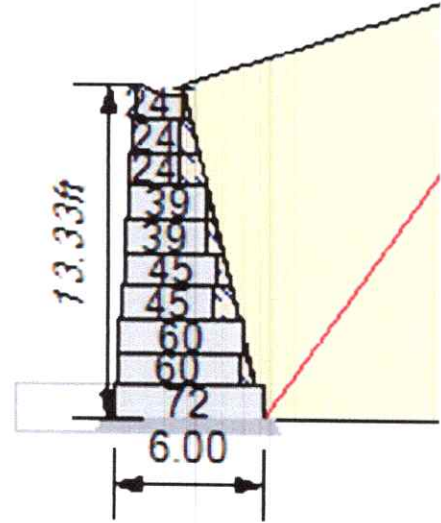




# Retaining Walls

# ReCon Wall

Project: Vallis Way - #23-387  
 Location: Lynnfield, MA  
 Designer: Civil Connection, LLC.  
 Date: 8/16/2023  
 Section: Section 1  
 Design Method: NCMA\_09\_3rd\_Ed  
 Design Unit: ReCon



SOIL PARAMETERS	$\phi$	coh	$\gamma$	
Retained Soil:	32 deg	0psf	120pcf	
Foundation Soil:	32 deg	0psf	120pcf	
Leveling Pad:	40 deg	0psf	135pcf	Crushed Stone

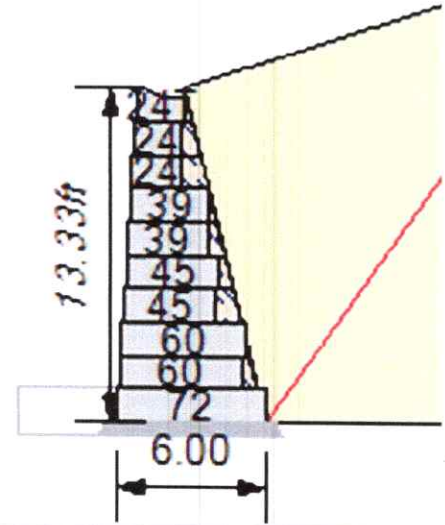
## GEOMETRY

Design Height:	13.33ft	Live Load:	0psf
Wall Batter/Tilt:	3.60/ 0.00 deg	Live Load Offset:	0.00ft
Embedment:	1.33ft	Live Load Width:	0ft
Leveling Pad Depth:	0.50ft	Dead Load:	0psf
Slope Angle:	18.0 deg	Dead Load Offset:	0.0ft
Slope Length:	20.0ft	Dead Load Width:	0ft
Slope Toe Offset:	0.0ft	D.L. Embedment:	0ft
Leveling Pad Width:	7.00ft		
Vert $\delta$ on Single Dpth			

## FACTORS OF SAFETY

Sliding:	1.50	Overturning:	1.50
Bearing:	2.00		

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for final n or construction without the independent review, verification, and approval by a qualified professional engineer.



**RESULTS**

FoS Sliding: 1.63 (lvlpd)      FoS Overturning: 1.63  
 Bearing: 3289.65      FoS Bearing: 3.37

Name	Elev.[dpth]	ka	Pa	PaT	FSsl	FoS OT	%D/H
24T	12.00[1.33]	0.358	38	38	>100	22.55	150%
24	10.67[2.66]	0.323	138	138	56.21	6.57	75%
24	9.33[4.00]	0.323	310	310	26.00	3.07	50%
39	8.00[5.33]	0.487	831	831	12.50	3.01	61%
39	6.67[6.66]	0.459	1222	1222	8.91	2.33	49%
45	5.33[8.00]	0.471	1808	1808	6.64	2.05	47%
45	4.00[9.33]	0.453	2368	2368	5.39	1.72	40%
60	2.67[10.66]	0.519	3538	3538	4.34	1.81	47%
60	1.33[12.00]	0.498	4302	4302	3.83	1.63	42%
72	0.00[13.33]	0.533	5683	5683	1.63	1.77	45%

**Column Descriptions:**

- ka: active earth pressure coefficient
- Pa: active earth pressure
- Paq: live surcharge earth pressure
- Paq2: live load 2 surcharge earth pressure
- Paqd: dead surcharge earth pressure
- (PaC): reduction in load due to cohesion
- PaT: sum of all earth pressures
- FSsl(lvl Pad): factor of safety for sliding at each layer. (FS sliding below the leveling pad)
- FSot: factor of safety of overturning about the toe.

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