

RADIUS (m)	DESIGN SPEED (kph)					
	60	70	80	90	100	110
900	1.1	1.1	1.1	1.2	1.2	1.2
700	1.1	1.1	1.2	1.2	1.2	1.3
600	1.1	1.2	1.2	1.2	1.3	1.4
500	1.1	1.2	1.2	1.3	1.3	1.4
450	1.2	1.2	1.3	1.3	1.4	1.5
400	1.2	1.2	1.3	1.3	1.4	
350	1.2	1.2	1.3	1.4	1.5	
300	1.2	1.3	1.4	1.5	1.5	
250	1.3	1.3	1.4	1.5		
200	1.3	1.4	1.5			
150	1.4	1.5				
100	1.5					

$$CZ_c = (L_c)(K_{cz})$$

WHERE:

CZ_c = Clear Zone on Outside of Curvature, ft.

L_c = Clear Zone Distance, ft.
Figure 3.1 or Table 3.1

K_{cz} = Curve Correction Factor

NOTE:

Clear zone correction factor is applied to outside of curves only.

Curves flatter than 2.0° do not require an adjusted clear zone.

Figure 300.03
Horizontal Curve Adjustments Factors

307.01 APPLICATION OF CLEAR ZONE

307.01.01 Roadside Terrain: Foreslope

When a roadway is on an embankment, the side slope is called a foreslope (negative slope) which can be recoverable, non-recoverable, or critical:

Recoverable - A recoverable slope is one that an errant vehicle can drive across, slow down, stop, and return to the roadway. Recoverable slopes are 1:4 or flatter, relatively smooth, and clear of all fixed object hazards. The top of the slope shall be rounded so a vehicle's wheels remain in contact with the roadway when encountering the embankment. The toe of slope shall also be rounded so the driver is able to negotiate and drive across if the vehicle reaches the base of the embankment.

Non-recoverable - A non-recoverable slope is one which an errant vehicle can be driven across but may not be able to slow down or stop before

reaching the base. Embankments with slopes between 1:3 and 1:4 generally fall under this category. A smooth clear run-out area with a slope of 1:6 or flatter, in addition to the recommended clear zone distance is recommended at the base of the slope. The width of the runout area is determined according to the available width between the edge of traveled way and the breakpoint between the flatter (1:4 and flatter) and steeper (1:4 and 1:3) slope of the embankment. This available width is then subtracted from the clear zone distance obtained from Figure 300.02, based on the steeper slope of the embankment. The difference is the width of the clear runout area. See Figure 300.04 for example.

Critical - A critical slope is one where a vehicle has a high probability of overturning, slopes steeper than 1:3 fall in this category. If the available clear zone is narrower than the recommended width or it is not practical to adjust the roadside geometry, installing a barrier system may be necessary.