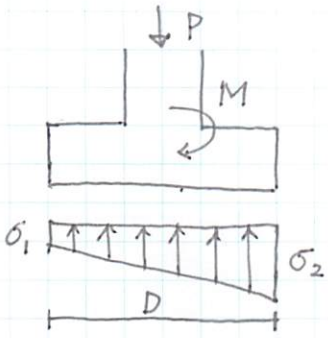
○ 基礎スラブの接地圧.



$$\sigma = \frac{P}{A} + \frac{M}{Z}$$

$$= \frac{P}{BD} \pm \frac{P \cdot e}{BD^2/6}$$

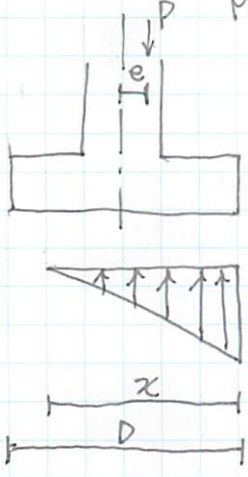
$$= \frac{P}{BD}\left(1 \pm 6 \cdot \frac{e}{D}\right)$$

$\sigma_1 = 0$ のとき.

$$1 - 6\frac{e}{D} = 0 \quad \therefore e = \frac{D}{6}$$

$\therefore$ $e < \frac{D}{6}$ のとき. $\sigma = \frac{P}{BD}\left(1 \pm 6\frac{e}{D}\right)$

・ $e > \frac{D}{6}$ のとき.



鉛直方向釣合式

$$P = \sigma_2 \cdot x/2 \cdot B$$

モーメント釣合式

$$P\left(\frac{D}{2} - e\right) - \left(\sigma_2 \cdot x \cdot \frac{1}{2}\right) \cdot \frac{x}{3} \cdot B = 0$$

$$\therefore \sigma_2 \cdot \frac{x}{2} \cdot B\left(\frac{D}{2} - e\right) - \sigma_2 \cdot \frac{x^2}{6} \cdot B = 0$$

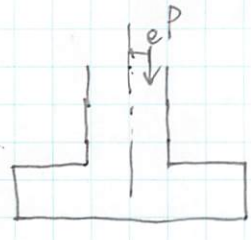
$$\frac{1}{2}\left(\frac{D}{2} - e\right) - \frac{x}{6} = 0 \quad \therefore x = 3\left(\frac{D}{2} - e\right)$$

↑ 中立軸.

$$\therefore \sigma = \frac{2P}{xB} = \frac{2}{3} \cdot \frac{P}{\left(\frac{D}{2} - e\right)B}$$

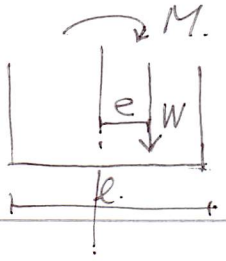
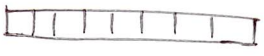
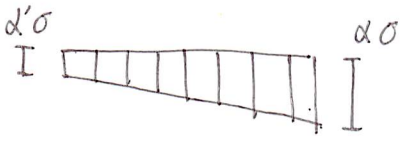
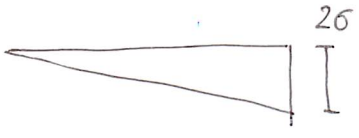
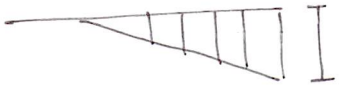
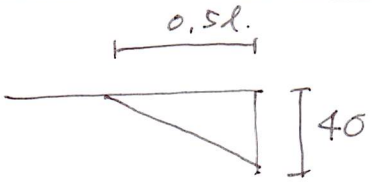
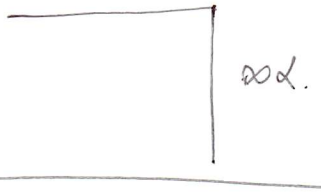
$$= \frac{P}{BD} \cdot \frac{2}{3\left(\frac{1}{2} - \frac{e}{D}\right)}$$

・ 転倒する条件.



$\sigma = 0$ より. $\frac{1}{2} - \frac{e}{D} = 0 \quad \therefore e \geq \frac{D}{2}$ 転倒.

◎ 接地圧係数 α.

$e=\frac{M}{W}$	 $\sigma=\frac{W}{A}$	接地圧係数 α.
$e=0$	 1σ	$\alpha=1.$
$\frac{e}{\ell}<\frac{1}{6}$ (断面の核内).		$\alpha'=1-6\frac{e}{\ell}$ $\alpha=1+6\frac{e}{\ell}$ $1<\alpha<2.$
$\frac{e}{\ell}=\frac{1}{6}$ (断面の核).		$\alpha=1+6\frac{e}{\ell}$ $\alpha=2.$
$\frac{e}{\ell}>\frac{1}{6}$ (底面の一部が接地圧0).		$\alpha=\frac{2.}{3(\frac{1}{2}-\frac{e}{\ell})}$ $\alpha>2.$
$\frac{e}{\ell}=\frac{1}{3}$ (底面の1/2が接地圧0).		$\alpha=\frac{2.}{3(\frac{1}{2}-\frac{e}{\ell})}$ $\alpha=4$
$\frac{e}{\ell}\geq\frac{1}{2}$ 転倒.		$\alpha=\frac{2}{3(\frac{1}{2}-\frac{e}{\ell})}$ $\alpha=\infty.$

※ 短期 $\frac{e}{\ell}\leq\frac{1}{3}$ となるように設計するのが望ましい.