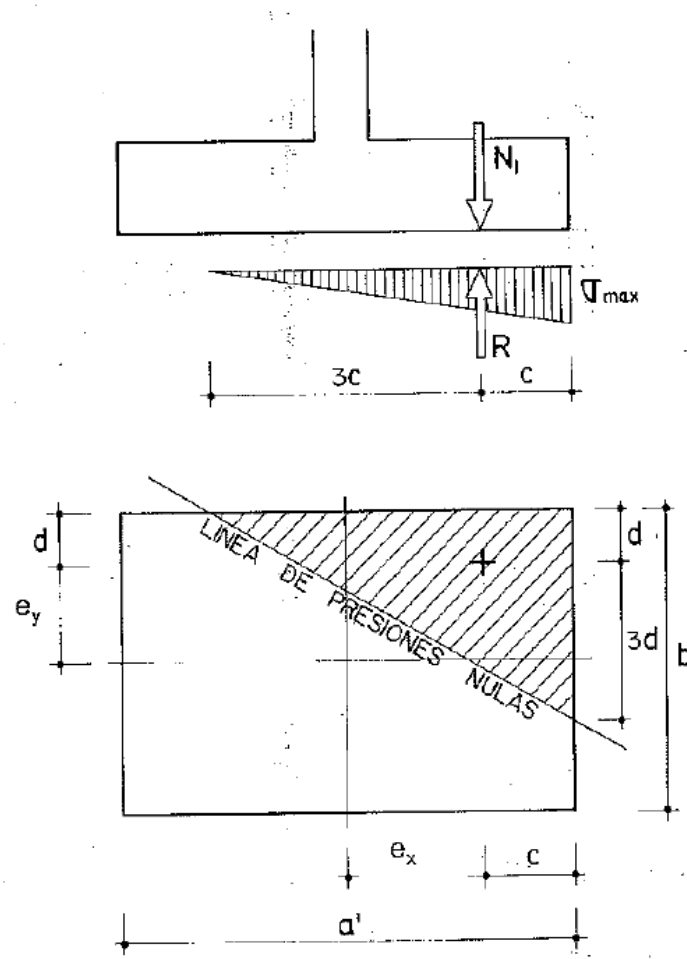
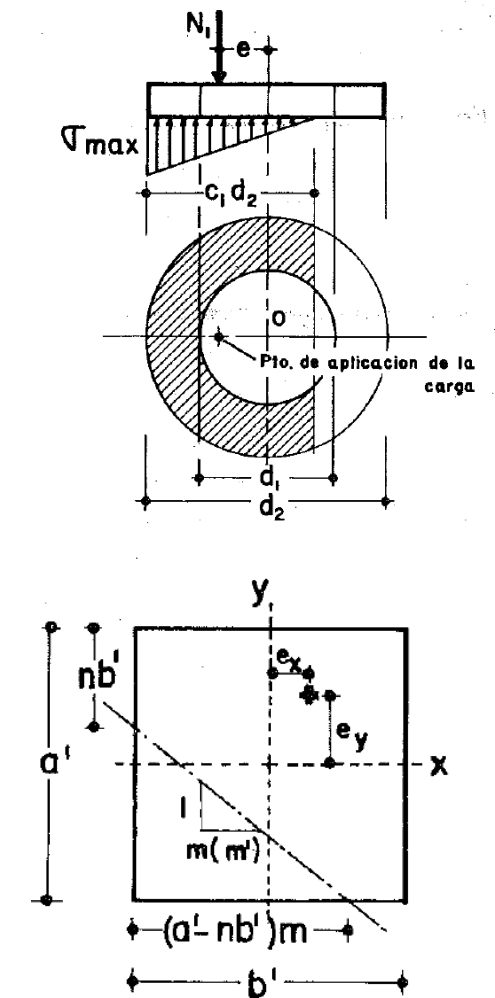


BASES AISLADAS

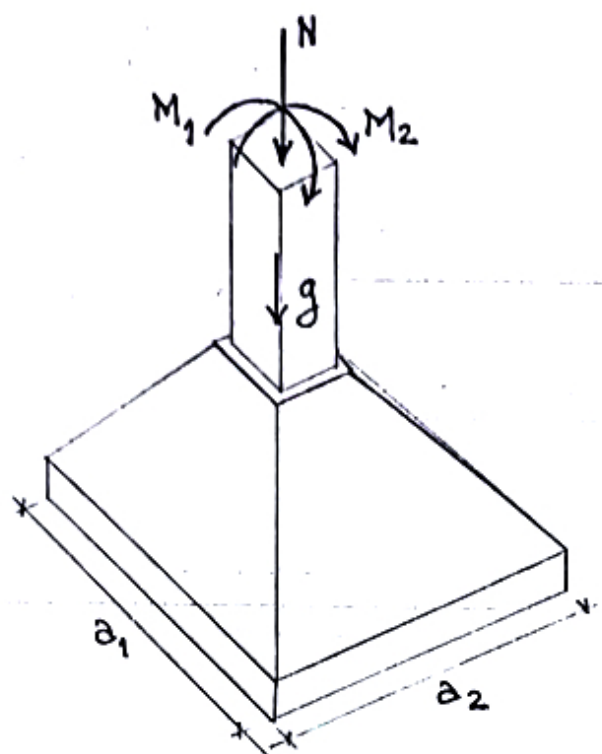
momento en ambas direcciones



base no rectangular

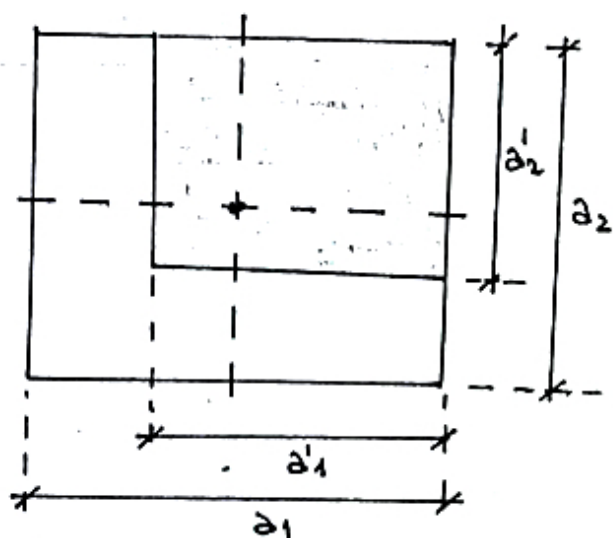


BASE RÍGIDA CON MOMENTO EN 2 DIRECCIONES:



La columna está sometida a flexión compuesta oblicua. En cada vértice de la base el valor de la tensión en el terreno es diferente. Según la norma DIN, se adopta un diagrama de tensiones uniformes en la zona rayada de la figura:

* Verificación de las tensiones en el terreno:



$$\begin{cases} a'_1 = a_1 - 2e_1 \\ a'_2 = a_2 - 2e_2 \end{cases}$$

$$P = N + g \Rightarrow \begin{cases} e_1 = \frac{M_1}{P} \\ e_2 = \frac{M_2}{P} \end{cases}$$

Elijo a_1 y $a_2 \Rightarrow$ calculo a'_1 y a'_2 .

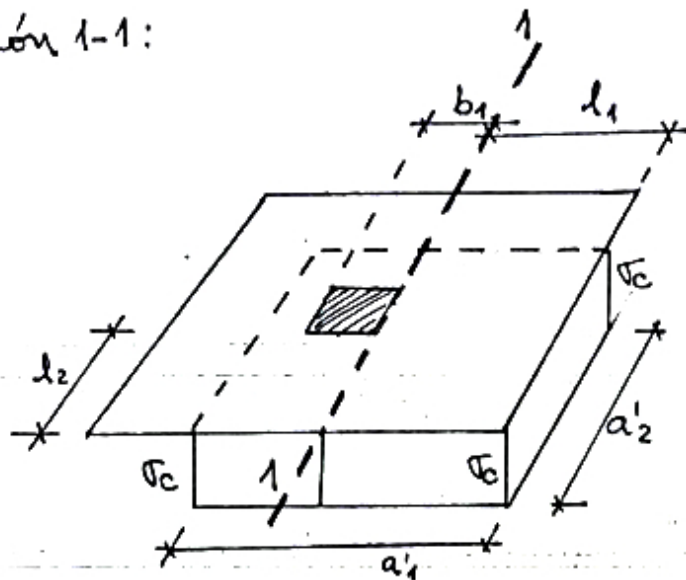
$$\sigma_t = \frac{P}{a'_1 \cdot a'_2} \leq \sigma_{tadm} \quad (\text{hasta que verifique})$$

* Dimensionado: sin $g \rightarrow$

$$\sigma_c = \frac{N}{a'_1 \cdot a'_2}$$

Calculamos sollicitaciones por líneas de rotura:

Dirección 1-1:



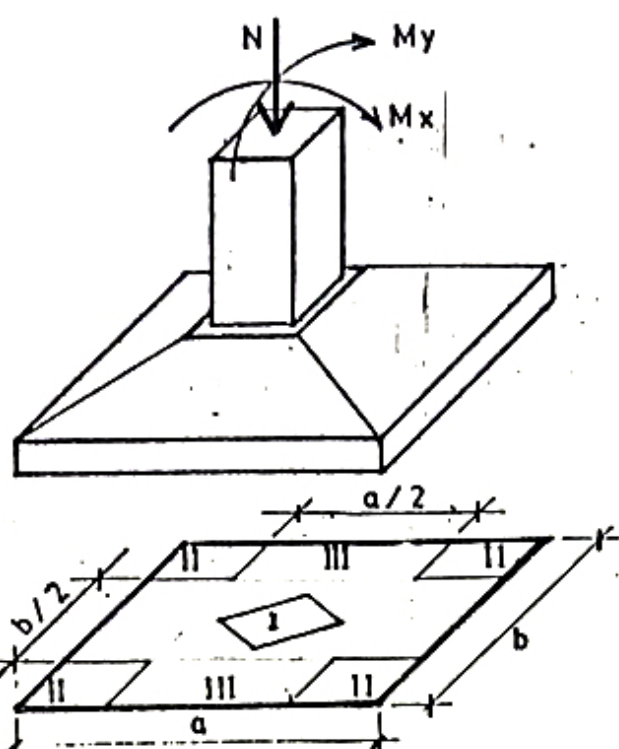
$$l_1 = \frac{a_1 - b_1}{2}$$

$$l_2 = \frac{a_2 - b_2}{2}$$

$$M_1 = \text{Vol } \sigma \cdot l_1/2 \Rightarrow M_1 = \sigma_c \cdot \frac{a'_2 \cdot l_1^2}{2}$$

$$\text{Análogamente: } M_2 = \sigma_c \cdot \frac{a'_1 \cdot l_2^2}{2}$$

Dimensionado: con M_1 y $M_2 \Rightarrow \begin{cases} F_{e1} \\ F_{e2} \end{cases}$



ZONA I

$$\sigma_{\max} = \frac{N}{a \cdot b} \left(1 + \frac{6e_x}{a} + \frac{6e_y}{b} \right)$$

ZONA II-III

$$\sigma_{\max} = K \cdot \frac{N}{a \cdot b} \quad c = \frac{e_x}{a}$$

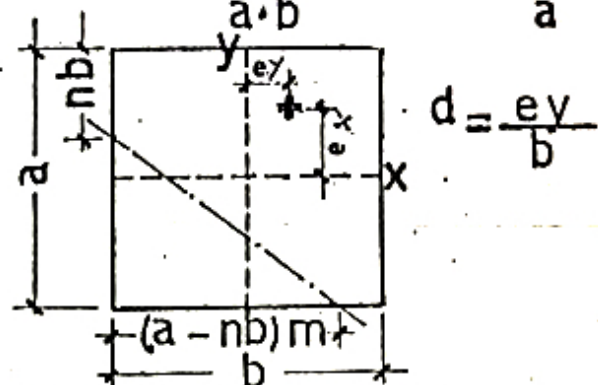
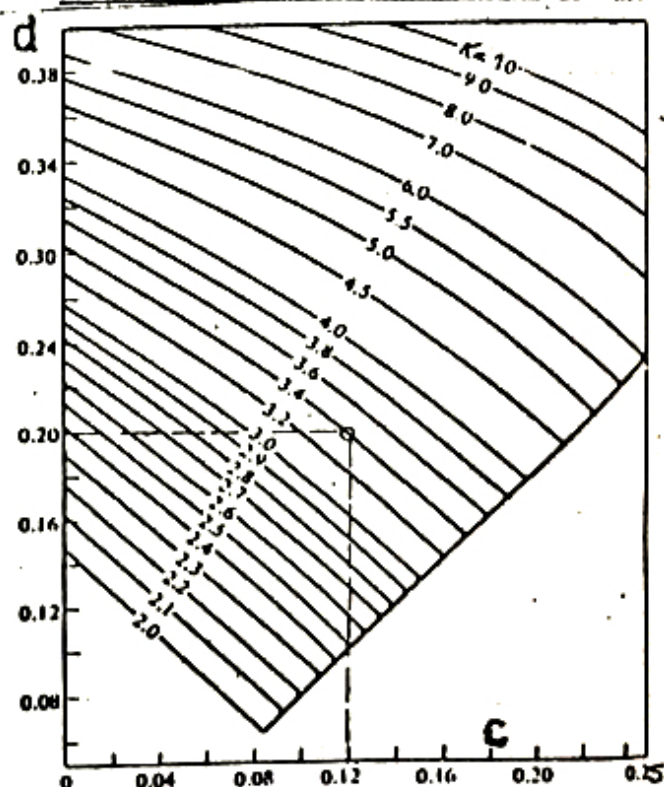
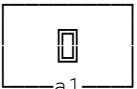


DIAGRAMA DE PLOCK



BASE CENTRADA CON N, M_x, M_y

B A S E	A C C I O N E S				DIMENSIONES						Punzo. tr tp kg/cm ²	Armadura Inferior					Armadura Superior					
	N t	Ng t	M1 tm	M2 tm	a1	H	Talón	d1	c1	got		Mf1	Fe1	CANT	Φ	Sep	Mf1	Fe1	CANT	Φ	Sep	
					a2			d2	c2			Mf2	Fe2				Mf2	Fe2				
					cm	cm	cm	cm	cm	kg/cm ²		tm	cm ²	n	mm	cm	tm	cm ²	n	mm	cm	
B-01	2.6	19.5	30.0	1.3	360 220	80	20	140 30	146 36	1.20	0.11 3.84	10.8 0.7	24.1 38.2	12 19	16 16	20 20	3.1 0.4	24.1 38.2	12 19	16 16	20 20	
B-02	-1.4	5.6	0.0	1.7	130 180	50	20	30 50	36 56	0.33	0.11 4.83	-0.1 0.2	11.3 7.9	10 7	12 12	20 20	0.1 0.6	11.3 7.9	10 7	12 12	20 20	
B-03	-10.4	27.4	14.3	4.8	390 280	70	20	220 60	226 66	0.34	0.29 4.08	0.2 -1.3	30.2 40.2	15 20	16 16	20 20	2.4 4.6	30.2 40.2	15 20	16 16	20 20	
B-04	17.9	25.8	4.8	4.8	280 390	70	20	30 50	36 56	0.46	0.61 4.08	5.7 7.3	40.2 30.2	20 15	16 16	20 20		40.2 30.2	20 15	16 16	20 20	