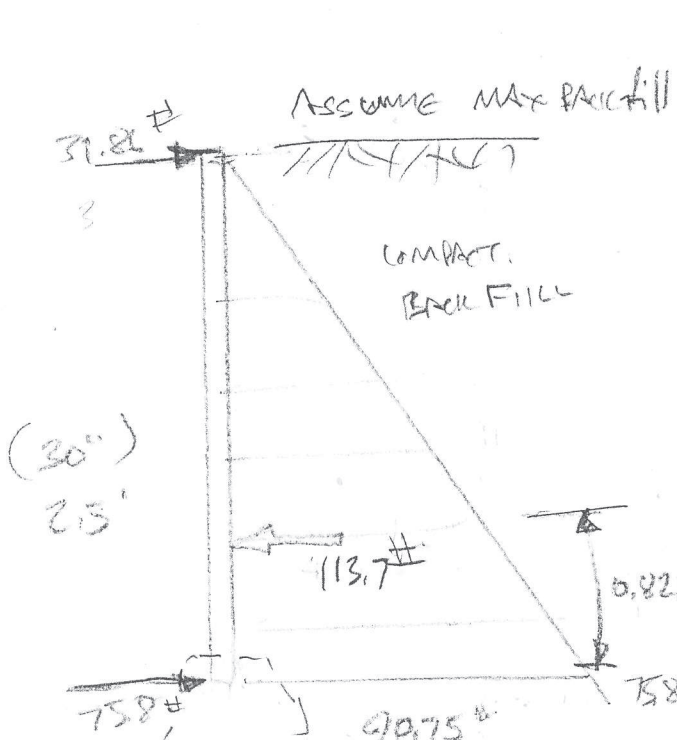


# LATERAL LOAD CALCULATION FOR DURASKIRTEW PIVOT

WIRE 1" x 1" x 36" - 16 ga. wire  $0.0508" \text{ dia} \Rightarrow 0.002027 \text{ in}^2$   
 117.8 Rec. wire  $58,170 \text{ PSI}$   $\rho = 12 \times 0.002027 \Rightarrow 0.0243$



SOIL PROPERTIES  
 Assume Max Backfill Mod sand back fill test  
 measured unit weight 110 PCF  
 $\phi = 30^\circ$   
 Active let coefficient for  $30^\circ \Rightarrow 0.33$   
 Equ. FLUID PRESSURE  $\Rightarrow 110(0.33) = 36.3 \text{ PCF}$

Lateral EARTH PRESSURE  
 $0.825' \times 2.5' \times 36.3 \text{ PCF} = 90.75 \text{ lb}$   
 Total load  $= \frac{90.75}{2} \times 2.5' = 113.4$   
 Max Moment  $= \frac{113.7(0.825)^2}{2.5} = 63.0$   
 $\Rightarrow 766.4 \text{ ft-lb}$

Concrete Capacity  
 $M_u = 1.7(36.47) = 62.0 \text{ ft-lb} \Rightarrow 743.97 \text{ in-lb}$

$$M_u = \rho \rho f_y b d^2 \left(1 - \frac{\rho \rho}{17.5 \rho_c}\right) \text{ for } \rho = 0.0243$$

$$M_u = (0.9) \rho (60 \text{ kip}) 12 (.75)^2 \left(1 - \frac{(\rho) 60 \text{ kip}}{1.7(3000)}\right)$$

$$= 8857.35 (0.9979)$$

$M_u \approx 8857 \text{ in-lb}$  Moment Capacity

SAFETY FACTOR  $\frac{8857}{766.4} = 11.7$   
OKAY

