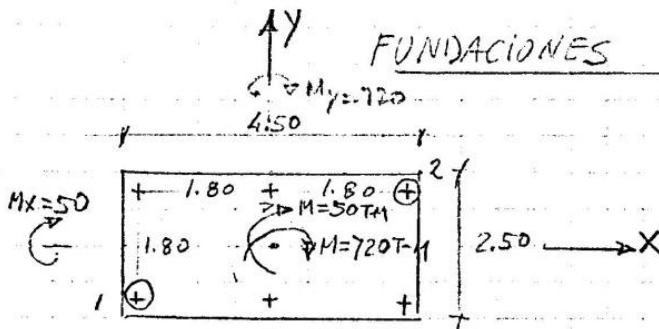


CÁLCULO DE LA LONGITUD DEL PILOTE



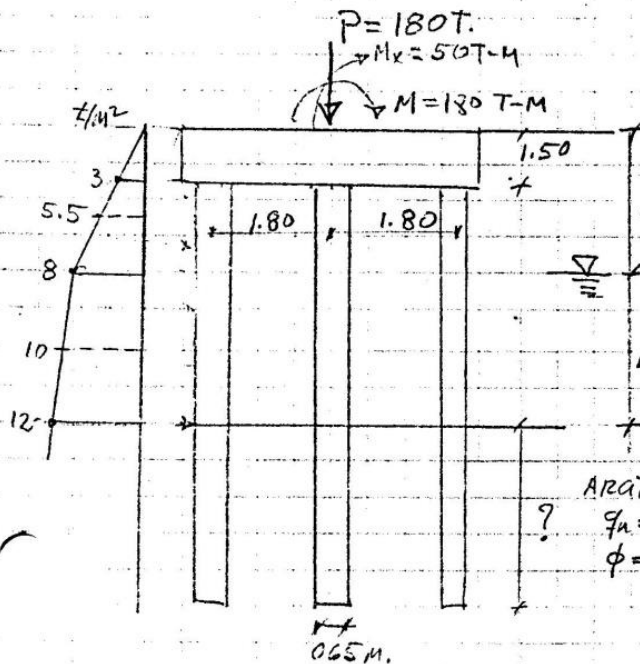
MOMENTO SENTIDO CORTO $M_x = 50 \text{ T-M}$
 MOMENTO SENTIDO LARGO $M_y = 720 \text{ T-M}$

$$P_v = 180 \text{ T}$$

CABEZAL: 1

$$1.50 \times 4.50 \times 2.50 \times 2.40 = 40.5 \text{ T}$$

$$P_{v \text{ TOTAL}} = 220.5 \text{ T.}$$



$$\sum d_x^2 = 6 \times 0.90^2 = 4.86$$

$$\sum d_y^2 = 4 \times 1.80^2 = 12.96$$

$$P = \frac{120.5}{6} + \frac{50 \times 0.90}{4.86} + \frac{720 \times 1.80}{12.96}$$

$$P = 36.75 + 9.26 + 100$$

$$P_{\text{COMP. EN ②}} = 36.75 + 9.26 + 100 = 146 \text{ T.}$$

$$P_{\text{TRAC. MAX EN ①}} = 36.75 - 9.26 - 100 = -72.5$$

FRICCIÓN: $S = (5.50 \times 2.50 + 10.0 \times 4) \times 0.50 \times \gamma \left(\frac{2}{3} 35^\circ\right) \times \pi \times 0.65 = 21.1 \text{ Ton.}$

ADHERENCIA: $q_n = 40 \text{ t/m}^2 \rightarrow c = 20 \text{ t/m}^2 \rightarrow \alpha = 0.25$

$$Q = 20 \times 0.25 \times \pi \times 0.65 \times L = 10.2 L \text{ T.}$$

$$N'_c = 40$$

$$\phi = 15^\circ$$

PUNTA: $P_0 = 40 \times 20 \times \frac{\pi \times 0.65^2}{4} = 265 \text{ T.}$

A TRACCIÓN: CON F.S. = 3 $\rightarrow P_{\text{falla TRACCIÓN}} = 72.5 \times 3 = 21.1 + 10.2L \rightarrow L = 19.3 \text{ m.}$

A COMPRESIÓN: CON F.S. = 3 $\rightarrow P_{\text{falla COMP.}} = 146 \times 3 = 265 + 21.1 + 10.2L \rightarrow L = 14.9 \sim 15.0$

SIN CONTAR EL PESO DEL PILOTE

$$L_{\text{TOTAL}} = 19 + 8.0 + 0.65 = 27.7 \sim \underline{\underline{28.0 \text{ m.}}}$$