



$$\text{CONCRETE WEIGHT} = 150 \#/\text{FT}^3$$

$$= .15 \text{ K}/\text{FT}^3$$

$$W_{\text{WALL}} = (.15 \text{ K}/\text{FT}^3)(16'-0'')(40'-0'')(1'-6'')$$

$$= 144 \text{ K}$$

$$W_{\text{FOOTING}} = (.15 \text{ K}/\text{FT}^3)(20'-0'')(6'-0'')(2'-0'')$$

$$= 36 \text{ K}$$

STABILIZING MOMENT = $D = \text{CENTROID}$

$$SM_1 = (DL \times D_{DL}) + (W_{\text{WALL}} \times D_{\text{WALL}}) + (W_{\text{FOOTING}} \times D_{\text{FOOTING}})$$

$$SM_1 = (240 \text{ K} \times 10') + (144 \text{ K} \times 11'-0'') + (36 \text{ K} \times 10'-0'')$$

$$SM_1 = 4344 \text{ K-FT}$$

$$SM_2 = (240 \text{ K})(10'-0'') + (144 \text{ K} \times 9'-0'') + (36 \text{ K} \times 10'-0'')$$

$$SM_2 = 4056 \text{ K-FT}$$

OVERTURNING MOMENT

$$OM = F \times D$$

$$OM = 24 \text{ K} \times 42'-0''$$

$$OM = 1008 \text{ K-FT}$$

$$F_{S_2} = \frac{4056 \text{ K-FT}}{1008 \text{ K-FT}}$$

$$F_{S_2} = 4.0238 \rightarrow 4.02$$

$$F_S = \frac{SM}{OM}$$

$$F_S = \frac{4344 \text{ K-FT}}{1008 \text{ K-FT}}$$

$$F_S = 4.309 \rightarrow 4.3$$