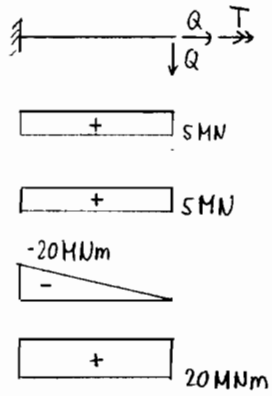
Resultate Baustatik I, Hausübung 6

1a)



1b) Punkt 1: $\sigma_x = 11.34\ N/mm^2$ $\quad (\tau_{xz}(V) = 0.5\ N/mm^2 \approx 0)$

$\tau_{xy}(V) = 0$

$\tau_{xy}(T) = 5.79\ N/mm^2$ $\Big\}\ \tau_{xy\,tot} = 5.79\ N/mm^2$

Punkt 2: $\sigma_x = 5.94\ N/mm^2$

$\tau_{xz}(V) = 5.35\ N/mm^2$

$\tau_{xt}(T) = 11.57\ N/mm^2$ $\Big\}\ \tau_{xz\,tot} = 16.92\ N/mm^2$

1c) Punkt 1: $\sigma_1 = 13.77\ N/mm^2$; $\sigma_2 = -2.42\ N/mm^2$; $\varphi_1 = 22.8°$

Punkt 2: $\sigma_1 = 20.15\ N/mm^2$; $\sigma_2 = -14.21\ N/mm^2$; $\varphi_1 = 40°$

2) $H \leq 1.342\ m$ (Zugseite massgebend)

3a) Punkt 1: $\sigma_{x_1} = 98.18\ N/mm^2$

$\tau_{xz_1} = 53.58\ N/mm^2$

Punkt 2: $\sigma_{x_2} = 115.14\ N/mm^2$

$\tau_{xz_2} = \tau_{xy_2} = 0$

Punkt 3: $\sigma_{x_3} = -71.94\ N/mm^2$

$\tau_{xz_3} = 79.27\ N/mm^2$

3b) Punkt 1 $\quad \sigma_1 = 122\ N/mm^2$

$\sigma_2 = -23\ N/mm^2$

$\varphi_1 \hat{=} 24°$

Punkt 2 $\quad \sigma_1 = 115.14\ N/mm^2$

$\sigma_2 = 0$

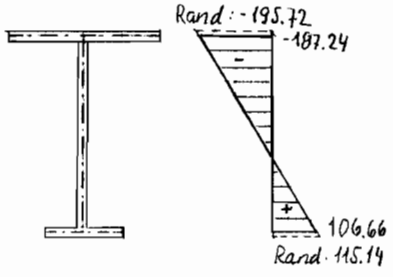
$\varphi_1 = 0°$

Punkt 3 $\quad \sigma_1 = 51\ N/mm^2$

$\sigma_2 = -123\ N/mm^2$

$\varphi_1 \hat{=} 57°$

3c) Verlauf von σ_x [N/mm²]:



Idealisierter Verlauf von τ_{yx}, τ_{zx} [N/mm²]: