

John Shively PE

Terrain profile

Terrain behind the structure is flat.

Water influence

Ground water table is located below the structure.

Input surface surcharges

No.	Surcharge		Action	Mag.1 [lb/ft ²]	Mag.2 [lb/ft ²]	Ord.x x [ft]	Length l [ft]	Depth z [ft]
	new	change						
1	Yes		permanent	125.00		6.00	25.00	on terrain

No.	Name
1	Roadway

Resistance on front face of the structure

Resistance on front face of the structure: at rest

Soil on front face of the structure - Lean Clay

Soil thickness in front of structure $h = 3.00$ ft**Terrain shape in front of structure**

No.	Coordinate x[ft]	Depth z[ft]
1	0.00	0.00
2	0.00	-3.00
3	-0.10	-3.00
4	-6.10	-1.00
5	-7.10	-1.00

Origin [0,0] is located in bottom left edge of construction.

Positive coordinate +z has downward direction.

Settings of the stage of construction

Design situation : permanent

Reduction of soil/soil friction angle : do not reduce

Verification No. 1 (Stage of construction 1)**Forces acting on construction**

Name	F_{hor} [lb/ft]	App.Pt. z [ft]	F_{vert} [lb/ft]	App.Pt. x [ft]	Design coefficient
Weight - wall	0.0	-4.41	4670.6	2.62	1.000
FF resistance	-240.5	-1.01	0.3	-0.32	1.000
Weight - earth wedge	0.0	-1.28	25.5	5.67	1.000
Weight - earth wedge	0.0	-3.26	205.1	4.55	1.000
Weight - earth wedge	0.0	-7.48	77.7	3.70	1.000
Weight - earth wedge	0.0	-10.11	4.0	3.38	1.000
Active pressure	2294.9	-3.62	2516.3	4.95	1.000
Roadway	224.0	-4.07	181.7	4.80	1.000

Verification of complete wall**Check for overturning stability**Resisting moment $M_{res} = 26951.3$ lbfft/ftOverturning moment $M_{ovr} = 8966.8$ lbfft/ft

Safety factor = 3.01 > 1.50