Cantilevered Retaining Wall

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ENERCALC, INC. 1983-2015, Build:6.15.10.6, Ver:6.15.10.6
Lic. # : KW-06010584
Licensee : AEdifica Case Engineering

Description : Retaining Wall - 6'-8" Tall

Footing Dimensions & Strengths

Toe Width	=	0.67 ft
Heel Width	=	3.83
Total Footing Width	=	4.50
Footing Thickness	=	10.00 in
Key Width	=	0.00 in
Key Depth	=	0.00 in
Key Distance from Toe	=	2.00 ft

f'c = 4,000 psi Fy = 60,000 psi
Footing Concrete Density = 150.00 pcf
Min. As % = 0.0018
Cover @ Top 2.00 @ Btm.= 3.00 in

Footing Design Results

		Toe	Heel	
Factored Pressure	=	2,050	77	psf
Mu' : Upward	=	438	0	ft-lb
Mu' : Downward	=	83	0	ft-lb
Mu: Design	=	355	4,141	ft-lb
Actual 1-Way Shear	=	2.60	41.84	psi
Allow 1-Way Shear	=	94.87	94.87	psi
Toe Reinforcing	=	None Spec'd		
Heel Reinforcing	=	# 5 @ 12.00 in		
Key Reinforcing	=	None Spec'd		

Other Acceptable Sizes & Spacings

Toe: Not req'd, Mu < S * Fr
Heel: #4@ 14.75 in, #5@ 22.75 in, #6@ 32.00 in, #7@ 43.75 in, #8@ 48.25 in, #9@ 4
Key: No key defined

Summary of Overturning & Resisting Forces & Moments

Item		.....OVERTURNING..... Force lbs	Distance ft	Moment ft-lb		.....RESISTING..... Force lbs	Distance ft	Moment ft-lb
Heel Active Pressure	=	985.0	2.50	2,463.2	Soil Over Heel	= 2,320.6	2.92	6,772.3
Surcharge over Heel	=	238.7	3.75	895.4	Sloped Soil Over Heel	=		
Toe Active Pressure	=	-93.8	0.83	-78.1	Surcharge Over Heel	= 316.3	2.92	923.2
Surcharge Over Toe	=				Adjacent Footing Load	=		
Adjacent Footing Load	=				Axial Dead Load on Stem	=		
Added Lateral Load	=				* Axial Live Load on Stem	=		
Load @ Stem Above Soil	=	20.0	9.50	190.0	Soil Over Toe	= 122.8	0.34	41.1
					Surcharge Over Toe	=		
					Stem Weight(s)	= 667.0	1.00	669.2
					Earth @ Stem Transitions	=		
					Footing Weight	= 562.5	2.25	1,265.6
					Key Weight	=	2.00	
					Vert. Component	=		
Total	=	1,149.9	O.T.M. =	3,470.6	Total	= 3,989.3 lbs	R.M. =	9,671.4

Resisting/Overturning Ratio = 2.79
Vertical Loads used for Soil Pressure = 3,989.3 lbs

* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.