



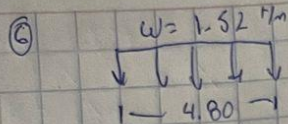
Alumno: Nestor Ivan Guillen Velasco

Profesor: Pedro Garcia

Cuatrimestre: Quinto cuatrimestre

Fecha:11/02/2024

7c



⑦ Momento

$$\frac{w(L)^2}{8} = \frac{1.52 \text{ t/m} (4.80)^2}{8} = 4.37 \text{ t}\cdot\text{m}$$

⑧ Momento ultimo (Mu)

$$M_u = 110 (1.3^{105}) = 140 / \text{cm}$$

$$M_u = 4.37 (130,000) = 568,100 \text{ K}\cdot\text{cm}$$

$$\textcircled{9} \rho = \frac{568,100 \text{ K}\cdot\text{cm}}{0.90 \times 20 \text{ cm} \times 36^2 \times 136 \text{ K}/\text{cm}^2} \cdot 2 \text{ fl} = 0.8011$$

$$\textcircled{10} \rho = \frac{(9+1) \cdot F_c}{F_y} \Rightarrow (-0.8011) \cdot \frac{136 \text{ K}/\text{cm}^2}{4200 \text{ K}/\text{cm}^2} = 0.006440$$

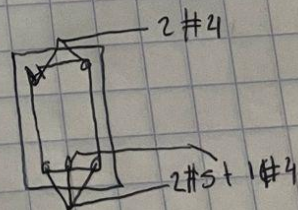
$$\textcircled{11} A_s = \rho (b) d$$

$$0.006440 (20) 36 = 4.6368 \text{ cm}^2$$

$$2 \#5 + 1 \#4 = 5.23 \text{ cm}^2$$

$$\textcircled{12} A_{s \text{ min}} = 0.00235 (20 \text{ cm}) 36 = 1.692 \text{ cm}^2$$

$$A_{s \text{ max}} = 0.001143 (20 \text{ cm}) 36 = 8.22 \text{ cm}^2$$



④ Peso de Alca CP. 1000 x area (Reguladora) / distancia de apoyo

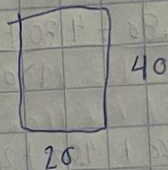
$$P_1 = 5.76 \text{ m}^2 (665 \text{ Kg/m}^2) = 3,830.40 \text{ Kg/m}^2 / 4.80 \text{ m} = 798 \text{ Kg/m}$$

$$P_2 = 3.83 \text{ m}^2 (668 \text{ Kg/m}^2) = 2,520.14 \text{ Kg/m}^2 / 4.80 \text{ m} = 525.02 \text{ Kg/m}$$

⑤ Carga w

$P_1 + P_2 +$ peso propio de Vabe

$$P.P = h \cdot \frac{L}{12} = \frac{4.80}{12} = 0.40$$



$$b = 0.5(h) = 0.5(0.40) = 0.20 \text{ m}$$

$$\text{Peso} = 2.4 \text{ t/m}$$

$$h(b)_{\text{peso}} = 0.40 \text{ m} \times 0.20 \text{ m} (2.40 \text{ t/m}) = 0.192 \text{ t/m} / \text{P.P. de trabe}$$

$$P_1 + P_2 = \frac{1,323.02 \text{ Kg/m}}{1000} = 1.323 \text{ t/m}$$

$$+ 0.192 \text{ t/m}$$

$$1.515 \text{ t/m}$$

Datos

$$h = 40 \text{ cm}$$

$$F_c = 200 \text{ Kg/cm}^2$$

$$b = 20 \text{ cm}$$

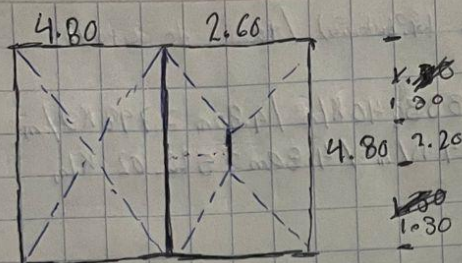
$$F_t = 4,200 \text{ Kg/cm}^2$$

$$L = 4.80 \text{ cm}$$

$$F_k = 136 \text{ Kg/cm}^2$$

$$d = 36 \text{ cm}$$

$$F_n = 0.90$$



$$\textcircled{1} \quad H_{z-P} + R = \frac{4.80 + 4.80 + 4.80 + 4.80 + 0.04}{170} = 0.152 \text{ m} = 0.25 \text{ m}$$

$$H_{z-P} + R = \frac{2.60 + 4.80 + 2.60 + 4.80 + 0.04}{170} = 0.127 \text{ m} = 12 \text{ m}$$

Azoleca

$$\textcircled{2} \quad \text{Loss 1} = 665 \text{ Kg/m}^2$$

$$\text{Loss 2} = 658 \text{ Kg/m}^2$$

Area

③

$$A_1 = \frac{b \times h}{2} = \frac{4.80 \times 2.40}{2} = 5.76 \text{ m}^2$$

$$A_2 = \frac{B \times b \times h}{h} = \frac{4.80 \times 2.20 (1.30)}{2} = 3.83 \text{ m}^2$$