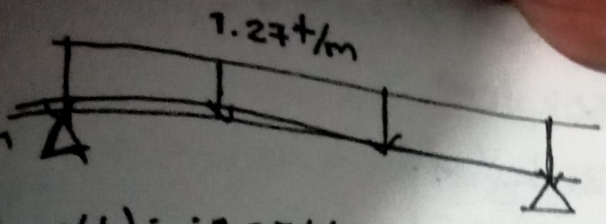
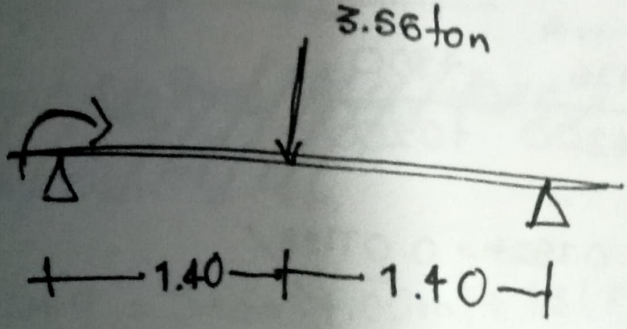


$P = w(L) = 1.27\ t/m\ (2.80\ m) = 3.56\ ton$

$UP = L/2 = 2.80\ m/s = 1.40\ m$



$\Sigma M = 0 : 3.56\ ton\ (1.40\ m) + RB\ (2.80\ m) = 0$

$4.97\ ton/m + RB\ (2.80\ m) = 0$

$RB = \frac{4.97\ ton/m}{-2.80\ m} = 1.77\ ton$

$\Sigma Fy = 0$

$RA - 3.56\ ton + 1.77\ ton =$

$RA - 1.78 = 0$

$RA = 1.78\ ton$

$M = 1.24\ ton$

$M = \frac{w L^2}{8}$

$F'_c = 200 kg/cm^2$

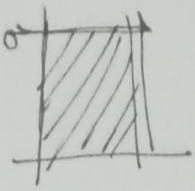
$F^*c = 200 kg/cm^2 (0.80) = 160 kg/cm^2$

$F''c = 160 kg/cm (0.88) = 136 kg/cm^2$

RO BALANCEADO

RO MAXIMO

RO MIN



$$RBS = \frac{F''c}{Fy} = \frac{4800}{Fy + 6000} = \frac{136}{4200} = \frac{4800}{10200} = 0.01524$$

$$P_{MAX} = 0.75 p_b = 0.75 \times 0.01524 = 0.01143$$

$$P_{MIN} \frac{0.7\sqrt{F'c}}{Fy} = \frac{0.7\sqrt{200}}{4200} = 0.002357$$

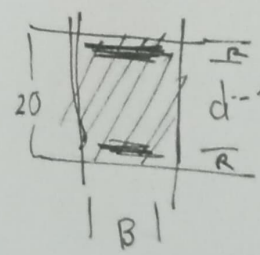
$$Rb = \frac{(-q+1) \cdot F''c}{Fy}$$

$Fs = 1.35 : 130{,}000 kg/cm$

$Mu : 161{,}200 kg\cdot cm$

$$q^2 = -\frac{Mu}{FR \cdot b \cdot d^2 \cdot F''c} \times 2 + 1 \longrightarrow q = \sqrt{\frac{Mu}{FR \cdot b \cdot d^2 F''c}} \cdot 2 + 1$$

F REDUCCION / BASE / PERALTE



$V FR : 0.80$

$M RR. 0.90$

$M = 1.24 ton/m$

$$q = \sqrt{\frac{161{,}200 k\cdot cm}{0.90 \cdot 15 cm \cdot \frac{16^2}{cm} \cdot 136 kg/cm^2}} \cdot 2 + 1 :$$

$q = 0.560$

$$R_B = \frac{-(0.560 + 1)(136)}{4200} = 0.01424$$