates need, or where specific site investigation shows definitive accident potential, clear zone widths shall be adjusted on the outside of horizontal curves with flush shoulders in accordance with Table 2.11.10.

Clear zone widths are measured from the edge of the traveled way.



MEASUREMENT OF CLEAR ZONE

**TABLE 2.11.10 Clear Zone Widths For Curved Alignments
On Highways With Flush Shoulders**

TABLE I

CLEAR ZONE OF CURVED ALIGNMENT (CZ_c), FEET

D	DESIGN SPEED (Vmph) And Clear Zone (CZ, Feet)																								
	30		35		40		45		50		55		60		65		70								
Tangent	10	16	18	10	16	18	14	20	24	14	18	24	30	18	24	30	36	18	24	30	36				
0° 15'	10	16	18	10	16	18	14	20	24	14	18	24	30	18	24	30	36	19	25	31	37	19	25	31	37
0° 30'	10	16	18	10	16	18	14	21	25	14	19	25	31	19	25	31	38	19	25	32	38	19	25	32	38
0° 45'	10	16	18	10	16	19	15	21	25	15	19	25	32	19	26	32	39	20	26	33	39	20	26	33	40
1° 00'	10	16	18	10	16	19	15	21	25	15	20	26	32	20	27	33	40	20	27	34	40	21	28	34	41
1° 30'	10	16	18	10	17	19	15	21	26	15	20	27	33	21	27	34	41	21	28	35	42	22	29	36	43
2° 00'	10	17	19	11	17	19	15	22	26	16	21	29	35	21	29	36	43	22	29	37	44	23	30	38	46
2° 30'	11	17	19	11	17	20	11	17	20	17	21	29	36	22	30	37	44	23	31	38	46	24	32	40	48
3° 00'	11	17	19	11	17	20	11	18	20	17	22	30	37	23	31	38	46	24	32	40	48	25	33	42	50
3° 30'	11	17	19	11	18	20	11	18	20	18	23	30	38	24	32	40	48	25	33	42	50	26	34	43	51
4° 00'	11	17	20	11	18	20	12	18	21	18	23	31	39	25	33	41	49	26	35	43	52	27	35	44	53
4° 15'																		26	35	44	53				
5° 00'	11	18	20	11	18	21	12	19	21	17	25	30	18	26	31	19	25	33	41	26	35	44	52		
5° 15'																		27	36	44	53				
6° 00'	11	18	20	12	19	21	12	20	22	18	26	31	19	27	33	20	26	35	43						
6° 30'																		21	27	36	44				
7° 00'	12	18	21	12	19	22	13	20	23	19	27	32	20	28	34										
8° 00'	12	19	21	12	20	22	13	21	23	19	28	33	21	30	36										
8° 15'																									
9° 00'	12	19	21	13	20	23	13	21	24	20	29	34													
10° 00'	12	19	22	13	20	23	14	22	25	21	29	35													
10° 15'																									
11° 00'	12	20	22	13	21	24	14	22	25																
12° 00'	13	20	23	14	21	24	15	23	26																
13° 00'	13	20	23	14	22	25	15	24	27																
13° 15'																									
14° 00'	13	21	23	14	22	25																			
16° 00'	13	21	24	14	22	25																			
17° 45'																									
18° 00'	14	22	25																						
20° 00'	14	22	25																						
22° 00'	14	23	26																						
24° 00'	15	24	27																						
24° 45'	15	24	27																						

Step 1. Select CZ value from Table 2.12.1.
 Step 2. In Table above, locate the "Design Speed" and "Tangent" CZ values that match the speed and CZ value from Step 1.
 Step 3. Move down the radius column to the radius under consideration, then across the table to the column found under Step 2, to find the CZ_c value.

2.11 Horizontal Clearances

Figure 2.11.1 Clearance to Guardrail

