

Restoring Moment @ X.

Element

$$\begin{array}{lcl} 1 & 2.4 \times 0.4175 \times 20 & = 20.04 \times 0.508 = 10.18 \\ 2 & 1.9175 \times 0.3 \times 24 & = 13.81 \times 0.958 = 13.23 \\ 3 & 2.4 \times 1.2 \times 18 & = 51.84 \times 1.3175 = 68.30 \end{array}$$

$$\Sigma \quad 85.69 \text{ kN} \quad \Sigma \quad 91.71 \text{ kNm}$$

$$F_{ofS} \text{ o/T.} = \frac{91.71}{11.23} = 8.16 \quad \checkmark \quad \text{OK}$$

F of S sliding taking $\mu = 0.5$

$$= \frac{85.69 \times 0.5}{14.05} = 3.05 \quad \checkmark \quad \text{OK}$$

Bearing Pressure

$$\frac{M}{R_v} = \frac{91.71 - 11.23}{85.69} = 0.940$$

$$e = 0.958 - 0.940 = 0.018 \text{ m}$$

$$P_1, P_2 = \frac{W}{B} \left(1 \pm \frac{6e}{B} \right)$$

$$P_1, P_2 = \frac{85.69}{1.9175} \left(1 \pm \frac{6 \times 0.018}{1.9175} \right)$$

$$P_1, P_2 = 47.2 \text{ and } 42.17$$

both $< 75 \text{ kN/m}^2$ OK $\checkmark$.

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