Cleared Area

10' Clearance to any
overhead obstruction
(12' for Equestrian trails)

Surface material as
approved by Local
Entity Engineer.

Road Base

2%

Undisturbed
Ground

4'-0"   8' or 10'   4'-0"

20' Easement (min.)

Shoulder
Area

Shoulder
Area

BIKE PATH CLEARING

NOTES:

1. Clear trail and shoulder areas of all vegetative matter and debris.
2. For bike paths 10 feet or greater in width, 4 feet in width more than the bike path shall be cleared.
3. 8' width (min.) for one way traffic, 10' width (min.) for two way traffic.

Minimum Stopping Distance - Ft.
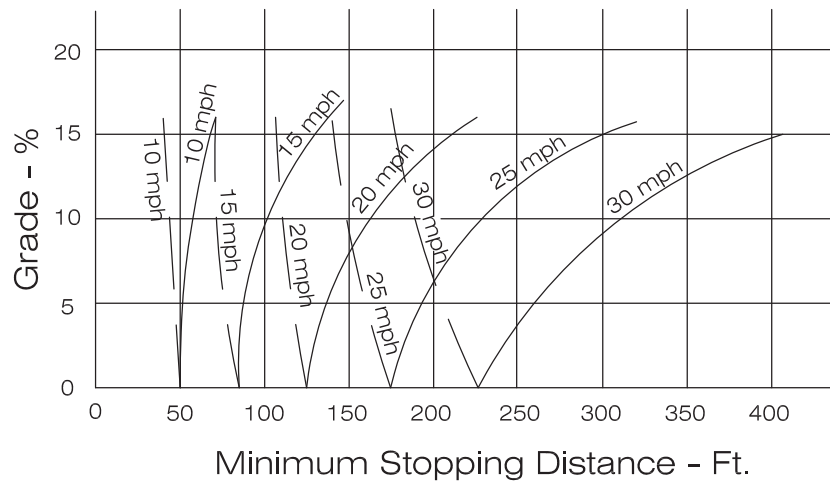
$$S = \frac{V^2}{30(f \pm G)} + 3.67 \, v$$

Where: S = Minimum Sight Distance, Ft.   Descend (-G) ——————
        V = Velocity, mph   Ascend (+G) —— ——
        f = Coefficient of Friction (use 0.25)
        G = Grade Ft./Ft. (rise/run)

(Metric Conversion: 1 FT. = 0.3 m. 1 mph = 1.6 km/h)

From AASHTO

MINIMUM STOPPING SIGHT DISTANCES			
LARIMER COUNTY URBAN AREA STREET STANDARDS	DESIGN FIGURE	REVISION NO:	FIGURE
		DATE: 08/07/00	17−2

Minimum Vertical Curve Length (L) - Ft.

500

400

V=30 mph

300

V=25 mph

V=20 mph

200

S > L

L > S

V=15 mph

100

V=10 mph

0

0   5   10   15   20   25

Algebraic Difference in Grade (A)
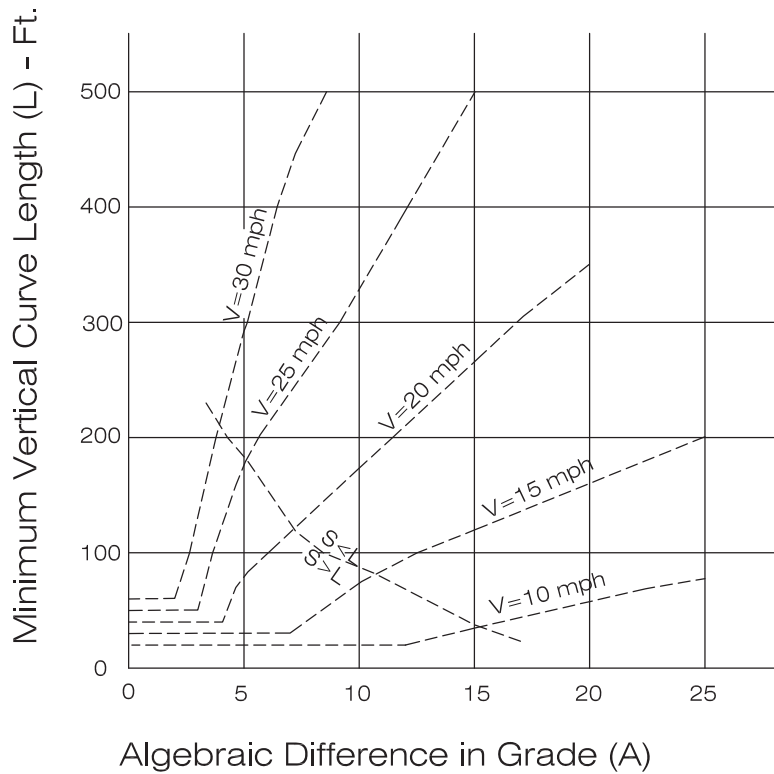
$$L = 25 - \frac{200(\sqrt{h_1} + \sqrt{h_2})^2}{A} \quad \text{When } S > L$$

$$L = \frac{AS^2}{100(\sqrt{2h_1} + \sqrt{2h_2})^2} \quad \text{When } S < L$$

$$L \text{ (min.)} = 2V$$

Where: S = Stopping Sight Distance (ft.)
         A = Algebraic Difference in Grade
         h_1 = Eye Height of Bicyclist (4.5 Feet)
         h_2 = Height of Object (0 Feet)
         L = Minimum Vertical Curve Length (ft.)

From AASHTO

MINIMUM LENGTH OF VERTICAL CURVES			
LARIMER COUNTY URBAN AREA STREET STANDARDS	DESIGN FIGURE	REVISION NO:	FIGURE
		DATE: 08/07/00	17-3

Lateral Clearance to Obstruction (m) - feet

R=25 · R=50 · R=75 · R=95 · R=125 · R=155 · R=175 · R=200 · R=225 · R=250 · R=275 · R=300 · R=350 · R=390 · R=500 · R=565 · R=600 · R=700 · R=800 · R=900 · R=1000

Sight Distance (S) – Feet *
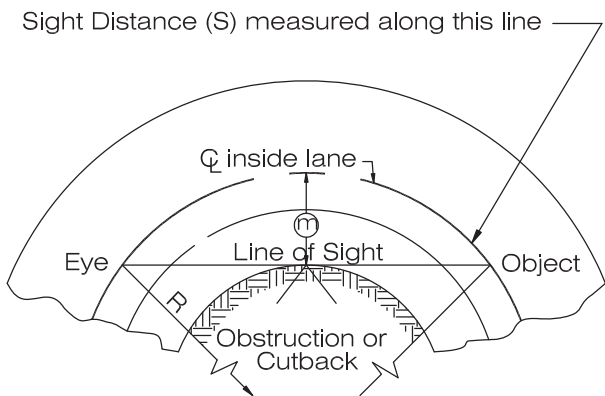
(Metric Conversion: 1 FT. = 0.3 m.)

* Lateral clearances on horizontal curves should be calculated based on the sum of the stopping sight distances for bicyclists traveling in opposite directions around the curve. See text for additional discussion.

Sight Distance (S) measured along this line

ℂ inside lane

Eye — Line of Sight — Object

m

R

Obstruction or Cutback

Line of sight is 2.0' above ℂ inside lane at point of obstruction.

S = Sight distance in feet.
R = Radius of ℂ inside lane in feet.

m = Distance from ℂ inside lane in feet.

v = Design speed for 5 in mph.

Angle is expressed in degrees

$$m = R \left[v \text{ or } s \ \left(\frac{28.655}{R} \right) \right]$$

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

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

From AASHTO

MINIMUM LATERAL CLEARANCES ON HORIZONTAL CURVES

LARIMER COUNTY URBAN AREA STREET STANDARDS	DESIGN FIGURE	REVISION NO:	FIGURE
		DATE: 08/07/00	17−4