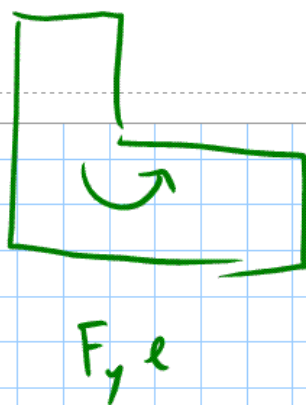


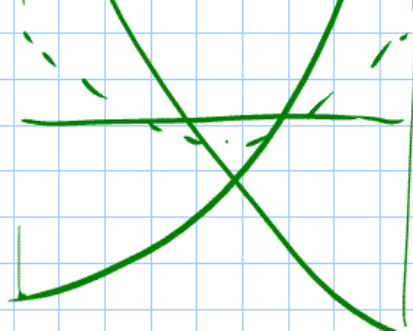
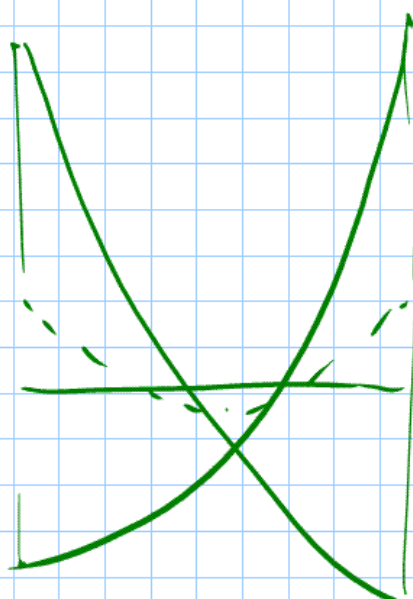
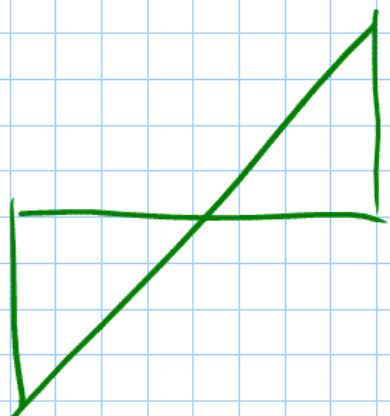
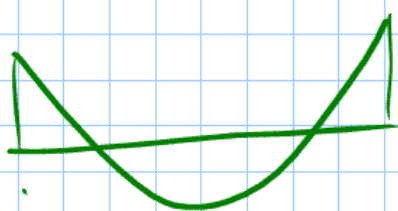
M_4



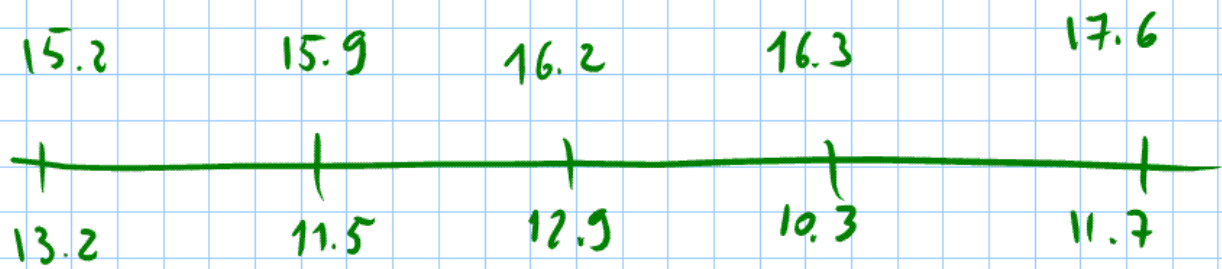
M_6

$$\text{sign}(M_4) (|M_4| + |M_6|)$$

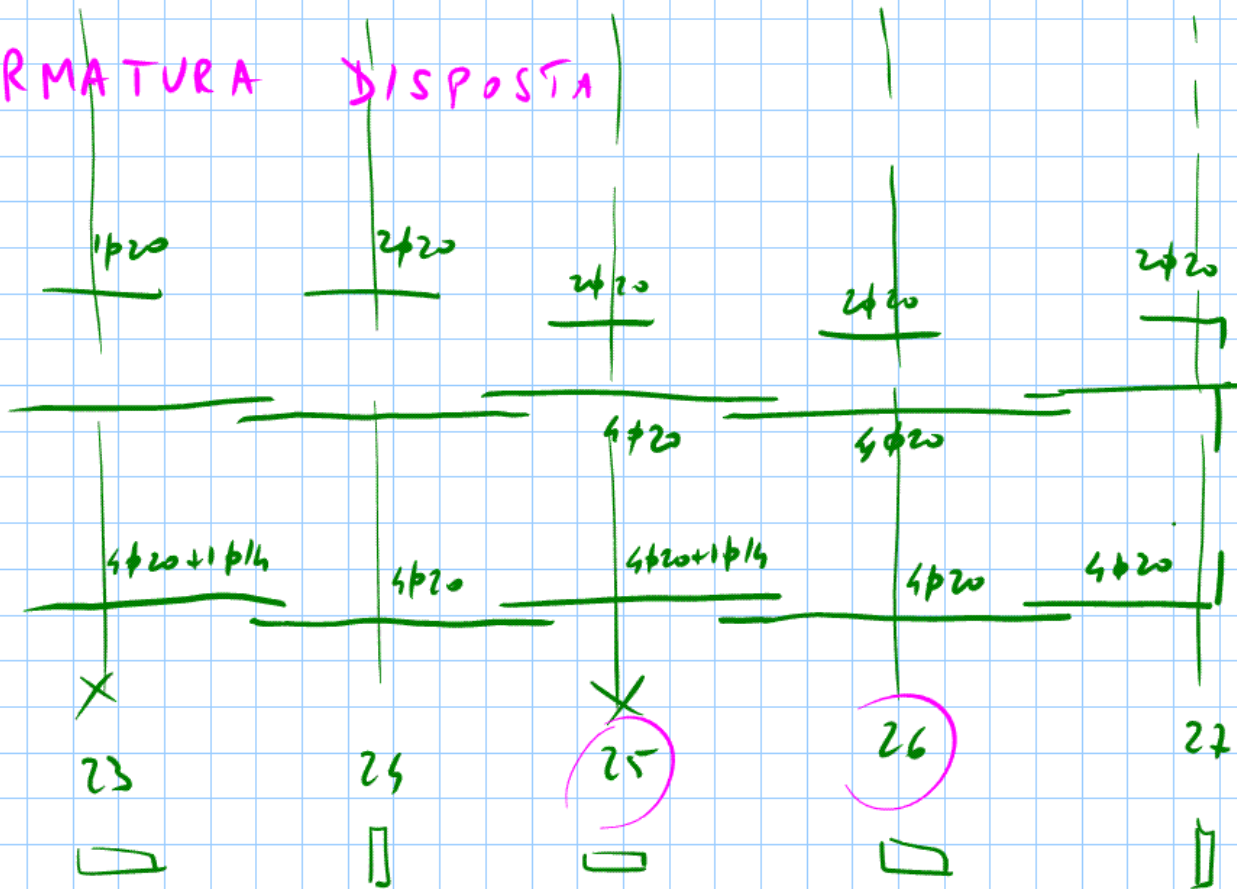
risma y



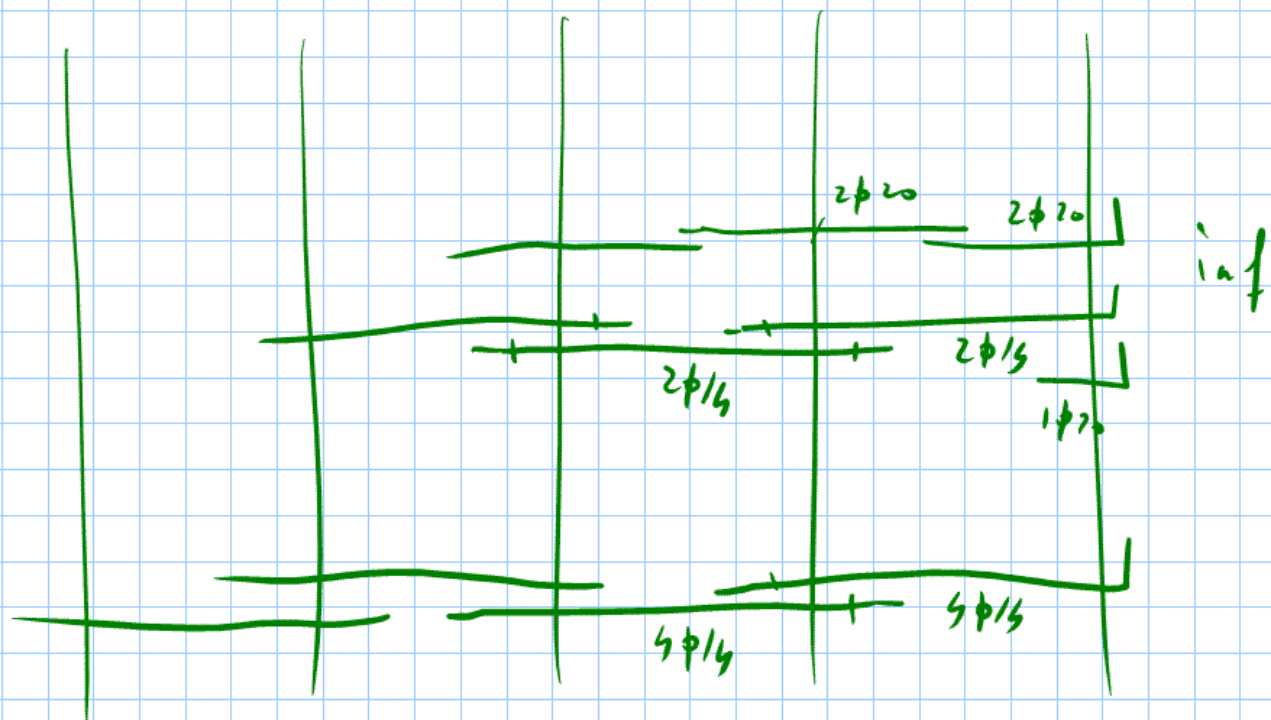
$$A_s = \frac{M}{0.9 \cdot d \cdot f_{yd}} = \frac{137 \times 10}{0.9 \times 0.24 \times 391.3} = 16.2 \text{ cm}^2$$



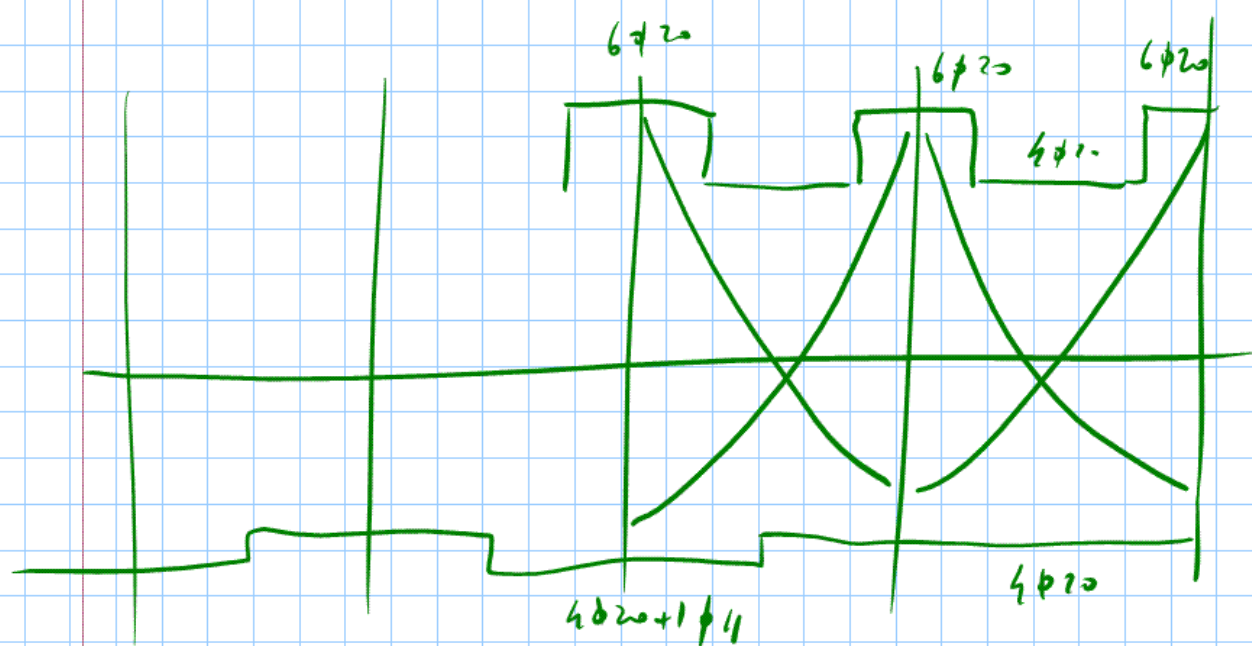
ARMATURA DISPOSTA

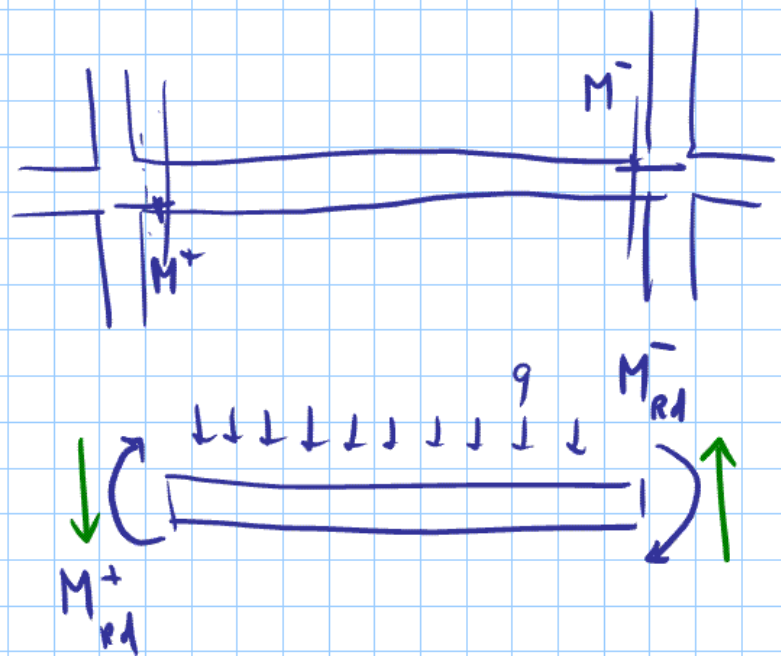
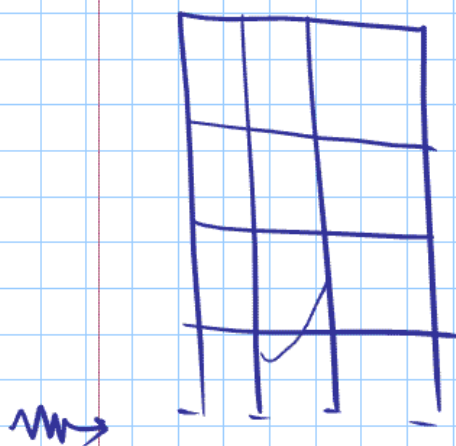
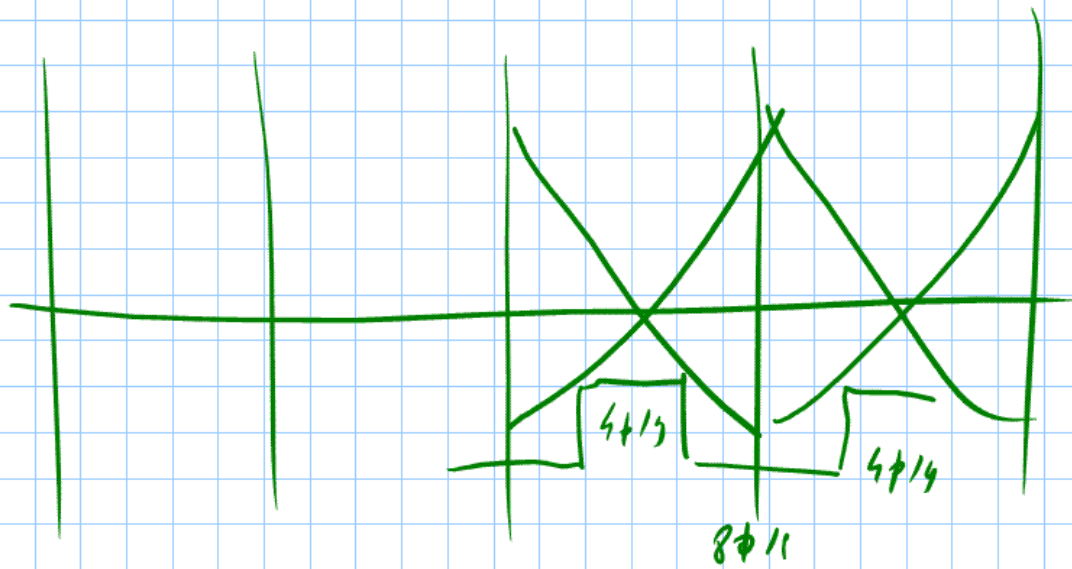


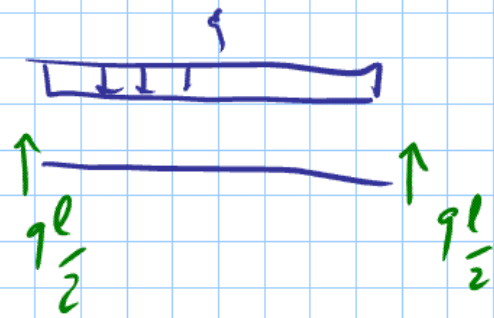
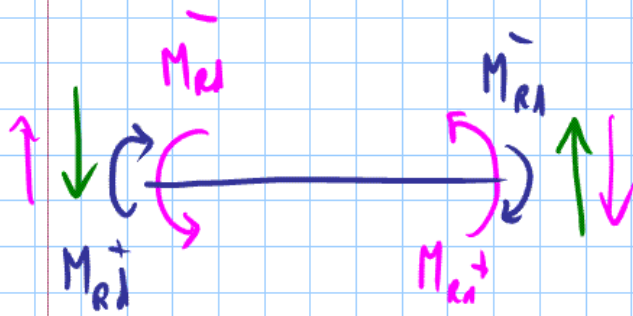
(2)



(1)



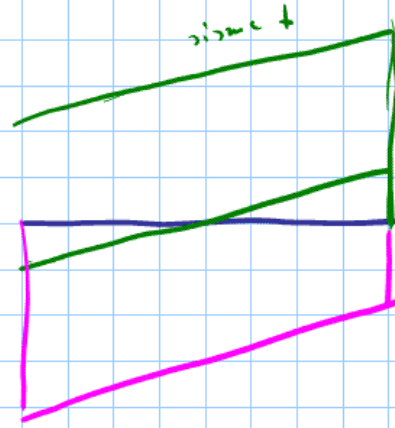




$$\frac{M_{rd}^+ + M_{rd}^-}{l}$$

$$V_2 = \frac{M_{rd}^+ + M_{rd}^-}{l} + \frac{q l}{2}$$

$$V_1 = \frac{M_{rd}^- + M_{rd}^+}{l} + \frac{q l}{2}$$



V

campate 25 - 26

153.7 ← 6 φ 20

6 φ 20 → 153.6

$q = 32.0 \text{ kN/m}$

116.8 ← 4 φ 20 + 1 φ 16

4 φ 20 → 104.7

$l_{net} = 3.45 \text{ m}$

$$V = \frac{153.6 + 116.8}{3.45} + \frac{32.0 \times 3.45}{2} = 133.6 \text{ kN}$$

78.4 +

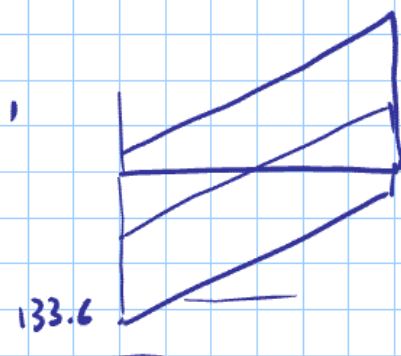
55.2

130.1

74.5

153.7 + 104.7

3.45



$$V_{Rd,max} = b z f_{cd} \frac{\cot \theta}{1 + \cot^2 \theta} = \frac{60 \times 21.6 \times 7.08 \times 0.4}{12} = 367 \text{ kV}$$

ok!

$$b = 60 \text{ cm}$$

$$d = 24 \text{ cm}$$

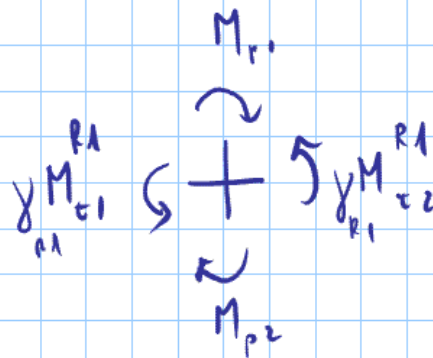
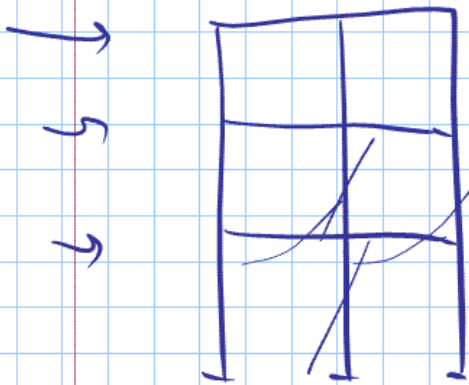
$$z = 21.6 \text{ cm}$$

$$f_{cd} = 7.08 \text{ MPa}$$

$$A_{st} = \frac{V_s}{z f_{yd} \cot \theta} = \frac{133 \times 1000}{21.6 \times 35.13 \times 2} = 7.9 \text{ cm}^2/\text{m}$$

$$\phi 8/10 \quad 26 \quad 80 \text{ cm} \quad (40 \text{ cm} < 45)$$

$$\phi 8/15 \quad 26$$



$$M_{r1} + M_{p2} \geq \gamma_{Rd} (M_{r1}^{Ed} + M_{p2}^{Ed})$$

153.7	6d20	6d20
116.8	4p20+1p14	4p20+1p14

$$(153.7 + 116.8) 1.1 = 297.6 \text{ kNm}$$

