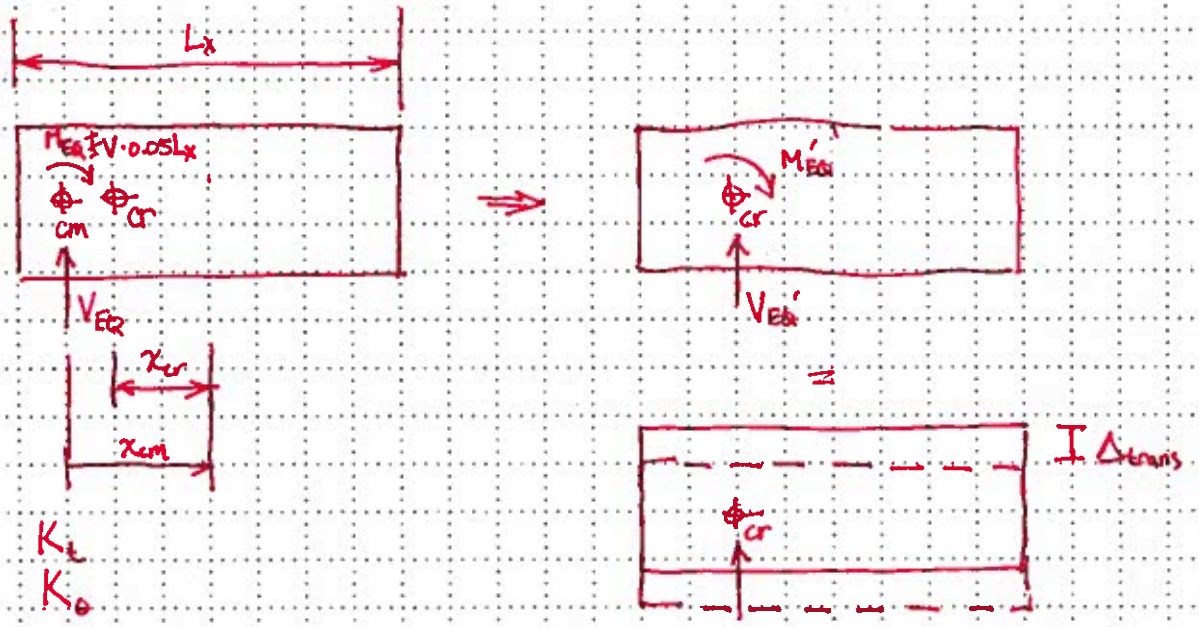
KSi/Structural Engineers

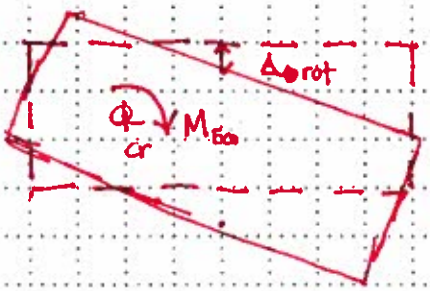
Subject:	Date:
Project:	Project Number:
Computed By:	Sheet Number:



$\Delta_{trans} = V_{EQ}' / K_t$

$\theta_{rot} = M_{EQ}' / K_\theta$

↳ $\Delta_{rot} = (0.5L_x - x_{cr})\,\theta_{rot}$



$M_{EQ}' = V_{EQ}(x_{cm} - x_{cr} \pm 0.05L_x)$

$= V_{EQ}(x_{cm}' - x_{cr})$

ASSUME x_{cm} moves to x_{cm}' to account for M_{EQ}

$\Delta_{trans} = -\Delta_{rot} \Rightarrow \dfrac{V_{EQ}}{K_t} = -\dfrac{V_{EQ}(x_{cm}' - x_{cr})}{K_\theta}(0.5L_x - x_{cr})$

$\therefore K_\theta = -K_t \cdot (x_{cm}' - x_{cr}) \cdot (0.5L_x - x_{cr})$