

The logo for UDS (Universidad de Sevilla) features a stylized sun or flame icon to the left of the letters 'UDS' in a bold, blue, sans-serif font.

MOMENTOS

JOSE JAVIER PERERA VENTURA

ARQ. PEDRO ALBERTO GARCIA

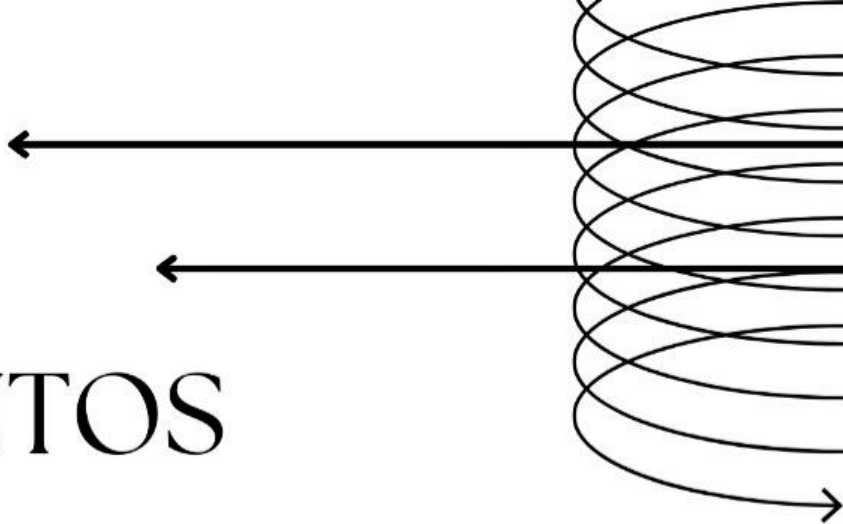
LOPEZ

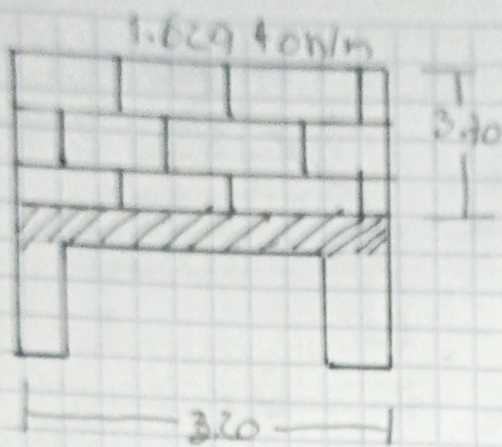
4. CUATRIMESTRE

RESISTENCIA DE MATERIALES DE

CONSTRUCCION

15 DE OCTUBRE DEL 2023





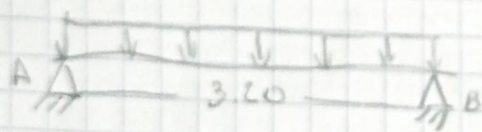
concreto reforzado
Muro de block = 270 kg/m

$$h = \frac{L}{12} \rightarrow \frac{3.20m}{12} = 0.2666m$$

$$b = 0.5(h) \rightarrow 0.5(0.2666m) = 0.1333m$$

$$p.p + robe = 0.25m \times 0.15 \times 2400 \text{ kg/m}^3 = 90 \text{ kg}$$

$$p.p \text{ muro} = 5.70m(270 \text{ kg/m}) = 1.539 \text{ kg/m}$$



$$\frac{1.539 \text{ kg/m} + 90 \text{ kg/m}}{1} \rightarrow 1.629 \text{ ton/m}$$

$$M = \frac{1}{8} qL^2 = 1.629 \text{ ton/m} (3.20m)^2 = 2.085 \text{ ton/m}$$

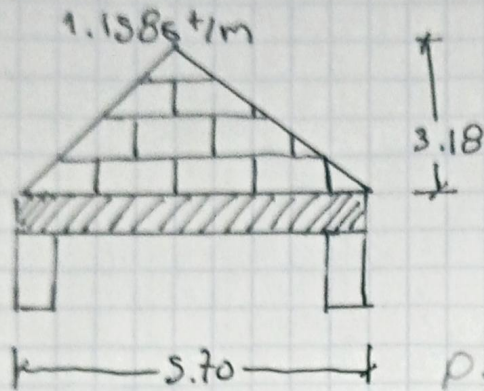
$$R_A = R_B = \frac{qL}{2} = \frac{1.629 \text{ ton/m} (3.20m)}{2} = 2.606 \text{ ton}$$

$$E = 3,100,000 \text{ ton/m}^2$$

$$\theta_A = \theta_B = \frac{qL^3}{24EI} \rightarrow \frac{1.629 (3.20m)^3}{24(3,100,000 \text{ ton/m}^2)(0.0014384 \text{ m}^4)} = \frac{53.379072}{14,530.32} = 0.0036731$$

$$f = \frac{5}{384} \frac{qL^4}{EI} \rightarrow \frac{5}{384} \frac{1.629 \text{ ton/m} (3.20m)^4}{(3,100,000 \text{ ton/m}^2)(0.0014384 \text{ m}^4)} = 0.0036731m = 36.73cm$$

$$Per = \frac{L}{240} = \frac{320cm}{240} = 1.33cm$$



concreto reforzado
muro de block = 270 kg/m

$$h = \frac{L}{12} = \frac{3.70 \text{ m}}{12} = 0.475 \text{ m}$$

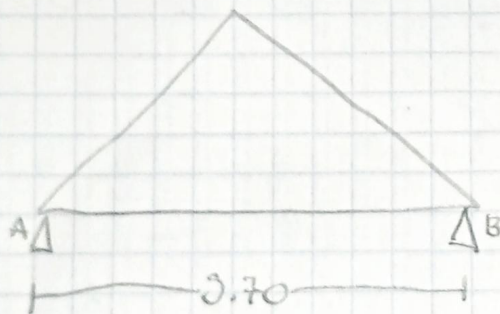
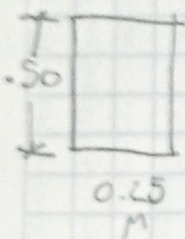
$$b = 0.5(h) \rightarrow 0.5(0.50) = 0.25 \text{ m}$$

$$\text{p.p. + adobe} \rightarrow 0.50 \text{ m} \times 0.25 \text{ m} \times 2400 \text{ kg/m}^3 = 300 \text{ kg/m}$$

$$\text{p.p. muro} \rightarrow 3.18 \text{ m} \times 270 \text{ kg/m} = 858.6 \text{ kg/m}$$

$$+ \begin{array}{r} 858.6 \text{ kg/m} \\ 300 \text{ kg/m} \\ \hline 1.158.6 \text{ kg/m} \end{array}$$

$$1.1586 \text{ ton/m}$$



$$E = 3,100,000 \text{ ton/m}^2$$

$$M = q \cdot L^2 \rightarrow 1.1586 \text{ ton/m} \cdot (5.70)^2 = 3.136 \text{ ton} \cdot \text{m}$$

$$R_A = R_B = \frac{qL}{4} \rightarrow 1.1586 \text{ ton/m} \cdot (5.70) = 1.651 \text{ ton}$$

$$I_y = \frac{b^3}{12} \rightarrow \frac{0.25^3}{12} = 0.002604 \text{ m}^4$$

$$\theta_A = \theta_B = \frac{3qL^3}{192EI} = \frac{3(1.1586 \text{ ton/m})(5.70)^3}{192(3,100,000 \text{ ton/m}^2)(0.002604 \text{ m}^4)} = \frac{1072.8230}{152190.4} = 12.62 \text{ cm}$$

$$F = \frac{qL^4}{120EI} = \frac{1.1586 \text{ ton/m} \cdot (5.70)^4}{120(3,100,000 \text{ ton/m}^2)(0.002604 \text{ m}^4)} = 0.001262 \text{ m} = 12.62 \text{ cm}$$

$$A_{\text{per}} = \frac{L}{240} \rightarrow \frac{570 \text{ m}}{240} = 2.375 \text{ cm}$$