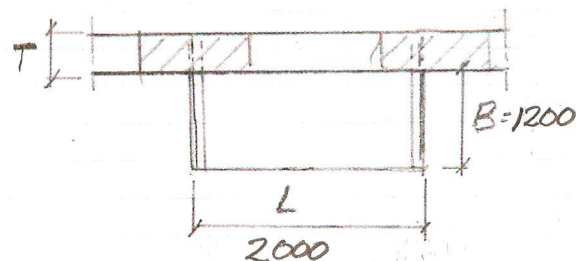
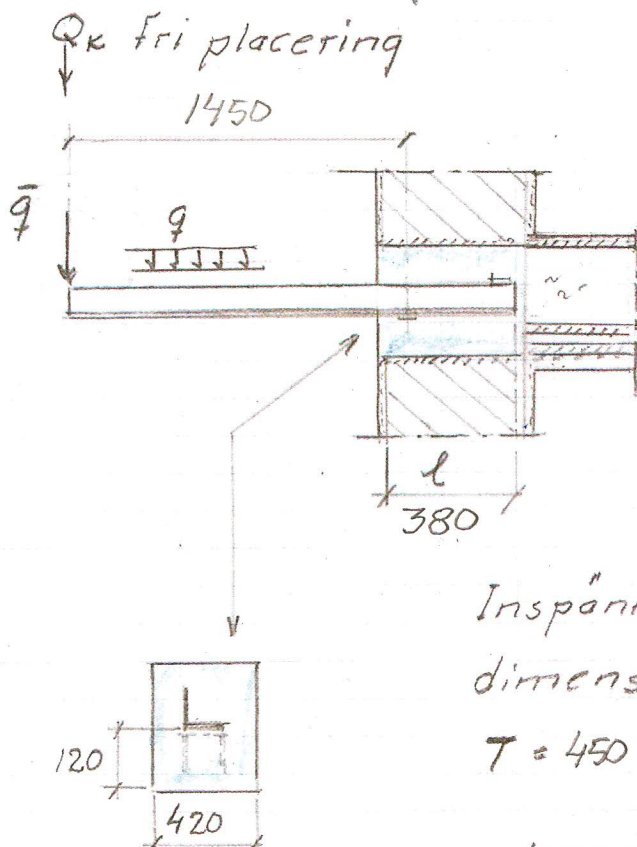


Dimensionering av balkongkonsoler



l = Ingrutningslängd

Inspänning av konsoler har dimensionerats för väggjocklek $T = 450$ ($1\frac{1}{2}$ -sten)

Dimensioneringsdatum: 2022.05.03

Jan J. Björn

Egenvekt betongplatta: $2,82 \text{ KN/m}^2$
($\gamma = 24$)

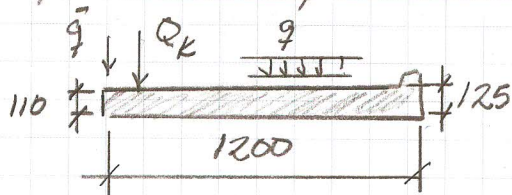
Nyttiga laster: $\left\{ \begin{array}{l} q_k = 3,5 \text{ KN/m}^2 \\ Q_k = 2,0 \text{ KN (punktlast)} \end{array} \right.$
(Eurocord EKS 11)

Brottgränslaster:

$\left\{ \begin{array}{l} q = 2,82 + 1,35 \cdot 3,5 = 7,55 \text{ KN/m}^2 \\ Q_k = 1,35 \cdot 2,0 = 2,70 \text{ KN} \end{array} \right. \text{ Olika lastfall}$
 $\bar{q} = \text{KN/m (räcke)}$

Stål: Ss 1312 SK 3 $\sigma_{br}^{till} = \frac{220}{1,0 \cdot 1,2} = 183 \text{ MPa}$

Nya balkonger 2000x1200



$$l_{medel} = 0,5 (110 + 125) = 117,5 \text{ mm}$$

$$\text{Egenvikt } q_e = 2,82 \text{ kN/m}^2 \quad (\gamma = 24)$$

Bröttgränslaster enl. blad 1 (sid 1)

$$q = 7,55 \text{ kN/m}^2 \quad Q_k = 2,70 \text{ kN} \quad (\text{kombinerad med } q = 2,82 \text{ kN/m}^2)$$

$$\text{Konsollaster} \begin{cases} M = 1,0 (1,2 \cdot 7,55 \cdot 0,65 + 0,2 \cdot 1,25) = 6,14 \text{ kNm} \\ \text{alt. } 1,0 (1,2 \cdot 2,82 \cdot 0,65 + 0,2 \cdot 1,25) + 2,70 \cdot 1,25 = 5,83 \text{ kNm} \\ \quad \quad \quad (< 6,14) \end{cases}$$

Hörtill L 150x90x10

$$W_x = 53,1 \text{ cm}^3$$

$$\sigma = 115,6 \text{ MPa} < 183$$

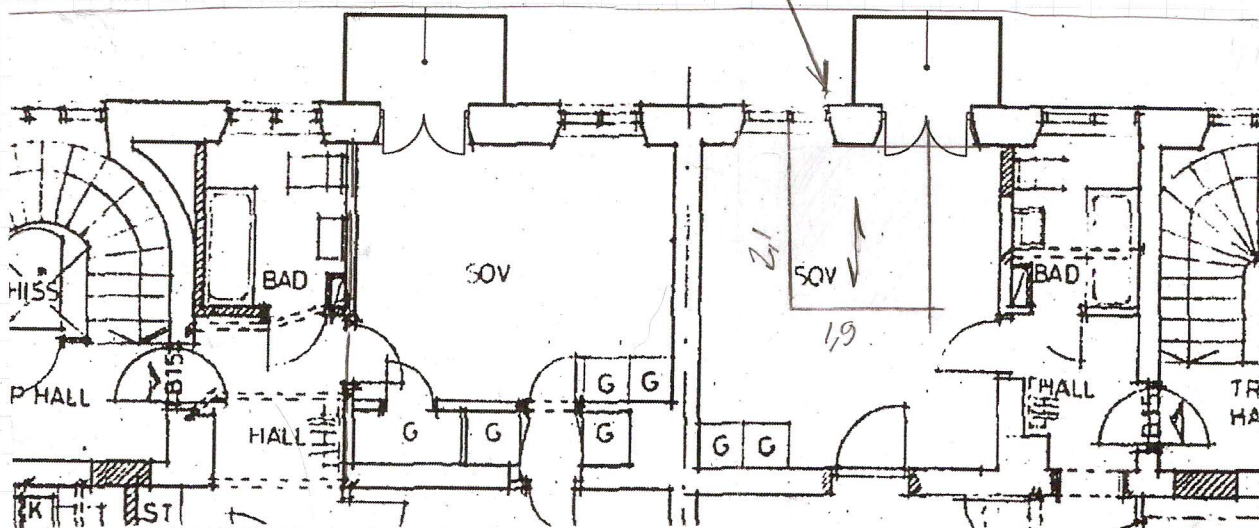
$$T = 1,0 (1,2 \cdot 7,55 + 0,2) = 9,26 \text{ kN}$$

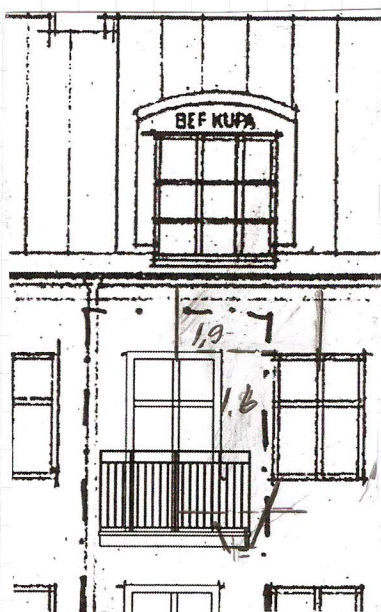
Erf. motmällstyrngdi:

$$G_{erf} = \frac{9,26 \cdot 10^{-4} + 2 \cdot 6,14 \cdot 0,42 \cdot 1,3}{0,85 (0,42 \cdot 0,38 \cdot 1,3 - 9,26 \cdot 10^{-3})} = \frac{6,8906 \cdot 10^{-3}}{0,1685} = 40,89 \cdot 10^3 \text{ MN}$$

40,9 kN

Kontroll för ogynnsammaste konsolläge





Höger sida:

$$G = \text{Fasad } 3,5 \cdot 0,5 \cdot 18 = 31,5 \text{ KN}$$

$$\text{Taklast } 1,9 \cdot 1,0 = 1,9 \text{ KN}$$

$$\text{Bjälklag } 2,1 \cdot 1,9 \cdot 3,0 = 12,0 \text{ KN}$$

$$45,4 \text{ KN}$$

$$\frac{45,4}{1,1} = 41,3 \text{ KN} > 40,9 \text{ KN} \text{ OK!}$$

Fasad 1:100

Betongplatta $M = 7,55 \cdot 2,0^2 \cdot 0,125 = 3,78 \sim 3,8 \text{ KNm}$

Armering: ks 500; Nps 500; SK 3

$$d = 117,5 - 30 - 4 = 83,5 \text{ mm} \quad \text{Välj } d = 80 \text{ mm}$$

$$\bar{m} = \frac{3,8 \cdot 10^{-3}}{11,3 \cdot 1,0 \cdot 0,08^2} = 0,053 \quad w = 1 - \sqrt{1 - 2 \cdot 0,053} = 0,055$$

$$A_s = \frac{3,8 \cdot 10^{-3}}{371 \cdot 0,08 (1 - 0,055/2)} = 1,32 \cdot 10^{-4} \text{ m}^2$$

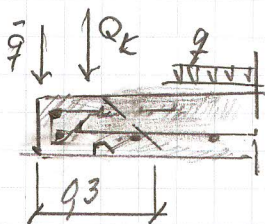
Väljes # 8 s 200

$$A_s = 2,5 \cdot 10^{-4} \text{ m}^2$$

$$(\# 6 \text{ s } 200 \quad A = 1,40 \cdot 10^{-4} \text{ m}^2)$$

Kantförstärkning

$$d = 110 - 30 - 5 = 75 \text{ mm}$$



$$M = (0,2 + 0,3 \cdot 2,82)^2 \cdot 0,125 + 2,90 \cdot 2,0 \cdot 0,25 = 1,87 \text{ KNm}$$

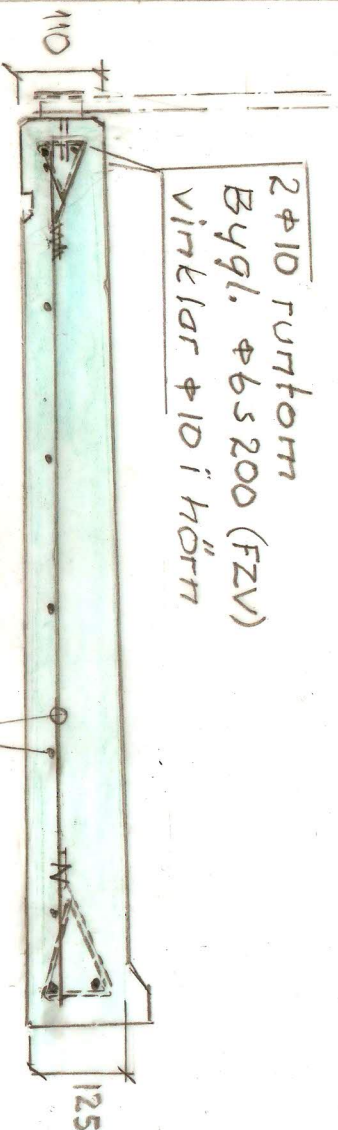
$$A_s = \frac{1,87 \cdot 10^{-3}}{371 \cdot 0,075 \cdot 0,9} = 0,95 \cdot 10^{-4} \text{ m}^2$$

$$\left. \begin{array}{l} 1 \cdot 10 \\ 1 \cdot 8 \end{array} \right\} A_s = 1,29 \cdot 10^{-4} \text{ m}^2$$

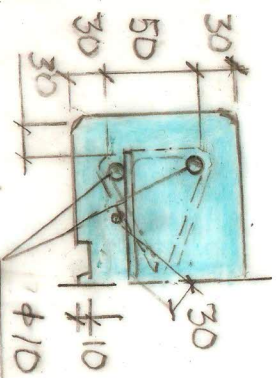
2022.05. 03

Jon P. Lignell

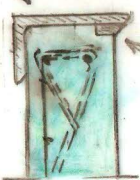
2 ϕ 10 runtom
Bygl. ϕ 6 s 200 (FZV)
vinklar ϕ 10 i hörn



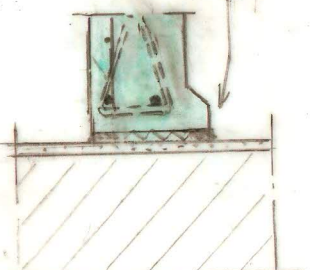
SEKTION 1:10

H ϕ 8 s 200

L 150 x 30 x 10



MUKFOGAR

FÖRESKRIFTER:ARMERING: NPS 500, KS 500TÄCKSKIKT: 30 MMBETONG: C 32/40 ANL. CEM. 42,5EXP. KLASSER: XC4 OCH XF3ROSTSKYDD: BYGL. VFZSTÅL:L-STÅL: S 235 JR G2 (SS 1312)KORROSIONSKLASS: C3