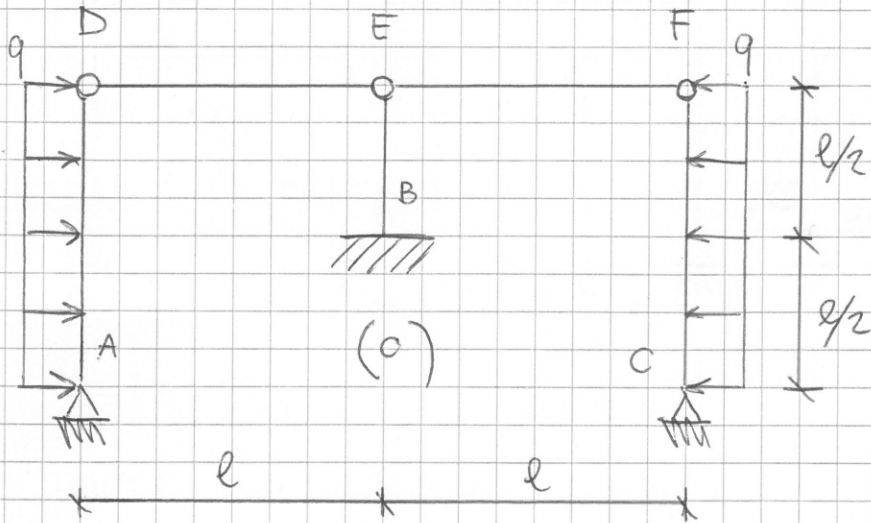
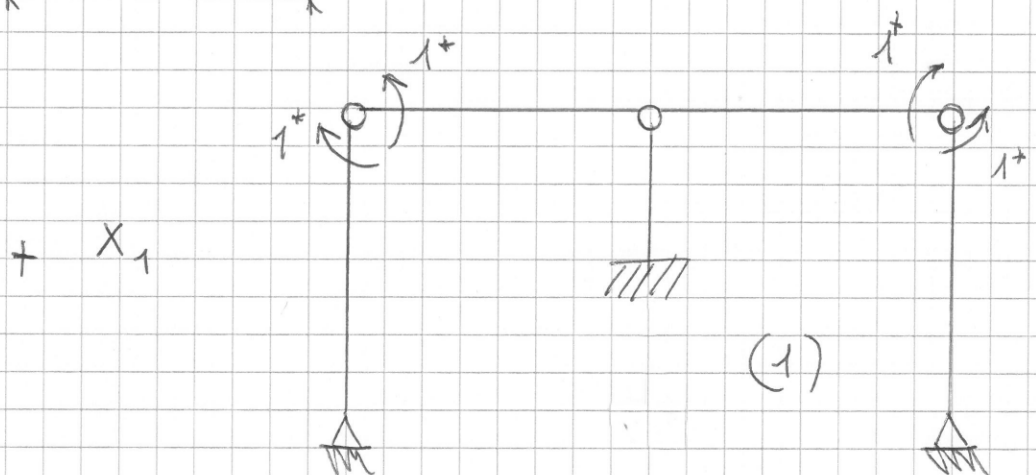


3° PARZIALE SDC

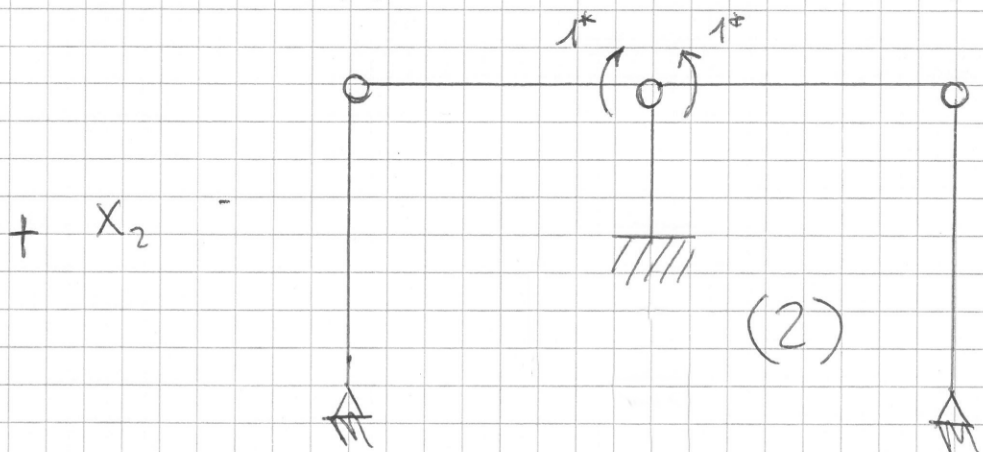


$$l = 3 \text{ m}$$

$$q = 2000 \text{ Nm}$$



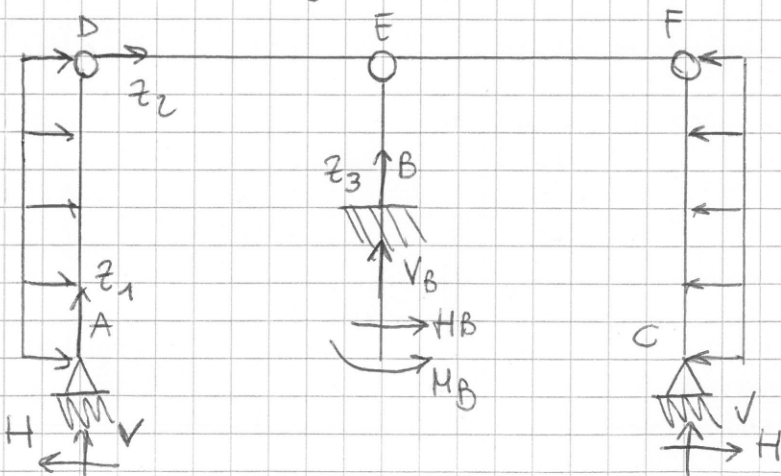
(1)



(2)

1)

SISTEMA (1)



$$L_B, M_B = 0 \quad \text{per sym}$$

F↑ AUS FC

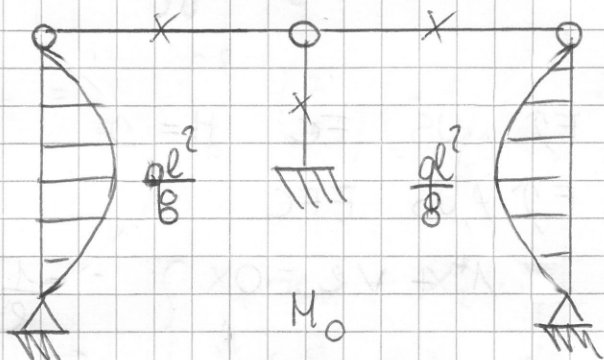
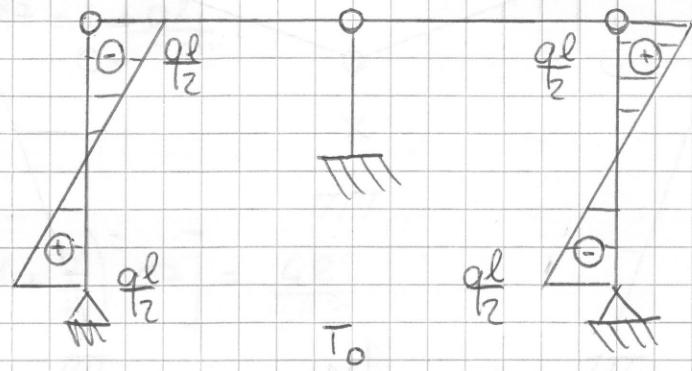
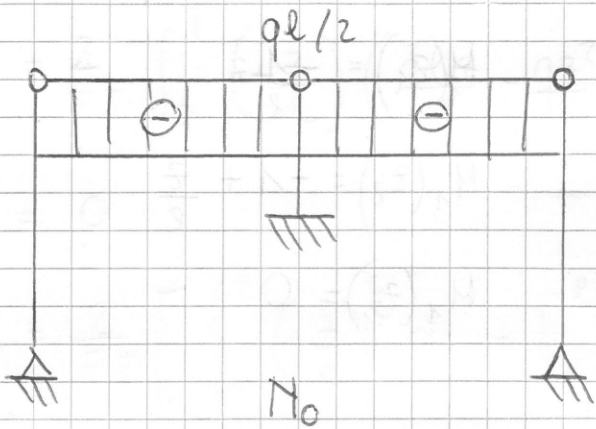
F↑ AUS FC

$$H \cdot l - \frac{q l^2}{2} = 0 \quad H = \frac{q l}{2}$$

$E \uparrow \rightarrow \text{AUS} \rightarrow \text{EFC}$

$$V = 0$$

↑) $V_B = 0$

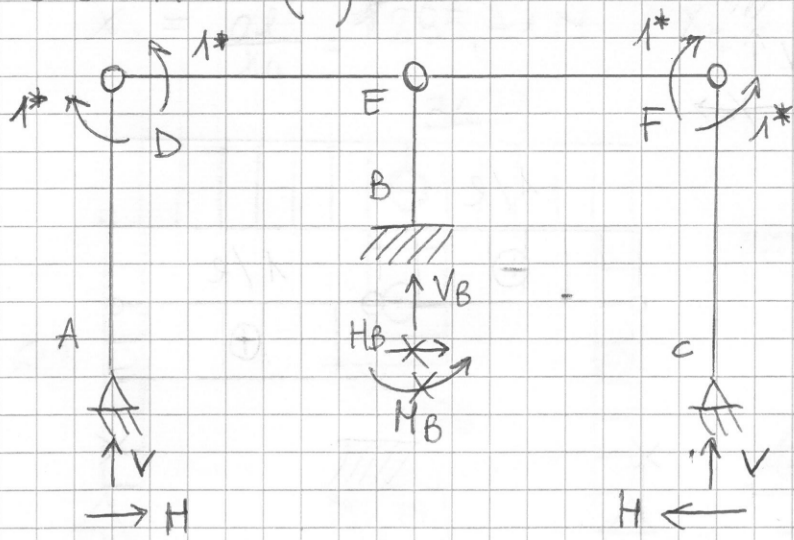


$$M_0(z_1) = \frac{ql}{2}z - \frac{qz^2}{2}$$

$$M_0(z_2) = 0$$

$$M_0(z_3) = 0$$

SISTEMA (1)



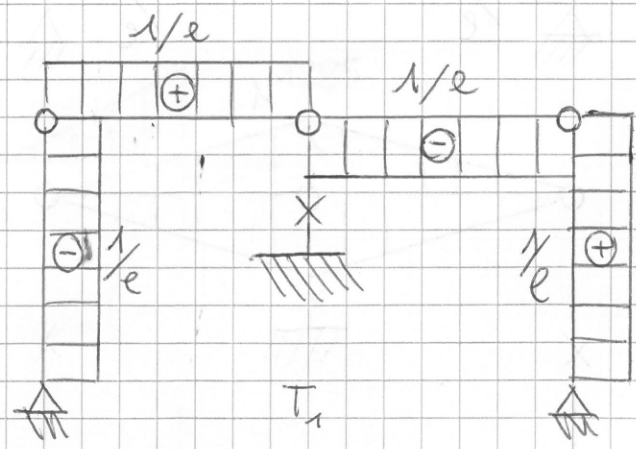
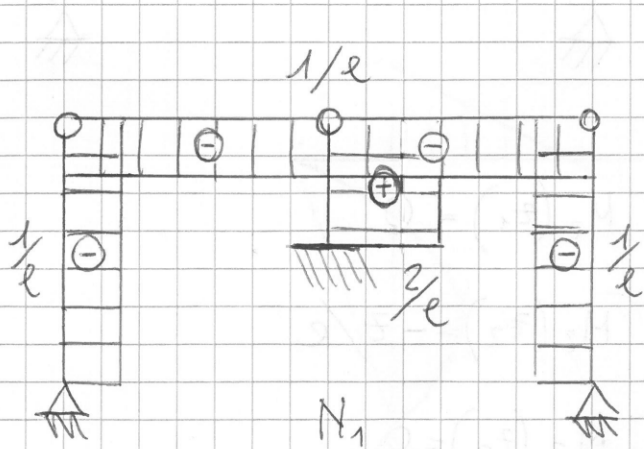
F ↑ AUS FC

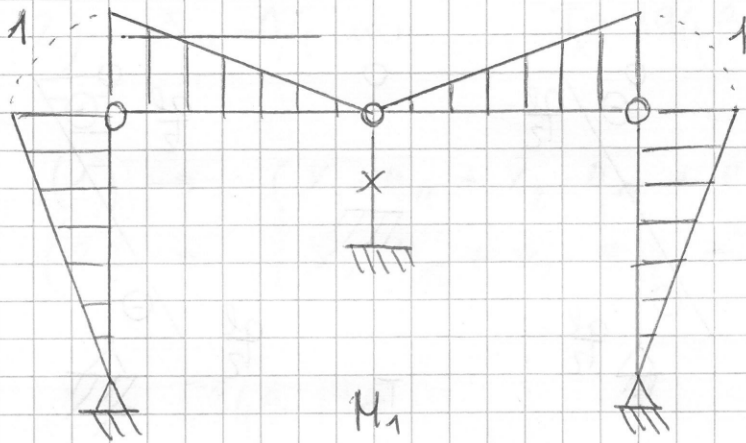
$$1^* - H \cdot l = 0 \quad H = 1/l$$

E ↑ AUS EFC

$$-Hl + Vl = 0 \quad V = 1/l$$

$$\uparrow \uparrow V_B = -2/e$$



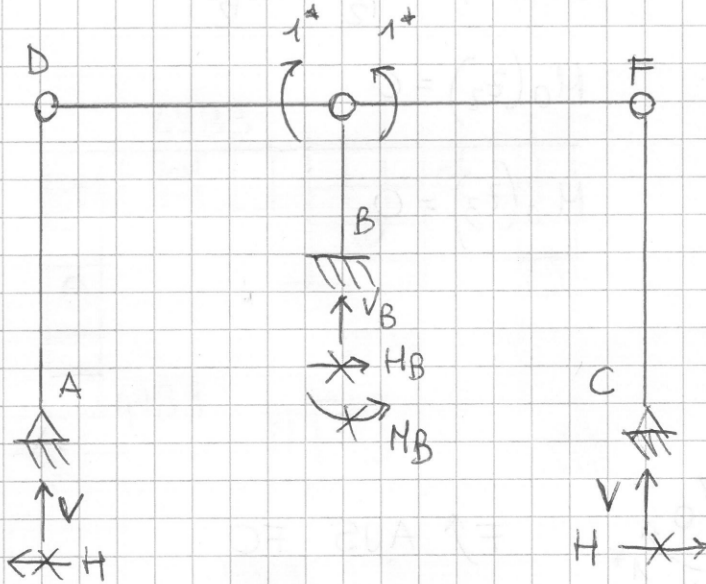


$$M_1(z_1) = -\frac{1}{e}z$$

$$M_1(z_2) = -1 + \frac{z}{e}$$

$$M_1(z_3) = 0$$

SISTEMA (2)

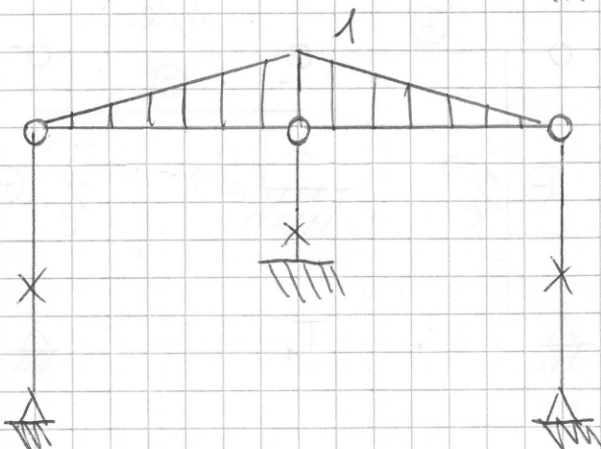
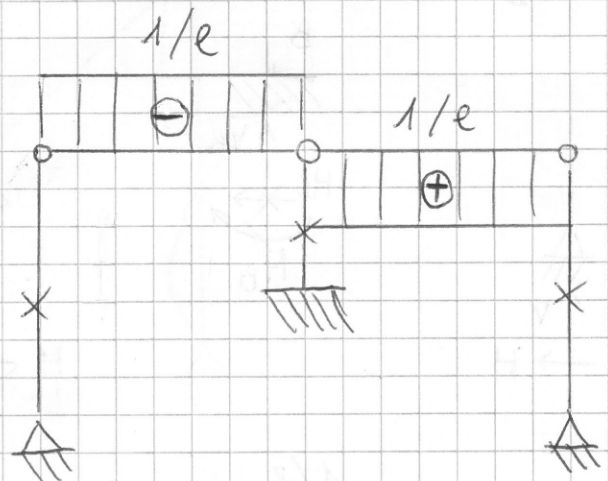
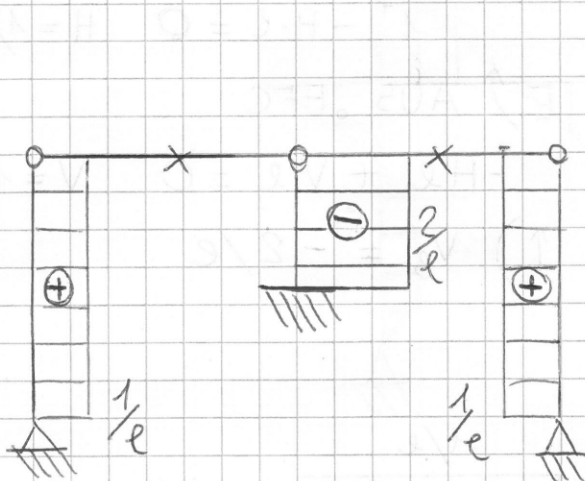


$$F \uparrow \text{ AUS } FC \quad H=0$$

$$E \uparrow \text{ AUS } EFC$$

$$1^* + V e = 0 \quad V = -\frac{1}{e}$$

$$\uparrow) V_B + 2V = 0 \quad V_B = 2/e$$



$$M_2(z_1) = 0$$

$$M_2(z_2) = -z/e$$

$$M_2(z_3) = 0$$

$$M_{10} = \frac{2}{EJ} \int_0^l \left(-\frac{z}{e}\right) \left(\frac{qlz}{2} - \frac{qz^2}{2}\right) dz = -\frac{ql^3}{12EJ}$$

$$M_{20} = 0$$

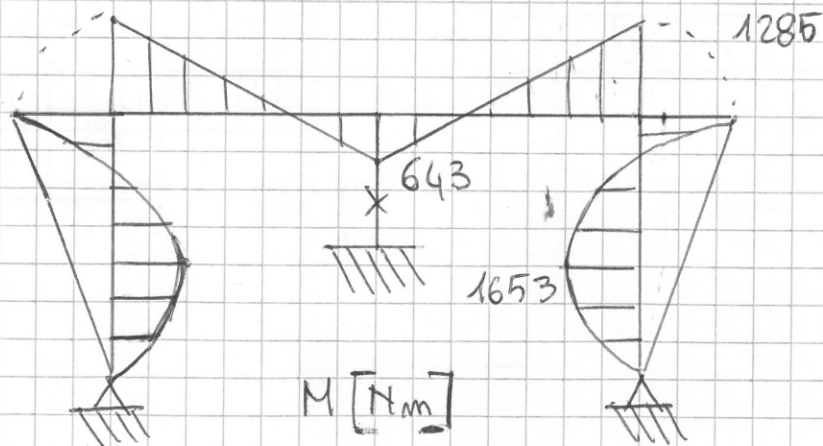
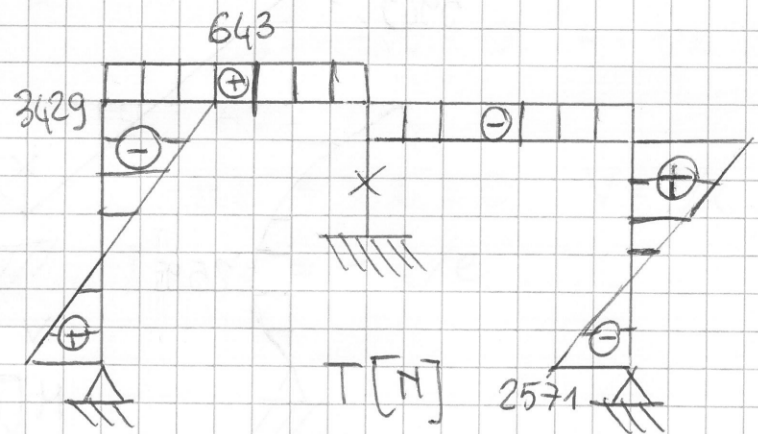
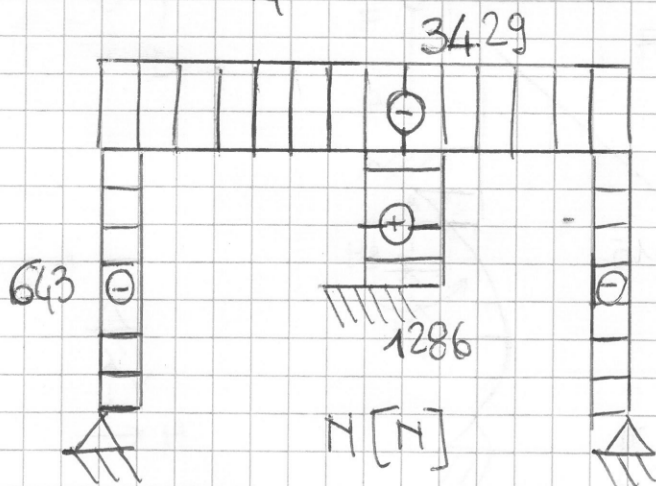
$$M_{11} = \frac{2}{EJ} \left[\int_0^l \left(-\frac{z}{e}\right)^2 dz + \int_0^l \left(-1 + \frac{z}{e}\right)^2 dz \right] = \frac{4l}{3EJ}$$

$$M_{22} = \frac{2}{EJ} \int_0^l \left(\frac{z}{e}\right)^2 dz = \frac{2l}{3EJ}$$

$$M_{12} = \frac{2}{EJ} \int_0^l \left(\frac{z}{e}\right) \left(-1 + \frac{z}{e}\right) dz = +\frac{l}{3EJ}$$

$$\begin{aligned} (1) &\rightarrow \begin{cases} X_1 \cdot M_{11} + X_2 \cdot M_{12} + M_{10} = 0 \\ (2) \rightarrow \begin{cases} X_1 \cdot M_{12} + X_2 \cdot M_{22} + M_{20} = 0 \end{cases} \end{cases} \end{aligned}$$

$$X_1 = \frac{ql^2}{14} = 1285,71 \text{ N} \quad X_2 = \frac{ql^2}{28} = -642,86 \text{ N}$$



$$2) \Delta u = 0,4 \text{ cm}$$

$$J_x = 1943 \text{ cm}^4$$

$$E = 210000 \text{ MPa}$$

$$(1) \rightarrow \begin{cases} X_1 \cdot M_{11} + X_2 \cdot M_{12} + M_{10} = \left(-\frac{2}{e}\right) (-0,004) \end{cases}$$

$$(2) \rightarrow \begin{cases} X_1 \cdot M_{12} + X_2 \cdot M_{22} = \left(\frac{2}{e}\right) (-0,004) \end{cases}$$

$$X_1 = 5949 \text{ Nm}$$

$$= \frac{q l^4 + 36 \Delta u EJ}{14 l^2}$$

$$X_2 = -8415 \text{ Nm}$$

$$= -\frac{q l^4 + 120 \Delta u EJ}{28 l^2}$$

