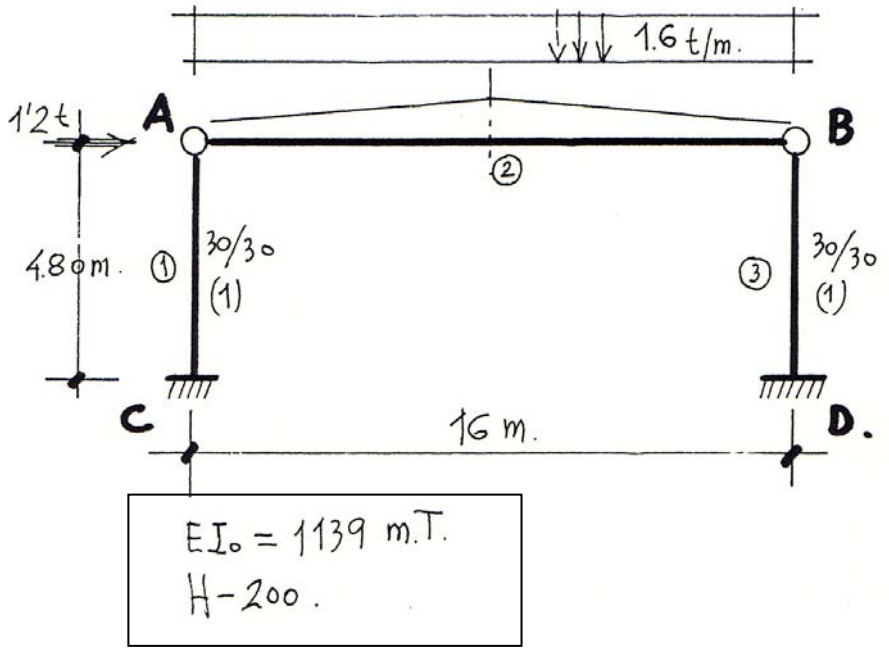
ESTRUCTURAS PREFABRICADAS. (E. INDUSTRIAL)



NAVE SIMPLE.

Δ_1				
0.0868	x	Δ_1	=	-1,2.

$\Delta_1 = -13{,}8249/EI_0$ (1'21 cms)

$M_{1C} = k_1\left(\frac{\Delta_1}{L_1}\right) = -2.88$ mt.

$M_{3D} = k_3\left(\frac{\Delta}{L_3}\right) = -2.88$ mt.

SOPORTE: $N_0 = 12.80$ t. 30x30 (4φ16)

$M_0 = 2.88$ mt.

$K1 = K3 = 3E * I1 / L1 = 1139$ mt

Con E =269985 kp cm^2 → K pilar = 3 * 269985 * (30^4 /12) / (480 *10^5) = 1139 tm

En 1997 se utiliza la EH-91 → E = 19000 * $(f_j)^{1/2}$ = 19000 (200) ^{½} = 268701kp/cm^2

Rigidez de piso = (K_1+ K_3) / h^2 = (1+1) / 4,8 ^{2} = 0,0868

Δ_1(m) = -13,8249 /1139 = -0,0121 m

Momentos barra elásticamente sustentada en los dos extremos

$$Ma = \pm \dot{M}_a + K\left(\alpha_a + \beta * \alpha_b + 1{,}5\frac{\delta}{L}\right)$$

$$Mb = \pm \dot{M}_b + K\left(\alpha_b + \beta * \alpha_a + 1{,}5\frac{\delta}{L}\right)$$

Momentos barra elásticamente sustentada en un extremo:

$$Ma = \pm \dot{M}_a + K\left(\alpha_a + \beta * \alpha_b 1{,}0\,,5\frac{\delta}{L}\right)$$

$$Mb = \pm \dot{M}_b + K\left(\alpha_b + \beta * \alpha_c 1{,}0\,,5\frac{\delta}{L}\right)$$

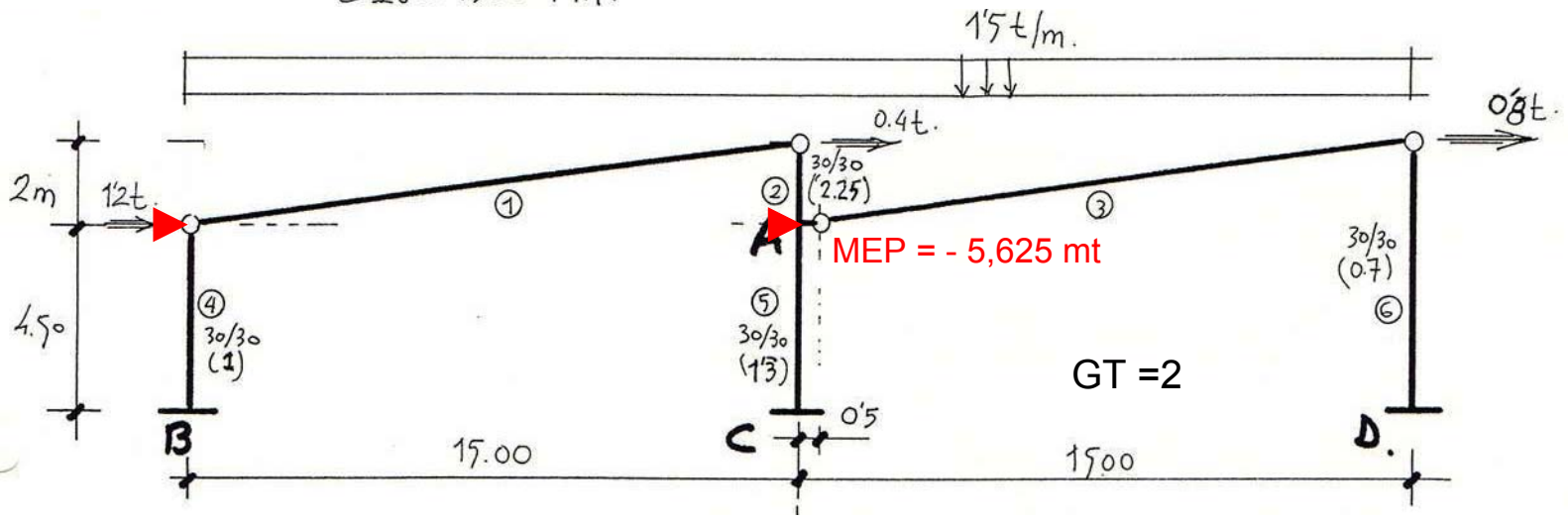
M1c= ± 0,0 +1139 (0 + 0 *αa + 1,0 * - 0,0121 / 4,8) = - 2,88 mt

M3d = ± 0,0 +1139 (0 + 0 *αb + 1,0 * - 0,0121 / 4,8) = -2,88 mt

Tomás Cabrera (E.U.A.T.M.)

NAVE MULTIPLE. DIENTE DE SIERRA.
HORMIGON H:400 (PREFABRICACION)
$EI_o = 1300$ Tm.

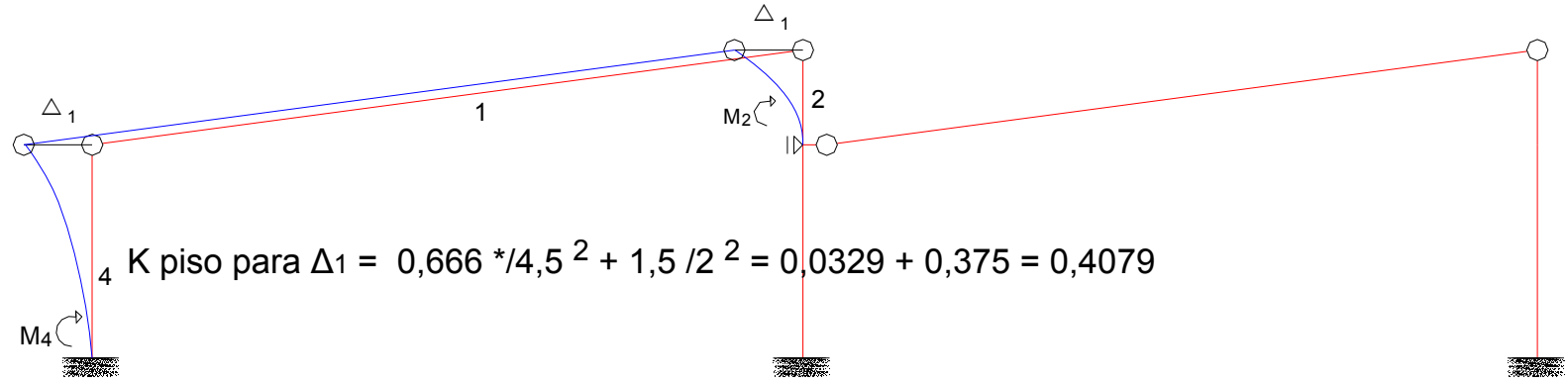
Apoyo con reacción única horizontal para inmovilizar nudo.



	α_A	Δ_1	Δ_2			
α_A	2,39	0,75	0,2967	α_A	+ 5,625
Δ_1		0,4079	0,0329	Δ_1	- 1,60
Δ_2			0,1757	Δ_2	- 2,40

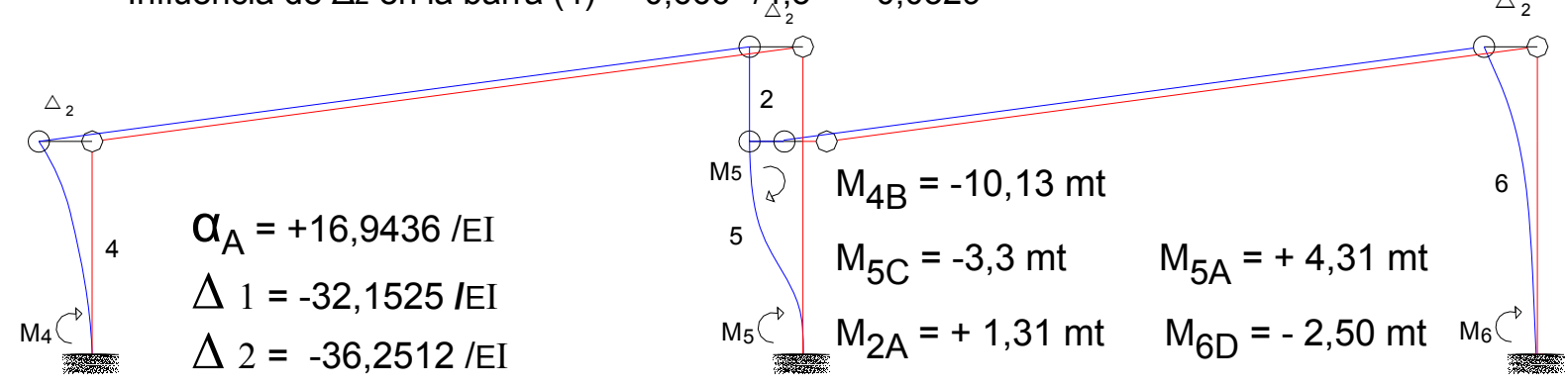
$K_1 = 3 * E * I_1 / L_1 = 3 / 4,5 = 0,666\ EI$ $K_2 = 3 * E * I_2 / L_2 = 3 / 2\ EI$

$K_6 = 3 * E * I_6 / L_6 = 3 / 6,5 = 0,4615\ EI$ $K_5 = 4 * E * I_5 / L_5 = 4 / 4,5 = 0,89\ EI$



K piso para Δ_1 = 0,666 */4,5 ^{2} + 1,5 /2 ^{2} = 0,0329 + 0,375 = 0,4079

Influencia de Δ_2 en la barra (4) = 0,666 */4,5 ^{2} = 0,0329



α_A = +16,9436 /EI

Δ_1 = -32,1525 /EI

Δ_2 = -36,2512 /EI

M_{4B} = -10,13 mt

M_{5C} = -3,3 mt M_{5A} = + 4,31 mt

M_{2A} = + 1,31 mt M_{6D} = - 2,50 mt

K piso para Δ_2 = 0,666 */4,5 ^{2} + 3 *0,89 /2 ^{2} + 0,4615 /6,5 ^{2} = 0,0329 + 0,1319 + 0,0109 = 0,1757

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