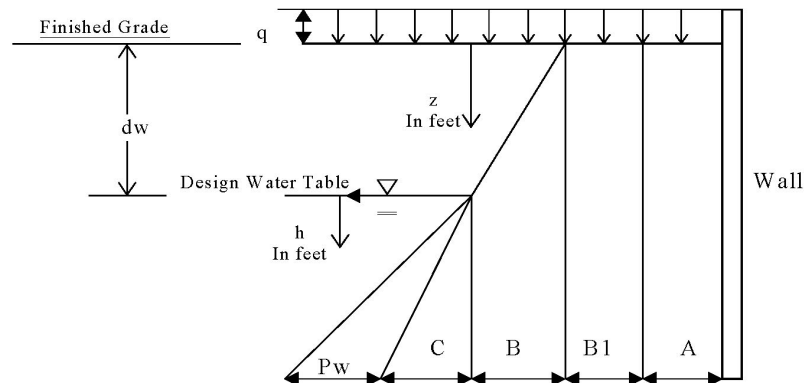


Passive Earth Pressure on 1 foot wide vertical strip



$A = 1.47 (q) =$ Effect of uniform full coverage surface surcharge = 367.5 for example
surcharge of 250 psf

$B1 = 3346$ psf = Passive earth pressure at ground surface due to soil cohesion

$B = 194 (z)$ = Passive earth pressure above water table

$C = 102.3 (h)$ = Passive earth pressure increment below water table

$P_w = 62.4 (h)$ = Hydrostatic pressure increment

$P_p = A + B1 + B =$ Passive lateral earth pressure above water table ($z \leq dw$)

$P_p = A + B1 + 194 (dw) + 102.3 (h) + 62.4 (h) =$ Passive lateral earth pressure below water table, ($z > dw$); $h = z-dw$

Conditions on information:

- Units of pressure = lbs/ft²
- A surcharge value, q , of 250 lbs/ft² is used as an example only; actual value must be provided by designer.
- Backfill of borrow soil meeting Class I properties as defined in FSAR, 1986 compacted to 95% MDD by ASTM D698
- No factors included
- $\gamma_s = 132$ lbs/ft³ = saturated unit weight of backfill above water table based on 95% Maximum dry density at 2% above optimum moisture
- $\gamma = 69.6$ lbs/ft³ = submerged soil density
- $\phi_{cu} = 11$ deg = angle of internal friction of soil (95% Maximum dry density at 2% above optimum moisture; total stress)
- $K_p = 1.47 =$ Coefficient of passive earth pressure due to ϕ (Rankine equation)
- $C_{cu} = 1380$ psf = shear strength intercept of soil (total stress, saturated CU test)
- Plane strain conditions (corner adjustment factors not included)
- Dynamic soil pressure not included