

## ANALISI DEI CARICHI (SOMMARIA)

PESI PROPRI

SOLAI A STRUTT. METALLICA

(ORDITURA PRINCIPALE, ORD. SECONDARIA, LAMIERA GRECCATA)

150  $\text{daN m}^{-2}$

PAVIMENTAZ.

80  $\text{daN m}^{-2}$

FINITURA INTRADOSSO

80

SOVRACCARICHI ACCIDENTALI

400

710  $\text{daNm}^{-2}$

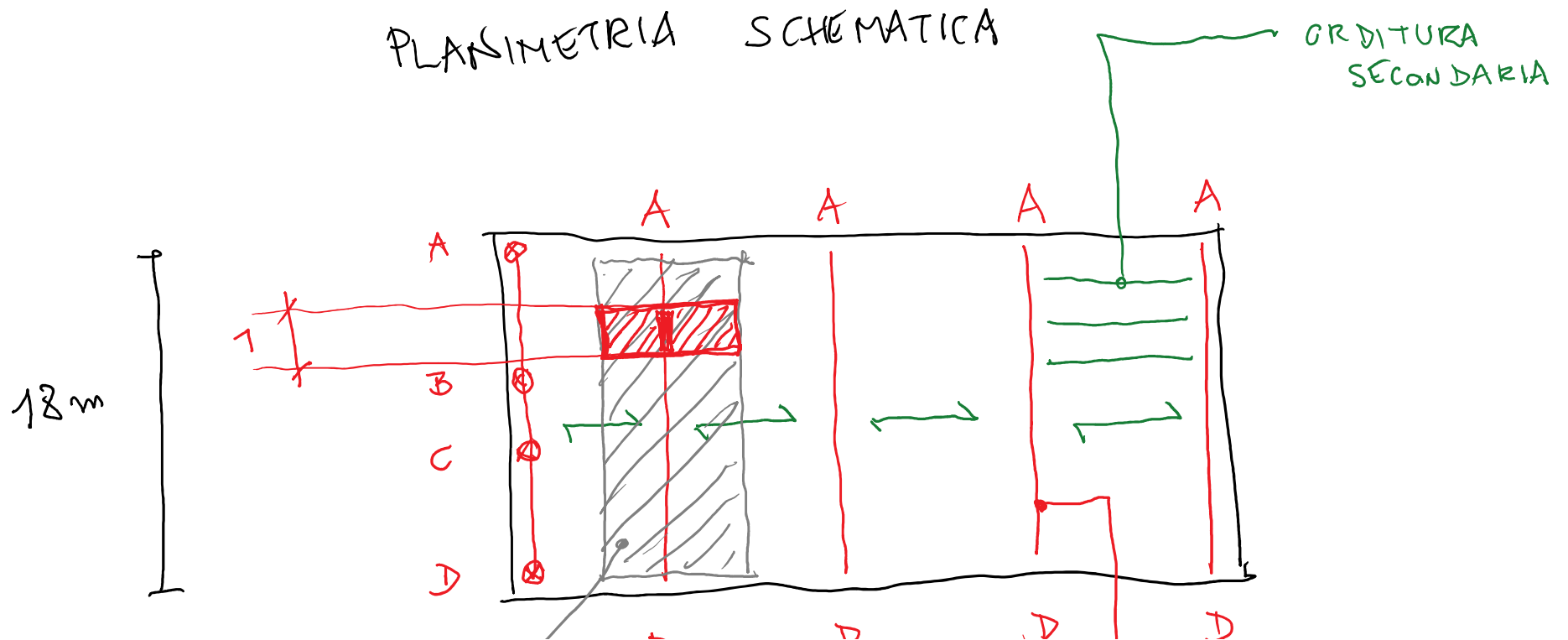
TOTALE (valori caratteristici)

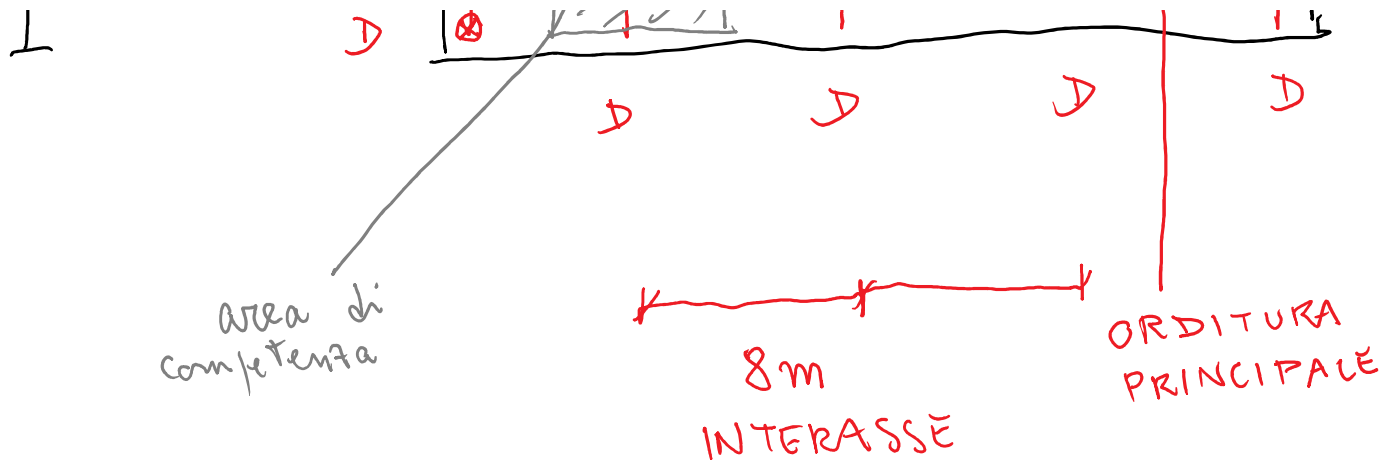
40

per arrotondamento & varie

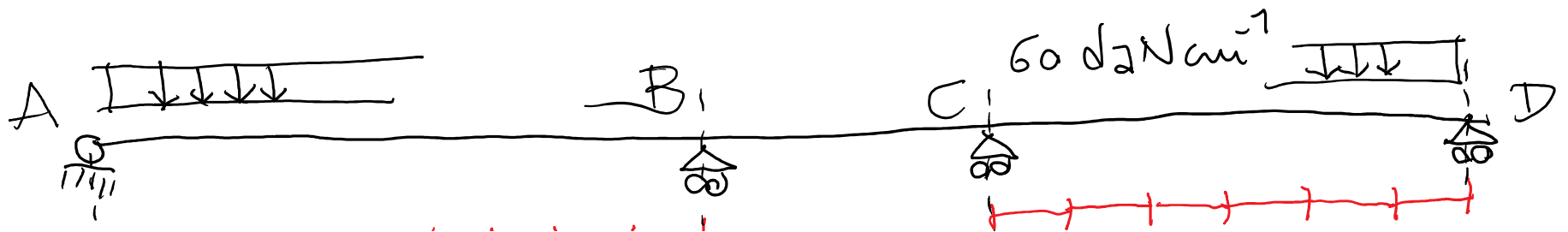
750

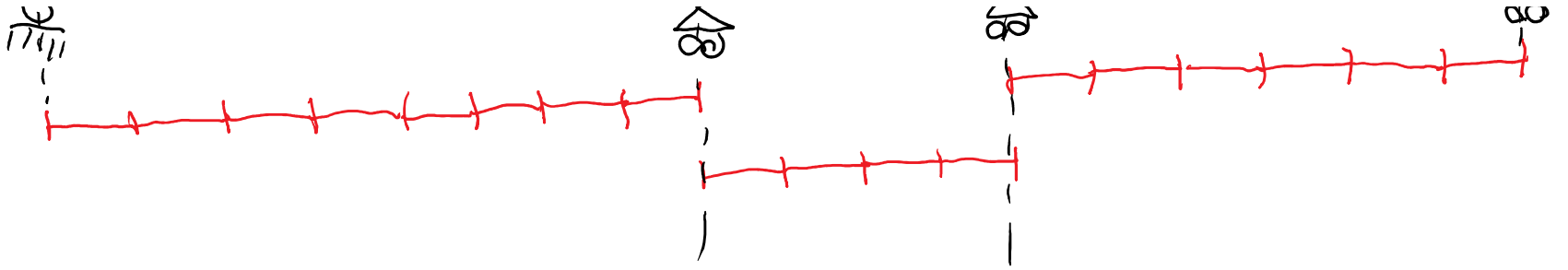
PLANSIMETRIA SCHEMATICA





$$\begin{aligned}
 q(x) &= [F][L]^{-1} = 750 \text{ daN m}^{-2} \times 8 \text{ m} \\
 &= 6000 \text{ daN m}^{-1} \\
 &= 60 \text{ daN cm}^{-1}
 \end{aligned}$$





IPE 360

$$W_{xE} = 903,6 \text{ cm}^3$$

$$W_{xPL} = 1019 \text{ cm}^3$$

Strumenti software :

SAP 2000

( v. lab. LIA )

Strumento molto potente

ftool

Strumento molto semplice

# Preparazione dell'input per SAP2000

Il generico punto nel piano xz ha i seguenti DOF (gradi di libertà):

$$\delta_x$$

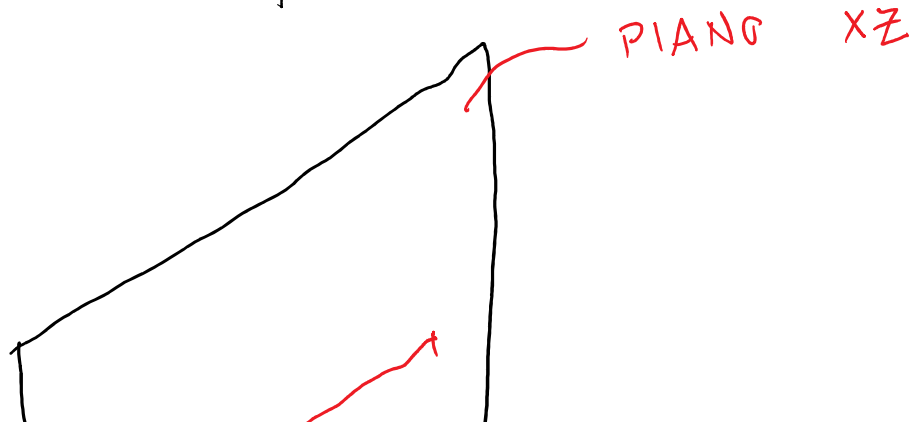
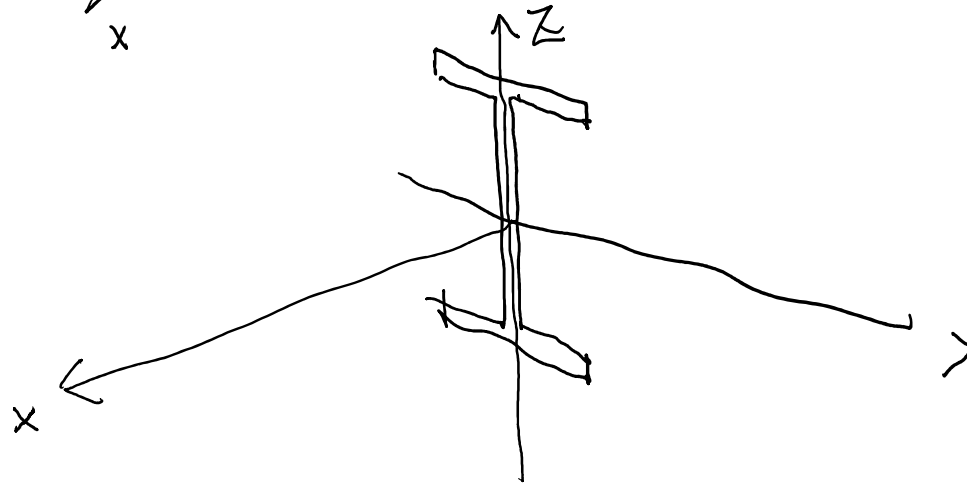
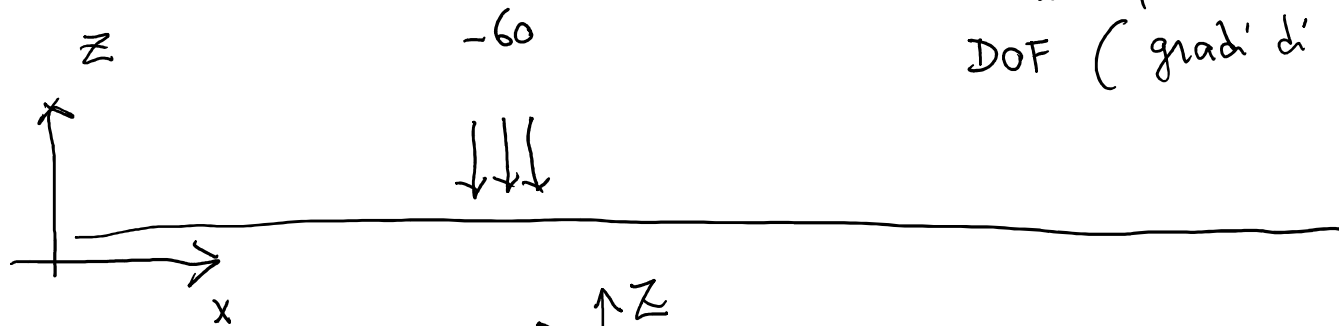
$$\delta_z$$

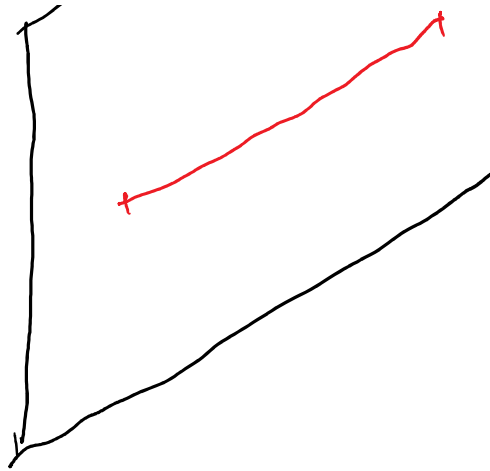
$$\varphi_y$$

$$\delta_y = 0$$

$$\varphi_x = 0$$

$$\varphi_z = 0$$





Esaminiamo nell'output  
campata AB :

$M_{max}$

$$L = 800 \text{ cm}$$

$$q = 60 \text{ daN cm}^{-1}$$

$$K \approx 10$$

$$M_{max} = \frac{qL^2}{K}$$

$$M_{max} = \frac{60 \times 800^2}{10} = 6 \times 640000$$

3840000

daN · cm

VALORE

APPROSSIMATO

DA SAP 2000 3 272 459 daN.cm

$$\sigma_{MAX} = \frac{M_{max}}{W_E} = \frac{3300000}{903.6} = 3652 \text{ daN cm}^{-2}$$

Per l'acciaio S275 si ha:  $f_{yk} = 275 \text{ MPa}$   
 $= 2750 \text{ daN cm}^{-2}$

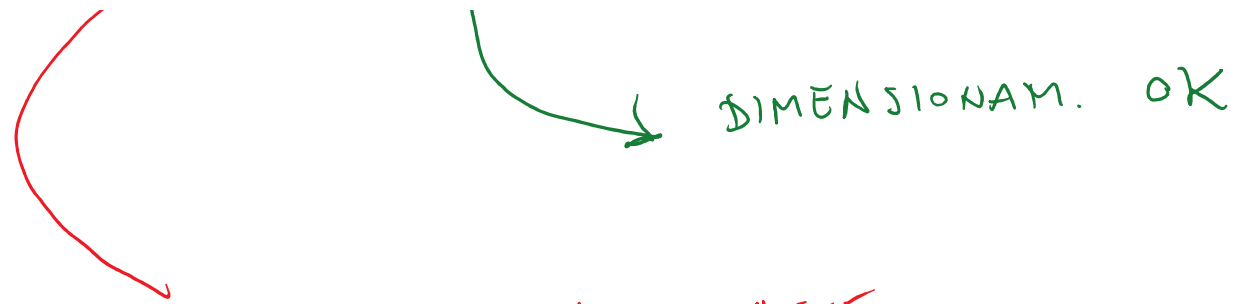


COEFFICIENTE DI SICUREZZA

$$S = 2$$

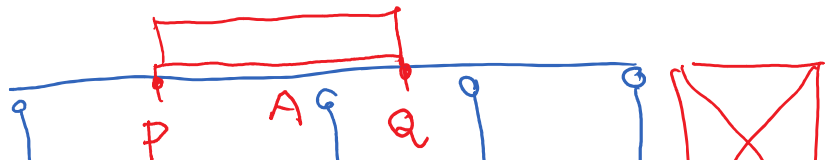
$$\sigma_{MAX} = 3652 > 1375 ?$$

DIMENSIONAM. OK

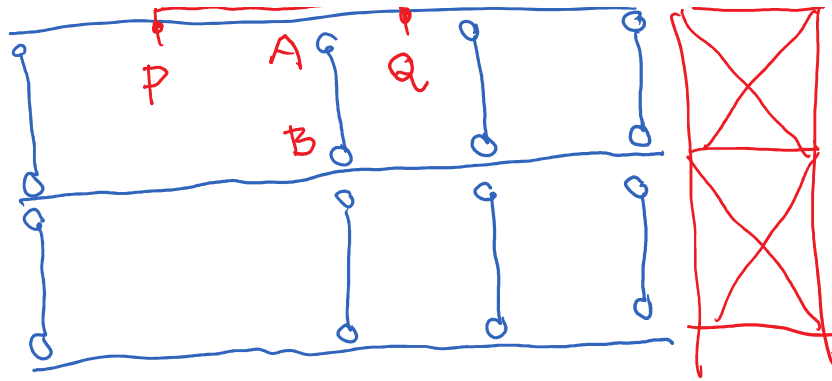


IL DIMENSIONAM. DEVE  
ESSERE MODIFICATO

DIMENSIONAM. OK







$$\overline{PQ} = 4 + 2 = 6\text{m}$$

(...)

Pilastro AB  
 sollecitazione di  $N_{AB}$   
 10 orizzontam. f.t.

$$q \times \overline{PQ} = 60 \text{ daN/cm}^2 \times 600 \text{ cm} = 36\,000 \text{ daN}$$

$$N_{\max} = 360\,000 \text{ daN}$$

dimensionamento del pilastro

HE 400 B

$$a = 197.8 \text{ cm}^2$$

$$\sigma_{\text{MAX}} = \frac{360\,000}{197.8} = 1820 \geq 1375 \quad ?$$

HE 400 M

$$a = 325.8$$

$$\sigma = 1105 < 1375 \quad \text{OK}$$