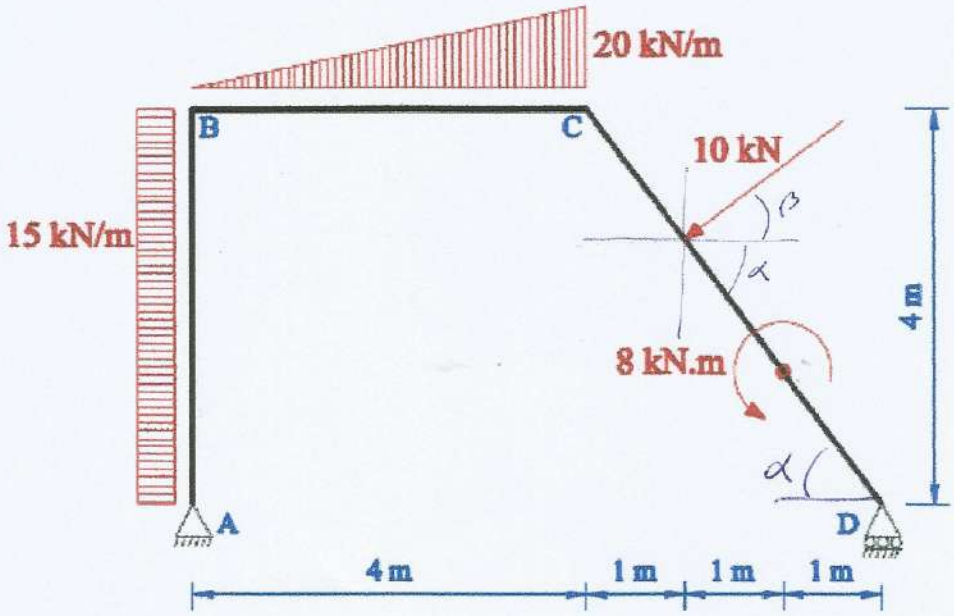
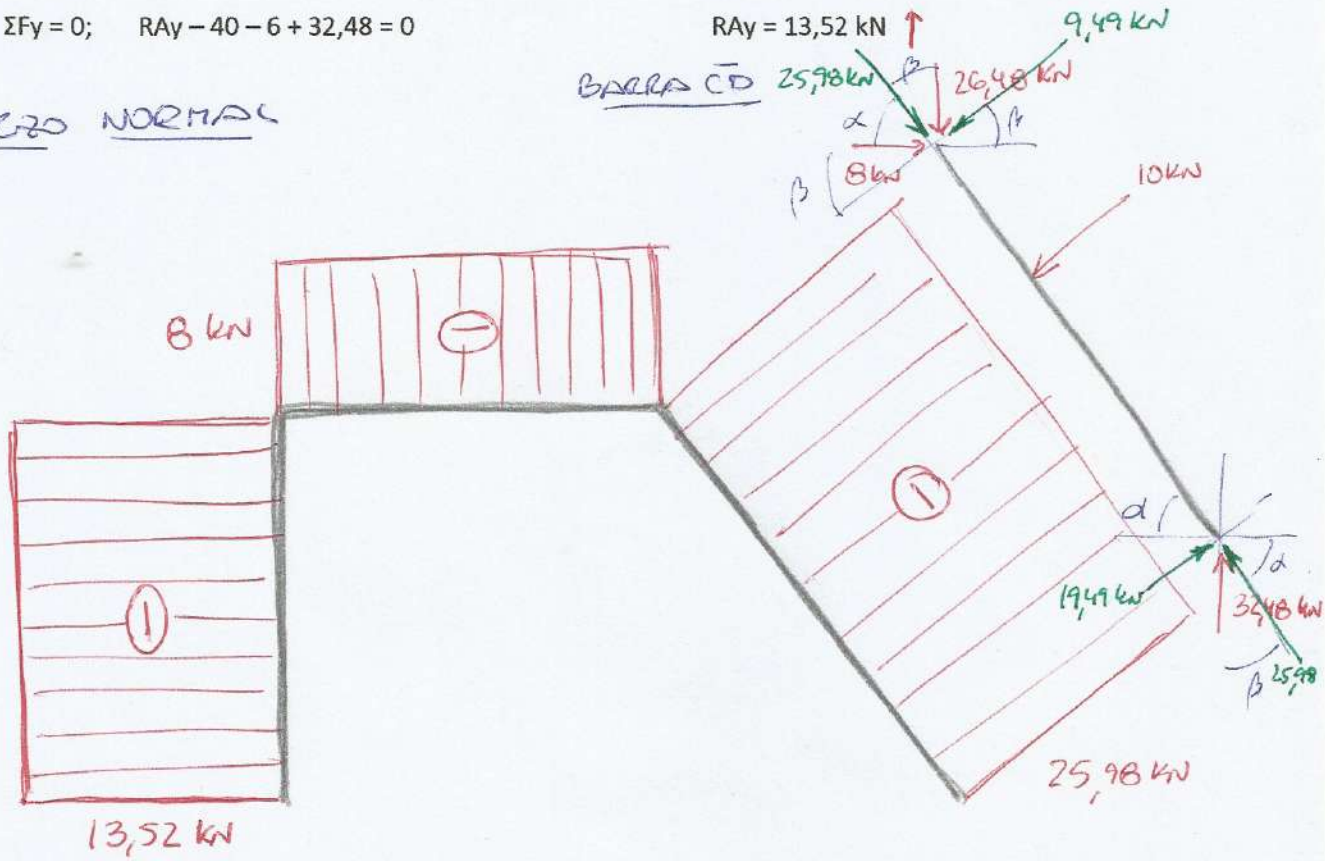


(α) Ángulo = 53,13 (β) complementario = 36,87

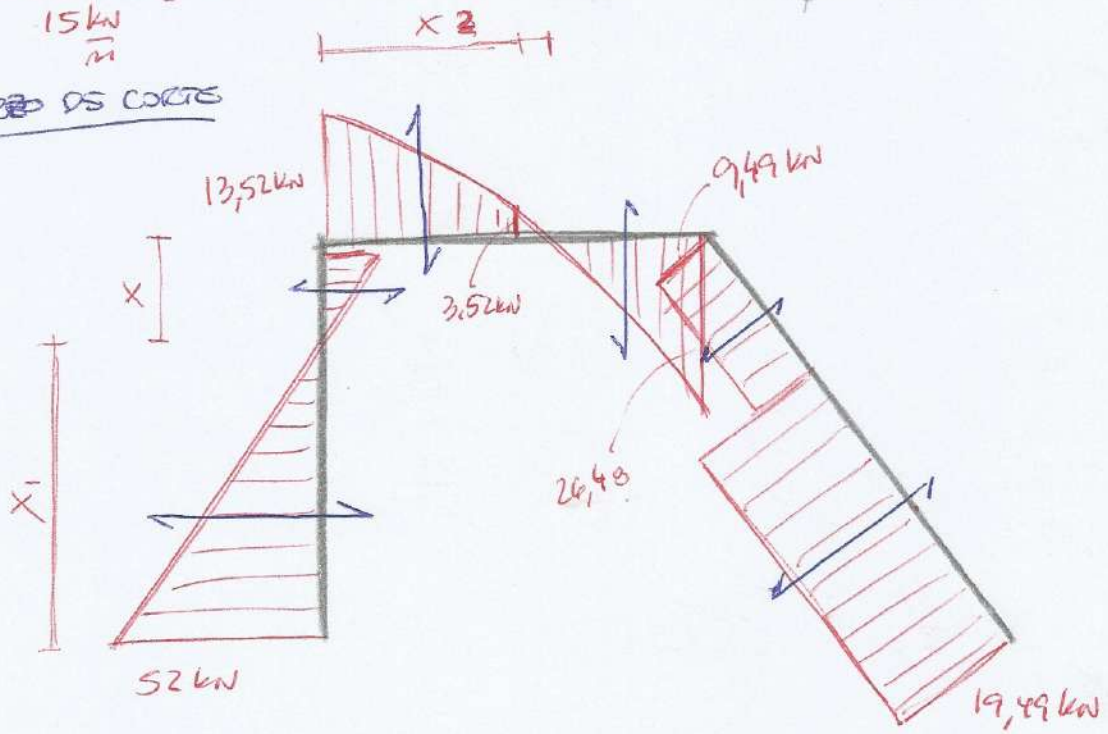
ΣFx = 0;	15 . 4 – 10 . cos 36,87 – Rax = 0	RAx = 52 kN ←
ΣMA = 0;	120 + 106,67 + 30 – 21,33 – 8 – RD . 7 = 0	RD = 32,48 kN ↑
ΣFy = 0;	RAy – 40 – 6 + 32,48 = 0	RAy = 13,52 kN ↑

ESFUERZO NORMAL

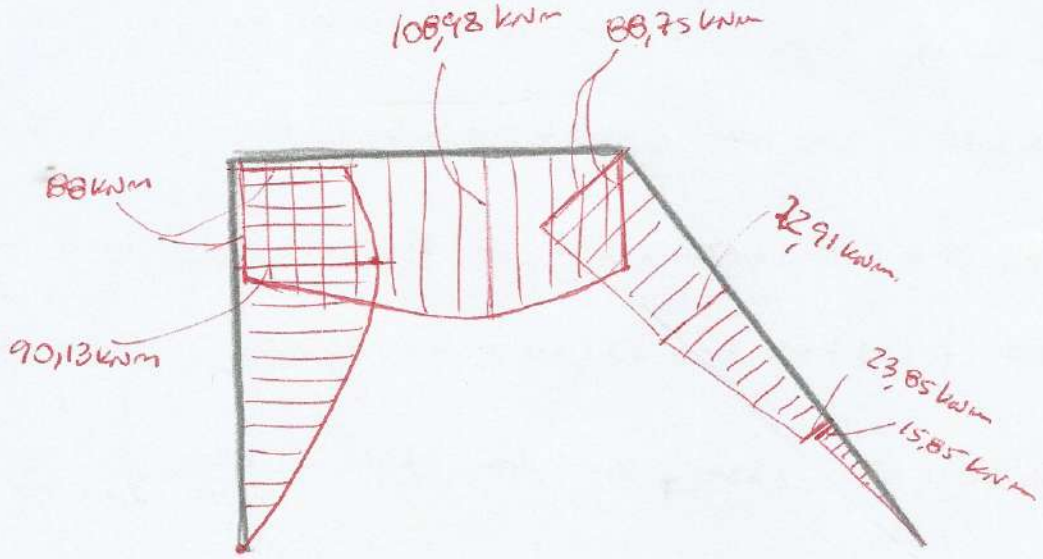


$X_1 = \frac{52\,kN}{15\,\frac{kN}{m}} = 3,47\,m$

ESFUERZO DE CORTE

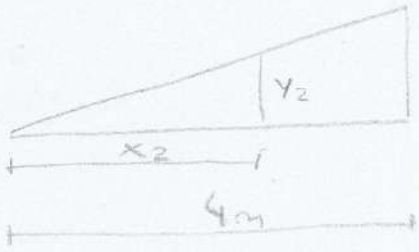


ESFUERZO FLECTOR



$M_{max\,1} = 90,13\ kNm$

$M_{max\,2} = 108,98\ kNm$



$$\frac{20}{4} = \frac{Y_2}{X_2}$$

$$X_2 = \frac{4m \cdot Y_2}{20 \frac{kN}{m}}$$

$$13,52\,kN - \frac{Y_2}{2} \cdot \frac{4m \cdot Y_2}{20 \frac{kN}{m}} = 0 \qquad 13,52\,kN - \frac{Y_2^2}{10 \frac{kN}{m^2}} = 0$$

$$Y_2^2 = 13,52\,kN \cdot 10 \frac{kN}{m^2} \Rightarrow Y_2 = \sqrt{135,2 \frac{kN^2}{m^2}}$$

$$\boxed{Y_2 = 11,63 \frac{kN}{m^2}}$$

$$\boxed{X_2 = \frac{4m}{20 \frac{kN}{m}} \cdot 11,63 \frac{kN}{m^2} = 2,33\,m}$$

$$M_{X_2} = 13,52\,kN \cdot 2,33\,m + 52\,kN \cdot 4m - 15 \frac{kN}{m} \cdot 4m \cdot 2m - 11,63 \frac{kN}{m} \cdot \frac{2,33m}{2} \cdot \frac{2,33m}{3} =$$

$$M_{X_2} = 31,5\,kN \cdot m + 208\,kNm - 120\,kNm - 10,52\,kNm = 108,98\,kNm$$

$$M_C = 13,52\,kN \cdot 4m + 52\,kN \cdot 4m - 15 \frac{kN}{m} \cdot 4m \cdot 2m - 20 \frac{kN}{m} \cdot \frac{4m}{2} \cdot \frac{4m}{3} =$$

$$M_C = 54,08\,kNm + 208\,kNm - 120\,kNm - 53,33\,kNm = 88,75\,kNm$$

$$M_{C_1} = 13,52\,kN \cdot 5m + 52\,kN \cdot 2,67m - 15 \frac{kN}{m} \cdot 4m \cdot 0,67m - 20 \frac{kN}{m} \cdot \frac{4m}{2} \cdot \left(\frac{4m}{3} + 1m\right) =$$

$$M_{C_1} = 67,6\,kNm + 138,84\,kN \cdot m - 40,2\,kN \cdot m - 93,33\,kNm = 72,91\,kNm$$

$$M_{C_{2\,izq}} = 13,52\,kN \cdot 6m + 52\,kN \cdot 1,33m + 15 \frac{kN}{m} \cdot 4m \cdot 0,67m - 20 \frac{kN}{m} \cdot \frac{4m}{2m} \cdot \left(\frac{4m}{3} + 2m\right) = 10\,kN \cdot 3,33m =$$

$$M_{C_{2\,izq}} = 81,12\,kNm + 69,16\,kNm + 40,2\,kNm - 133,33\,kNm = 33,3\,kNm = 23,85\,kNm$$

$$M_{C_{2\,der}} = 23,85\,kN\,m - 8\,kNm = 15,85\,kNm$$

$$M_D = 13,52\,kN \cdot 7m + 15 \frac{kN}{m} \cdot 4m \cdot 2m - 20 \frac{kN}{m} \cdot \frac{4m}{2} \cdot \left(\frac{4m}{3} + 3m\right) - 10\,kN \cdot 3,33m - 8\,kNm =$$

$$M_D = 94,64\,kNm + 120\,kNm - 173,33\,kNm - 33,3\,kNm - 8\,kNm = \underline{0\,kNm}$$