

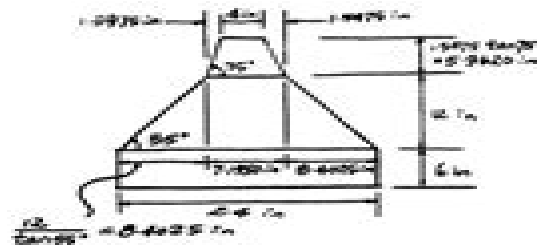
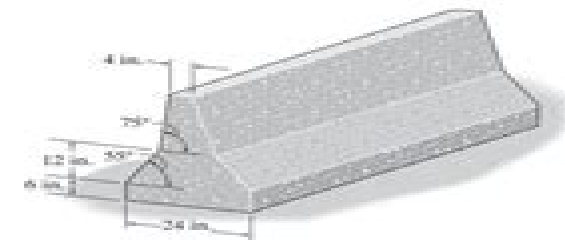
***1-4.** The “New Jersey” barrier is commonly used during highway construction. Determine its weight per foot of length if it is made from plain stone concrete.

$$\begin{aligned}\text{Cross-sectional area} &= 6(24) + \left(\frac{1}{2}\right)(24 + 7.1950)(12) + \left(\frac{1}{2}\right)(4 + 7.1950)(5.9620) \\ &= 364.54 \text{ in}^2\end{aligned}$$

Use Table 1-2.

$$w = 144 \text{ lb/ft}^3 (364.54 \text{ in}^2) \left(\frac{1 \text{ ft}^2}{144 \text{ in}^2}\right) = 365 \text{ lb/ft}$$

Ans.



1-5. The floor of a light storage warehouse is made of 150-mm-thick lightweight plain concrete. If the floor is a slab having a length of 7 m and width of 3 m, determine the resultant force caused by the dead load and the live load.

From Table 1-3

$$DL = [0.015 \text{ kN/m}^2 \cdot \text{mm} (150 \text{ mm})] (7 \text{ m}) (3 \text{ m}) = 47.25 \text{ kN}$$

From Table 1-4

$$LL = (6.00 \text{ kN/m}^2) (7 \text{ m}) (3 \text{ m}) = 126 \text{ kN}$$

Total Load

$$F = 126 \text{ kN} + 47.25 \text{ kN} = 173 \text{ kN}$$

Ans.

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WJ Hussar



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