

Table 1 Clear zone Distance

Table 2 Horizontal Curve Adjustment

Table 1 CLEAR ZONE DISTANCE (in Feet from Edge of Driving Lane)¹

DESIGN SPEED	DESIGN ADT***	FORESLOPE					BACKSLOPE				
		FLAT	1V: 6H	1V: 5H	1V: 4H	1V: 3H	1V: 3H	1V: 4H	1V: 5H	1V: 6H	FLAT
40 mph or less	Under 750	7-10	7-10	7-10	7-10	**	7-10	7-10	7-10	7-10	7-10
	750-1500	10	12	12	14	**	12-14	12-14	12-14	12-14	12-14
	1500-6000	12	14	14	16	**	14-16	14-16	14-16	14-16	14-16
	Over 6000	14	16	16	18	**	16-18	16-18	16-18	16-18	16-18
45-50 mph	Under 750	10	12	12	14	**	8-10	8	10	10	12
	750-1500	14	16	16	20	**	10-12	12	14	14	16
	1500-6000	16	18	20	26	**	12-14	14	16	16	18
	Over 6000	20	22	24	28	**	14-16	18	20	20	22
55 mph	Under 750	12	14	14	18	**	8-10	10-12	10-12	10-12	10-12
	750-1500	16	18	20	24	**	10-12	14	16	16	18
	1500-6000	20	22	24	30	**	14-16	16	18	20	22
	Over 6000	22	24	26	32*	**	16-18	20	22	22	24
60 mph	Under 750	16	18	20	24	**	10-12	12	14	14	16
	750-1500	20	24	26	32*	**	12-14	16	18	20	22
	1500-6000	26	30	32*	40*	**	14-18	18	22	24	26
	Over 6000	30	32*	36*	44*	**	20-22	24	26	26	28
65-75 mph	Under 750	18	20	20	26	**	10-12	14-16	14-16	14-16	14-16
	750-1500	24	26	28	36*	**	12-16	18	20	20	22
	1500-6000	28	32*	34*	42*	**	16-20	22	24	26	28
	Over 6000	30	34*	38*	46*	**	22-24	26	30	28	30

*Where a site specific investigation indicates a high probability of occurrences are indicated by crash history, the designer may provide clear zone distance greater than 30 feet as indicated. Clear zone may be limited to 30 feet for practicality and provide a consistent roadway template if previous experience with similar projects or design indicates satisfactory performance.

**Since recovery is less likely on unshielded traversable 3:1 slopes, fixed objects should not be present in the vicinity of the toe of these slopes. Recovery of high speed vehicles that encroach beyond the edge of the shoulder may be expected to occur beyond the toe of the slope. Determination of the width of the recovery area at the toe of the slope should take into consideration right of way availability, environmental concerns, economic factors, safety needs and crash histories. Also, the distance between the edge of the travel lane and the beginning of the 3:1 slope should influence the recovery area provided at the toe of the slope. While the application may be limited by several factors, the fill slope parameters, which may enter into determining the maximum desirable recovery area, is illustrated in Figure 3-2, AASHTO Roadside Design Guide (2011).

***Design ADT is the total ADT for both directions of travel for the design year. This applies to both divided and undivided facilities. Typically is based on the 20 year projected ADT.

¹AASHTO Roadside Design Guide (2011), Table 3-1

Table 2

HORIZONTAL CURVE ADJUSTMENT²

Kcz (Curve Correction Factor)

Radius (ft)	Design Speed (mph)					
	40	45	50	55	65	70
2,950	1.1	1.1	1.1	1.2	1.2	1.2
2,300	1.1	1.1	1.2	1.2	1.2	1.3
1,970	1.1	1.2	1.2	1.2	1.3	1.4
1,640	1.1	1.2	1.2	1.3	1.3	1.5
1,475	1.2	1.2	1.3	1.3	1.4	1.5
1,315	1.2	1.2	1.3	1.3	1.4	-
1,150	1.2	1.2	1.3	1.4	1.5	-
985	1.2	1.3	1.4	1.5	1.5	-
820	1.3	1.3	1.4	1.5	-	-
660	1.3	1.4	1.5	-	-	-
495	1.4	1.5	-	-	-	-
330	1.5	-	-	-	-	-

$$CZc = (Lc)(Kcz)$$

Where: CZc = clear zone on outside of curvature in feet.

Lc = clear zone distance in feet, Table 1 this Appendix.

Kcz = curve correction factor.

Note: Clear zone correction factor is applied to outside of the curve only.

Corrections are typically made only to curves less than 2,950-ft radius.

²AASHTO Roadside Design Guide (2011), Table 3-2