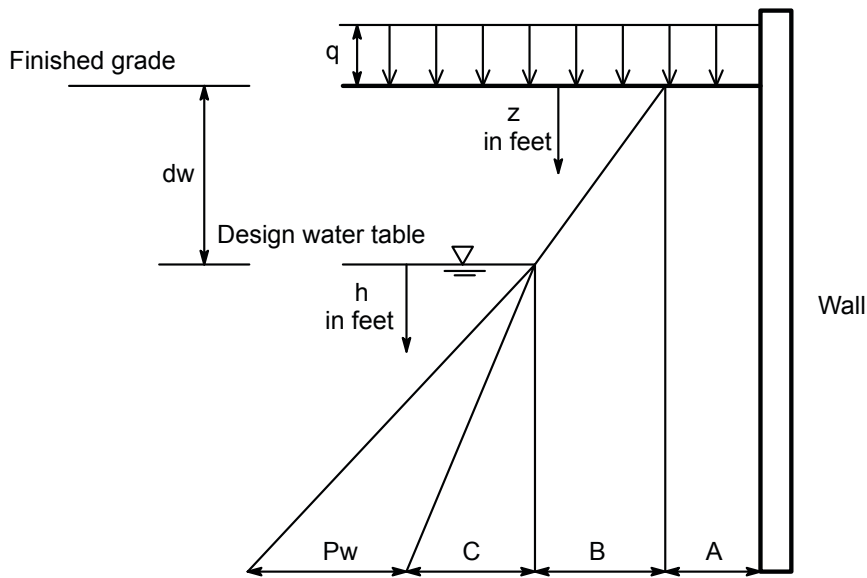


Active Earth Pressure on 1-ft Wide Vertical Strip



- $A = K_a (q) =$  Effect of uniform full coverage surface surcharge
- $B = K_a \gamma_s (z) =$  Active earth pressure above water table
- $C = K_a \gamma' (h) =$  Active earth pressure increment below water table
- $P_w = 62.4 (h) =$  Hydrostatic pressure increment
- $H = A + B =$  Static lateral earth pressure above water table ( $z < dw$ )
- $H = A + K_a \gamma_s (dw) + K_a \gamma' (z - dw) =$  Static lateral earth pressure below water table ( $z > dw$ ) ( $P_w$  not included)

Conditions on information:

- Units of pressure, psf
- Backfill of granular material compacted to 96% maximum dry density by ASTM D1557
- $\gamma_s =$  saturated unit weight of granular backfill above water table, pcf
- $\gamma' =$  submerged unit weight of granular backfill, pcf
- $\phi = 35$  degrees = angle of internal friction of soil
- $K_a = \tan^2 (45 - \phi/2) =$  Active earth pressure coefficient of soil
- Plane strain conditions (corner adjustment factors not included)
- Dynamic soil pressure not included
- Compaction-induced residual pressure not included

USCS Type	$\gamma_s$	$\gamma'$	$K_a$
GW	150	87.6	0.271
GP	142	79.6	0.271
SW	136	73.6	0.271

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FIGURE 2.5.4-255a Rev 7