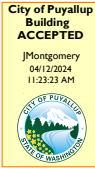


FULL SIZED LEDGIBLE COLOR REPORT IS REQUIRED TO BE PROVIDED BY THE PERMITTEE ON SITE FOR ALL INSPECTIONS

Seattle 1011 Western Avenue, Suite 810 | Seattle, WA 98104 | 206.292.5076
Tacoma 1250 Pacific Avenue, Suite 701 | Tacoma, WA 98402 | 253.383.2797
Portland 101 SW Main Street, Suite 280 | Portland, OR 97204 | 503.232.3746

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SUPPLEMENTAL STRUCTURAL CALCULATIONS

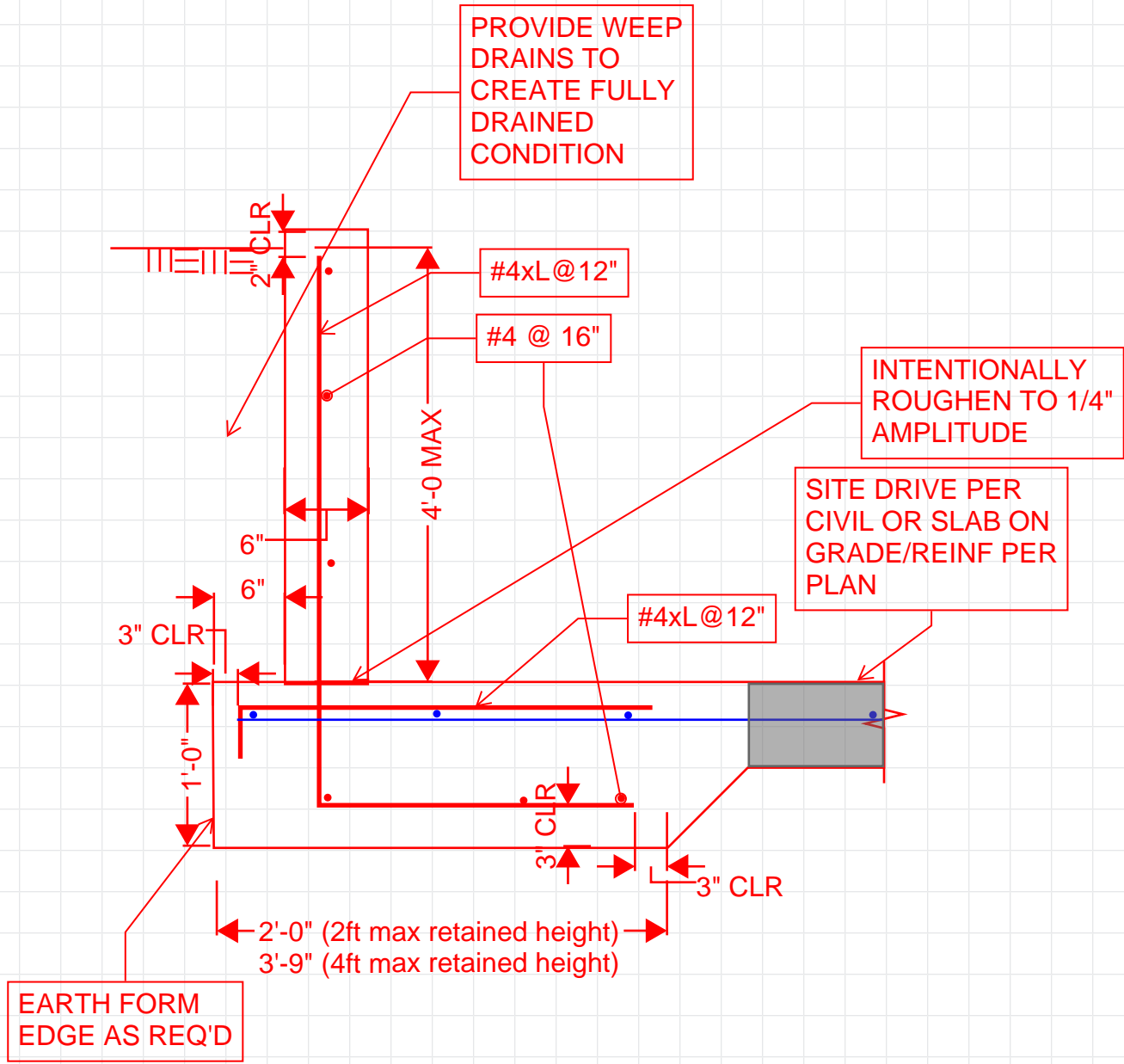
FOR

HAMPTON INN SITE RETAINING WALL
1515 S MERIDIAN
PUYALLUP, WA 98371

PREPARED BY
PCS STRUCTURAL SOLUTIONS



MARCH 29, 2024
18-741



Project Title:
 Engineer:
 Project ID:
 Project Descr:

Cantilevered Retaining Wall

Project File: 18741 Rigid Diaphragm and Foundation.ec

LIC# : KW-06014122, Build:20.23.2.14

PCS STRUCTURAL SOLUTIONS

(c) ENERCALC INC 1983-2022

DESCRIPTION: 2ft - Reverse L Retaining Wall

Code Reference

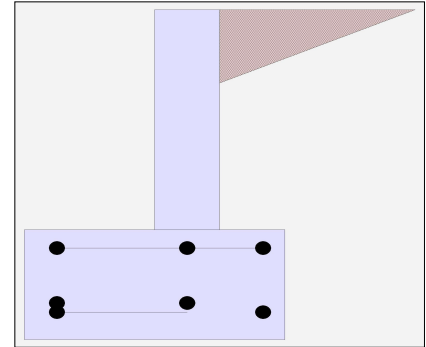
Calculations per IBC 2015 1807.3, CBC 2016, ASCE 7-10

Criteria

Retained Height	=	2.00 ft
Wall height above soil	=	0.00 ft
Slope Behind Wall	=	0.00
Height of Soil over Toe	=	0.00 in
Water height over heel	=	0.0 ft

Soil Data

Allow Soil Bearing	=	4,000.0 psf
Equivalent Fluid Pressure Method		
Active Heel Pressure	=	40.0 psf/ft
Passive Pressure	=	525.0 psf/ft
Soil Density, Heel	=	110.00 pcf
Soil Density, Toe	=	110.00 pcf
Footing Soil Friction	=	0.600
Soil height to ignore for passive pressure	=	0.00 in



Surcharge Loads

Surcharge Over Heel	=	250.0 psf
Used To Resist Sliding & Overturning		
Surcharge Over Toe	=	0.0
Used for Sliding & Overturning		

Axial Load Applied to Stem

Axial Dead Load	=	0.0 lbs
Axial Live Load	=	0.0 lbs
Axial Load Eccentricity	=	0.0 in

Lateral Load Applied to Stem

Lateral Load	=	0.0 #/ft
...Height to Top	=	4.00 ft
...Height to Bottom	=	0.00 ft
Load Type	=	Seismic (E) (Service Level)
Wind on Exposed Stem	=	0.0 psf (Strength Level)

Adjacent Footing Load

Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	=	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type	=	Spread Footing
Base Above/Below Soil at Back of Wall	=	0.0 ft
Poisson's Ratio	=	0.300

Cantilevered Retaining Wall

Project File: 18741 Rigid Diaphragm and Foundation.ec

LIC# : KW-06014122, Build:20.23.2.14

PCS STRUCTURAL SOLUTIONS

(c) ENERCALC INC 1983-2022

DESCRIPTION: 2ft - Reverse L Retaining Wall

Design Summary

Wall Stability Ratios

Overturning	=	1.53	OK
Sliding	=	1.49	Ratio < 1.5!
Global Stability	=	2.71	
Total Bearing Load	=	685	lbs
...resultant ecc.	=	6.58	in
Eccentricity outside middle third			
Soil Pressure @ Toe	=	1,010	psf OK
Soil Pressure @ Heel	=	0	psf OK
Allowable	=	4,000	psf
Soil Pressure Less Than Allowable			
ACI Factored @ Toe	=	1,414	psf
ACI Factored @ Heel	=	0	psf
Footing Shear @ Toe	=	3.1	psi OK
Footing Shear @ Heel	=	3.7	psi OK
Allowable	=	94.9	psi

Sliding Calcs

Lateral Sliding Force	=	452.7	lbs
less 100% Passive Force	=	262.5	lbs
less 100% Friction Force	=	411.0	lbs
Added Force Req'd	=	0.0	lbs OK
...for 1.5 Stability	=	5.6	lbs NG

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing pressures.

Load Factors

Building Code	
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.600
Seismic, E	1.000

Stem Construction

Design Height Above Ftg

ft =	Stem OK	0.00
Wall Material Above "Ht"	=	Concrete
Design Method	=	SD
Thickness	=	6.00
Rebar Size	=	# 4
Rebar Spacing	=	12.00
Rebar Placed at	=	Center

Design Data

fb/FB + fa/Fa	=	0.146
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Total Force @ Section

Service Level	lbs =	
Strength Level	lbs =	418.9

Moment....Actual

Service Level	ft-# =	
Strength Level	ft-# =	376.2

Moment.....Allowable	=	2,567.3
----------------------	---	---------

Shear....Actual

Service Level	psi =	
Strength Level	psi =	11.6

Shear.....Allowable	psi =	94.9
---------------------	-------	------

Anet (Masonry)	in2 =	
----------------	-------	--

Wall Weight	psf =	75.0
-------------	-------	------

Rebar Depth 'd'	in =	3.00
-----------------	------	------

Masonry Data

f'm	psi =	
Fs	psi =	
Solid Grouting	=	
Modular Ratio 'n'	=	
Equiv. Solid Thick.	=	
Masonry Block Type	=	
Masonry Design Method	=	ASD

Concrete Data

f'c	psi =	4,000.0
Fy	psi =	60,000.0

Bottom

Stem OK					
Concrete					
SD	SD	SD	SD	SD	SD

See calc below

Using site drive: 4" thick, min asphalt
 4/12*142pcf x 1 x 28ft wide = 1325 lb > 6 OK

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Cantilevered Retaining Wall

Project File: 18741 Rigid Diaphragm and Foundation.ec

LIC# : KW-06014122, Build:20.23.2.14

PCS STRUCTURAL SOLUTIONS

(c) ENERCALC INC 1983-2022

DESCRIPTION: 2ft - Reverse L Retaining Wall

Concrete Stem Rebar Area Details

Bottom Stem	<u>Vertical Reinforcing</u>	<u>Horizontal Reinforcing</u>	
As (based on applied moment) :	0.0312 in2/ft		
(4/3) * As :	0.0416 in2/ft	Min Stem T&S Reinf Area 0.288 in2	
200bd/fy : 200(12)(3)/60000 :	0.12 in2/ft	Min Stem T&S Reinf Area per ft of stem Height : 0.144 in2/ft	
0.0018bh : 0.0018(12)(6) :	0.1296 in2/ft	Horizontal Reinforcing Options :	
	=====	<u>One layer of :</u> <u>Two layers of :</u>	
Required Area :	0.1296 in2/ft	#4@ 16.67 in	#4@ 33.33 in
Provided Area :	0.2 in2/ft	#5@ 25.83 in	#5@ 51.67 in
Maximum Area :	0.6503 in2/ft	#6@ 36.67 in	#6@ 73.33 in

Footing Data

Toe Width	=	1.00 ft
Heel Width	=	1.00
Total Footing Width	=	2.00
Footing Thickness	=	12.00 in
Key Width	=	0.00 in
Key Depth	=	0.00 in
Key Distance from Toe	=	0.00 ft
f'c = 4,000 psi	Fy = 60,000 psi	
Footing Concrete Density = 150.00pcf		
Min. As % = 0.0018		
Cover @ Top 2.00	@ Btm.= 3.00 in	

Footing Design Results

	<u>Toe</u>	<u>Heel</u>	
Factored Pressure	= 1,414	0 psf	
Mu' : Upward	= 533	0 ft-#	
Mu' : Downward	= 90	106 ft-#	
Mu: Design	= 443 OK	106 ft-#	OK
phiMn	= 9,911	24,628ft-#	
Actual 1-Way Shear	= 3.09	3.70 psi	
Allow 1-Way Shear	= 94.87	94.87 psi	
Toe Reinforcing	= # 5 @ 14.35 in		
Heel Reinforcing	= # 7 @ 12.00 in		
Key Reinforcing	= None Spec'd		
Footing Torsion, Tu	=	0.00 ft-lbs	
Footing Allow. Torsion, phi Tu	=	0.00 ft-lbs	

If torsion exceeds allowable, provide supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe: #4@ 9.25 in, #5@ 14.35 in, #6@ 20.37 in, #7@ 27.77 in, #8@ 36.57 in, #9@ 46.29 in, #10@ 58.79 in

Heel: #4@ 9.25 in, #5@ 14.35 in, #6@ 20.37 in, #7@ 27.77 in, #8@ 36.57 in, #9@ 46.29 in, #10@ 58.79 in

Key: No key defined

Min footing T&S reinf Area 0.52 in2
 Min footing T&S reinf Area per foot 0.26 in2 /ft

If one layer of horizontal bars:

#4@ 9.26 in
 #5@ 14.35 in
 #6@ 20.37 in

If two layers of horizontal bars:

#4@ 18.52 in
 #5@ 28.70 in
 #6@ 40.74 in

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Cantilevered Retaining Wall

Project File: 18741 Rigid Diaphragm and Foundation.ec

LIC# : KW-06014122, Build:20.23.2.14

PCS STRUCTURAL SOLUTIONS

(c) ENERCALC INC 1983-2022

DESCRIPTION: 2ft - Reverse L Retaining Wall

Summary of Overturning & Resisting Forces & Moments

ItemOVERTURNING.....			RESISTING.....		
	Force lbs	Distance ft	Moment ft-#		Force lbs	Distance ft	Moment ft-#
HL Act Pres (ab water tbl)	180.0	1.00	180.0	Soil Over HL (ab. water tbl)	110.0	1.75	192.5
HL Act Pres (be water tbl)				Soil Over HL (bel. water tbl)		1.75	192.5
Hydrostatic Force				Water Table			
Buoyant Force =				Sloped Soil Over Heel =			
Surcharge over Heel =	272.7	1.50	409.1	Surcharge Over Heel =	125.0	1.75	218.8
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 =				Soil Over Toe =			
				Surcharge Over Toe =			
				Stem Weight(s) =	150.0	1.25	187.5
				Earth @ Stem Transitions =			
Total	= 452.7	O.T.M. =	589.1	Footing Weight =	300.0	1.00	300.0
				Key Weight =			
				Vert. Component =			
Resisting/Overturning Ratio		= 1.53		Total =	685.0 lbs	R.M.=	898.8
Vertical Loads used for Soil Pressure :		685.0 lbs		* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.			

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus 250.0 pci
 Horizontal Defl @ Top of Wall (approximate only) 0.028 in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

Statement is not applicable. Heel pressure is less than toe pressure, design OK

Project Title:
Engineer:
Project ID:
Project Descr:

Cantilevered Retaining Wall

Project File: 18741 Rigid Diaphragm and Foundation.ec

LIC# : KW-06014122, Build:20.23.2.14

PCS STRUCTURAL SOLUTIONS

(c) ENERCALC INC 1983-2022

DESCRIPTION: 2ft - Reverse L Retaining Wall

Rebar Lap & Embedment Lengths Information

Stem Design Segment: Bottom

Stem Design Height: 0.00 ft above top of footing

Lap Splice length for #4 bar specified in this stem design segment (25.4.2.3a) = 15.60 in

Development length for #4 bar specified in this stem design segment = 12.00 in

Hooked embedment length into footing for #4 bar specified in this stem design segment = 6.64 in

As Provided = 0.2000 in²/ft

As Required = 0.1296 in²/ft

Cantilevered Retaining Wall

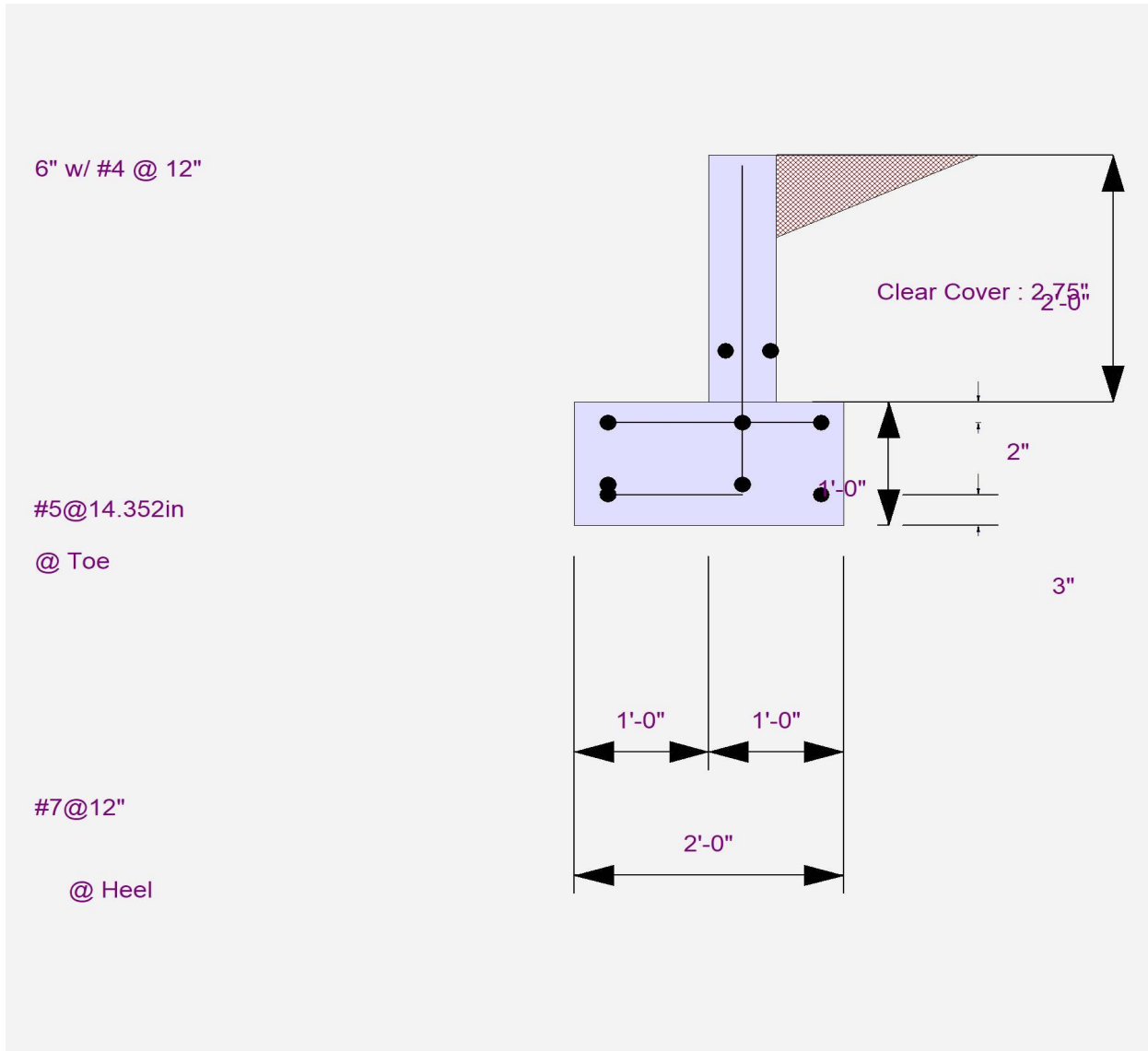
Project File: 18741 Rigid Diaphragm and Foundation.ec

LIC# : KW-06014122, Build:20.23.2.14

PCS STRUCTURAL SOLUTIONS

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DESCRIPTION: 2ft - Reverse L Retaining Wall



Cantilevered Retaining Wall

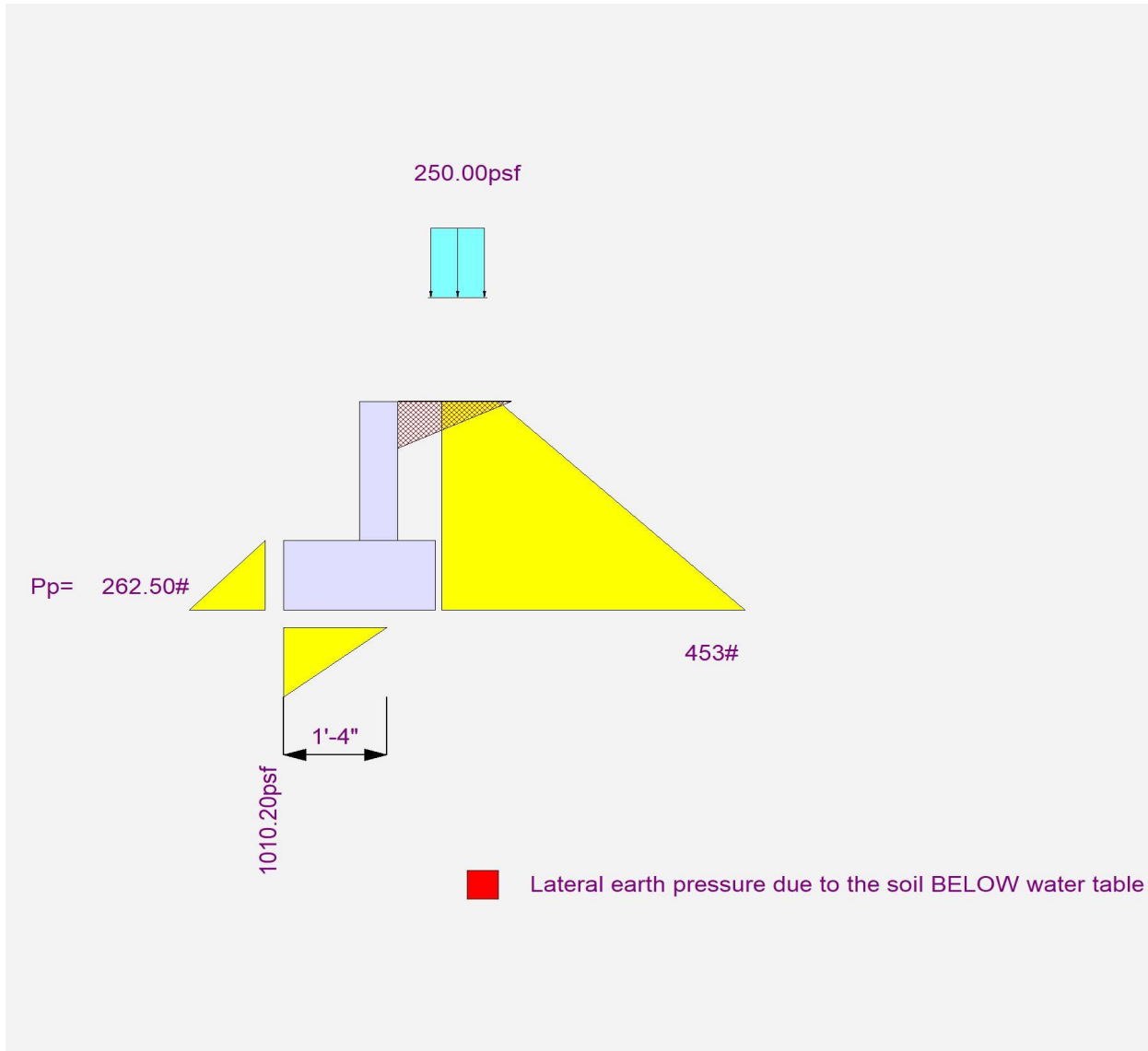
Project File: 18741 Rigid Diaphragm and Foundation.ec

LIC# : KW-06014122, Build:20.23.2.14

PCS STRUCTURAL SOLUTIONS

(c) ENERCALC INC 1983-2022

DESCRIPTION: 2ft - Reverse L Retaining Wall



Project Title:
 Engineer:
 Project ID:
 Project Descr:

Cantilevered Retaining Wall

Project File: 18741 Rigid Diaphragm and Foundation.ec

LIC# : KW-06014122, Build:20.23.2.14

PCS STRUCTURAL SOLUTIONS

(c) ENERCALC INC 1983-2022

DESCRIPTION: 4ft - Reverse L Retaining Wall

Code Reference

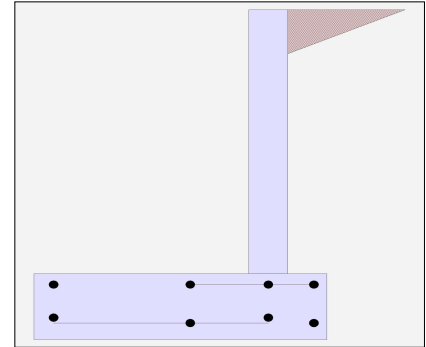
Calculations per IBC 2015 1807.3, CBC 2016, ASCE 7-10

Criteria

Retained Height	=	4.00 ft
Wall height above soil	=	0.00 ft
Slope Behind Wall	=	0.00
Height of Soil over Toe	=	0.00 in
Water height over heel	=	0.0 ft

Soil Data

Allow Soil Bearing	=	4,000.0 psf
Equivalent Fluid Pressure Method		
Active Heel Pressure	=	40.0 psf/ft
Passive Pressure	=	525.0 psf/ft
Soil Density, Heel	=	110.00 pcf
Soil Density, Toe	=	110.00 pcf
Footings Soil Friction	=	0.600
Soil height to ignore for passive pressure	=	0.00 in



Surcharge Loads

Surcharge Over Heel	=	250.0 psf
Used To Resist Sliding & Overturning		
Surcharge Over Toe	=	0.0
Used for Sliding & Overturning		

Axial Load Applied to Stem

Axial Dead Load	=	0.0 lbs
Axial Live Load	=	0.0 lbs
Axial Load Eccentricity	=	0.0 in

Lateral Load Applied to Stem

Lateral Load	=	0.0 #/ft
...Height to Top	=	4.00 ft
...Height to Bottom	=	0.00 ft
Load Type	=	Seismic (E) (Service Level)
Wind on Exposed Stem	=	0.0 psf (Strength Level)

Adjacent Footing Load

Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	=	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type	=	Spread Footing
Base Above/Below Soil at Back of Wall	=	0.0 ft
Poisson's Ratio	=	0.300

Cantilevered Retaining Wall

Project File: 18741 Rigid Diaphragm and Foundation.ec

LIC# : KW-06014122, Build:20.23.2.14

PCS STRUCTURAL SOLUTIONS

(c) ENERCALC INC 1983-2022

DESCRIPTION: 4ft - Reverse L Retaining Wall

Design Summary

Wall Stability Ratios

Overtuning	=	1.61	OK
Sliding	=	1.03	Ratio < 1.5!
Global Stability	=	1.56	
Total Bearing Load	=	1,208	lbs
...resultant ecc.	=	10.65	in
Eccentricity outside middle third			
Soil Pressure @ Toe	=	815	psf OK
Soil Pressure @ Heel	=	0	psf OK
Allowable	=	4,000	psf
Soil Pressure Less Than Allowable			
ACI Factored @ Toe	=	1,141	psf
ACI Factored @ Heel	=	0	psf
Footing Shear @ Toe	=	11.4	psi OK
Footing Shear @ Heel	=	4.9	psi OK
Allowable	=	94.9	psi

Sliding Calcs

Lateral Sliding Force	=	954.5	lbs
less 100% Passive Force	=	262.5	lbs
less 100% Friction Force	=	724.5	lbs
Added Force Req'd	=	0.0	lbs OK
...for 1.5 Stability	=	444.8	lbs NG

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing pressures.

Load Factors

Building Code	
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.600
Seismic, E	1.000

Stem Construction

Design Height Above Ftg

ft =	Stem OK	0.00
Wall Material Above "Ht"	=	Concrete
Design Method	=	SD
Thickness	=	6.00
Rebar Size	=	# 4
Rebar Spacing	=	12.00
Rebar Placed at	=	Center

Design Data

fb/FB + fa/Fa	=	0.719
---------------	---	-------

Total Force @ Section

Service Level	lbs =	
Strength Level	lbs =	1,093.8

Moment....Actual

Service Level	ft-# =	
Strength Level	ft-# =	1,846.3

Moment.....Allowable	=	2,567.3
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Shear....Actual

Service Level	psi =	
Strength Level	psi =	30.4

Shear.....Allowable	psi =	94.9
---------------------	-------	------

Anet (Masonry)	in2 =	
----------------	-------	--

Wall Weight	psf =	75.0
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Rebar Depth 'd'	in =	3.00
-----------------	------	------

Masonry Data

f'm	psi =	
Fs	psi =	
Solid Grouting	=	
Modular Ratio 'n'	=	
Equiv. Solid Thick.	=	
Masonry Block Type	=	
Masonry Design Method	=	ASD

Concrete Data

f'c	psi =	4,000.0
Fy	psi =	60,000.0

See calc below

Using site drive: 4" thick, min asphalt
 4/12*142pcf x 1 x 28ft wide = 1325 lb > 445 OK

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Cantilevered Retaining Wall

Project File: 18741 Rigid Diaphragm and Foundation.ec

LIC# : KW-06014122, Build:20.23.2.14

PCS STRUCTURAL SOLUTIONS

(c) ENERCALC INC 1983-2022

DESCRIPTION: 4ft - Reverse L Retaining Wall

Concrete Stem Rebar Area Details

Bottom Stem	<u>Vertical Reinforcing</u>	<u>Horizontal Reinforcing</u>	
As (based on applied moment) :	0.153 in2/ft		
(4/3) * As :	0.204 in2/ft	Min Stem T&S Reinf Area 0.576 in2	
200bd/fy : 200(12)(3)/60000 :	0.12 in2/ft	Min Stem T&S Reinf Area per ft of stem Height : 0.144 in2/ft	
0.0018bh : 0.0018(12)(6) :	0.1296 in2/ft	Horizontal Reinforcing Options :	
	=====	<u>One layer of :</u> <u>Two layers of :</u>	
Required Area :	0.153 in2/ft	#4@ 16.67 in	#4@ 33.33 in
Provided Area :	0.2 in2/ft	#5@ 25.83 in	#5@ 51.67 in
Maximum Area :	0.6503 in2/ft	#6@ 36.67 in	#6@ 73.33 in

Footing Data

Toe Width	=	2.75 ft
Heel Width	=	1.00
Total Footing Width	=	3.75
Footing Thickness	=	12.00 in
Key Width	=	0.00 in
Key Depth	=	0.00 in
Key Distance from Toe	=	0.00 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

	<u>Toe</u>	<u>Heel</u>	
Factored Pressure	= 1,141	0 psf	
Mu' : Upward	= 2,980	0 ft-#	
Mu' : Downward	= 681	139 ft-#	
Mu: Design	= 2,299 OK	139 ft-#	OK
phiMn	= 9,911	24,628 ft-#	
Actual 1-Way Shear	= 11.37	4.86 psi	
Allow 1-Way Shear	= 94.87	94.87 psi	
Toe Reinforcing	= # 5 @ 14.35 in		
Heel Reinforcing	= # 7 @ 12.00 in		
Key Reinforcing	= None Spec'd		
Footing Torsion, Tu	=	0.00 ft-lbs	
Footing Allow. Torsion, phi Tu	=	0.00 ft-lbs	

If torsion exceeds allowable, provide supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe: #4@ 9.25 in, #5@ 14.35 in, #6@ 20.37 in, #7@ 27.77 in, #8@ 36.57 in, #9@ 46.29 in, #10@ 58.79 in

Heel: #4@ 9.25 in, #5@ 14.35 in, #6@ 20.37 in, #7@ 27.77 in, #8@ 36.57 in, #9@ 46.29 in, #10@ 58.79 in

Key: No key defined

Min footing T&S reinf Area 0.97 in2
 Min footing T&S reinf Area per foot 0.26 in2 /ft

If one layer of horizontal bars: If two layers of horizontal bars:

#4@ 9.26 in	#4@ 18.52 in
#5@ 14.35 in	#5@ 28.70 in
#6@ 20.37 in	#6@ 40.74 in

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Cantilevered Retaining Wall

Project File: 18741 Rigid Diaphragm and Foundation.ec

LIC# : KW-06014122, Build:20.23.2.14

PCS STRUCTURAL SOLUTIONS

(c) ENERCALC INC 1983-2022

DESCRIPTION: 4ft - Reverse L Retaining Wall

Summary of Overturning & Resisting Forces & Moments

ItemOVERTURNING.....		RESISTING.....			
	Force lbs	Distance ft	Moment ft-#	Force lbs	Distance ft	Moment ft-#	
HL Act Pres (ab water tbl)	500.0	1.67	833.3	Soil Over HL (ab. water tbl)	220.0	3.50	770.0
HL Act Pres (be water tbl)				Soil Over HL (bel. water tbl)		3.50	770.0
Hydrostatic Force				Water Table			
Buoyant Force =				Sloped Soil Over Heel =			
Surcharge over Heel =	454.5	2.50	1,136.4	Surcharge Over Heel =	125.0	3.50	437.5
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 =				Soil Over Toe =			
				Surcharge Over Toe =			
				Stem Weight(s) =	300.0	3.00	900.0
				Earth @ Stem Transitions =			
Total	= 954.5	O.T.M. =	1,969.7	Footing Weight =	562.5	1.88	1,054.7
				Key Weight =			
				Vert. Component =			
Resisting/Overturning Ratio		= 1.61		Total =	1,207.5 lbs	R.M.=	3,162.2
Vertical Loads used for Soil Pressure :		1,207.5 lbs		* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.			

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus 250.0 pci
 Horizontal Defl @ Top of Wall (approximate only) 0.024 in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

Statement is not applicable. Heel pressure is less than toe pressure, design OK

Project Title:
Engineer:
Project ID:
Project Descr:

Cantilevered Retaining Wall

Project File: 18741 Rigid Diaphragm and Foundation.ec

LIC# : KW-06014122, Build:20.23.2.14

PCS STRUCTURAL SOLUTIONS

(c) ENERCALC INC 1983-2022

DESCRIPTION: 4ft - Reverse L Retaining Wall

Rebar Lap & Embedment Lengths Information

Stem Design Segment: Bottom

Stem Design Height: 0.00 ft above top of footing

Lap Splice length for #4 bar specified in this stem design segment (25.4.2.3a) =	15.60 in
Development length for #4 bar specified in this stem design segment =	12.00 in
Hooked embedment length into footing for #4 bar specified in this stem design segment =	6.64 in
As Provided =	0.2000 in ² /ft
As Required =	0.1530 in ² /ft

Cantilevered Retaining Wall

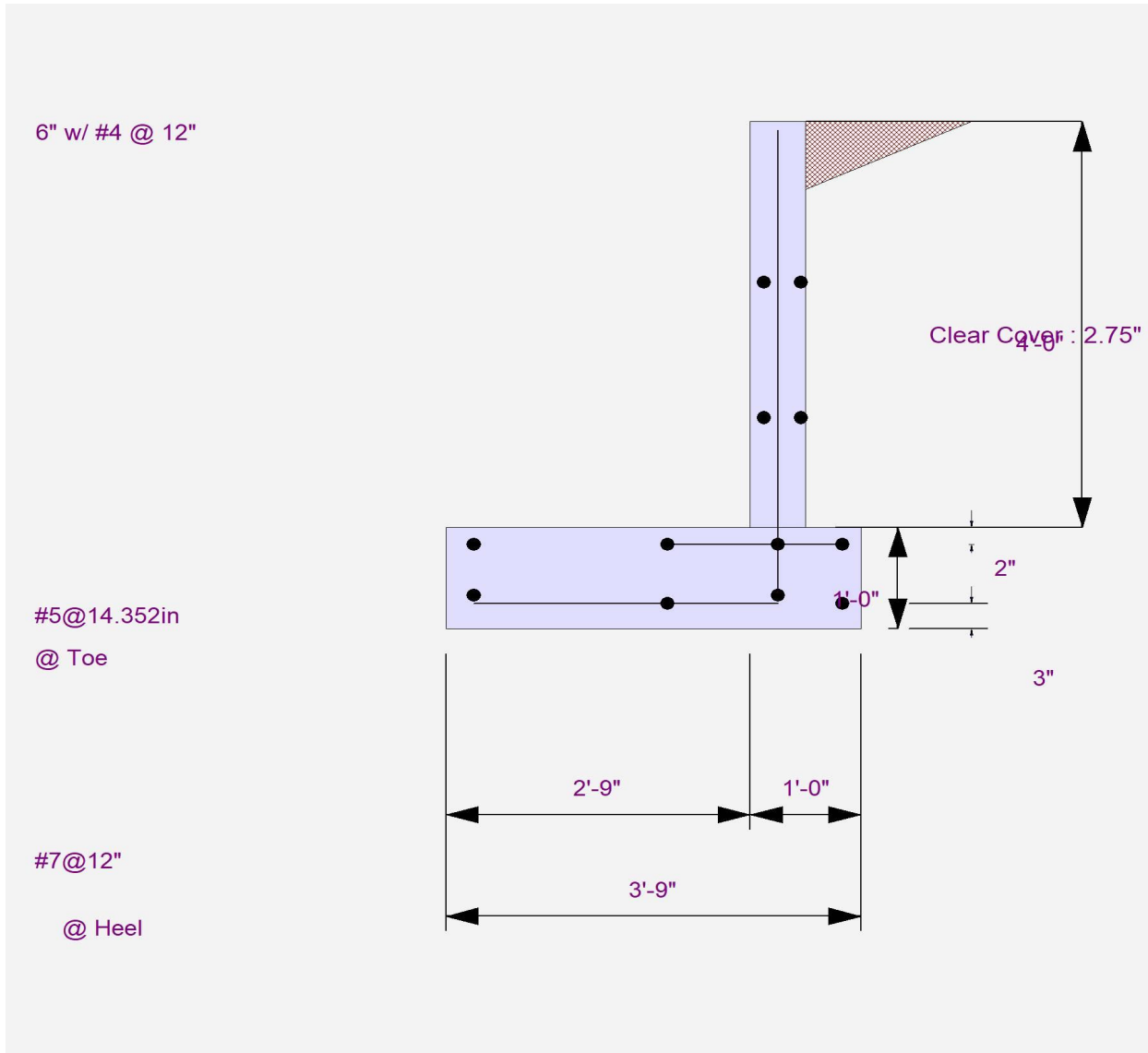
Project File: 18741 Rigid Diaphragm and Foundation.ec

LIC# : KW-06014122, Build:20.23.2.14

PCS STRUCTURAL SOLUTIONS

(c) ENERCALC INC 1983-2022

DESCRIPTION: 4ft - Reverse L Retaining Wall



Cantilevered Retaining Wall

Project File: 18741 Rigid Diaphragm and Foundation.ec

LIC# : KW-06014122, Build:20.23.2.14

PCS STRUCTURAL SOLUTIONS

(c) ENERCALC INC 1983-2022

DESCRIPTION: 4ft - Reverse L Retaining Wall

