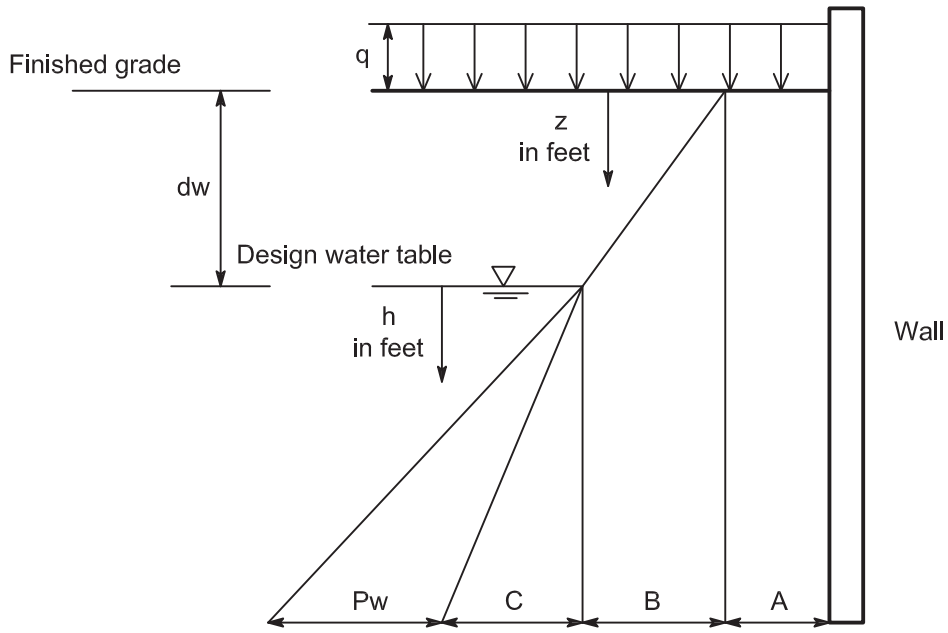


Passive Earth Pressure on 1-ft Wide Vertical Strip



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

Conditions on information:

- Units of pressure, psf
- Backfill of granular material compacted to 96% maximum dry density by ASTM D1557
- γ_s = saturated unit weight of granular backfill above water table, pcf
- γ' = submerged unit weight of granular backfill, pcf
- $\phi = 35$ degrees = angle of internal friction of soil
- $K_p = \tan^2 (45 + \phi/2)$ = passive 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	γ_s	γ'	K_p
GW	150	87.6	3.690
GP	142	79.6	3.690
SW	136	73.6	3.690

WLS COL 2.5-13

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Passive Lateral Pressure on
Nuclear Island

FIGURE 2.5.4-255c Rev 7