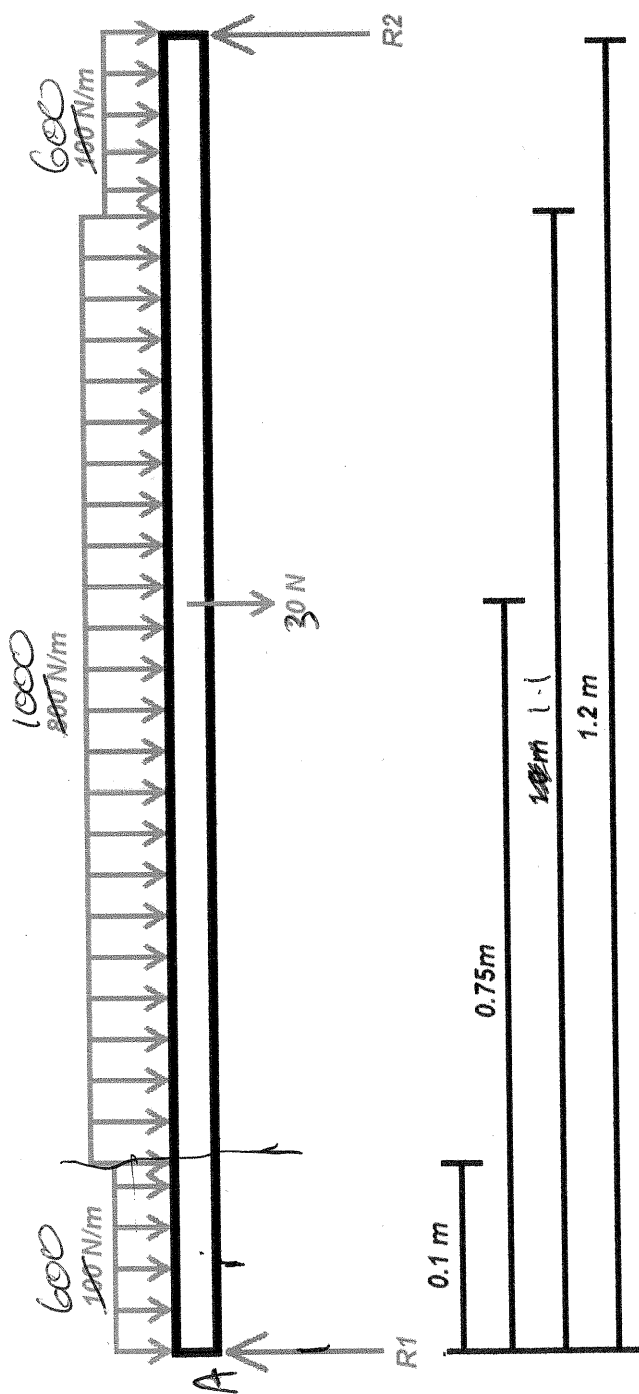




$$EI = 46 \text{ kN}\cdot\text{m}^2$$

Calculating Moments:

$$\textcircled{A}. \quad 1.2 R_2 = [0.05 \times 0.1 \times 600] + [0.6 \times 1000 \times 1] + [30 \times 0.75] + [1.5 \times 600 \times 0.1]$$

$$R_2 = 578.75 \text{ N.}$$

$$\therefore R_1 = 571.25 \text{ N}$$

Governing Equations:

$$EI \frac{d^2 y}{dx^2} = 571.25 [x] - \frac{600 [x]^2}{2} + \frac{600 [x-0.1]^2}{2} - \frac{1000 [x-0.1]^2}{2} + \frac{1000 [x-1.1]^2}{2} - \frac{600 [x-1.1]^2}{2} - 30 [x-0.75]$$

$$I \frac{dy}{dx} = \frac{571.25 [x]^2}{2} - \frac{600 [x]^3}{6} + \frac{600 [x-0.1]^3}{6} - \frac{1000 [x-0.1]^3}{6} + \frac{1000 [x-1.1]^3}{6} - \frac{600 [x-1.1]^3}{6} - \frac{30 [x-0.75]^2}{2} + A$$

$$I y = \frac{571.25 [x]^3}{6} - \frac{600 [x]^4}{24} + \frac{600 [x-0.1]^4}{24} - \frac{1000 [x-0.1]^4}{24} + \frac{1000 [x-1.1]^4}{24} - \frac{600 [x-1.1]^4}{24} - \frac{30 [x-0.75]^3}{6} + Ax + B$$

Applying Boundary Conditions:

$$\textcircled{A} x=0 \quad y=0.$$

$$0 = 0 - 0 + 0 - 0 + 0 - 0 - 0 + 0A + B$$

$$\therefore \underline{\underline{B=0}}$$

$$\textcircled{A} x=1.2 \quad y=0$$

$$0 = \frac{571.25 [1.2]^3}{6} - \frac{600 [1.2]^4}{24} + \frac{600 [1.1]^4}{24} - \frac{1000 [1.1]^4}{24} + \frac{1000 [0.1]^4}{24} - \frac{600 [0.1]^4}{24} - \frac{30 [0.45]^3}{6} + A(1.2).$$

$$A = -73.188.$$

$$y_{\max} = -0.601 \times 10^{-3} \text{ m}$$

$$\textcircled{A} x = 0.6012 \text{ m.}$$

$$= -0.601 \text{ mm}$$

$$\text{For } y_{\max} = -0.25 \text{ mm} \quad EI = 110500 \text{ Pa.}$$