



Mi Universidad

Nombre del Alumno: Ana Cristell Gómez Rodríguez

Nombre del tema: Métodos Energéticos

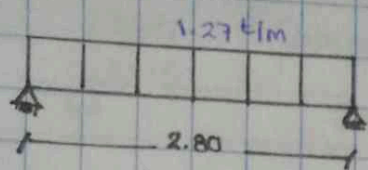
Parcial: 2do

Nombre de la Materia: Análisis de Estructuras

Nombre del profesor: Arq. Pedro Alberto García López

Nombre de la Licenciatura: Arquitectura

Cuatrimestre: 4to



$\Sigma M =$ Sumatoria de momento

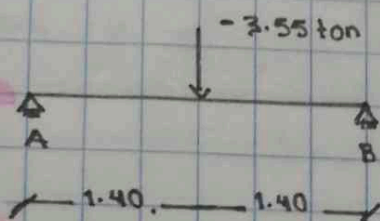
$\Sigma F =$ Sumatoria de fuerza

$$M_0 = \frac{wL^2}{8}$$

$$f = \frac{(-q+1) \cdot T/C}{F_y}$$

$$P = (w)L = 1.27 \text{ t/m} (2.80 \text{ m}) = 3.55 \text{ ton}$$

$$L_p = L/2 = 2.80 \text{ m} / 2 = 1.40 \text{ m}$$



$$\Sigma M = 0$$

$$-3.55 \text{ ton} (1.40 \text{ m}) + R_B (2.80) = 0$$

$$-4.97 \text{ ton/m} + R_B (2.80) = 0$$

$$R_B = 4.97 \text{ t/m} / 2.80 \text{ t/m} = 1.778 \text{ ton}$$

$$F^*C = 200 \text{ kg/cm}^2$$

$$T^*C = 200 \text{ kg/cm}^2 (0.80) = 160 \text{ kg/cm}^2$$

$$F^*C = 0.85 (160 \text{ kg/cm}^2) = 136 \text{ kg/cm}^2$$

$$\Sigma F = 0$$

$$R_A - 3.55 \text{ ton} + 1.778 \text{ ton}$$

$$R_A = 1.78 \text{ ton} = 0$$

$$R_A = 1.78$$



$\Delta \sigma_{\text{máx}}$

$$F^*S \text{ SISMICO} = 1.3 \times 10^5$$

$\Delta \sigma_{\text{mín}}$

$$130.000$$

$\Delta \sigma_{\text{B3}}$

$$M \cdot FR = 0.90$$

$$V \cdot FR = 0.80$$

$$R_B = 1.778 \text{ ton}$$

$$R_A = 1.78 \text{ ton}$$

$$M_0 = 1.24 \text{ ton/m}$$

$$M_0 = 161.200 \text{ kg/cm}$$

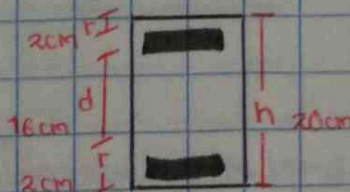
$$M_0 = 124 \text{ ton/m} \times 1.3 \times 10^5$$

$$M_0 = 161.200$$

$$P_b = T^*C / F_y = 4800 / F_y + 16000 = 136 / 4800 = 4800 / 10700 = 0.0448$$

$$P_{\text{máx}} = 0.75 P_b = 0.75 \times 0.0448 = 0.0336$$

$$P_{\text{mín}} = 0.7 \sqrt{T^*C} = 0.7 \sqrt{200} = 0.002357$$



$$f = \frac{(-q+1) \cdot (T^*C)}{F_y}$$

$$q^2 = \frac{M_0}{F_y} \times 2 + 1 = q = \sqrt{\frac{-M_0}{F_y} \cdot 2 + 1}$$

$$b = 0.15 = 15 \text{ cm}$$

$$TR \cdot b \cdot d^2 \cdot T^*C$$

$$FR \cdot b \cdot d^2 \cdot T^*C$$

$$q = \sqrt{\frac{161200 \text{ kg/cm}^2}{4200} \times 2 + 1}$$

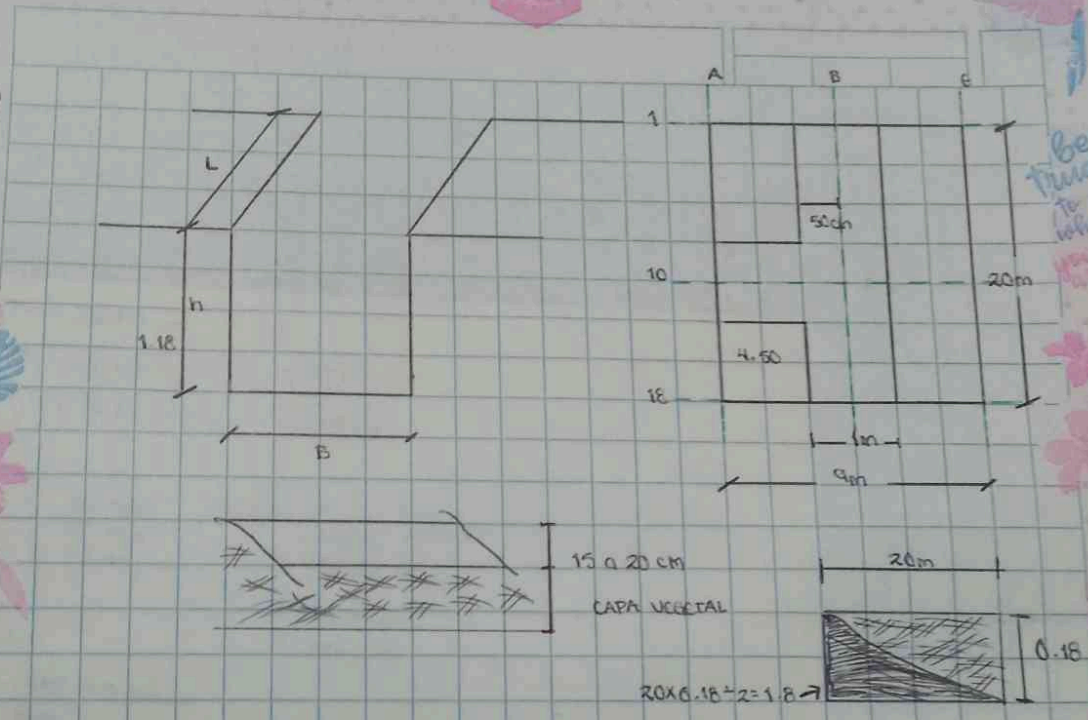
$$0.90 \cdot 15 \cdot 16^2 \cdot 136$$

$$q = 0.560$$

$$f = \frac{(-0.560 + 1) \cdot 136}{4200}$$

$$= 0.0448$$

SPRINKLE EVERYWHERE



x0

CONCEPTO	UNIDAD	EJE	TRAMO	LARGO	ANCHO	ALTURA	PIEZAS	TOTAL	OBSERVACION
Limpieza	m ²	1-18	A-E	20.0m	9.0m	/	1	180m ²	
Trazo	m ²	10	A-B	5.0m	1m	/	1	5m	
Nivelación	m ³	1-18	A-E	1.20m ²	9.0m	/	1	16.2m ² + 95% ccm = 39.59m ³	
Excavación	m ³	10	A-B	4.50m	1m	1.18m	1	5.31m ³ *	ZC-1
		B	1-18	2.0m	1m	1.18m	1	23.60 m ³ *	
								28.91307 m ³ arreda = 37.583m ³	
Planchilla de concreto pobre f'c = 100 kg/cm ²		10	A-B	4.5m	1m	0.05m	1	0.225 *	ZC-1
		B	1-18	20m	1m	0.05m	1	1 *	ZC-1
								1.22515% arreda = 1.286	