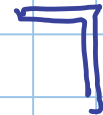
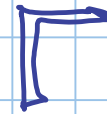
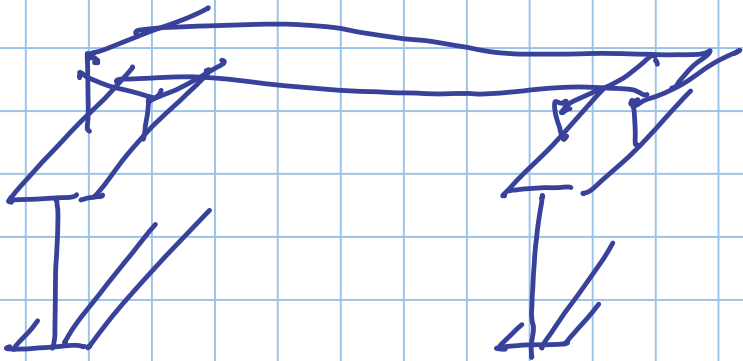
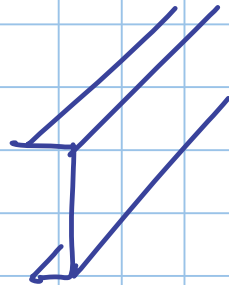
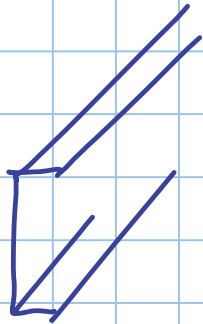
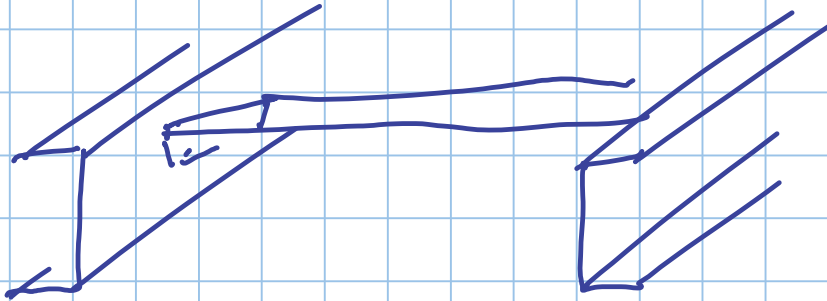
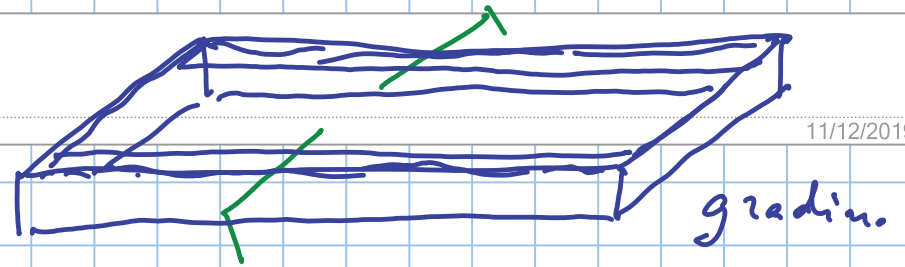
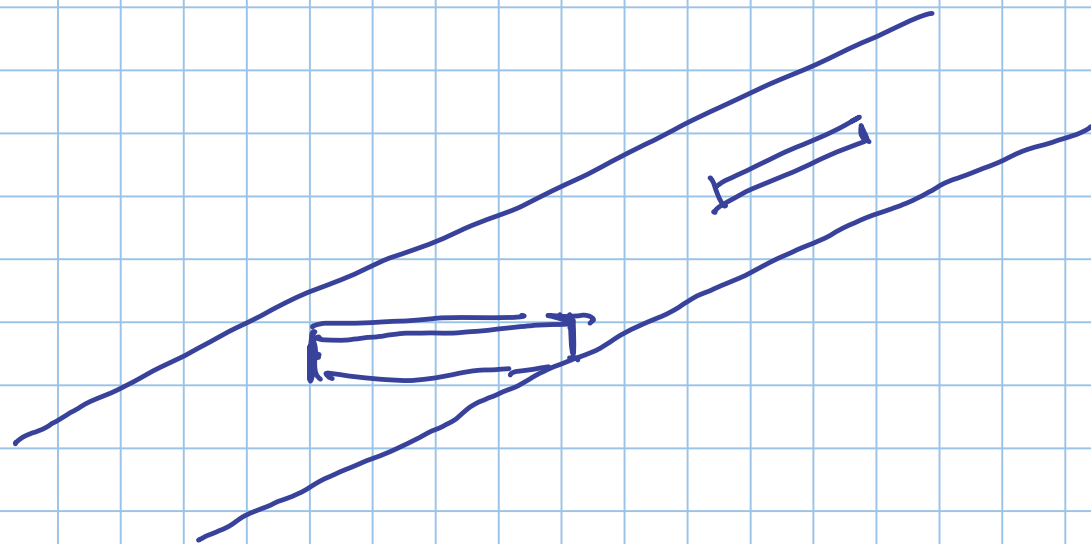
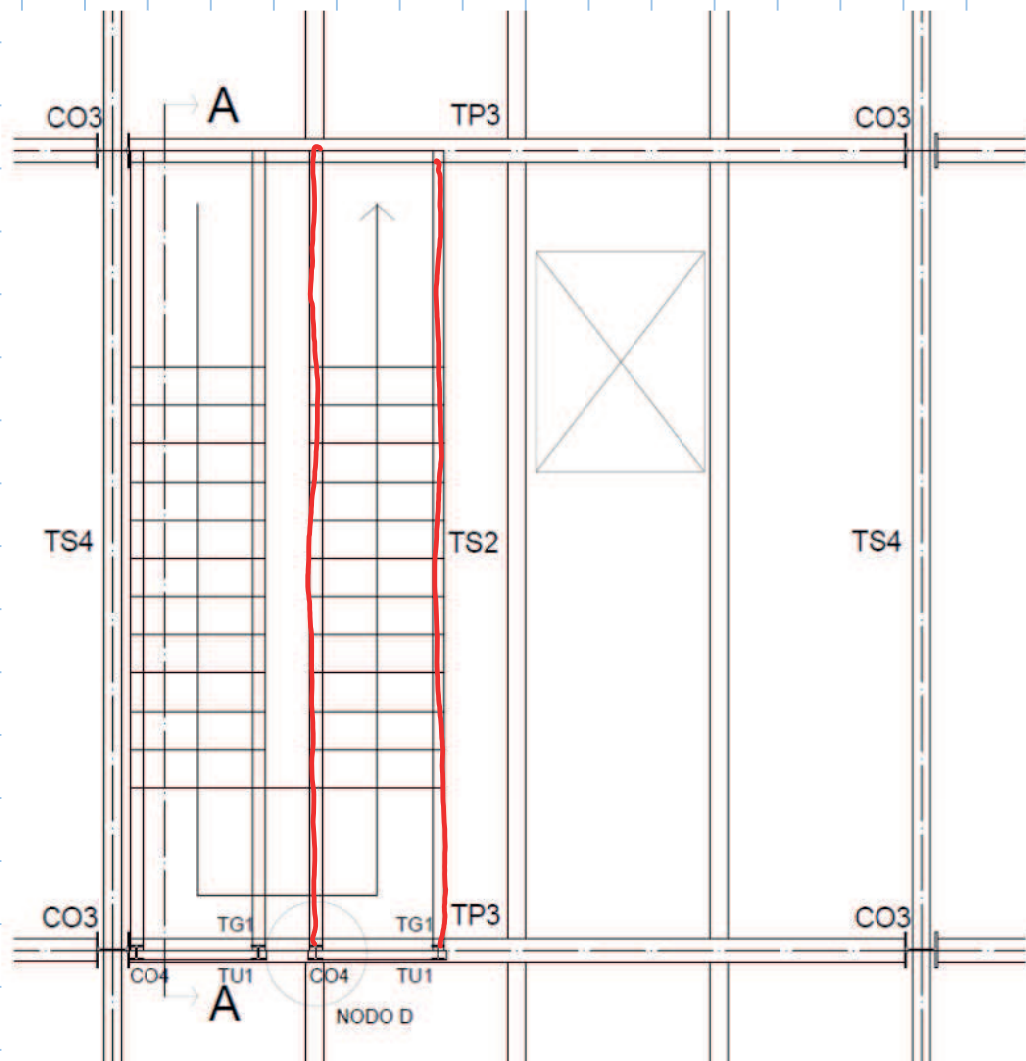
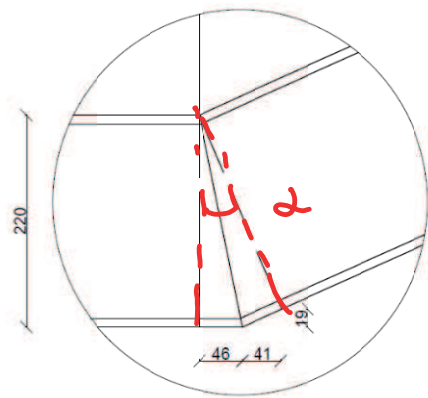


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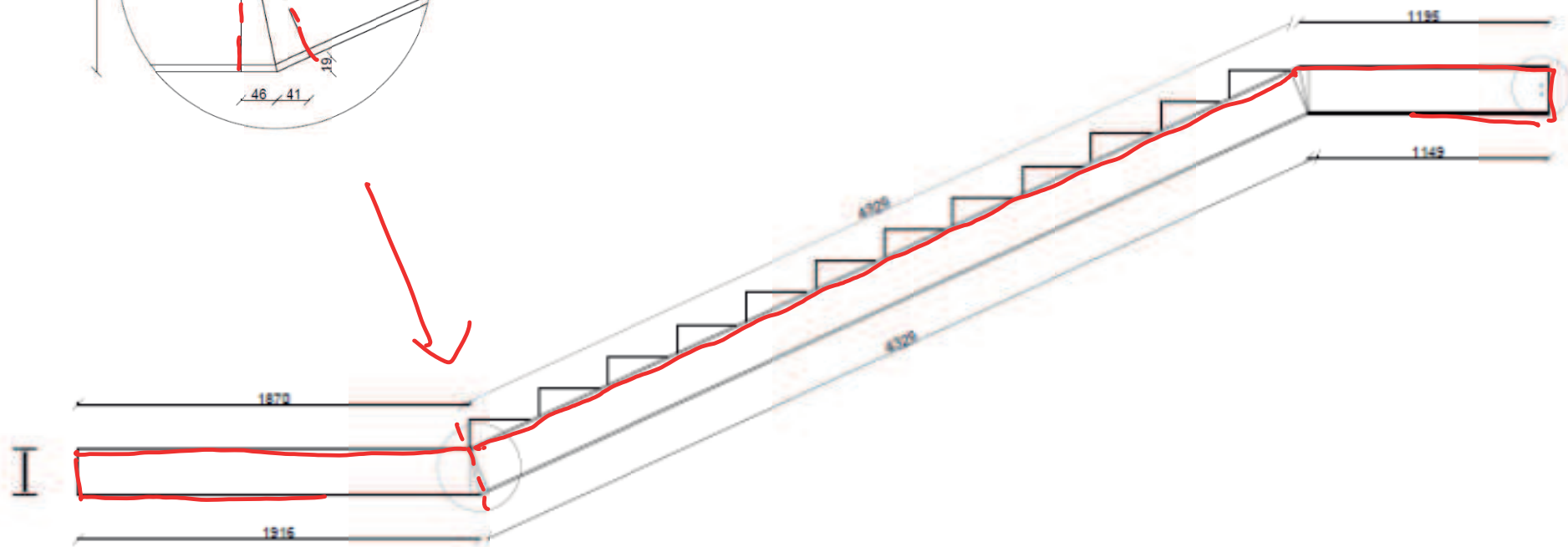








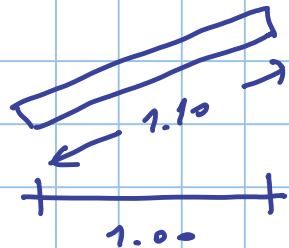
Trave a ginocchio TG1



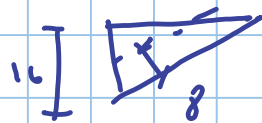
CARICHI UNITARI

solite rampanti
cement. armato

p.p.p.i. 3.3 KN/m^2



manif. x gradino



$$0.08 \times \frac{20}{8} = 0.65$$

manif. 0.6 KN/m^2

TOT. $g_k \approx 5 \text{ KN/m}^2$

$i = 1.20$

acciaio

$$\text{UTE} \quad \frac{0.3 \text{ KN/m}}{i/2} \rightarrow 0.5 \text{ KN/m}^2$$

$$\left\{ \begin{array}{l} \text{struttura gradino} \\ \text{gradino, manif.} \end{array} \right. \rightarrow 0.2 \text{ KN/m}^2$$

$$\text{TOT} \quad \frac{0.6}{1.3 \text{ KN/m}^2}$$

CARICO VARIABILE (abitazioni)

$$q_k = 4 \text{ KN/m}^2$$

carico sulle travi

RAMPA 1.20 m

la trave porta 0.6 m di gradino

g_k

q_k

$g_k + q_k$

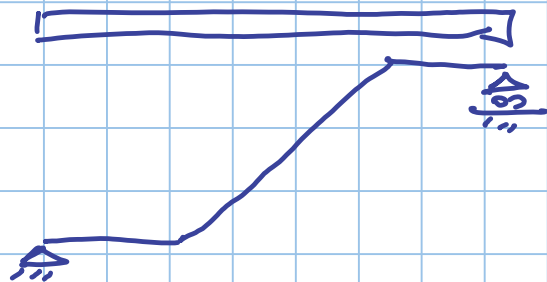
gradino 0.60 m x

0.48 kN/m

2.4

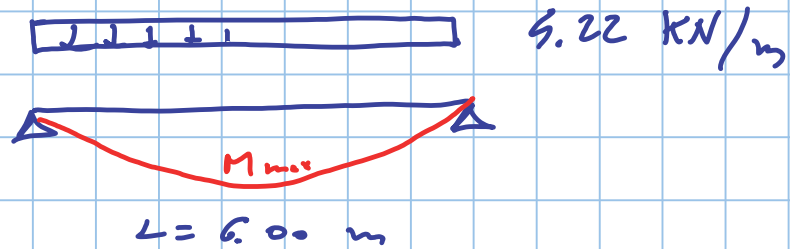
4.22 kN/m

SCHEMA



+ L = 6.00 m +

per SLU



$$M_{Ed, \max} = \frac{q l^2}{8}$$

S 235

$$M = \frac{4.22 \times 6.00^2}{8} = 19 \text{ kNm}$$

$$M_{Rd} = W_{pl} \frac{f_y}{\gamma_{m0}}$$

$$W_{pl} \geq \frac{M_{Ed} \gamma_{m0}}{f_y} =$$

$$= \frac{19 \times 10^6 \times 1.05}{235} = 84.9 \times 10^3 \text{ mm}^3$$

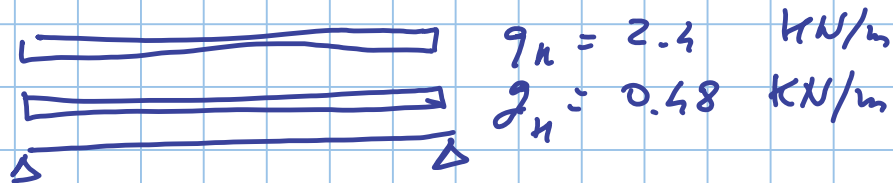
per SLE

$$f(q_k) \leq \frac{L}{300}$$

↓
2.4

$$f(q_k + q_{\text{im}}) \leq \frac{L}{250}$$

↓
2.88



6.00 m

6000 mm

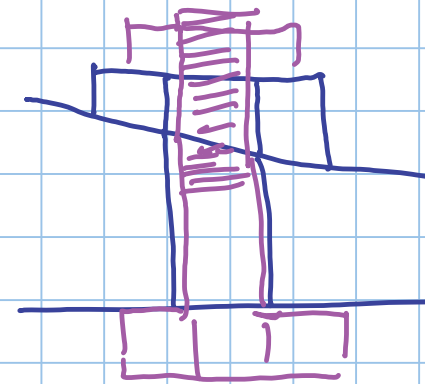
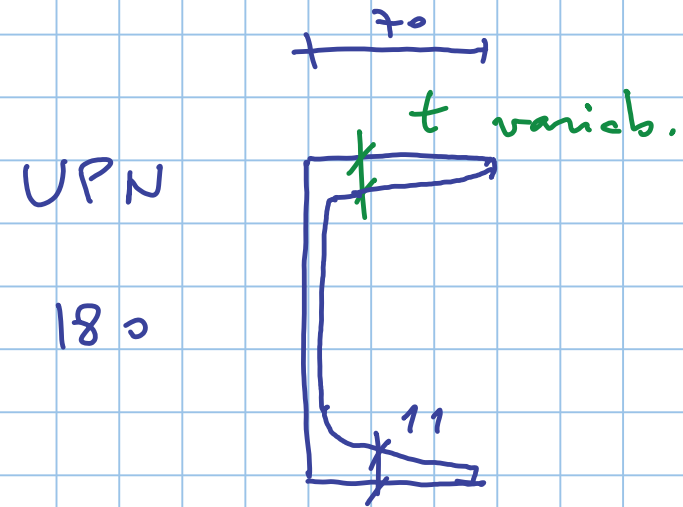
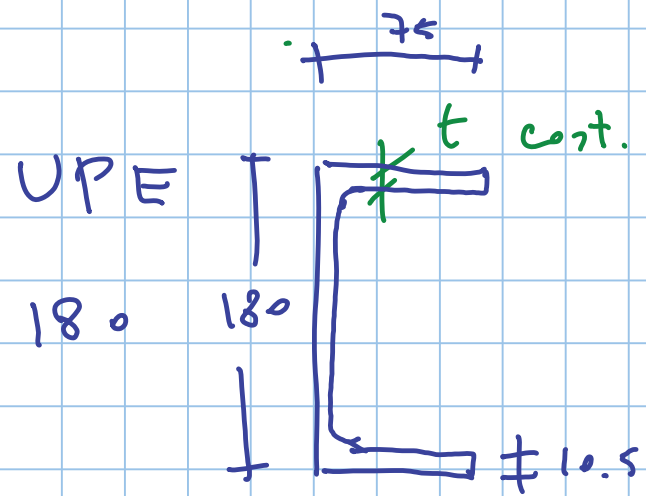
$$f = \frac{5}{384} \frac{q_k L^4}{EI} \leq \frac{L}{K} = \frac{300}{250}$$

$$I \geq K \frac{5}{384} \frac{q_k L^4}{E}$$

$$\text{per } q_k = I \geq 300 \times \frac{5}{384} \times \frac{2.4 \times 6^3 \times 10^9}{210000} = 964.2 \times 10^4 \text{ mm}^4$$

$$\text{per } q_k + q_{\text{im}} = I \geq 250 \times \frac{5}{384} \times \frac{2.88 \times 6^3 \times 10^9}{210000} = 964.3 \times 10^4 \text{ mm}^4$$

OCCORRE ALMENO UPE 180



t var.

