

BLD19-2145 PCI

THESE ATTACHMENTS ARE PART OF THE
APPROVED PLANS
DO NOT REMOVE THEM

Reviewed for Code Compliance
County of Sonoma
PRMD

APR 18 2019



APR 18 2019

PRMD
RESILIENCY PERMIT CENTER

Resiliency Permit Center

PERMIT # _____

ARCHITECTS
PO Box 111
Lagunitas, CA 94938
(415) 314-0525
rpsuttman@rpsdesign.net

STRUCTURAL CALCULATIONS

Project:
New House

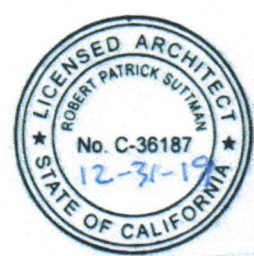
Address:
91 & 93 Ursuline Road
Santa Rosa, CA

Prepared for:
Salvador Jauregui

Job Number:
2018-0036

Date:
4-12-2019

OFFICE





ARCHITECTS

Project Title: 91 & 93 Ursuline Road
Architect: Robert P. Suttman C-36187
Project ID: 2018-0036
Project Descr: New House

Building Code Information

File = \\HCLSVR\Folder Redirection\slaughter\Documents\ENERCALC Data Files\Ursuline.ec6
Software copyright ENERCALC, INC. 1983-2018, Build:10.18.12.22

Lic. # : KW-06009141

Licensee : HCL Engineering & Surveying, LLC

Governing Code : IBC 2015, ASCE 7-10, CBC 2016, AISC 360-10, NDS 2015, ACI 318-14, ACI

City Jurisdiction : Sonoma County

Contact Name :

Alternate Contact :

Building Official :

Address : , ,

Phone :

Fax :

eMail :

Notes :

submit

Building Code Information

1. The building shall conform to the requirements of the International Building Code (IBC) 2015 Edition, with all amendments through 2018, as adopted by the City of...

Building Code Information
City: ...
County: ...
District: ...
Address: ...
Building Code: ...
Floor Area: ...
Height: ...



Project Title: 91 & 93 Ursuline Road
Architect: Robert P. Suttman C-36187
Project ID: 2018-0036
Project Descr: New House

Project Information

File = \\HCLSVR\Folder Redirection\slaughter\Documents\ENERCALC Data Files\Ursuline.ec6
Software copyright ENERCALC, INC. 1983-2018, Build:10.18.12.22
Licensee : HCL Engineering & Surveying, LLC

Lic. # : KW-06009141

Project Title : Ursuline Duplex

Description : New Duplex

I.D. :

Address : 91 & 93 Ursuline, Santa Rosa, CA

Project Leader : Robert P. Suttman

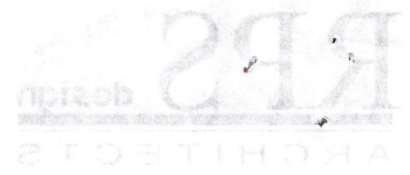
Phone : 415 314-0525

Fax :

eMail : rpsuttman@rpsdesign.net

Project Notes

10/18/18
10/18/18
10/18/18



Project Information

Project Name

Project Title

Description

City

Address

Project Leader

Phone

Email

Project Title: 91 & 85 Millville Road
Architect: Robert R. Sullivan, C.A.S. 1977
Project ID: 2018-0023
Project Descr: New Home

Project Information

Center
of Sonoma
Code Cu
MD
6

Wall Footing

File = \\HCLSVR\Folder Redirection\slaughter\Documents\ENERCALC Data Files\Ursuline.ec6
 Software copyright ENERCALC, INC. 1983-2018, Build:10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: Interior Grids Worse Case

Code References

Calculations per ACI 318-14, IBC 2015, CBC 2016, ASCE 7-10
 Load Combinations Used: ASCE 7-10

General Information

Material Properties

f_c : Concrete 28 day strength	=	3.0 ksi
f_y : Rebar Yield	=	60.0 ksi
E_c : Concrete Elastic Modulus	=	3,122.0 ksi
Concrete Density	=	145.0 pcf
ϕ Values Flexure	=	0.90
Shear	=	0.750

Analysis Settings

Min Steel % Bending Reinf.	=	
Min Allow % Temp Reinf.	=	0.00180
Min. Overturning Safety Factor	=	1.0 : 1
Min. Sliding Safety Factor	=	1.0 : 1
AutoCalc Footing Weight as DL	:	Yes

Soil Design Values

Allowable Soil Bearing	=	2.0 ksf
Increase Bearing By Footing Weight	=	No
Soil Passive Resistance (for Sliding)	=	250.0 pcf
Soil/Concrete Friction Coeff.	=	0.30

Increases based on footing Depth

Reference Depth below Surface	=	ft
Allow. Pressure Increase per foot of depth when base footing is below	=	ksf
	=	ft

Increases based on footing Width

Allow. Pressure Increase per foot of width when footing is wider than	=	ksf
	=	ft

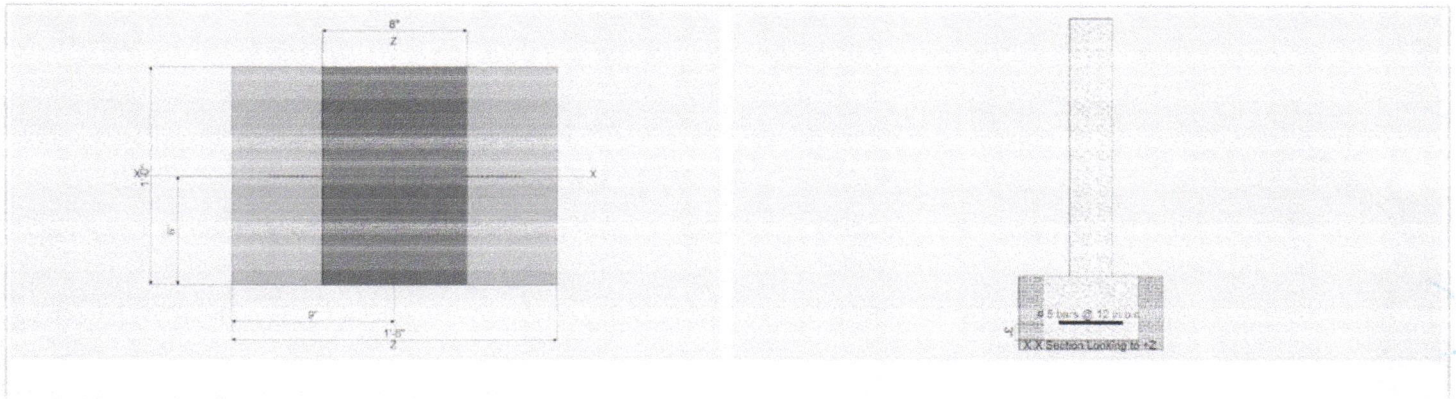
Adjusted Allowable Bearing Pressure = 2.0 ksf

Dimensions

Footing Width	=	1.50 ft
Wall Thickness	=	8.0 in
Wall center offset from center of footing	=	0 in

Reinforcing

Footing Thickness	=	12.0 in	Bars along X-X Axis	=	
Rebar Centerline to Edge of Concrete... at Bottom of footing	=	3.0 in	Bar spacing	=	12.00
			Reinforcing Bar Size	=	# 5



Applied Loads

	D	Lr	L	S	W	E	H	
P: Column Load	=	2						k
OB: Overburden	=		0.750					ksf
V-x	=							k
M-zz	=							k-ft
Vx applied	=							in above top of footing

5/18/2018
 CONSULTING
 ARCHITECT

Wall Footing

Order Reference: 1802018-0035
 Calculation per 1718 of 1802018-0035-01-CT-010

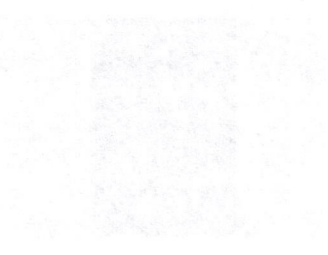
General Information

Material: 12" x 12" x 16' Precast Concrete
 A. Footing Height: 12" x 12" x 16'
 B. Footing Width: 12" x 12" x 16'
 C. Footing Length: 12" x 12" x 16'
 D. Footing Area: 12" x 12" x 16'
 E. Footing Volume: 12" x 12" x 16'
 F. Footing Weight: 12" x 12" x 16'
 G. Footing Moment: 12" x 12" x 16'
 H. Footing Shear: 12" x 12" x 16'
 I. Footing Axial: 12" x 12" x 16'
 J. Footing Torsion: 12" x 12" x 16'

1.000
 0.100
 0.100
 0.100
 0.100
 0.100
 0.100
 0.100
 0.100
 0.100
 0.100

Reinforcing

Reinforcing Steel: 12" x 12" x 16'
 Rebar Size: 12" x 12" x 16'
 Rebar Spacing: 12" x 12" x 16'
 Rebar Quantity: 12" x 12" x 16'
 Rebar Weight: 12" x 12" x 16'
 Rebar Volume: 12" x 12" x 16'
 Rebar Moment: 12" x 12" x 16'
 Rebar Shear: 12" x 12" x 16'
 Rebar Axial: 12" x 12" x 16'
 Rebar Torsion: 12" x 12" x 16'



Anchor Loads

Anchor Length: 12" x 12" x 16'
 Anchor Diameter: 12" x 12" x 16'
 Anchor Spacing: 12" x 12" x 16'
 Anchor Quantity: 12" x 12" x 16'
 Anchor Weight: 12" x 12" x 16'
 Anchor Volume: 12" x 12" x 16'
 Anchor Moment: 12" x 12" x 16'
 Anchor Shear: 12" x 12" x 16'
 Anchor Axial: 12" x 12" x 16'
 Anchor Torsion: 12" x 12" x 16'

Reviewed by
 County
 Permit Application
 18-0035
 18-0035

Wall Footing

File = \\HCLSVR\Folder Redirection\loslaughter\Documents\ENERCALC Data Files\Ursuline.ec6
 Software copyright ENERCALC, INC. 1983-2018. Build:10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: Interior Grids Worse Case

DESIGN SUMMARY

Design OK

Factor of Safety	Item	Applied	Capacity	Governing Load Combination	
PASS	n/a	Overturning - Z-Z	0.0 k-ft	0.0 k-ft	No Overturning
PASS	n/a	Sliding - X-X	0.0 k	0.0 k	No Sliding
PASS	n/a	Uplift	0.0 k	0.0 k	No Uplift

Utilization Ratio	Item	Applied	Capacity	Governing Load Combination	
PASS	0.9892	Soil Bearing	1.978 ksf	2.0 ksf	+D+L+H
PASS	0.01842	Z Flexure (+X)	0.2234 k-ft	12.131 k-ft	+1.20D+0.50Lr+1.60L+
PASS	0.009520	Z Flexure (-X)	0.1155 k-ft	12.131 k-ft	+0.90D+E+0.90H
PASS	n/a	1-way Shear (+X)	0.0 psi	82.158 psi	n/a
PASS	0.0	1-way Shear (-X)	0.0 psi	0.0 psi	n/a

Detailed Results

Soil Bearing

Rotation Axis & Load Combination...	Gross Allowable	Xecc	Actual Soil Bearing Stress		Actual / Allowable Ratio
			-X	+X	
.+D+H	2.0 ksf	0.0 in	1.478 ksf	1.478 ksf	0.739
.+D+L+H	2.0 ksf	0.0 in	1.978 ksf	1.978 ksf	0.989
.+D+Lr+H	2.0 ksf	0.0 in	1.478 ksf	1.478 ksf	0.739
.+D+S+H	2.0 ksf	0.0 in	1.478 ksf	1.478 ksf	0.739
.+D+0.750Lr+0.750L+H	2.0 ksf	0.0 in	1.853 ksf	1.853 ksf	0.927
.+D+0.750L+0.750S+H	2.0 ksf	0.0 in	1.853 ksf	1.853 ksf	0.927
.+D+0.60W+H	2.0 ksf	0.0 in	1.478 ksf	1.478 ksf	0.739
.+D+0.70E+H	2.0 ksf	0.0 in	1.478 ksf	1.478 ksf	0.739
.+D+0.750Lr+0.750L+0.450W+H	2.0 ksf	0.0 in	1.853 ksf	1.853 ksf	0.927
.+D+0.750L+0.750S+0.450W+H	2.0 ksf	0.0 in	1.853 ksf	1.853 ksf	0.927
.+D+0.750L+0.750S+0.5250E+H	2.0 ksf	0.0 in	1.853 ksf	1.853 ksf	0.927
.+0.60D+0.60W+0.60H	2.0 ksf	0.0 in	0.8870 ksf	0.8870 ksf	0.444
.+0.60D+0.70E+0.60H	2.0 ksf	0.0 in	0.8870 ksf	0.8870 ksf	0.444

Units: k-ft

Overturning Stability

Rotation Axis & Load Combination...	Overturning Moment	Resisting Moment	Stability Ratio	Status
-------------------------------------	--------------------	------------------	-----------------	--------

Footing Has NO Overturning

Sliding Stability

Force Application Axis Load Combination...	Sliding Force	Resisting Force	Sliding Safety Ratio	Status
--	---------------	-----------------	----------------------	--------

Footing Has NO Sliding

Footing Flexure

Flexure Axis & Load Combination	Mu k-ft	Which Side ?	Tension @ Bot. or Top ?	As Req'd in^2	Gvrn. As in^2	Actual As in^2	Phi*Mn k-ft	Status
.+1.40D+1.60H	0.1796	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.40D+1.60H	0.1796	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50Lr+1.60L+1.60H	0.2234	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50Lr+1.60L+1.60H	0.2234	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60L+0.50S+1.60H	0.2234	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60L+0.50S+1.60H	0.2234	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60Lr+0.50L+1.60H	0.1757	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60Lr+0.50L+1.60H	0.1757	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60Lr+0.50W+1.60H	0.154	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60Lr+0.50W+1.60H	0.154	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50Lr+1.60S+1.60H	0.1757	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50Lr+1.60S+1.60H	0.1757	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60S+0.50W+1.60H	0.154	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60S+0.50W+1.60H	0.154	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50Lr+0.50L+W+1.60H	0.1757	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50Lr+0.50L+W+1.60H	0.1757	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50L+0.50S+W+1.60H	0.1757	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50L+0.50S+W+1.60H	0.1757	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK

Wall Footing

File = \\HCLSVR\Folder Redirection\slaughter\Documents\ENERCALC Data Files\Ursuline.ecb
 Software copyright ENERCALC, INC. 1983-2018, Build:10.18.12.22

Lic. #: KW-06009141

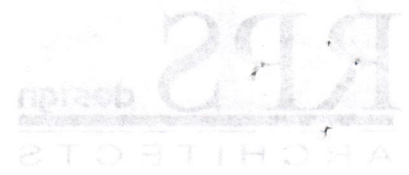
Licensee: HCL Engineering & Surveying, LLC

Description: Interior Grids Worse Case

. +1.20D+0.50L+0.20S+E+1.60H	0.1757	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+0.50L+0.20S+E+1.60H	0.1757	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK

11/15/2018
 JMS
 COMM

Project Title: 01 & 02 Building Head
Architect: Robert F. Smith Architects
Project ID: 2018-0000
Project Desc: New House



Well Footing

Well Footing
Description: The well footing is a concrete structure that is cast in place and is used to support the foundation of the building. It is located at the base of the building and is used to transfer the load of the building to the ground. The well footing is a critical component of the foundation system and is used to ensure the stability of the building.

Item	Quantity	Unit	Material	Notes
1	1.00	EA	Well Footing	See Notes
2	1.00	EA	Well Footing	See Notes

Agency

Complete

Wall Footing

File = \\HCLSVR\Folder Redirection\slaughter\Documents\ENERCALC Data Files\Ursuline.ec6
 Software copyright ENERCALC, INC. 1983-2018. Build:10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: Interior Grids Worse Case

Footing Flexure

Flexure Axis & Load Combination	Mu k-ft	Which Side ?	Tension @ Bot. or Top ?	As Req'd in^2	Gvrn. As in^2	Actual As in^2	Phi*Mn k-ft	Status
+0.90D+W+0.90H	0.1155	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
+0.90D+W+0.90H	0.1155	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
+0.90D+E+0.90H	0.1155	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
+0.90D+E+0.90H	0.1155	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK

Units : k

One Way Shear

Load Combination...	Vu @ -X	Vu @ +X	Vu:Max	Phi Vn	Vu / Phi*Vn	Status
+1.40D+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+0.50Lr+1.60L+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+1.60L+0.50S+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+1.60Lr+0.50L+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+1.60Lr+0.50W+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+0.50L+1.60S+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+1.60S+0.50W+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+0.50Lr+0.50L+W+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+0.50L+0.50S+W+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+0.50L+0.20S+E+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+0.90D+W+0.90H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+0.90D+E+0.90H	0 psi	0 psi	0 psi	82.158 psi	0	OK

Concrete Slender Wall

File = \\HCLSVR\Folder Redirection\slaughter\Documents\ENERCALC Data Files\Ursuline.ec6
 Software copyright ENERCALC, INC. 1983-2018, Build:10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: 12" Wall

Code References

Calculations per ACI 318-14 Sec 11.8, IBC 2015, CBC 2016, ASCE 7-10

Load Combinations Used: ASCE 7-10

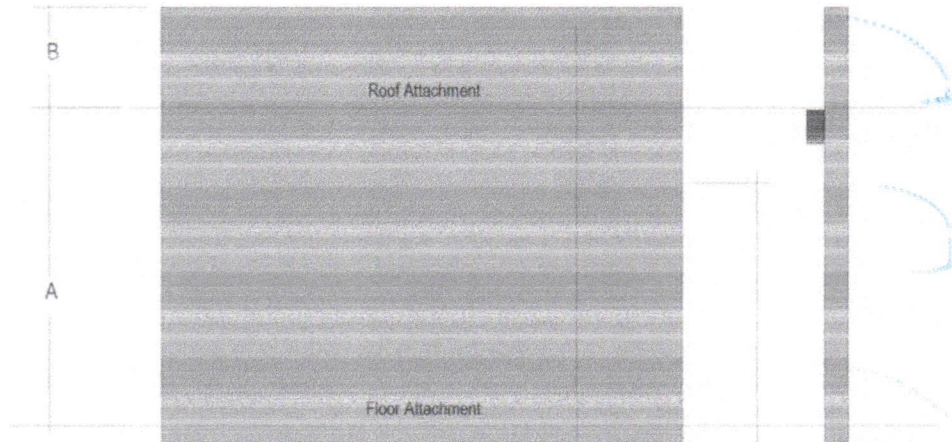
General Information

f_c : Concrete 28 day strength = 3.5 ksi	Wall Thickness = 12 in	Temp Diff across thickness = deg F
F_y : Rebar Yield = 60.0 ksi	Rebar at each face	Min Allow Out-of-Plane Defl Ratio = L/ 0.0
E_c : Concrete Elastic Modulus = 3,122.0 ksi	Rebar "d" distance = 1.250 in	Min allow A_s/bd = 0.0020
λ : Lt Wt Conc Factor = 1.0	Lower Level Rebar ...	Using Stiff. Reduction Factor per ACI R.10.12.3
F_r : Rupture Modulus = 295.804 psi	Bar Size # = 5	
Max Allow A_s/bd = 0.01581	Bar Spacing = 16.0 in	
Max $P_u/Ag = f_c^*$ = 0.060		
Concrete Density = 144.0 pcf		
Width of Design Strip = 12.0 in		

One-Story Wall Dimensions

A Clear Height = 4 ft
B Parapet height = 0.0 ft

Wall Support Condition Top & Bottom Pinned



Vertical Loads

Vertical Uniform Loads ... (Applied per foot of Strip Width)	DL: Dead	Lr: Roof Live	Lf: Floor Live	S: Snow	W: Wind
Ledger Load Eccentricity 0 in	2	2	2	0.0	0.0 k/ft
Concentric Load	0.0	0.0	0.0	0.0	0.0 k/ft

Lateral Loads

Wind Loads:	Seismic Loads:
Full area WIND load = 15.0 psf	Wall Weight Seismic Load Input Method: Direct entry of Lateral Wall Weight
	Seismic Wall Lateral Load = 25.0 psf
	$F_p = 1.0 = 25.0$ psf

Concrete Slender Wall

File = \\HCLSVR\Folder Redirection\slaughter\Documents\ENERCALC Data Files\Ursuline.ec6
 Software copyright ENERCALC, INC. 1983-2018. Build:10.18.12.22

Lic. #: KW-06009141

Description: 12" Wall

Licensee: HCL Engineering & Surveying, LLC

DESIGN SUMMARY

Results reported for "Strip Width" of 12.0 in

Governing Load Combination ...		Actual Values ...		Allowable Values ...	
PASS	Moment Capacity Check +0.90D+E+0.90H	Maximum Bending Stress Ratio =	0.004028		
		Max Mu	0.04990 k-ft	Phi * Mn	12.387 k-ft
PASS	Service Deflection Check E Only	Actual Defl. Ratio L/	#####	Allowable Defl. Ratio	150.0
		Max. Deflection	.0000360 in		
PASS	Axial Load Check +1.20D+0.50L+0.20S+E+1.60H	Max Pu / Ag	26.171 psi	Max. Allow. Defl.	0.320 in
		Location	1.933 ft	0.06 * fc	210.0 psi
PASS	Reinforcing Limit Check	Actual As/bd	0.001802	Max Allow As/bd	0.01581
Maximum Reactions ... for Load Combination...					
		Top Horizontal	E Only		0.050 k
		Base Horizontal	E Only		0.050 k
		Vertical Reaction	+D+0.750Lr+0.750L+0.450W+H		5.576 k

Design Maximum Combinations - Moments

Results reported for "Strip Width" = 12 in.

Load Combination	Axial Load			Moment Values				As Ratio	0.6 * rho bal
	Pu k	0.06*fc*b*t k	Mcr k-ft	Mu k-ft	Phi	Phi Mn k-ft	As in ²		
	0.000	0.000	0.00	0.00	0.00	0.00	0.000	0.0000	0.0000
	0.000	0.000	0.00	0.00	0.00	0.00	0.000	0.0000	0.0000
	0.000	0.000	0.00	0.00	0.00	0.00	0.000	0.0000	0.0000
	0.000	0.000	0.00	0.00	0.00	0.00	0.000	0.0000	0.0000
+1.20D+1.60Lr+0.50W+1.60H at 1.87 to 2.00	5.969	30.240	7.10	0.01	0.90	13.85	0.233	0.0018	0.0158
	0.000	0.000	0.00	0.00	0.00	0.00	0.000	0.0000	0.0000
+1.20D+1.60S+0.50W+1.60H at 1.87 to 2.00	2.769	30.240	7.10	0.01	0.90	12.65	0.233	0.0018	0.0158
+1.20D+0.50Lr+0.50L+W+1.60H at 1.87 to 2.00	4.769	30.240	7.10	0.03	0.90	13.40	0.233	0.0018	0.0158
+1.20D+0.50L+0.50S+W+1.60H at 1.87 to 2.00	3.769	30.240	7.10	0.03	0.90	13.03	0.233	0.0018	0.0158
+1.20D+0.50L+0.20S+E+1.60H at 1.87 to 2.00	3.769	30.240	7.10	0.05	0.90	13.03	0.233	0.0018	0.0158
+0.90D+W+0.90H at 1.87 to 2.00	2.076	30.240	7.10	0.03	0.90	12.39	0.233	0.0018	0.0158
+0.90D+E+0.90H at 1.87 to 2.00	2.076	30.240	7.10	0.05	0.90	12.39	0.233	0.0018	0.0158

Design Maximum Combinations - Deflections

Results reported for "Strip Width" = 12 in.

Load Combination	Axial Load Pu k	Moment Values		I gross in ⁴	Stiffness		Deflections	
		Mcr k-ft	Mactual k-ft		I cracked in ⁴	I effective in ⁴	Deflection in	Defl. Ratio
	0.000	0.00	0.00	0.00	0.00	0.000	0.000	0.0
	0.000	0.00	0.00	0.00	0.00	0.000	0.000	0.0
	0.000	0.00	0.00	0.00	0.00	0.000	0.000	0.0
	0.000	0.00	0.00	0.00	0.00	0.000	0.000	0.0
	0.000	0.00	0.00	0.00	0.00	0.000	0.000	0.0
	0.000	0.00	0.00	0.00	0.00	0.000	0.000	0.0
+D+0.60W+H at 1.87 to 2.00	2.307	7.10	0.02	1,728.00	222.70	1296.000	0.000	#####
+D+0.70E+H at 1.87 to 2.00	2.307	7.10	0.03	1,728.00	222.70	1296.000	0.000	#####
+D+0.750Lr+0.750L+0.450W+H at 1.87 to 2.00	5.307	7.10	0.01	1,728.00	244.58	1296.000	0.000	#####
+D+0.750L+0.750S+0.450W+H at 1.87 to 2.00	3.807	7.10	0.01	1,728.00	233.69	1296.000	0.000	#####
+D+0.750L+0.750S+0.5250E+H at 1.87 to 2.00	3.807	7.10	0.03	1,728.00	233.69	1296.000	0.000	#####
+0.60D+0.60W+0.60H at 1.87 to 2.00	1.384	7.10	0.02	1,728.00	215.90	1296.000	0.000	#####
+0.60D+0.70E+0.60H at 1.87 to 2.00	1.384	7.10	0.03	1,728.00	215.90	1296.000	0.000	#####
	0.000	0.00	0.00	0.00	0.00	0.000	0.000	0.0
	0.000	0.00	0.00	0.00	0.00	0.000	0.000	0.0

Concrete Slender Wall

Design

DESIGN SUMMARY

Item	Description	Value
1	Minimum Depth Check	1.000
2	Minimum Depth Check	1.000
3	Minimum Depth Check	1.000
4	Minimum Depth Check	1.000
5	Minimum Depth Check	1.000
6	Minimum Depth Check	1.000
7	Minimum Depth Check	1.000
8	Minimum Depth Check	1.000
9	Minimum Depth Check	1.000
10	Minimum Depth Check	1.000

Results reported for "Strip Width" of 15 in

Item	Description	Value	Allowable Value
1	Minimum Depth Check	1.000	1.000
2	Minimum Depth Check	1.000	1.000
3	Minimum Depth Check	1.000	1.000
4	Minimum Depth Check	1.000	1.000
5	Minimum Depth Check	1.000	1.000
6	Minimum Depth Check	1.000	1.000
7	Minimum Depth Check	1.000	1.000
8	Minimum Depth Check	1.000	1.000
9	Minimum Depth Check	1.000	1.000
10	Minimum Depth Check	1.000	1.000

Design Maximum Compression - Moments

Item	Description	Value	Allowable Value
1	Minimum Depth Check	1.000	1.000
2	Minimum Depth Check	1.000	1.000
3	Minimum Depth Check	1.000	1.000
4	Minimum Depth Check	1.000	1.000
5	Minimum Depth Check	1.000	1.000
6	Minimum Depth Check	1.000	1.000
7	Minimum Depth Check	1.000	1.000
8	Minimum Depth Check	1.000	1.000
9	Minimum Depth Check	1.000	1.000
10	Minimum Depth Check	1.000	1.000

Design Maximum Compression - Deflections

Item	Description	Value	Allowable Value
1	Minimum Depth Check	1.000	1.000
2	Minimum Depth Check	1.000	1.000
3	Minimum Depth Check	1.000	1.000
4	Minimum Depth Check	1.000	1.000
5	Minimum Depth Check	1.000	1.000
6	Minimum Depth Check	1.000	1.000
7	Minimum Depth Check	1.000	1.000
8	Minimum Depth Check	1.000	1.000
9	Minimum Depth Check	1.000	1.000
10	Minimum Depth Check	1.000	1.000

Results reported for "Strip Width" of 15 in

Resiliency Permit Center

Reviewed for Code Compliance

County of Sonoma

PRMD

Apr 18 2019

Concrete Slender Wall

File = \\HCLSVR\Folder Redirection\cslaughter\Documents\ENERCALC Data Files\Ursuline.ec6
 Software copyright ENERCALC, INC. 1983-2018, Build:10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: 12" Wall

	0.000	0.00	0.00	0.00	0.00	0.000	0.000	0.0
	0.000	0.00	0.00	0.00	0.00	0.000	0.000	0.0
W Only at 2.00 to 2.13	0.000	7.10	0.03	1,728.00	205.63	1296.000	0.000	#####
E Only at 1.87 to 2.00	0.000	7.10	0.05	1,728.00	205.63	1296.000	0.000	#####
	0.000	0.00	0.00	0.00	0.00	0.000	0.000	0.0

Reactions - Vertical & Horizontal

Load Combination	Base Horizontal	Top Horizontal	Vertical @ Wall Base
+D+H	0.0 k	0.00 k	2.576 k
+D+L+H	0.0 k	0.00 k	4.576 k
+D+Lr+H	0.0 k	0.00 k	4.576 k
+D+S+H	0.0 k	0.00 k	2.576 k
+D+0.750Lr+0.750L+H	0.0 k	0.00 k	5.576 k
+D+0.750L+0.750S+H	0.0 k	0.00 k	4.076 k
+D+0.60W+H	0.0 k	0.02 k	2.576 k

Concrete Slender Wall

Design: 1/1/18

Station	Start	End	Length	Area	Volume	Weight
1+00	1+00	1+05	5	10	10	10
1+05	1+05	1+10	5	10	10	10
1+10	1+10	1+15	5	10	10	10
1+15	1+15	1+20	5	10	10	10
1+20	1+20	1+25	5	10	10	10
1+25	1+25	1+30	5	10	10	10
1+30	1+30	1+35	5	10	10	10
1+35	1+35	1+40	5	10	10	10
1+40	1+40	1+45	5	10	10	10
1+45	1+45	1+50	5	10	10	10
1+50	1+50	1+55	5	10	10	10
1+55	1+55	1+60	5	10	10	10
1+60	1+60	1+65	5	10	10	10
1+65	1+65	1+70	5	10	10	10
1+70	1+70	1+75	5	10	10	10
1+75	1+75	1+80	5	10	10	10
1+80	1+80	1+85	5	10	10	10
1+85	1+85	1+90	5	10	10	10
1+90	1+90	1+95	5	10	10	10
1+95	1+95	2+00	5	10	10	10

Rebar - Vertical & Horizontal

Station	Start	End	Length	Area	Volume	Weight
1+00	1+00	1+05	5	10	10	10
1+05	1+05	1+10	5	10	10	10
1+10	1+10	1+15	5	10	10	10
1+15	1+15	1+20	5	10	10	10
1+20	1+20	1+25	5	10	10	10
1+25	1+25	1+30	5	10	10	10
1+30	1+30	1+35	5	10	10	10
1+35	1+35	1+40	5	10	10	10
1+40	1+40	1+45	5	10	10	10
1+45	1+45	1+50	5	10	10	10
1+50	1+50	1+55	5	10	10	10
1+55	1+55	1+60	5	10	10	10
1+60	1+60	1+65	5	10	10	10
1+65	1+65	1+70	5	10	10	10
1+70	1+70	1+75	5	10	10	10
1+75	1+75	1+80	5	10	10	10
1+80	1+80	1+85	5	10	10	10
1+85	1+85	1+90	5	10	10	10
1+90	1+90	1+95	5	10	10	10
1+95	1+95	2+00	5	10	10	10

on Perm

Concrete Slender Wall

File = \\HCLSVR\Folder Redirection\slaughter\Documents\ENERCALC Data Files\Ursuline.ec6
 Software copyright ENERCALC, INC. 1983-2018, Build:10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: 12" Wall

Reactions - Vertical & Horizontal

Load Combination	Base Horizontal	Top Horizontal	Vertical @ Wall Base
+D+0.70E+H	0.0 k	0.04 k	2.576 k
+D+0.750Lr+0.750L+0.450W+H	0.0 k	0.01 k	5.576 k
+D+0.750L+0.750S+0.450W+H	0.0 k	0.01 k	4.076 k
+D+0.750L+0.750S+0.5250E+H	0.0 k	0.03 k	4.076 k
+0.60D+0.60W+0.60H	0.0 k	0.02 k	1.546 k
+0.60D+0.70E+0.60H	0.0 k	0.04 k	1.546 k
D Only	0.0 k	0.00 k	2.576 k
Lr Only	0.0 k	0.00 k	2.000 k
L Only	0.0 k	0.00 k	2.000 k
S Only	0.0 k	0.00 k	0.000 k
W Only	0.0 k	0.03 k	0.000 k
E Only	0.0 k	0.05 k	0.000 k
H Only	0.0 k	0.00 k	0.000 k

Concrete Slender Wall

Rebarline - Vertical & Horizontal

Vertical @ Full Base	Horizontal	Base-Rebarline	Rebarline - Vertical & Horizontal
1.00	1.00	1.00	1.00
1.50	1.50	1.50	1.50
2.00	2.00	2.00	2.00
2.50	2.50	2.50	2.50
3.00	3.00	3.00	3.00
3.50	3.50	3.50	3.50
4.00	4.00	4.00	4.00
4.50	4.50	4.50	4.50
5.00	5.00	5.00	5.00
5.50	5.50	5.50	5.50
6.00	6.00	6.00	6.00
6.50	6.50	6.50	6.50
7.00	7.00	7.00	7.00
7.50	7.50	7.50	7.50
8.00	8.00	8.00	8.00
8.50	8.50	8.50	8.50
9.00	9.00	9.00	9.00
9.50	9.50	9.50	9.50
10.00	10.00	10.00	10.00

Resiliency

Wall Footing

File = \\HCLSVR\Folder Redirection\cslaughter\Documents\ENERCALC Data Files\Ursuline.ec6

Software copyright ENERCALC, INC. 1983-2018, Build: 10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: Exterior Walls Only

Code References

Calculations per ACI 318-14, IBC 2015, CBC 2016, ASCE 7-10
 Load Combinations Used: ASCE 7-10

General Information

Material Properties

f_c : Concrete 28 day strength	=	3.0 ksi
f_y : Rebar Yield	=	60.0 ksi
E_c : Concrete Elastic Modulus	=	3,122.0 ksi
Concrete Density	=	145.0 pcf
ϕ Values Flexure	=	0.90
Shear	=	0.750

Analysis Settings

Min Steel % Bending Reinf.	=	
Min Allow % Temp Reinf.	=	0.00180
Min. Overturning Safety Factor	=	1.0 : 1
Min. Sliding Safety Factor	=	1.0 : 1
AutoCalc Footing Weight as DL	:	Yes

Soil Design Values

Allowable Soil Bearing	=	2.0 ksf
Increase Bearing By Footing Weight	=	No
Soil Passive Resistance (for Sliding)	=	250.0 pcf
Soil/Concrete Friction Coeff.	=	0.30

Increases based on footing Depth

Reference Depth below Surface	=	ft
Allow. Pressure Increase per foot of depth when base footing is below	=	ksf
	=	ft

Increases based on footing Width

Allow. Pressure Increase per foot of width when footing is wider than	=	ksf
	=	ft

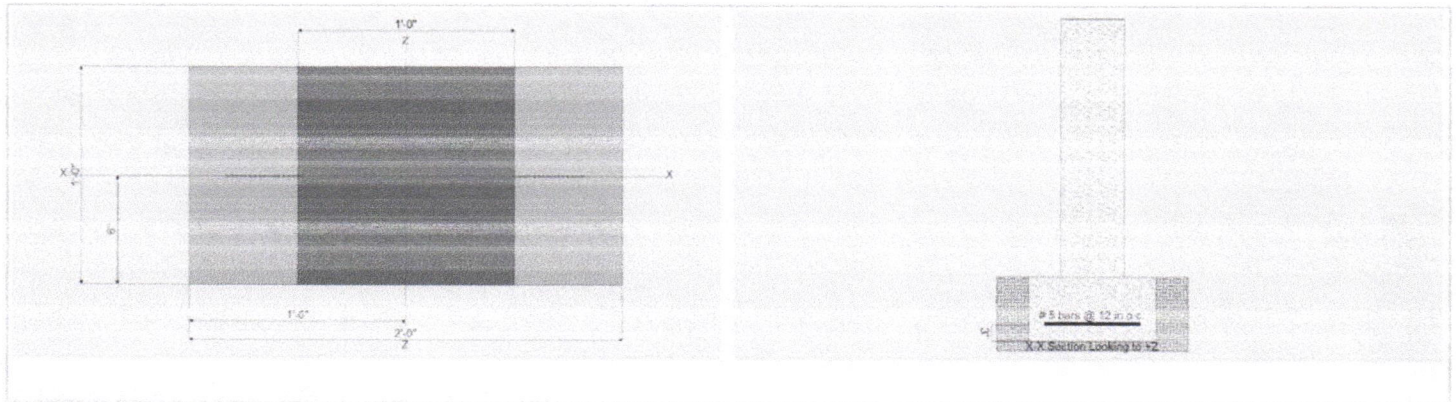
Adjusted Allowable Bearing Pressure = 2.0 ksf

Dimensions

Footing Width	=	2 ft
Wall Thickness	=	12.0 in
Wall center offset from center of footing	=	0 in

Reinforcing

Footing Thickness	=	12.0 in	Bars along X-X Axis	=	
Rebar Centerline to Edge of Concrete... at Bottom of footing	=	3.0 in	Bar spacing	=	12.00
			Reinforcing Bar Size	=	# 5



Applied Loads

	D	Lr	L	S	W	E	H
P : Column Load	=	2.0	0.70	0.70	0.0	0.0	0.0 k
OB : Overburden	=	0.0	0.0	0.0	0.0	0.0	0.0 ksf
V-x	=						k
M-zz	=						k-ft
Vx applied	=						in above top of footing

15000

Wall Footing

File = \\HCLSVR\Folder Redirection\slaughter\Documents\ENERCALC Data Files\Ursuline.ec6

Software copyright ENERCALC, INC. 1983-2018. Build:10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: Exterior Walls Only

Design OK

DESIGN SUMMARY

Factor of Safety	Item	Applied	Capacity	Governing Load Combination	
PASS	n/a	Overturning - Z-Z	0.0 k-ft	0.0 k-ft	No Overturning
PASS	n/a	Sliding - X-X	0.0 k	0.0 k	No Sliding
PASS	n/a	Uplift	0.0 k	0.0 k	No Uplift

Utilization Ratio	Item	Applied	Capacity	Governing Load Combination	
PASS	0.8350	Soil Bearing	1.670 ksf	2.0 ksf	+D+0.750Lr+0.750L+0.
PASS	0.02173	Z Flexure (+X)	0.2636 k-ft	12.131 k-ft	+1.20D+0.50Lr+1.60L+
PASS	0.01062	Z Flexure (-X)	0.1288 k-ft	12.131 k-ft	+0.90D+E+0.90H
PASS	n/a	1-way Shear (+X)	0.0 psi	82.158 psi	n/a
PASS	0.0	1-way Shear (-X)	0.0 psi	0.0 psi	n/a

Detailed Results

Soil Bearing

Rotation Axis & Load Combination...	Gross Allowable	Xeccc	Actual Soil Bearing Stress		Actual / Allowable Ratio
			-X	+X	
.+D+H	2.0 ksf	0.0 in	1.145 ksf	1.145 ksf	0.573
.+D+L+H	2.0 ksf	0.0 in	1.495 ksf	1.495 ksf	0.748
.+D+Lr+H	2.0 ksf	0.0 in	1.495 ksf	1.495 ksf	0.748
.+D+S+H	2.0 ksf	0.0 in	1.145 ksf	1.145 ksf	0.573
.+D+0.750Lr+0.750L+H	2.0 ksf	0.0 in	1.670 ksf	1.670 ksf	0.835
.+D+0.750L+0.750S+H	2.0 ksf	0.0 in	1.408 ksf	1.408 ksf	0.704
.+D+0.60W+H	2.0 ksf	0.0 in	1.145 ksf	1.145 ksf	0.573
.+D+0.70E+H	2.0 ksf	0.0 in	1.145 ksf	1.145 ksf	0.573
.+D+0.750Lr+0.750L+0.450W+H	2.0 ksf	0.0 in	1.670 ksf	1.670 ksf	0.835
.+D+0.750L+0.750S+0.450W+H	2.0 ksf	0.0 in	1.408 ksf	1.408 ksf	0.704
.+D+0.750L+0.750S+0.5250E+H	2.0 ksf	0.0 in	1.408 ksf	1.408 ksf	0.704
.+0.60D+0.60W+0.60H	2.0 ksf	0.0 in	0.6870 ksf	0.6870 ksf	0.344
.+0.60D+0.70E+0.60H	2.0 ksf	0.0 in	0.6870 ksf	0.6870 ksf	0.344

Units : k-ft

Overturning Stability

Rotation Axis & Load Combination...	Overturning Moment	Resisting Moment	Stability Ratio	Status
-------------------------------------	--------------------	------------------	-----------------	--------

Footing Has NO Overturning

Sliding Stability

Force Application Axis & Load Combination...	Sliding Force	Resisting Force	Sliding SafetyRatio	Status
--	---------------	-----------------	---------------------	--------

Footing Has NO Sliding

Footing Flexure

Flexure Axis & Load Combination	Mu k-ft	Which Side ?	Tension @ Bot. or Top ?	As Req'd in^2	Gvrn. As in^2	Actual As in^2	Phi*Mn k-ft	Status
.+1.40D+1.60H	0.2003	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.40D+1.60H	0.2003	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50Lr+1.60L+1.60H	0.2636	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50Lr+1.60L+1.60H	0.2636	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60L+0.50S+1.60H	0.2417	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60L+0.50S+1.60H	0.2417	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60Lr+0.50L+1.60H	0.2636	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60Lr+0.50L+1.60H	0.2636	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60Lr+0.50W+1.60H	0.2417	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60Lr+0.50W+1.60H	0.2417	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50L+1.60S+1.60H	0.1936	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50L+1.60S+1.60H	0.1936	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60S+0.50W+1.60H	0.1717	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+1.60S+0.50W+1.60H	0.1717	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50Lr+0.50L+W+1.60H	0.2155	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50Lr+0.50L+W+1.60H	0.2155	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50L+0.50S+W+1.60H	0.1936	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
.+1.20D+0.50L+0.50S+W+1.60H	0.1936	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK

4/20/2018
 Code Check

Wall Footing

Location: ...

DESIGN SUMMARY

Item	Description	Quantity	Unit	Material
1	Foundation	1.00	sq ft	Concrete
2	Foundation	1.00	sq ft	Concrete
3	Foundation	1.00	sq ft	Concrete
4	Foundation	1.00	sq ft	Concrete
5	Foundation	1.00	sq ft	Concrete
6	Foundation	1.00	sq ft	Concrete
7	Foundation	1.00	sq ft	Concrete
8	Foundation	1.00	sq ft	Concrete
9	Foundation	1.00	sq ft	Concrete
10	Foundation	1.00	sq ft	Concrete

Detailed Results

Item	Description	Quantity	Unit	Material	Notes
1	Foundation	1.00	sq ft	Concrete	
2	Foundation	1.00	sq ft	Concrete	
3	Foundation	1.00	sq ft	Concrete	
4	Foundation	1.00	sq ft	Concrete	
5	Foundation	1.00	sq ft	Concrete	
6	Foundation	1.00	sq ft	Concrete	
7	Foundation	1.00	sq ft	Concrete	
8	Foundation	1.00	sq ft	Concrete	
9	Foundation	1.00	sq ft	Concrete	
10	Foundation	1.00	sq ft	Concrete	
11	Foundation	1.00	sq ft	Concrete	
12	Foundation	1.00	sq ft	Concrete	
13	Foundation	1.00	sq ft	Concrete	
14	Foundation	1.00	sq ft	Concrete	
15	Foundation	1.00	sq ft	Concrete	
16	Foundation	1.00	sq ft	Concrete	
17	Foundation	1.00	sq ft	Concrete	
18	Foundation	1.00	sq ft	Concrete	
19	Foundation	1.00	sq ft	Concrete	
20	Foundation	1.00	sq ft	Concrete	
21	Foundation	1.00	sq ft	Concrete	
22	Foundation	1.00	sq ft	Concrete	
23	Foundation	1.00	sq ft	Concrete	
24	Foundation	1.00	sq ft	Concrete	
25	Foundation	1.00	sq ft	Concrete	
26	Foundation	1.00	sq ft	Concrete	
27	Foundation	1.00	sq ft	Concrete	
28	Foundation	1.00	sq ft	Concrete	
29	Foundation	1.00	sq ft	Concrete	
30	Foundation	1.00	sq ft	Concrete	
31	Foundation	1.00	sq ft	Concrete	
32	Foundation	1.00	sq ft	Concrete	
33	Foundation	1.00	sq ft	Concrete	
34	Foundation	1.00	sq ft	Concrete	
35	Foundation	1.00	sq ft	Concrete	
36	Foundation	1.00	sq ft	Concrete	
37	Foundation	1.00	sq ft	Concrete	
38	Foundation	1.00	sq ft	Concrete	
39	Foundation	1.00	sq ft	Concrete	
40	Foundation	1.00	sq ft	Concrete	
41	Foundation	1.00	sq ft	Concrete	
42	Foundation	1.00	sq ft	Concrete	
43	Foundation	1.00	sq ft	Concrete	
44	Foundation	1.00	sq ft	Concrete	
45	Foundation	1.00	sq ft	Concrete	
46	Foundation	1.00	sq ft	Concrete	
47	Foundation	1.00	sq ft	Concrete	
48	Foundation	1.00	sq ft	Concrete	
49	Foundation	1.00	sq ft	Concrete	
50	Foundation	1.00	sq ft	Concrete	

enter
Code Comp
at Sonoma

Wall Footing

File = \\HCLSVR\Folder Redirection\slaughter\Documents\ENERCALC Data Files\Ursuline.ec6
 Software copyright ENERCALC, INC. 1983-2018, Build:10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: Exterior Walls Only

. +1.20D+0.50L+0.20S+E+1.60H	0.1936	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+0.50L+0.20S+E+1.60H	0.1936	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK

Wall Footing

File = \\HCLSVR\Folder Redirection\cslaughter\Documents\ENERCALC Data Files\Ursuline.ec6

Software copyright ENERCALC, INC. 1983-2018, Build:10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: Exterior Walls Only

Footing Flexure

Flexure Axis & Load Combination	Mu k-ft	Which Side ?	Tension @ Bot. or Top ?	As Req'd in^2	Gvrn. As in^2	Actual As in^2	Phi*Mn k-ft	Status
+0.90D+W+0.90H	0.1288	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
+0.90D+W+0.90H	0.1288	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
+0.90D+E+0.90H	0.1288	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
+0.90D+E+0.90H	0.1288	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK

Units : k

One Way Shear

Load Combination...	Vu @ -X	Vu @ +X	Vu:Max	Phi Vn	Vu / Phi*Vn	Status
+1.40D+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+0.50Lr+1.60L+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+1.60L+0.50S+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+1.60Lr+0.50L+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+1.60Lr+0.50W+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+0.50L+1.60S+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+1.60S+0.50W+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+0.50Lr+0.50L+W+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+0.50L+0.50S+W+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+1.20D+0.50L+0.20S+E+1.60H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+0.90D+W+0.90H	0 psi	0 psi	0 psi	82.158 psi	0	OK
+0.90D+E+0.90H	0 psi	0 psi	0 psi	82.158 psi	0	OK

Project Title: 01 & 02 Dunwoody Road
 Address: 01 & 02 Dunwoody Road
 Project ID: 2018-0030
 Project Date: New Town

Wall Footing

Project Name: 01 & 02 Dunwoody Road
 Project Location: 01 & 02 Dunwoody Road
 Project ID: 2018-0030
 Project Date: New Town

Station	Start	End	Depth	Width	Notes	Remarks
0+00	0+00	0+05	1.00	1.00	1.00	OK
0+05	0+05	0+10	1.00	1.00	1.00	OK
0+10	0+10	0+15	1.00	1.00	1.00	OK
0+15	0+15	0+20	1.00	1.00	1.00	OK
0+20	0+20	0+25	1.00	1.00	1.00	OK
0+25	0+25	0+30	1.00	1.00	1.00	OK
0+30	0+30	0+35	1.00	1.00	1.00	OK
0+35	0+35	0+40	1.00	1.00	1.00	OK
0+40	0+40	0+45	1.00	1.00	1.00	OK
0+45	0+45	0+50	1.00	1.00	1.00	OK
0+50	0+50	0+55	1.00	1.00	1.00	OK
0+55	0+55	0+60	1.00	1.00	1.00	OK
0+60	0+60	0+65	1.00	1.00	1.00	OK
0+65	0+65	0+70	1.00	1.00	1.00	OK
0+70	0+70	0+75	1.00	1.00	1.00	OK
0+75	0+75	0+80	1.00	1.00	1.00	OK
0+80	0+80	0+85	1.00	1.00	1.00	OK
0+85	0+85	0+90	1.00	1.00	1.00	OK
0+90	0+90	0+95	1.00	1.00	1.00	OK
0+95	0+95	1+00	1.00	1.00	1.00	OK

Resiliency Permit

Rev

Concrete Slender Wall

File = \\HCLSVR\Folder Redirection\slaughter\Documents\ENERCALC Data Files\Ursuline.ec6

Software copyright ENERCALC, INC. 1983-2018, Build:10.18.12.22

Licensee : HCL Engineering & Surveying, LLC

Lic. #: KW-06009141

Description: 8" Grid Walls

Code References

Calculations per ACI 318-14 Sec 11.8, IBC 2015, CBC 2016, ASCE 7-10
 Load Combinations Used : ASCE 7-10

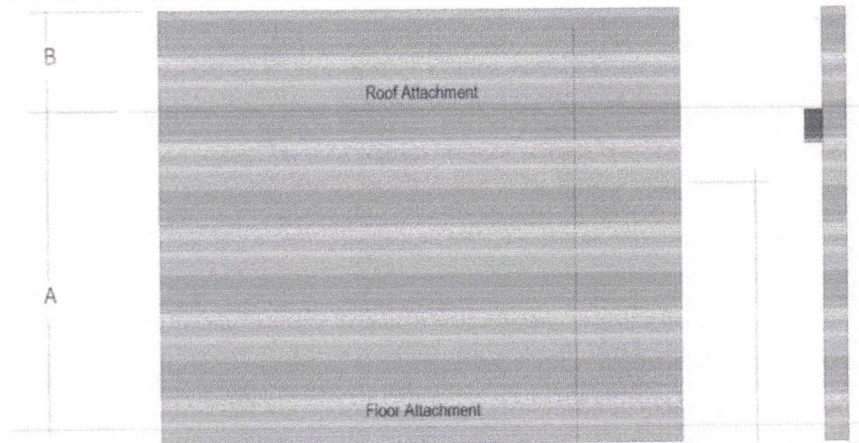
General Information

fc : Concrete 28 day strength = 3.0 ksi	Wall Thickness = 8.0 in	Temp Diff across thickness = deg F
Fy : Rebar Yield = 60.0 ksi	Rebar at wall center	Min Allow Out-of-Plane Defl Ratio = L/ 0.0
Ec : Concrete Elastic Modulus = 3,122.0 ksi	Rebar "d" distance = 4.0 in	Min allow As/bd = 0.0020
λ : Lt Wt Conc Factor = 1.0	Lower Level Rebar ...	Using Stiff. Reduction Factor per ACI R.10.12.3
Fr : Rupture Modulus = 273.861 psi	Bar Size # = 5	
Max Allow As/bd = 0.01355	Bar Spacing = 16.0 in	
Max Pu/Ag = fc * = 0.060		
Concrete Density = 144.0 pcf		
Width of Design Strip = 12.0 in		

One-Story Wall Dimensions

A Clear Height = 4.0 ft
B Parapet height = ft

Wall Support Condition Top & Bottom Pinned



Vertical Loads

Vertical Uniform Loads ... (Applied per foot of Strip Width)	DL : Dead	Lr : Roof Live	Lf : Floor Live	S : Snow	W : Wind
Ledger Load Eccentricity 6.750 in	2.0		1.5		k/ft
Concentric Load					k/ft

Lateral Loads

Wind Loads :	Seismic Loads :
Full area WIND load 15.0 psf	Wall Weight Seismic Load Input Method : Direct entry of Lateral Wall Weight
	Seismic Wall Lateral Load 25.0 psf
	Fp 1.0 = 25.0 psf

Concrete Slender Wall

Date: 14/05/2018

Calculation per ACI 318-11 Section 18.6.2.1
 and ACI 318-11 Section 18.6.2.2

General Information

Concrete Strength	30 MPa
Reinforcement	Grade 500
Effective Length	3.0 m
Slender Ratio	0.15
Design Moment	10 kNm
Design Axial Load	100 kN
Design Shear	5 kN
Design Torsion	0 kNm

Concrete Wall Dimensions

Wall Height	3.0 m
Wall Thickness	150 mm
Effective Length	3.0 m

Design Moment	10 kNm	Design Axial Load	100 kN
Design Shear	5 kN	Design Torsion	0 kNm
Concrete Strength	30 MPa	Reinforcement	Grade 500
Effective Length	3.0 m	Slender Ratio	0.15



Vertical Loads	100 kN	Design Moment	10 kNm
Design Axial Load	100 kN	Design Shear	5 kN
Design Torsion	0 kNm	Concrete Strength	30 MPa
Reinforcement	Grade 500	Effective Length	3.0 m
Slender Ratio	0.15	Design Moment	10 kNm
Design Axial Load	100 kN	Design Shear	5 kN
Design Torsion	0 kNm	Concrete Strength	30 MPa
Reinforcement	Grade 500	Effective Length	3.0 m

16

3
 Compliance

Concrete Slender Wall

File = \\HCLSVR\Folder Redirection\cslaughter\Documents\ENERCALC Data Files\Ursuline.ec6
 Software copyright ENERCALC, INC. 1983-2018, Build:10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: 8" Grid Walls

DESIGN SUMMARY

Results reported for "Strip Width" of 12.0 in

Governing Load Combination . . .		Actual Values . . .		Allowable Values . . .	
PASS	Moment Capacity Check +1.20D+0.50Lr+1.60L+1.60H	Maximum Bending Stress Ratio =	0.6841		
		Max Mu	2.70 k-ft	Phi * Mn	3.947 k-ft
PASS	Service Deflection Check +D+L+H	Actual Defl. Ratio L/	16492	Allowable Defl. Ratio	150.0
		Max. Deflection	0.002910 in		
PASS	Axial Load Check +1.20D+0.50Lr+1.60L+1.60H	Max Pu / Ag	50.323 psi	Max. Allow. Defl.	0.320 in
		Location	3.933 ft	0.06 * fc	180.0 psi
PASS	Reinforcing Limit Check	Actual As/bd	0.004844	Max Allow As/bd	0.01355
Maximum Reactions . . . for Load Combination....					
		Top Horizontal	+D+L+H		0.4922 k
		Base Horizontal	+D+L+H		0.4922 k
		Vertical Reaction	+D+L+H		3.884 k

Design Maximum Combinations - Moments

Results reported for "Strip Width" = 12 in.

Load Combination	Axial Load			Moment Values					0.6 * rho bal
	Pu k	0.06*fc*b*t k	Mcr k-ft	Mu k-ft	Phi	Phi Mn k-ft	As in ²	As Ratio	
+1.40D+1.60H at 3.87 to 4.00	0.000	17.280	2.92	1.58	0.90	3.95	0.233	0.0048	0.0135
+1.20D+0.50Lr+1.60L+1.60H at 3.87 to 4.00	0.000	17.280	2.92	2.70	0.90	3.95	0.233	0.0048	0.0135
+1.20D+1.60L+0.50S+1.60H at 3.87 to 4.00	0.000	17.280	2.92	2.70	0.90	3.95	0.233	0.0048	0.0135
+1.20D+1.60Lr+0.50L+1.60H at 3.87 to 4.00	0.000	17.280	2.92	1.77	0.90	3.95	0.233	0.0048	0.0135
+1.20D+1.60Lr+0.50W+1.60H at 3.87 to 4.00	0.000	17.280	2.92	1.35	0.90	3.95	0.233	0.0048	0.0135
+1.20D+0.50L+1.60S+1.60H at 3.87 to 4.00	0.000	17.280	2.92	1.77	0.90	3.95	0.233	0.0048	0.0135
+1.20D+1.60S+0.50W+1.60H at 3.87 to 4.00	0.000	17.280	2.92	1.35	0.90	3.95	0.233	0.0048	0.0135
+1.20D+0.50Lr+0.50L+W+1.60H at 3.87 to 4.00	0.000	17.280	2.92	1.77	0.90	3.95	0.233	0.0048	0.0135
+1.20D+0.50Lr+0.50S+W+1.60H at 3.87 to 4.00	0.000	17.280	2.92	1.77	0.90	3.95	0.233	0.0048	0.0135
+1.20D+0.50Lr+0.20S+E+1.60H at 3.87 to 4.00	0.000	17.280	2.92	1.77	0.90	3.95	0.233	0.0048	0.0135
+0.90D+W+0.90H at 3.87 to 4.00	0.000	17.280	2.92	1.01	0.90	3.95	0.233	0.0048	0.0135
+0.90D+E+0.90H at 3.87 to 4.00	0.000	17.280	2.92	1.01	0.90	3.95	0.233	0.0048	0.0135

Design Maximum Combinations - Deflections

Results reported for "Strip Width" = 12 in.

Load Combination	Axial Load Pu k	Moment Values		I gross in ⁴	Stiffness		Deflections	
		Mcr k-ft	Mactual k-ft		I cracked in ⁴	I effective in ⁴	Deflection in	Defl. Ratio
+D+H at 2.27 to 2.40	2.166	2.92	0.66	512.00	28.48	384.000	0.002	28,869.2
+D+L+H at 2.27 to 2.40	3.666	2.92	1.15	512.00	30.63	384.000	0.003	16,492.0
+D+Lr+H at 2.27 to 2.40	2.166	2.92	0.66	512.00	28.48	384.000	0.002	28,869.2
+D+S+H at 2.27 to 2.40	2.166	2.92	0.66	512.00	28.48	384.000	0.002	28,869.2
+D+0.750Lr+0.750L+H at 2.27 to 2.40	3.291	2.92	1.03	512.00	30.10	384.000	0.003	18,472.4
+D+0.750Lr+0.750S+H at 2.27 to 2.40	3.291	2.92	1.03	512.00	30.10	384.000	0.003	18,472.4
+D+0.60W+H at 2.27 to 2.40	2.166	2.92	0.67	512.00	28.48	384.000	0.002	28,161.4
+D+0.70E+H at 2.27 to 2.40	2.166	2.92	0.69	512.00	28.48	384.000	0.002	27,524.1
+D+0.750Lr+0.750L+0.450W+H at 2.27 to 2.40	3.291	2.92	1.04	512.00	30.10	384.000	0.003	18,252.2
+D+0.750Lr+0.750S+0.450W+H at 2.27 to 2.40	3.291	2.92	1.04	512.00	30.10	384.000	0.003	18,252.2
+D+0.750Lr+0.750S+0.5250E+H at 2.27 to 2.40	3.291	2.92	1.05	512.00	30.10	384.000	0.003	18,049.0
+0.60D+0.60W+0.60H at 2.27 to 2.40	1.300	2.92	0.41	512.00	27.22	384.000	0.001	46,188.5
+0.60D+0.70E+0.60H at 2.27 to 2.40	1.300	2.92	0.43	512.00	27.22	384.000	0.001	44,498.8
D Only at 2.27 to 2.40	2.166	2.92	0.66	512.00	28.48	384.000	0.002	28,869.2
	0.000	0.00	0.00	0.00	0.00	0.000	0.000	0.0

Concrete Slender Wall

Description: 1.0m x 1.0m

DESIGN SUMMARY

Item	Description	Quantity	Unit	Value
1	Formwork (2.0m x 1.0m)	1.00	m ²	100.00
2	Concrete (1.0m x 1.0m)	1.00	m ³	150.00
3	Reinforcement (1.0m x 1.0m)	1.00	m ²	100.00
4	Labour (1.0m x 1.0m)	1.00	hr	100.00
5	Transport (1.0m x 1.0m)	1.00	hr	100.00
6	Site Preparation (1.0m x 1.0m)	1.00	hr	100.00
7	Final Finish (1.0m x 1.0m)	1.00	hr	100.00
8	Quality Control (1.0m x 1.0m)	1.00	hr	100.00
9	Site Clean-up (1.0m x 1.0m)	1.00	hr	100.00
10	Contingency (1.0m x 1.0m)	1.00	hr	100.00
Total				1000.00

Item	Description	Quantity	Unit	Value
1	Formwork (2.0m x 1.0m)	1.00	m ²	100.00
2	Concrete (1.0m x 1.0m)	1.00	m ³	150.00
3	Reinforcement (1.0m x 1.0m)	1.00	m ²	100.00
4	Labour (1.0m x 1.0m)	1.00	hr	100.00
5	Transport (1.0m x 1.0m)	1.00	hr	100.00
6	Site Preparation (1.0m x 1.0m)	1.00	hr	100.00
7	Final Finish (1.0m x 1.0m)	1.00	hr	100.00
8	Quality Control (1.0m x 1.0m)	1.00	hr	100.00
9	Site Clean-up (1.0m x 1.0m)	1.00	hr	100.00
10	Contingency (1.0m x 1.0m)	1.00	hr	100.00
Total				1000.00

Design Maximum Compressive - Elements

Element	Location	Max Comp. Stress (MPa)	Design Comp. Stress (MPa)	Ratio
1	Top of Wall	12.5	15.0	0.83
2	Mid-height of Wall	10.0	15.0	0.67
3	Bottom of Wall	8.0	15.0	0.53
4	Top of Wall	15.0	15.0	1.00
5	Mid-height of Wall	12.5	15.0	0.83
6	Bottom of Wall	10.0	15.0	0.67
7	Top of Wall	8.0	15.0	0.53
8	Mid-height of Wall	6.0	15.0	0.40
9	Bottom of Wall	4.0	15.0	0.27
10	Top of Wall	2.0	15.0	0.13
11	Mid-height of Wall	1.0	15.0	0.07
12	Bottom of Wall	0.5	15.0	0.03

Design Maximum Compressive - Deflections

Element	Location	Max Deflection (mm)	Design Deflection (mm)	Ratio
1	Top of Wall	10.0	15.0	0.67
2	Mid-height of Wall	5.0	15.0	0.33
3	Bottom of Wall	2.0	15.0	0.13
4	Top of Wall	15.0	15.0	1.00
5	Mid-height of Wall	10.0	15.0	0.67
6	Bottom of Wall	5.0	15.0	0.33
7	Top of Wall	2.0	15.0	0.13
8	Mid-height of Wall	1.0	15.0	0.07
9	Bottom of Wall	0.5	15.0	0.03
10	Top of Wall	0.2	15.0	0.01
11	Mid-height of Wall	0.1	15.0	0.00
12	Bottom of Wall	0.05	15.0	0.00

Rouse & Sullivan
 Architects
 2019



Project Title: 91 & 93 Ursuline Road
 Architect: Robert P. Suttman C-36187
 Project ID: 2018-0036
 Project Descr: New House

Concrete Slender Wall

File = \\HCLSVR\Folder Redirection\slaughter\Documents\ENERCALC Data Files\Ursuline.ec6

Software copyright ENERCALC, INC. 1983-2018, Build:10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: 8" Grid Walls

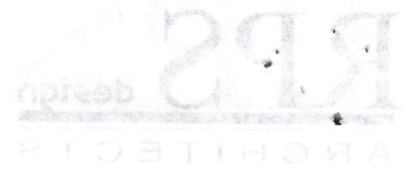
L Only at 2.27 to 2.40	1.500	2.92	0.49	512.00	27.52	384.000	0.001	38,497.1
	0.000	0.00	0.00	0.00	0.00	0.000	0.000	0.0
W Only at 1.87 to 2.00	0.000	2.92	0.03	512.00	25.28	384.000	0.000	667509.4
E Only at 2.00 to 2.13	0.000	2.92	0.05	512.00	25.28	384.000	0.000	400505.6
	0.000	0.00	0.00	0.00	0.00	0.000	0.000	0.0

Reactions - Vertical & Horizontal

Load Combination	Base Horizontal	Top Horizontal	Vertical @ Wall Base
+D+H	0.3 k	0.28 k	2.384 k
+D+L+H	0.5 k	0.49 k	3.884 k
+D+Lr+H	0.3 k	0.28 k	2.384 k
+D+S+H	0.3 k	0.28 k	2.384 k
+D+0.750Lr+0.750L+H	0.4 k	0.44 k	3.509 k
+D+0.750L+0.750S+H	0.4 k	0.44 k	3.509 k
+D+0.60W+H	0.3 k	0.26 k	2.384 k

15000
 465 1.8
 10000
 10000

Project Title: 21 & 22 Jantzen Road
 Architect: Robert F. Suter (RFS)
 Project No: 2018-0002
 Project Date: New House



Concrete Slender Wall

Architect: Robert F. Suter (RFS)
 Project No: 2018-0002
 Project Date: New House

Station	Top of Wall	Bottom of Wall	Notes
0+00	1.00	0.00	Start of wall
0+10	1.00	0.00	
0+20	1.00	0.00	
0+30	1.00	0.00	
0+40	1.00	0.00	
0+50	1.00	0.00	
0+60	1.00	0.00	
0+70	1.00	0.00	
0+80	1.00	0.00	
0+90	1.00	0.00	
1+00	1.00	0.00	End of wall

Approved for
 County PI
 APR 18
 . Perm

Concrete Slender Wall

File = \\HCLSVR\Folder Redirection\slaughter\Documents\ENERCALC Data Files\Ursuline.ecb

Software copyright ENERCALC, INC. 1983-2018, Build:10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: 8" Grid Walls

Reactions - Vertical & Horizontal

Load Combination	Base Horizontal	Top Horizontal	Vertical @ Wall Base
+D+0.70E+H	0.3 k	0.25 k	2.384 k
+D+0.750Lr+0.750L+0.450W+H	0.5 k	0.43 k	3.509 k
+D+0.750L+0.750S+0.450W+H	0.5 k	0.43 k	3.509 k
+D+0.750L+0.750S+0.5250E+H	0.5 k	0.41 k	3.509 k
+0.60D+0.60W+0.60H	0.2 k	0.15 k	1.430 k
+0.60D+0.70E+0.60H	0.2 k	0.13 k	1.430 k
D Only	0.3 k	0.28 k	2.384 k
Lr Only	0.0 k	0.00 k	0.000 k
L Only	0.2 k	0.21 k	1.500 k
S Only	0.0 k	0.00 k	0.000 k
W Only	0.0 k	0.03 k	0.000 k
E Only	0.1 k	0.05 k	0.000 k
H Only	0.0 k	0.00 k	0.000 k

02/11/2018
 11:50:06
 1/1/2018

Wall Footing

File = \\HCLSVR\Folder Redirection\cslaughter\Documents\ENERCALC Data Files\Ursuline.ec6

Software copyright ENERCALC, INC. 1983-2018. Build:10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: Garage Wall

Code References

Calculations per ACI 318-14, IBC 2015, CBC 2016, ASCE 7-10
 Load Combinations Used: ASCE 7-10

General Information

Material Properties

f_c : Concrete 28 day strength	=	3.0 ksi
f_y : Rebar Yield	=	60.0 ksi
E_c : Concrete Elastic Modulus	=	3,122.0 ksi
Concrete Density	=	145.0 pcf
ϕ Values Flexure	=	0.90
Shear	=	0.750

Analysis Settings

Min Steel % Bending Reinf.	=	
Min Allow % Temp Reinf.	=	0.00180
Min. Overturning Safety Factor	=	1.0 : 1
Min. Sliding Safety Factor	=	1.0 : 1
AutoCalc Footing Weight as DL	:	Yes

Soil Design Values

Allowable Soil Bearing	=	2.0 ksf
Increase Bearing By Footing Weight	=	No
Soil Passive Resistance (for Sliding)	=	250.0 pcf
Soil/Concrete Friction Coeff.	=	0.30

Increases based on footing Depth

Reference Depth below Surface	=	ft
Allow. Pressure Increase per foot of depth when base footing is below	=	ksf ft

Increases based on footing Width

Allow. Pressure Increase per foot of width when footing is wider than	=	ksf ft
---	---	-----------

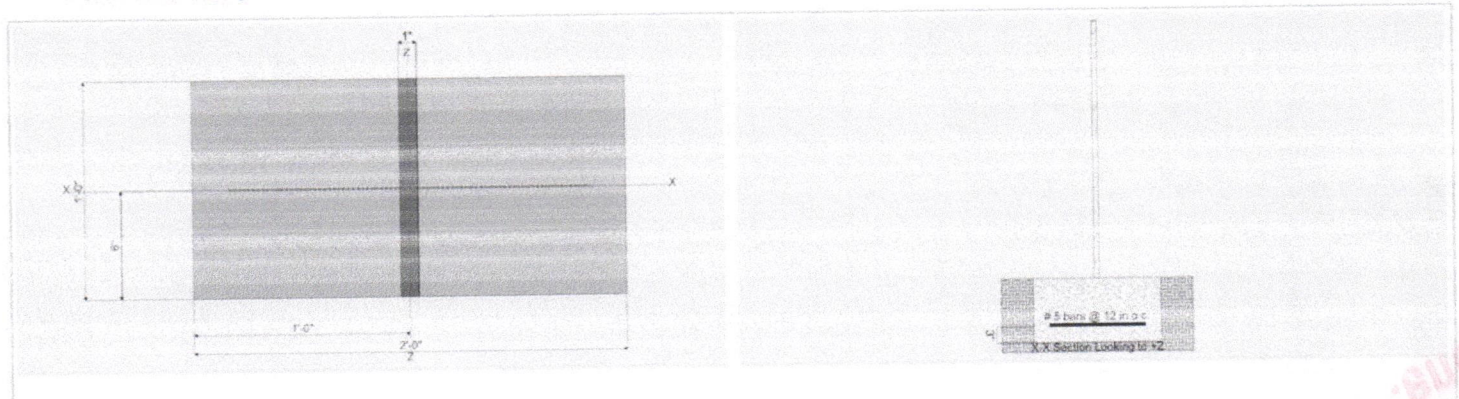
Adjusted Allowable Bearing Pressure = 2.0 ksf

Dimensions

Footing Width	=	2 ft
Wall Thickness	=	1.0 in
Wall center offset from center of footing	=	0 in

Reinforcing

Footing Thickness	=	12.0 in	Bars along X-X Axis	=	12.00
Rebar Centerline to Edge of Concrete... at Bottom of footing	=	3.0 in	Bar spacing	=	
			Reinforcing Bar Size	=	# 5



Applied Loads

	D	Lr	L	S	W	E	H	
P : Column Load	=	2.750	0.50	0.50				k
OB : Overburden	=							ksf
V-x	=							k
M-zz	=							k-ft
Vx applied	=							in above top of footing

HCL
 1800
 Code Cou...

Wall Footing

Description: (cont'd)

Quantity:

Calculation per A01 518 to 520 ASD 2015 ASD 1-10

Unit: Cubic Yards (CY)

General Information

Item	Description	Quantity	Unit
1	Excavate and backfill for footing	1.00	CY
2	Formwork for footing	1.00	SF
3	Reinforcing steel for footing	1.00	LB
4	Concrete for footing	1.00	CY
5	Formwork for wall	1.00	SF
6	Reinforcing steel for wall	1.00	LB
7	Concrete for wall	1.00	CY

Reinforcing

Item	Description	Quantity	Unit
1	Reinforcing steel for footing	1.00	LB
2	Reinforcing steel for wall	1.00	LB

RFS
 Center
 Code Compliant
 Sonoma

Wall Footing

File = \\HCLSVR\Folder Redirection\slaughter\Documents\ENERCALC Data Files\Ursuline.ec6
 Software copyright ENERCALC, INC. 1983-2018, Build:10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: Garage Wall

DESIGN SUMMARY

Design OK

Factor of Safety	Item	Applied	Capacity	Governing Load Combination	
PASS	n/a	Overturning - Z-Z	0.0 k-ft	0.0 k-ft	No Overturning
PASS	n/a	Sliding - X-X	0.0 k	0.0 k	No Sliding
PASS	n/a	Uplift	0.0 k	0.0 k	No Uplift

Utilization Ratio	Item	Applied	Capacity	Governing Load Combination	
PASS	0.9475	Soil Bearing	1.895 ksf	2.0 ksf	+D+0.750Lr+0.750L+0.
PASS	0.08892	Z Flexure (+X)	1.079 k-ft	12.131 k-ft	+1.20D+0.50Lr+1.60L+
PASS	0.05178	Z Flexure (-X)	0.6282 k-ft	12.131 k-ft	+0.90D+E+0.90H
PASS	0.05648	1-way Shear (+X)	4.640 psi	82.158 psi	+1.20D+0.50Lr+1.60L+
PASS	0.05648	1-way Shear (-X)	4.640 psi	82.158 psi	+1.20D+0.50Lr+1.60L+

Detailed Results

Soil Bearing

Rotation Axis & Load Combination...	Gross Allowable	Xecc	Actual Soil Bearing Stress		Actual / Allowable Ratio
			-X	+X	
. +D+H	2.0 ksf	0.0 in	1.520 ksf	1.520 ksf	0.760
. +D+L+H	2.0 ksf	0.0 in	1.770 ksf	1.770 ksf	0.885
. +D+Lr+H	2.0 ksf	0.0 in	1.770 ksf	1.770 ksf	0.885
. +D+S+H	2.0 ksf	0.0 in	1.520 ksf	1.520 ksf	0.760
. +D+0.750Lr+0.750L+H	2.0 ksf	0.0 in	1.895 ksf	1.895 ksf	0.948
. +D+0.750L+0.750S+H	2.0 ksf	0.0 in	1.708 ksf	1.708 ksf	0.854
. +D+0.60W+H	2.0 ksf	0.0 in	1.520 ksf	1.520 ksf	0.760
. +D+0.70E+H	2.0 ksf	0.0 in	1.520 ksf	1.520 ksf	0.760
. +D+0.750Lr+0.750L+0.450W+H	2.0 ksf	0.0 in	1.895 ksf	1.895 ksf	0.948
. +D+0.750L+0.750S+0.450W+H	2.0 ksf	0.0 in	1.708 ksf	1.708 ksf	0.854
. +D+0.750L+0.750S+0.5250E+H	2.0 ksf	0.0 in	1.708 ksf	1.708 ksf	0.854
. +0.60D+0.60W+0.60H	2.0 ksf	0.0 in	0.9120 ksf	0.9120 ksf	0.456
. +0.60D+0.70E+0.60H	2.0 ksf	0.0 in	0.9120 ksf	0.9120 ksf	0.456

Units: k-ft

Overturning Stability

Rotation Axis & Load Combination...	Overturning Moment	Resisting Moment	Stability Ratio	Status
-------------------------------------	--------------------	------------------	-----------------	--------

Footing Has NO Overturning

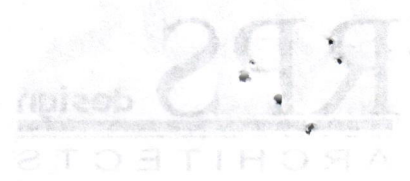
Sliding Stability

Force Application Axis Load Combination...	Sliding Force	Resisting Force	Sliding SafetyRatio	Status
--	---------------	-----------------	---------------------	--------

Footing Has NO Sliding

Footing Flexure

Flexure Axis & Load Combination	Mu k-ft	Which Side ?	Tension @ Bot. or Top ?	As Req'd in^2	Gvrn. As in^2	Actual As in^2	Phi*Mn k-ft	Status
. +1.40D+1.60H	0.9772	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.40D+1.60H	0.9772	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+0.50Lr+1.60L+1.60H	1.079	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+0.50Lr+1.60L+1.60H	1.079	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+1.60L+0.50S+1.60H	1.021	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+1.60L+0.50S+1.60H	1.021	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+1.60Lr+0.50L+1.60H	1.079	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+1.60Lr+0.50L+1.60H	1.079	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+1.60Lr+0.50W+1.60H	1.021	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+1.60Lr+0.50W+1.60H	1.021	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+0.50Lr+1.60S+1.60H	0.895	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+0.50Lr+1.60S+1.60H	0.895	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+1.60S+0.50W+1.60H	0.8376	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+1.60S+0.50W+1.60H	0.8376	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+0.50Lr+0.50L+W+1.60H	0.9524	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+0.50Lr+0.50L+W+1.60H	0.9524	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+0.50L+0.50S+W+1.60H	0.895	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+0.50L+0.50S+W+1.60H	0.895	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK



Project Name: New House
 Project ID: 2018-0001
 Architect: RPS Architects LLC (VA)
 Project File: 21 x 91_Judging Road

Wall Footing

DETAILED RESULTS

Item	Description	Quantity	Unit	Material	Notes
1	1' x 1' x 1' Concrete	1.00	cu yd	Concrete	
2	2' x 2' x 1' Concrete	1.00	cu yd	Concrete	
3	3' x 3' x 1' Concrete	1.00	cu yd	Concrete	
4	4' x 4' x 1' Concrete	1.00	cu yd	Concrete	
5	5' x 5' x 1' Concrete	1.00	cu yd	Concrete	
6	6' x 6' x 1' Concrete	1.00	cu yd	Concrete	
7	7' x 7' x 1' Concrete	1.00	cu yd	Concrete	
8	8' x 8' x 1' Concrete	1.00	cu yd	Concrete	
9	9' x 9' x 1' Concrete	1.00	cu yd	Concrete	
10	10' x 10' x 1' Concrete	1.00	cu yd	Concrete	

Soil Bearing

Item	Description	Capacity	Unit	Material	Notes
1	1' x 1' x 1' Soil	1.00	sq ft	Soil	
2	2' x 2' x 1' Soil	1.00	sq ft	Soil	
3	3' x 3' x 1' Soil	1.00	sq ft	Soil	
4	4' x 4' x 1' Soil	1.00	sq ft	Soil	
5	5' x 5' x 1' Soil	1.00	sq ft	Soil	
6	6' x 6' x 1' Soil	1.00	sq ft	Soil	
7	7' x 7' x 1' Soil	1.00	sq ft	Soil	
8	8' x 8' x 1' Soil	1.00	sq ft	Soil	
9	9' x 9' x 1' Soil	1.00	sq ft	Soil	
10	10' x 10' x 1' Soil	1.00	sq ft	Soil	

Approved for County of Prince William
 SR 18 2018
 Permit 0

Item	Description	Capacity	Unit	Material	Notes
1	1' x 1' x 1' Soil	1.00	sq ft	Soil	
2	2' x 2' x 1' Soil	1.00	sq ft	Soil	
3	3' x 3' x 1' Soil	1.00	sq ft	Soil	
4	4' x 4' x 1' Soil	1.00	sq ft	Soil	
5	5' x 5' x 1' Soil	1.00	sq ft	Soil	
6	6' x 6' x 1' Soil	1.00	sq ft	Soil	
7	7' x 7' x 1' Soil	1.00	sq ft	Soil	
8	8' x 8' x 1' Soil	1.00	sq ft	Soil	
9	9' x 9' x 1' Soil	1.00	sq ft	Soil	
10	10' x 10' x 1' Soil	1.00	sq ft	Soil	



Project Title: 91 & 93 Ursuline Road
 Architect: Robert P. Suttman C-36187
 Project ID: 2018-0036
 Project Descr: New House

Wall Footing

File = \\HCLSVR\Folder Redirection\slaughter\Documents\ENERCALC Data Files\Ursuline.ec6
 Software copyright ENERCALC, INC. 1983-2018. Build:10.18.12.22

Lic. #: KW-06009141

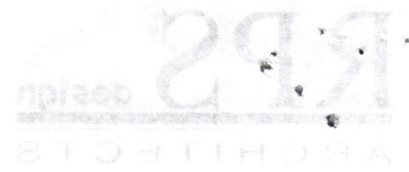
Licensee: HCL Engineering & Surveying, LLC

Description: Garage Wall

. +1.20D+0.50L+0.20S+E+1.60H	0.895	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
. +1.20D+0.50L+0.20S+E+1.60H	0.895	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK

SUCH BE
 5000

Project Name: New House
Project ID: 2015-0018
Architect: Robinson O. Miller
Project Location: 203 Lincoln Road



Wall Footing
Location: Garage Wall

Item	Quantity	Unit	Material	Notes
1	1.00	sq ft	Form	
2	1.00	sq ft	Form	

Agency Review

Wall Footing

File = \\HCLSVR\Folder Redirection\cslaughter\Documents\ENERCALC Data Files\Ursuline.ecb
 Software copyright ENERCALC, INC. 1983-2018, Build:10.18.12.22

Lic. #: KW-06009141

Licensee: HCL Engineering & Surveying, LLC

Description: Garage Wall

Footing Flexure

Flexure Axis & Load Combination	Mu k-ft	Which Side ?	Tension @ Bot. or Top ?	As Req'd in^2	Gvrn. As in^2	Actual As in^2	Phi*Mn k-ft	Status
+0.90D+W+0.90H	0.6282	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
+0.90D+W+0.90H	0.6282	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
+0.90D+E+0.90H	0.6282	-X	Bottom	0.2592	Min Temp %	0.31	12.131	OK
+0.90D+E+0.90H	0.6282	+X	Bottom	0.2592	Min Temp %	0.31	12.131	OK

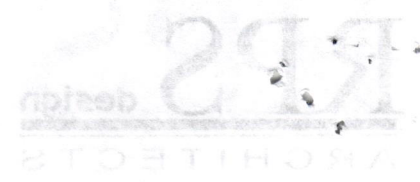
One Way Shear

Load Combination...	Vu @ -X	Vu @ +X	Vu:Max	Phi Vn	Vu / Phi*Vn	Status
+1.40D+1.60H	4.203 psi	4.203 psi	4.203 psi	82.158 psi	0.05116	OK
+1.20D+0.50Lr+1.60L+1.60H	4.64 psi	4.64 psi	4.64 psi	82.158 psi	0.05648	OK
+1.20D+1.60L+0.50S+1.60H	4.393 psi	4.393 psi	4.393 psi	82.158 psi	0.05347	OK
+1.20D+1.60Lr+0.50L+1.60H	4.64 psi	4.64 psi	4.64 psi	82.158 psi	0.05648	OK
+1.20D+1.60Lr+0.50W+1.60H	4.393 psi	4.393 psi	4.393 psi	82.158 psi	0.05347	OK
+1.20D+0.50L+1.60S+1.60H	3.85 psi	3.85 psi	3.85 psi	82.158 psi	0.04686	OK
+1.20D+1.60S+0.50W+1.60H	3.603 psi	3.603 psi	3.603 psi	82.158 psi	0.04385	OK
+1.20D+0.50Lr+0.50L+W+1.60H	4.097 psi	4.097 psi	4.097 psi	82.158 psi	0.04987	OK
+1.20D+0.50L+0.50S+W+1.60H	3.85 psi	3.85 psi	3.85 psi	82.158 psi	0.04686	OK
+1.20D+0.50L+0.20S+E+1.60H	3.85 psi	3.85 psi	3.85 psi	82.158 psi	0.04686	OK
+0.90D+W+0.90H	2.702 psi	2.702 psi	2.702 psi	82.158 psi	0.03289	OK
+0.90D+E+0.90H	2.702 psi	2.702 psi	2.702 psi	82.158 psi	0.03289	OK

RECEIVED

RECEIVED
 10/17/18
 COMMUNITY DEVELOPMENT
 PLANNING AND ECONOMIC DEVELOPMENT

Project Title: 31 - 43 Orange Road
Architect: RPS Architects
Project ID: 2019-0078
Project Date: 4/18/2019



Wall Footing

Item	Description	Quantity	Unit	Material	Notes
1	12" x 12" Wall Footing	10.00	LF	CONCRETE	
2	12" x 12" Wall Footing	10.00	LF	CONCRETE	
3	12" x 12" Wall Footing	10.00	LF	CONCRETE	
4	12" x 12" Wall Footing	10.00	LF	CONCRETE	
5	12" x 12" Wall Footing	10.00	LF	CONCRETE	
6	12" x 12" Wall Footing	10.00	LF	CONCRETE	
7	12" x 12" Wall Footing	10.00	LF	CONCRETE	
8	12" x 12" Wall Footing	10.00	LF	CONCRETE	
9	12" x 12" Wall Footing	10.00	LF	CONCRETE	
10	12" x 12" Wall Footing	10.00	LF	CONCRETE	
11	12" x 12" Wall Footing	10.00	LF	CONCRETE	
12	12" x 12" Wall Footing	10.00	LF	CONCRETE	
13	12" x 12" Wall Footing	10.00	LF	CONCRETE	
14	12" x 12" Wall Footing	10.00	LF	CONCRETE	
15	12" x 12" Wall Footing	10.00	LF	CONCRETE	
16	12" x 12" Wall Footing	10.00	LF	CONCRETE	
17	12" x 12" Wall Footing	10.00	LF	CONCRETE	
18	12" x 12" Wall Footing	10.00	LF	CONCRETE	
19	12" x 12" Wall Footing	10.00	LF	CONCRETE	
20	12" x 12" Wall Footing	10.00	LF	CONCRETE	

Resiliency Permit Center
APR 18 2019
Reviewed for Code Compliance
PRMD
County of Sonoma

RECEIVED

APR 12 2019
RESILIENCY PERMIT CENTER