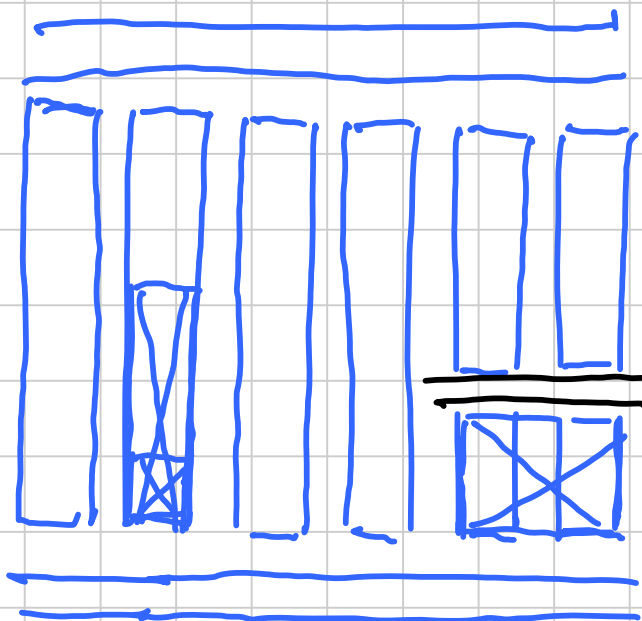
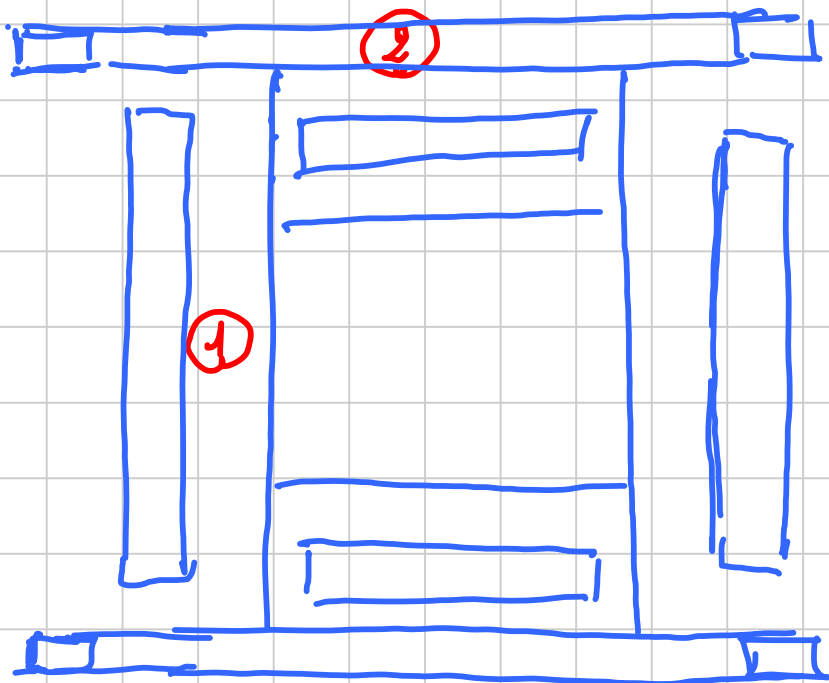


FORI NEI SOLAI

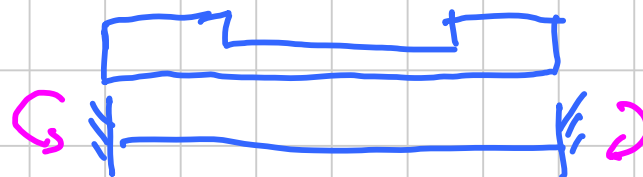
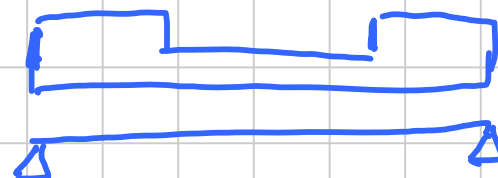
Titolo nota

25/05/2015



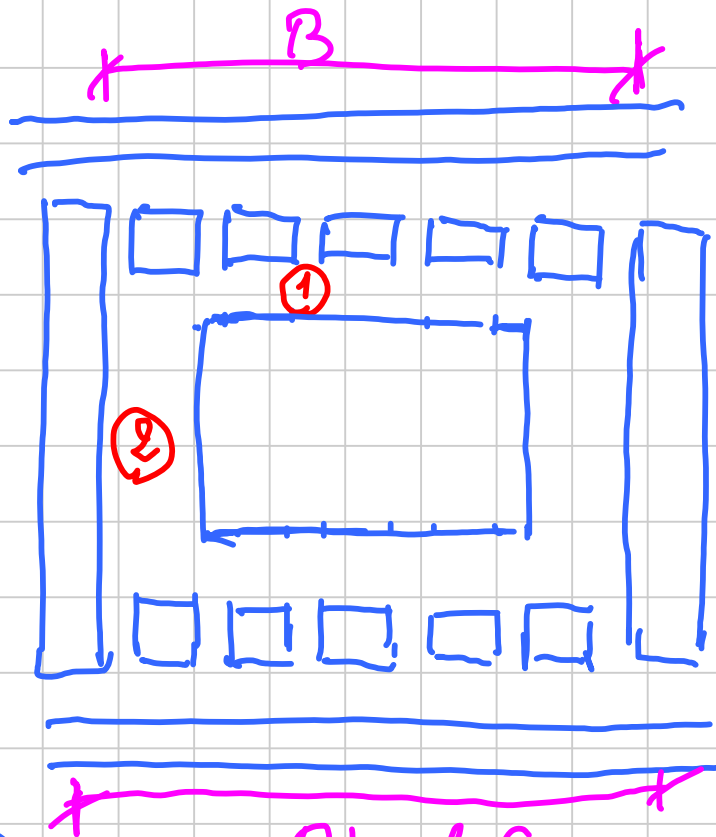


①



②



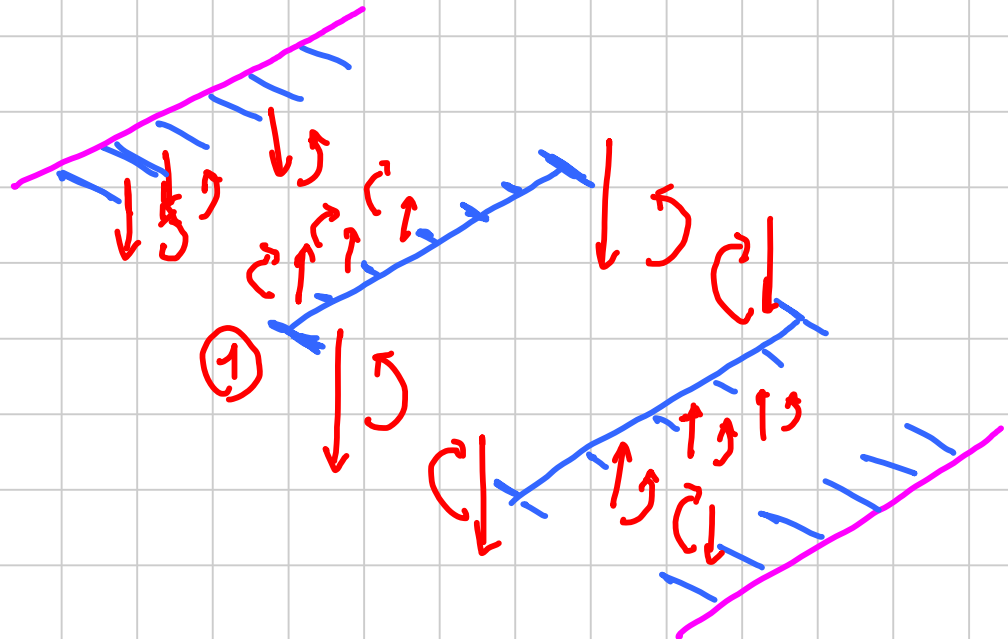
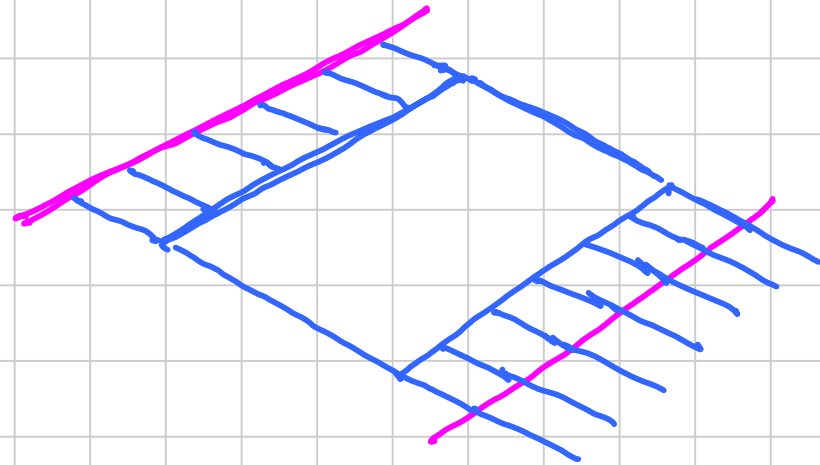


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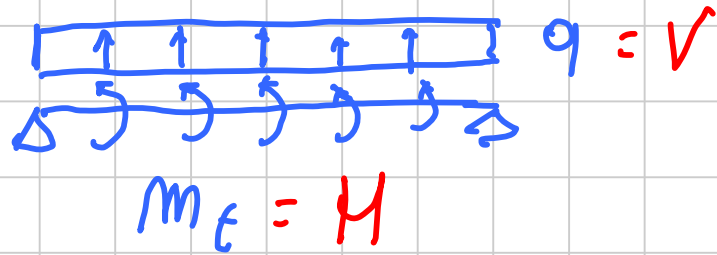
$$B' = 2.6$$

$$V = v^s \frac{B}{2}$$

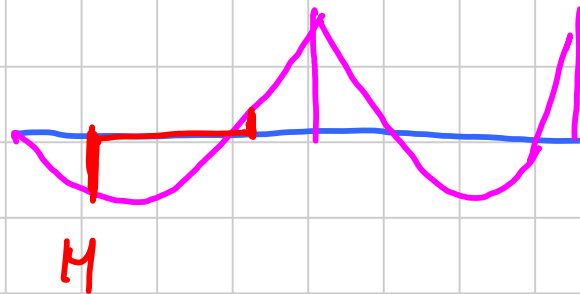
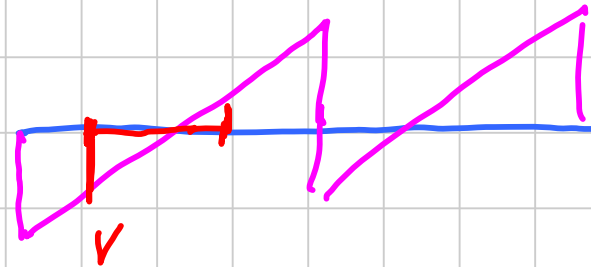
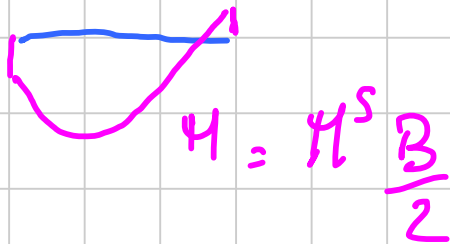
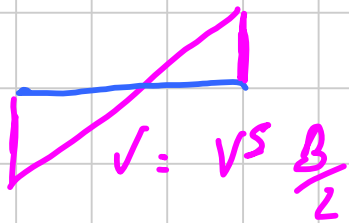
$$H = H^s \frac{B}{2}$$

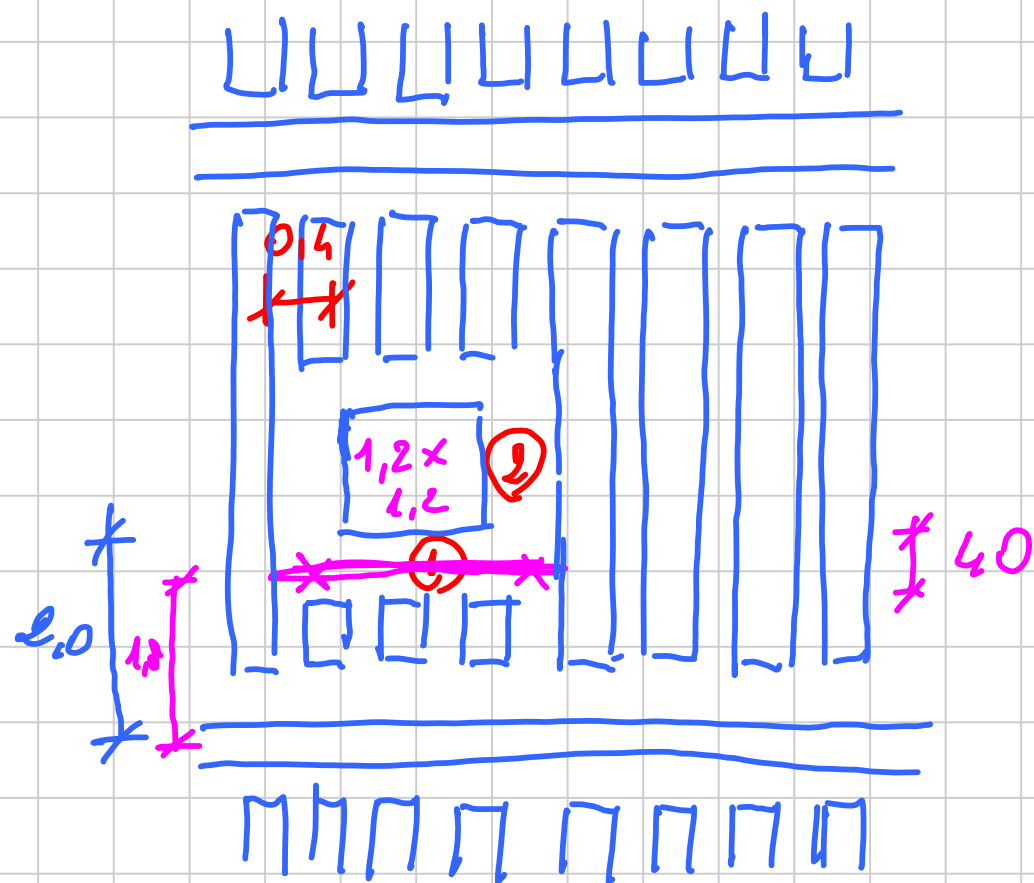


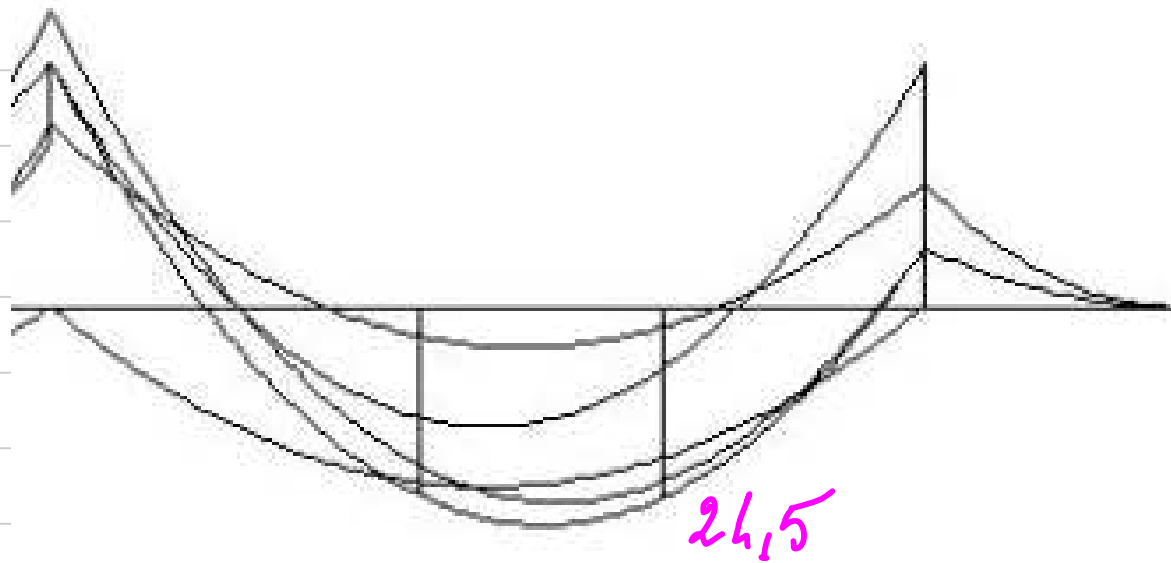
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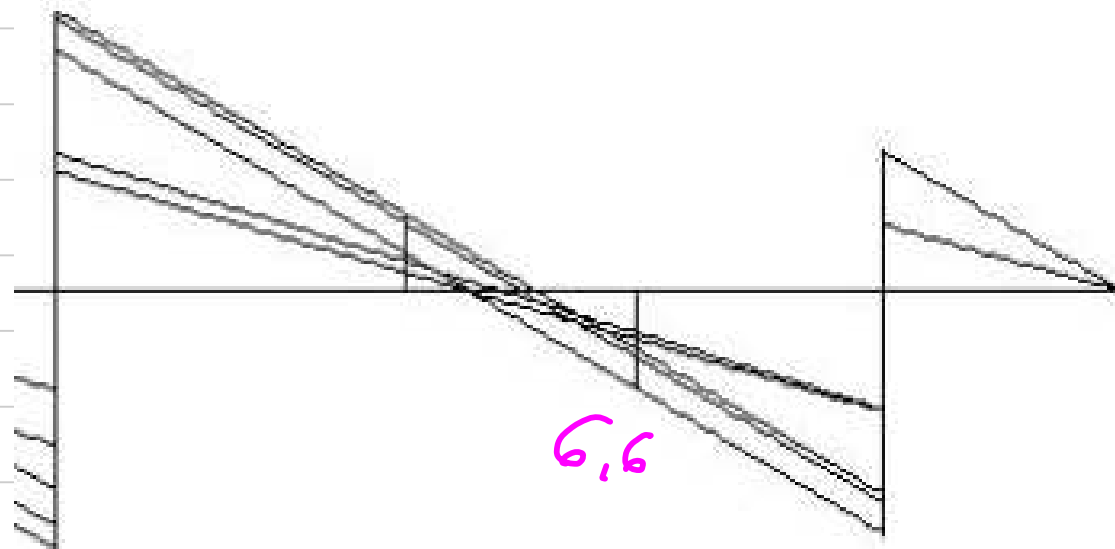




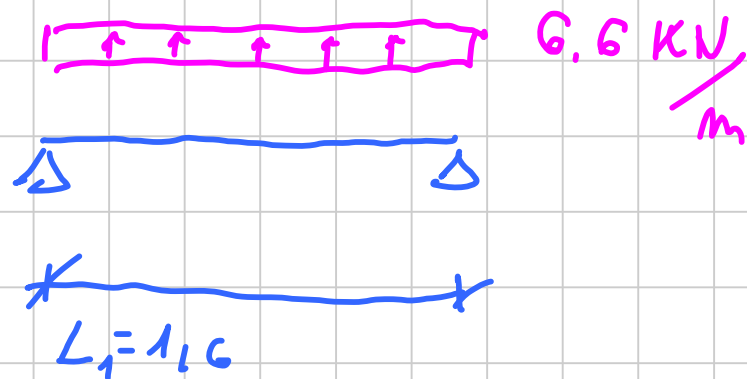
$m_E = 24,5 \text{ kNm/m}$

 $L_1 = 1,6$

$T_E = m_E \frac{L_1}{2}$
 $= 24,5 \times \frac{1,6}{2} = 19,6 \text{ kNm}$

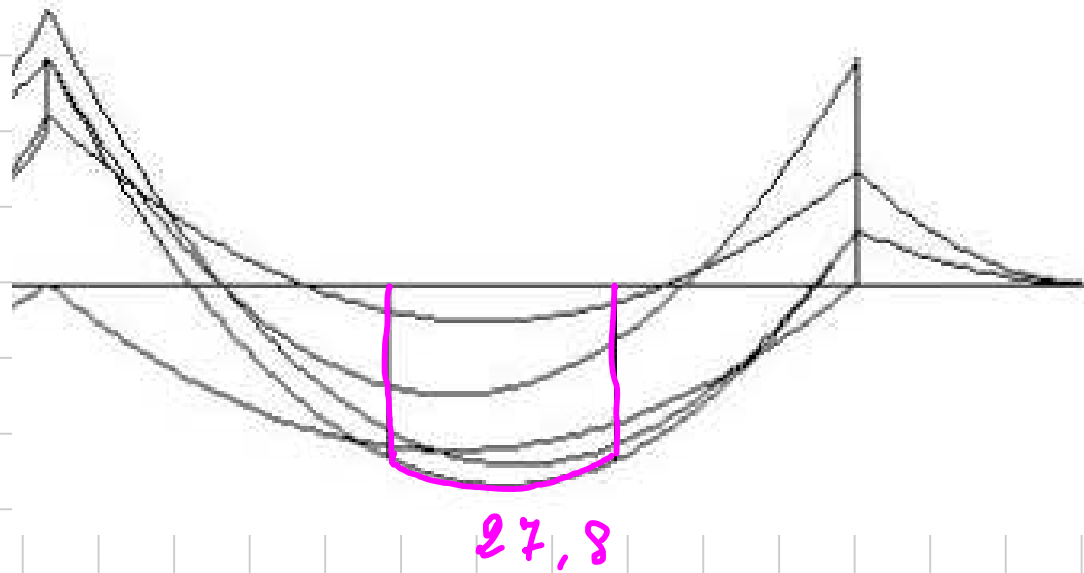


①



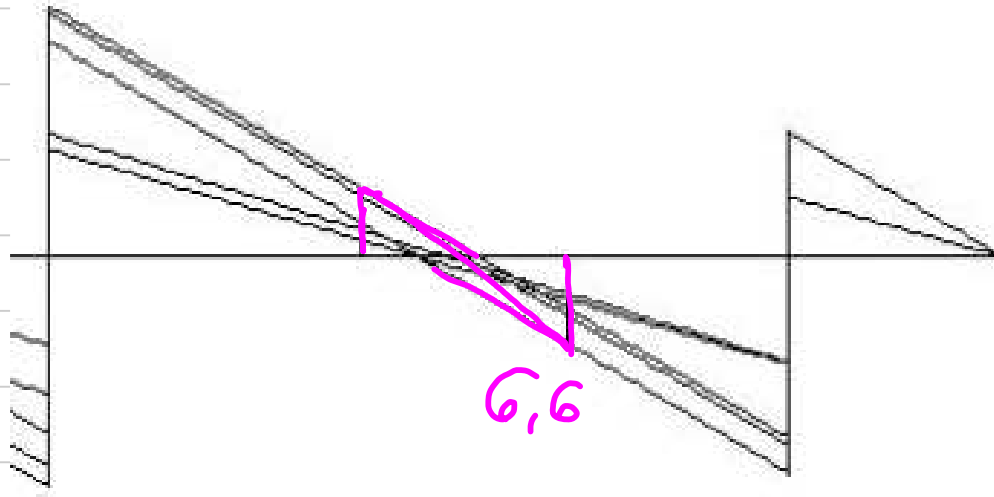
$$V_{Ed} = \frac{qL_1}{2} = \frac{6.6 \times 1.6}{2} = 5.3 \text{ kN}$$

$$M_{Ed} = \frac{qL_1^2}{8} = \frac{6.6 \times 1.6^2}{8} = 2.1 \text{ kN m}$$



2

$$M_{ed} = 27,8 \times \frac{2,6}{2} = 36,1 \text{ kNm}$$



(2)

$$V_{Ed} = 6.6 \times \frac{2.6}{2} = 8.6 \text{ kN}$$

$$\textcircled{1} T_{Ed} = 19,6 \text{ kNm}$$

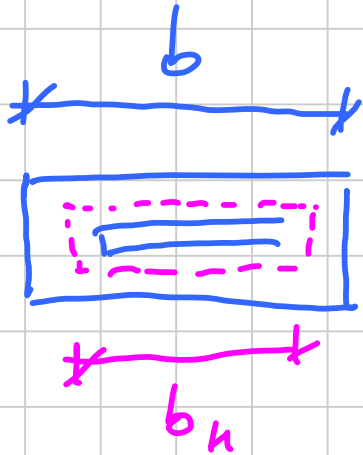
$$T_{Rd, max} = 2 A_k t f'_{cd} \frac{\cot \theta}{1 + \cot^2 \theta} \quad \cot \theta = 2$$

$$A_k = \frac{1 + \cot^2 \theta}{\cot \theta} \frac{T_{Ed}}{2 t f'_{cd}} = \frac{1 + 2^2}{2} \times \frac{19,6 \times 10}{2 \times 0,08 \times 7,1}$$

$$= 431,3 \text{ cm}^2$$

$$t = 2c = 8 \text{ cm}$$

$$f'_{cd} = 7,1 \text{ MPa}$$



$$h_k = 25 - 8 = 17 \text{ cm}$$

$$40 \times 25$$

$$b_k = \frac{A_k}{h_k} = \frac{431.3}{17} = 25.4 \text{ cm}$$

$$b = b_k + t = 25.4 + 8 = 33.4 \text{ cm}$$

$$T_{Rd, max} = 2 A_k + f_{ca} \frac{\cot \gamma \varnothing}{1 + \cot^2 \gamma \varnothing}$$

$$t = \frac{A}{u} = \frac{40 \times 25}{2(40 + 25)} = \cancel{7,1} \text{ cm} \\ 8 \text{ cm}$$

$$A_k = (40 - 8) \times (25 - 8) = 544 \text{ cm}^2$$

$$T_{Rd, max} = 2 \times 544 \times 0,08 \times 7,1 \times \frac{2}{1 + 2^2} \times \frac{1}{10} = 24,7 \text{ kNm}$$

$$V_{Rd, max} = 0,9 d b_w f'_{ct} \frac{\cot \theta}{1 + \cot^2 \theta}$$

$$= 0,9 \times 21 \times 40 \times 7,1 \times \frac{2}{1 + 2^2} \times \frac{1}{10} = 214,7 \text{ kN}$$

$$\frac{V_{Ed}}{V_{Rd, max}} + \frac{T_{Ed}}{T_{Rd, max}} = \frac{96}{214,7} + \frac{19,6}{214,7} = 0,82 < 1$$

$$M_{Ed} = 2.1 \text{ KN m}$$

$$A_s = \frac{2.1 \times 10}{0.9 \times 0.21 \times 371.3} = 0.28 \text{ cm}^2$$

$$V_{Ed} = 5.3 \text{ KN}$$

$$\frac{A_{sw}}{s} = \frac{V_{Ed}}{0.9 d f_{yd} \cot \theta} = \frac{5.3 \times 10}{0.9 \times 0.21 \times 371.3 \times 2} = 0.36 \frac{\text{cm}^2}{\text{m}}$$

$$\phi_s \text{ în } 1\text{m} = \frac{0.36}{1} = 0.36$$

$$T_{Rd,nt} = 2 A_k \frac{A_{sw}}{s} f_{yd} \cot \theta = T_{Ed}$$

$$\frac{A_{sw}}{s} = \frac{T_{Ed}}{2 A_k f_{yd} \cot \theta} = \frac{19,6 \times 10^3 \times 10^5 \times 10^2}{2 \times 544 \times 391,3 \times 2 \times 10^2 \times 10^2}$$

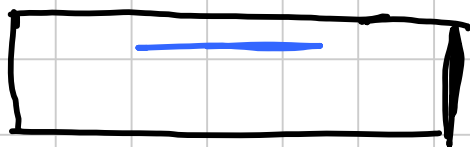
$$= 2,3 \text{ cm}^2/\text{m}$$

$$\Phi 8 \text{ in } 1 \text{ m} = \frac{2,3}{0,5} = 4,6$$

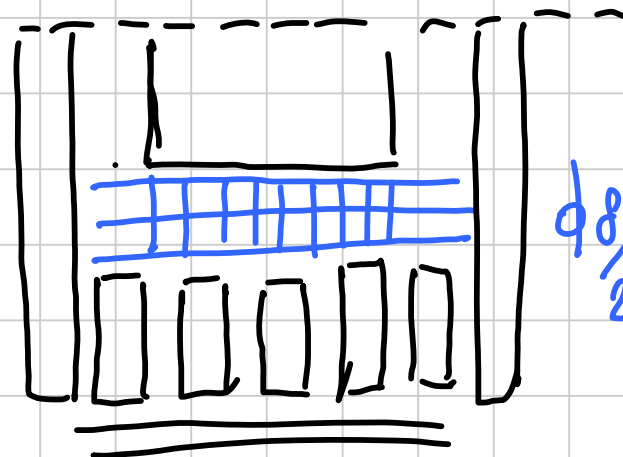
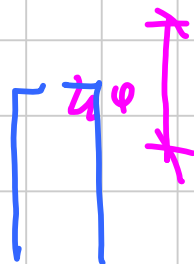
$$T_{Rd,lm} = 2 A_k \frac{A_{sl}}{u_k} f_{yd} \frac{1}{\cot \theta} = T_{Ed}$$

$$A_{sl} = \frac{T_{Ed} u_k \cot \theta}{2 A_k f_{yd}} = \frac{19,6 \times 98 \times 2 \times 10^3 \times 10^2}{2 \times 566 \times 391,3} = 9,01 \text{ m}^2$$

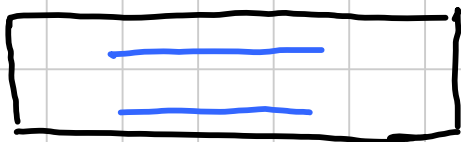
$$u_k = 2 (b_k + h_k) = 2 \times (32 + 17) = 98 \text{ cm}$$



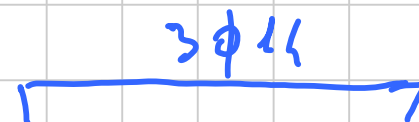
0,28 cm²



$\phi 8 / 20$



4,51 cm² 3 $\phi 14$
4,51 cm² 3 $\phi 14$



$$m \phi 8 / 1m = 0,36 + 4,6 = 4,96 \phi 8$$

o $\phi 8 / 20$

