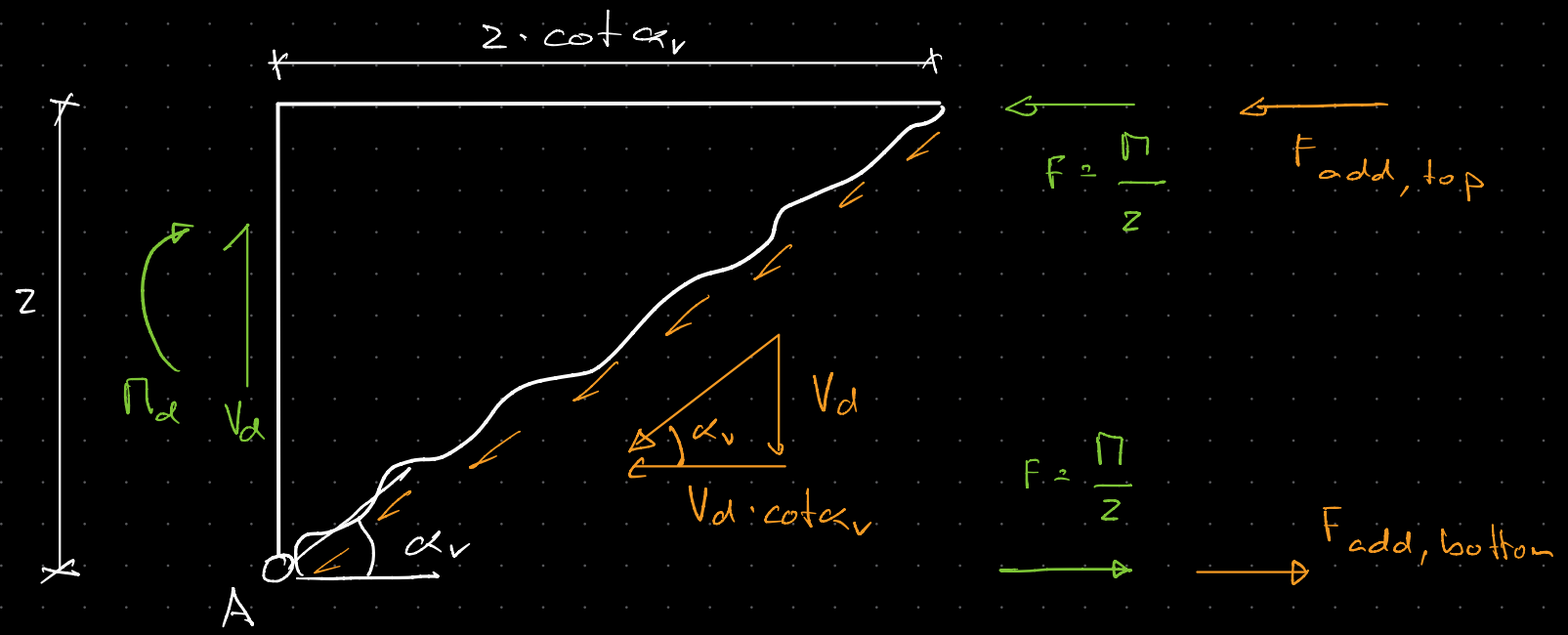


$$\sum M_A = 0: \quad \frac{M}{z} \cdot z + F_{add,top} \cdot z + V_d \cdot \cot\alpha_v \cdot \frac{z}{2} - V_d \cdot \frac{z \cot\alpha_v}{2} - M = 0$$

$$\Rightarrow F_{add,top} = 0$$

$$\sum N = 0: \quad \boxed{V_d \cdot \cot\alpha_v = F_{add,bottom}}$$

① V_d, m_{sd} from FE-Analysis

② bending design $\Rightarrow m_{rd}$

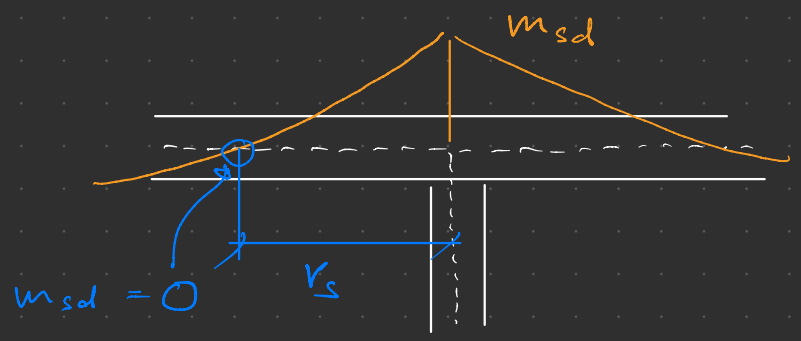
③ Assumption: $\dfrac{m_{sd}}{m_{rd}} \simeq \dfrac{V_d}{V_{flex}} \Rightarrow V_{flex}$

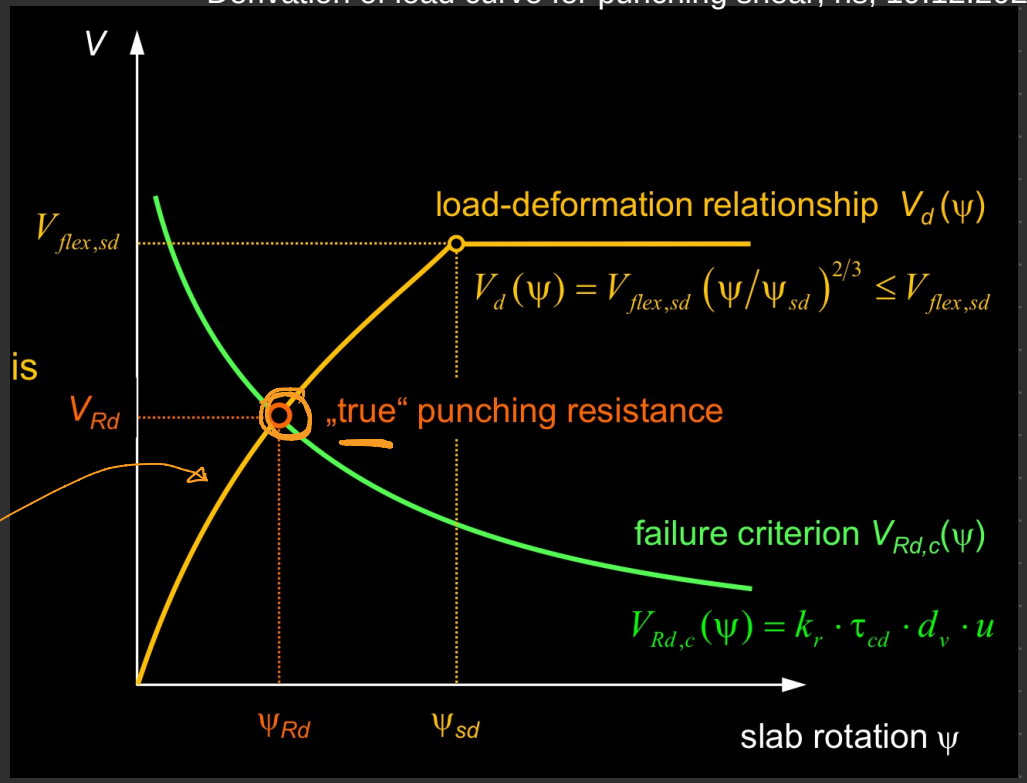
④ $\psi = \psi_{sd} \left(\dfrac{m_{sd}}{m_{rd}} \right)^{3/2}$

with ③: $\psi = \psi_{sd} \left(\dfrac{V_d}{V_{flex}} \right)^{3/2}$

$$\Rightarrow \boxed{V_d(\psi) = V_{flex} \left(\frac{\psi}{\psi_{sd}} \right)^{2/3}}$$

$= f(r_s)$





$V_{flex,\,sd}$	Support reaction at which the bending reinforcement yields (in the considered direction)
ψ_{sd}	Slab rotation when reaching $V_{flex,\,sd}$