




John Shively PE

Upper setback  $a_1 = 0.50$  ft  
 Lower setback  $a_2 = 0.50$  ft  
 Height  $h = 1.00$  ft  
 Width  $b = 6.00$  ft

**Material**

Soil creating foundation - Sand and Gravel - Foundation Soil

**Basic soil parameters**

No.	Name	Pattern	$\Phi_{ef}$ [°]	$C_{ef}$ [psf]	$\gamma$ [pcf]	$\gamma_{su}$ [pcf]	$\delta$ [°]
1	Lean Clay		29.00	25.0	120.00	58.50	19.00
2	Granular Backfill		39.00	0.0	135.00	72.50	28.00
3	Sand and Gravel - Foundation Soil		30.00	0.0	130.00	67.50	20.00

All soils are considered as cohesionless for at rest pressure analysis.

**Soil parameters****Lean Clay**

Unit weight :  $\gamma = 120.0$  pcf  
 Stress-state : effective  
 Angle of internal friction :  $\Phi_{ef} = 29.00^\circ$   
 Cohesion of soil :  $C_{ef} = 25.0$  psf  
 Angle of friction struc.-soil :  $\delta = 19.00^\circ$   
 Saturated unit weight :  $\gamma_{sat} = 121.0$  pcf

**Granular Backfill**

Unit weight :  $\gamma = 135.0$  pcf  
 Stress-state : effective  
 Angle of internal friction :  $\Phi_{ef} = 39.00^\circ$   
 Cohesion of soil :  $C_{ef} = 0.0$  psf  
 Angle of friction struc.-soil :  $\delta = 28.00^\circ$   
 Saturated unit weight :  $\gamma_{sat} = 135.0$  pcf

**Sand and Gravel - Foundation Soil**

Unit weight :  $\gamma = 130.0$  pcf  
 Stress-state : effective  
 Angle of internal friction :  $\Phi_{ef} = 30.00^\circ$   
 Cohesion of soil :  $C_{ef} = 0.0$  psf  
 Angle of friction struc.-soil :  $\delta = 20.00^\circ$   
 Saturated unit weight :  $\gamma_{sat} = 130.0$  pcf

**Backfill**

Backfill is not considered.

**Geological profile and assigned soils**

No.	Thickness of layer $t$ [ft]	Depth $z$ [ft]	Assigned soil	Pattern
1	-	0.00 .. $\infty$	Lean Clay	