



Highway Attachment - Sight Distance Calculations

HWY22FH001

(5 pages)

L= length of VC 1100
 G1= approach grade (%) 0.6667
 G2= departure grade (%) -3.0000
 A= Algebraic difference in grades (%) 3.6667
 h1= height of eye above roadway surface (ft) 3.5
 h2= height of object above roadway surface (ft) 2
 S= sight distance (ft)

1

$$L = \frac{AS^2}{100(\sqrt{2h_1} + \sqrt{2h_2})^2}$$

$$A \cdot S^2 = L \cdot (100(\sqrt{2h_1} + \sqrt{2h_2})^2)$$

AASHTO Sight Distance Design with Standard Car
 h1=3.5 ft, h2=2.0 ft

	sqrt 2h1	2.645751
	sqrt 2h2	2
	add	4.645751
	squared	21.58301
	*100	2158.301
	*L	2374131
	divide by A	647484.3
S=	sqrt	804.6641

Sight Distance Calculated = 805 ft.

L= length of VC 1100
 G1= approach grade (%) 0.6667
 G2= departure grade (%) -3.0000
 A= Algebraic difference in grades (%) 3.6667
 h1= height of eye above roadway surface (ft) 7
 h2= height of object above roadway surface (ft) 2
 S= sight distance (ft)
 $A \cdot S^2 = L \cdot (100(\sqrt{2h_1} + \sqrt{2h_2})^2)$

2

AASHTO Sight Distance Design for Bus
 h1=7.0 ft, h2=2.0 ft

	sqrt 2h1	3.741657
	sqrt 2h2	2
	add	5.741657
	squared	32.96663
	*100	3296.663
	*L	3626329
	divide by A	988989.9
S=	sqrt	994.4797

Sight Distance Calculated = 994 ft.

L= length of VC	1100
G1= approach grade (%)	0.6667
G2= departure grade (%)	-3.0000
A= Algebraic difference in grades (%)	3.6667
h1= height of eye above roadway surface (ft)	7.75
h2= height of object above roadway surface (ft)	5.833
S= sight distance (ft)	
$A * S_{sqrd} = L * (100(\sqrt{2h_1} + \sqrt{2h_2})_{sqrd})$	

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AASHTO Sight Distance Design for Bus

h1=7.75 ft, h2=5.833ft

Exemplar Vehicles	sqrt 2h1	3.937004
	sqrt 2h2	3.415553
	add	7.352557
	squared	54.06009
	*100	5406.009
	*L	5946610
	divide by A	1621788
S=	sqrt	1273.494

Sight Distance Calculated = 1273 ft.

L= length of VC 1100
 G1= approach grade (%) -3.0000
 G2= departure grade (%) 0.6667
 A= Algebraic difference in grades (%) 3.6667
 h1= height of eye above roadway surface (ft) 4
 h2= height of object above roadway surface (ft) 2
 S= sight distance (ft)
 $A \cdot S^2 = L \cdot (100(\sqrt{2h_1} + \sqrt{2h_2})^2)$

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AASHTO Sight Distance Design for Pickup Truck
 h1=4.0 ft, h2=2.0 ft

	sqrt 2h1	2.828427
	sqrt 2h2	2
	add	4.828427
	squared	23.31371
	*100	2331.371
	*L	2564508
	divide by A	699404.9
S=	sqrt	836.3043

Sight Distance Calculated = 836 ft.