

VOLADO (MURO ALA)

$$q_{EST} : (1.05/2 + 0.38) \times 1.69 = 1.53 \text{ TON/M/M}$$

$$q_{SIS} : 1.05/2 \times 1.69 + (1.44 + 1.08)/2 \times 1.3 + 0.13 \times 1.3 = 2.70 \text{ "}$$

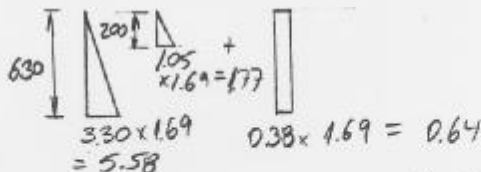
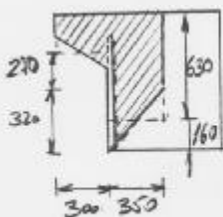
$$q_{DIS} = 2.7 \text{ TON/M/M}$$

$$M_{DIS} = \frac{q_{DIS} l^2}{2} \quad (l = 3.0 \text{ m})$$

$$M_{DIS} = 12.2 \text{ TON-M/M}$$

$$d = 30 \text{ cm}$$

$$A_s = 11.23 \text{ cm}^2 \quad (C/\phi/20 \ 20 + 5 \phi/6 \ 20)$$

24.6 CONTRAFUERTE:CASO ESTÁTICO

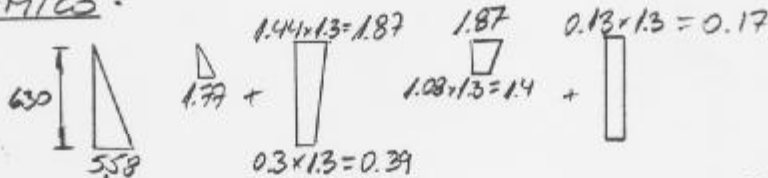
$$M_{EST} = 5.58 \times 3.5 \times 6.3/2 \times (6.3/3 + 1.6) = 227.6 \text{ TON-M}$$

$$+ 1.77 \times 3.0 \times 2.0/2 \times (2.0/3 + 5.9) = 20.9 \text{ "}$$

$$+ 0.64 \times 3.5 \times 6.3 \times (6.3/2 + 1.6) = 67.0 \text{ "}$$

$$+ 0.64 \times 3.0 \times 2.0 \times (2.0/2 + 5.9) = 26.5 \text{ "}$$

$$M_{EST} = 342.0 \text{ TON-M}$$

CASO SÍSMICO:

$$M_{SIS} = 227.6 + 20.9 = 248.5 \text{ TON-M}$$

$$+ (0.39 + 0.17) \times 3.5 \times 6.3 \times (6.3/2 + 1.6) = 58.7 \text{ "}$$

$$+ (1.87 - 0.39) \times 3.5 \times 6.3/2 \times (6.3/3 + 1.6) = 60.4 \text{ "}$$

$$+ (1.87 + 1.4)/2 \times 3.0 \times 2.0 \times (2.0/2 + 5.9) = 67.7 \text{ "}$$

$$M_{SISM.} = 435.3 \text{ TON-M}$$

$$\Rightarrow M_{DIS} = 435.3 \text{ TON-M}$$

$$d = 207 \text{ cm}$$

$$b = 210 \text{ cm}$$

$$A_s = 56.4 \text{ cm}^2 \quad (4 \phi 25 + 8 \text{ s. } \phi 25)$$