

DESIGN EXAMPLE 2

Report Printout

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Title : **EX-2**
 Job # : **702** Dsgnr:
 Description: Date: **JUL 11, 2009**

This Wall in File: c:\program files\rp2007\examples.rp5

Retain Pro © 1989 - 2009 Ver: 9.00 8096
 Registrations #: RP-11101 5 RP9.00
 Licensed to: [The company name goes here]

Cantilevered Retaining Wall Design

Code: IBC 2006

Footing Dimensions & Strengths

Toe Width = 3.00 ft
 Heel Width = 2.50 ft
 Total Footing Width = 5.50 ft
 Footing Thickness = 22.00 in
 Key Width = 12.00 in
 Key Depth = 16.00 in
 Key Distance from Toe = 3.00 ft
 f_c = 2,000 psi F_y = 60,000 psi
 Footing Concrete Density = 150.00 pcf
 Min. As % = 0.0018
 Cover @ Top 2.00 @ Rim = 3.00 in

Footing Design Results

	Toe	Heel
Factored Pressure	= 4,376	0 psf
M _u : Upward	= 15,407	0 ft-#
M _u : Downward	= 2,440	2,527 ft-#
M _u : Design	= 12,967	2,527 ft-#
Actual 1-Way Shear	= 23.05	10.58 psi
Allow 1-Way Shear	= 57.08	57.08 psi
Toe Reinforcing	= None Spec'd	
Heel Reinforcing	= None Spec'd	
Key Reinforcing	= None Spec'd	

Other Acceptable Sizes & Spacings
 Toe: #4@ 5.25 in, #5@ 5.50 in, #6@ 13.25 in, #7@ 18.25 in, #8@ 23.75 in, #9@ 30.
 Heel: Not req'd, M_u < S * F_r
 Key: #4@ 12.50 in, #5@ 19.25 in, #6@ 27.25 in, #7@ 37.25 in.

Summary of Overturning & Resisting Forces & Moments

ItemOVERTURNING.....		RESISTING.....			
	Force lbs	Distance ft	Moment ft-#	Force lbs	Distance ft	Moment ft-#	
Heel Active Pressure	= 2,100.4	3.94	8,285.0	Soil Over Heel	= 1,850.0	4.75	7,837.5
Surcharge over Heel	=			Sloped Soil Over Heel	=		
Toe Active Pressure	= -120.4	0.94	-113.7	Surcharge Over Heel	=		
Surcharge Over Toe	=			Adjacent Footing Load	= 166.7	4.75	791.7
Adjacent Footing Load	= 830.7	5.66	4,700.1	Axial Dead Load on Stem	=		
Added Lateral Load	=			* Axial Live Load on Stem	=		
Load @ Stem Above Soil	= 90.0	14.83	1,335.0	Soil Over Toe	= 330.0	1.50	495.0
				Surcharge Over Toe	=		
				Stem Weight(s)	= 1,616.0	3.44	5,552.0
Total	= 2,900.7	O.T.M. =	14,206.4	Earth @ Stem Transitions	= 73.3	3.83	281.1
Resisting/Overturning Ratio	=		1.39	Footing Weight	= 1,512.5	2.75	4,159.4
Vertical Loads used for Soil Pressure	=		5,548.5 lbs	Key Weight	= 200.0	3.50	700.0
				Vert. Component	=		
				Total =	5,548.5 lbs	R.M. =	19,816.7

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

DESIGNER NOTES: