

Dimensioning No. 1 (Stage of construction 1)

Forces acting on construction

Name	F _{hor} [lbf/ft]	App.Pt. z [ft]	F _{vert} [lbf/ft]	App.Pt. x [ft]	Design coefficient
Weight - wall	0.0	-2.94	2750.6	1.95	1.000
FF resistance	-2.4	-0.10	0.0	0.00	1.000
Weight - earth wedge	0.0	-3.13	451.6	3.60	1.000
Weight - earth wedge	0.0	-7.40	132.9	1.93	1.000
Active pressure	1175.1	-2.64	1292.9	4.15	1.000
Parking Lot	152.7	-2.74	151.0	4.03	1.000

Verification of block No. 1

Check for overturning stability

Resisting moment $M_{res} = 13227.3$ lbfft/ft

Overturning moment $M_{ovr} = 3515.2$ lbfft/ft

Safety factor = 3.76 > 1.50

Joint for overturning stability is SATISFACTORY

Check for slip

Resisting horizontal force $H_{res} = 2759.17$ lbf/ft

Active horizontal force $H_{act} = 1325.47$ lbf/ft

Safety factor = 2.08 > 1.50

Joint for verification is SATISFACTORY

Bearing capacity of foundation soil (Stage of construction 1)

Design load acting at the center of footing bottom

No.	Moment [lbfft/ft]	Norm. force [lbf/ft]	Shear Force [lbf/ft]	Eccentricity [-]	Stress [psf]
1	2180.7	6085.02	1552.02	0.060	1151.8

Service load acting at the center of footing bottom

No.	Moment [lbfft/ft]	Norm. force [lbf/ft]	Shear Force [lbf/ft]
1	2180.7	6085.02	1552.02

Verification of foundation soil

Stress in the footing bottom : rectangle

Eccentricity verification

Max. eccentricity of normal force $e = 0.060$

Maximum allowable eccentricity $e_{alw} = 0.333$

Eccentricity of the normal force is SATISFACTORY

Verification of bearing capacity

Max. stress at footing bottom $\sigma = 1151.8$ psf

Bearing capacity of foundation soil $R_d = 6000.0$ psf

Safety factor = 5.21 > 2.00

Bearing capacity of foundation soil is SATISFACTORY