

Example Problem 6D-1_1: Determining Stopping Sight Distance on Grade

Determine the required stopping sight distance on grade for the following situation.

The roadway consists of the following:

2-lane state highway

Design speed = 60 mph

6% down grade

Solution:

1. Use Equation 6D-1_2 to determine the required braking distance:

$$d_B = \frac{60^2}{30\left[\left(\frac{11.2}{32.2}\right) - 0.06\right]}$$
$$= 416.92 \text{ ft}$$

2. Add this to the distance traveled during brake reaction time ($1.47Vt$) to determine the required stopping sight distance:

$$SSD_{\text{req}} = 1.47 \times 60 \times 2.5 + 416.92 \approx 640 \text{ ft}$$