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:

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

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

   \[
   SSD_{req} = 1.47 \times 60 \times 2.5 + 416.92 = 640 \text{ ft}
   \]