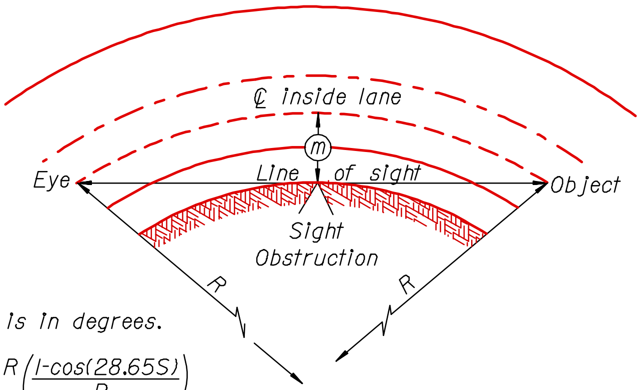
Line of sight is 600mm above ℄ inside lane at point of obstruction.

S = SIGHT DISTANCE IN METERS
R = RADIUS OF THE ℄ OF THE LANE NEAREST THE OBSTRUCTION IN METERS.
m = DISTANCE FROM ℄ OF THE LANE NEAREST THE OBSTRUCTION IN METERS.
V = DESIGN SPEED FOR "S" IN kph.

DESIGN SPEED	SIGHT DISTANCE
kph	kph
30	30
40	45
50	65
60	85
70	105
80	130
90	160
100	190
110	220
120	255
130	290



Angle is in degrees.

$$m = R\left(\frac{1-\cos(28.65S)}{R}\right)$$

$$S = \frac{R}{28.65}\left(\frac{\cos^{-1}(R-m)}{R}\right)$$

Formula applies only when "S" is less than or equal to the curve length.

For sustained downgrades, see Section 204.05.

Figure 200.03

Stopping Sight Distance on Horizontal Curves

If the vehicle is not skidding, all forces are in equilibrium and are governed by the following equation:

$$\text{Centrifugal Factor} = e + f = \frac{0.0079V^2}{R} = \frac{V^2}{127R}$$

Where:

e	=	Superelevation rate in m per m
e_{max}	=	Maximum superelevation rate for a given condition
f	=	Side friction factor
R	=	Curve radius in m
V	=	Velocity in kph

This equation is used to design superelevated curves for comfortable operation. Standard superelevation rates are designed to keep the portion of centrifugal force countered by tire friction within allowable limits.

202.02 SUPERELEVATION STANDARDS

Maximum superelevation rates for various roadway classifications are shown on Table 200.03. Table 200.04 shows values for design elements related to speed and horizontal curvature.

Table 200.03

Maximum Superelevation Rates

Roadway Classification	e_{max}
Freeways	0.06
Expressways	0.06
Ramps	0.06
Main Roads and Collectors	0.04
Sector Roads	Normal Crown

202.03 CITY ROAD CONDITIONS

Lower superelevation rates may be necessary in urban areas where restricted speed zones or intersections are controlling factors. In addition, existing road grades, curbs, or drainage may prove difficult to alter. Such conditions may warrant, for example, a reduction in the superelevation rate, different rates for each half of the roadbed, or both. In warping road areas for drainage, adverse superelevation should be avoided.