

$$\text{Cost of steel} = \frac{A_s L}{1,728 \text{ in.}^3 / \text{ft.}^3} \left(490 \frac{\text{lb.}}{\text{ft.}^3} \right) \left(\frac{\$530}{\text{ton}} \right) \left(\frac{\text{ton}}{2,000 \text{ lb.}} \right)$$

$$\text{Cost of cement} = \frac{bhL}{1,728 \text{ in.}^3 / \text{ft.}^3} \left(\frac{W_{\text{cement}}}{27 \text{ ft.}^3} \right) \left(\frac{\$130}{\text{ton}} \right) \left(\frac{\text{ton}}{2,000 \text{ lb.}} \right)$$

$$\text{Cost of coarse aggregate} = \frac{bhL}{1,728 \text{ in.}^3 / \text{ft.}^3} \left(\frac{W_{\text{CA}}}{27 \text{ ft.}^3} \right) \left(\frac{\$18}{\text{ton}} \right) \left(\frac{\text{ton}}{2,000 \text{ lb.}} \right)$$

$$\text{Cost of fine aggregate} = \frac{bhL}{1,728 \text{ in.}^3 / \text{ft.}^3} \left(\frac{W_{\text{FA}}}{27 \text{ ft.}^3} \right) \left(\frac{\$10}{\text{ton}} \right) \left(\frac{\text{ton}}{2,000 \text{ lb.}} \right)$$

$$W = \frac{bhL}{1,728 \text{ in.}^3 / \text{ft.}^3} \left(\frac{145 \text{ lb.}}{\text{ft.}^3} \right) + \frac{A_s L}{1,728 \text{ in.}^3 / \text{ft.}^3} \left(\frac{490 \text{ lb.} - 145 \text{ lb.}}{\text{ft.}^3} \right)$$