REScheck Software Version 4.6.4 Compliance Certificate

Project

Energy Code: Location: Construction Type: Project Type: Conditioned Floor Area: Glazing Area Climate Zone: Permit Date:	Utah Energy Conservation Code Huntsville, Utah Single-family New Construction 3,754 ft2 11% 5 (8065 HDD)
Permit Date:	
Permit Number:	

Construction Site:

Owner/Agent:

Designer/Contractor:

Compliance	Decos		trade off
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Compliance: 3.6% Better Than Code Maximum UA: 335 Your UA: 323

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules. It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	U-Factor	UA
Ceiling 1: Flat Ceiling or Scissor Truss	1,877	49.0	0.0	0.026	49
Wall 1: Wood Frame, 16" o.c.	610	19.0	0.0	0.060	30
Window 1: Vinyl/Fiberglass Frame:Double Pane with Low-E	94			0.330	31
Door 1: Glass	21		9	0.330	7
Wall 2: Wood Frame, 16" o.c.	610	19.0	0.0	0.060	32
Window 2: Vinyl/Fiberglass Frame:Double Pane with Low-E	59			0.330	19
Door 2: Solid	21			0.350	7
Wall 3: Wood Frame, 16" o.c.	480	19.0	0.0	0.060	26
Window 3: Vinyl/Fiberglass Frame:Double Pane with Low-E	51			0.330	17
Wall 4: Wood Frame, 16" o.c.	480	19.0	0.0	0.060	26
Window 4: Vinyl/Fiberglass Frame:Double Pane with Low-E	6			0.330	2
Door 3: Solid	42			0.350	15
Floor 1: All-Wood Joist/Truss:Over Unconditioned Space	1,877	30.0	0.0	0.033	62

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the Utah Energy Conservation Code requirements in RES*check* Version 4.6.4 and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Name - Title

Signature

Date

REScheck Software Version 4.6.4 Inspection Checklist

Energy Code: Utah Energy Conservation Code

Requirements: 0.0% were addressed directly in the RES*check* software

Text in the "Comments/Assumptions" column is provided by the user in the REScheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Pre-Inspection/Plan Review	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
103.2 [PR1] ¹	Construction drawings and documentation demonstrate energy code compliance for the building envelope.			Complies Does Not Not Observable Not Applicable	
403;6 [PR2] ²	Heating and cooling equipment is sized per ACCA Manual S based on loads calculated per ACCA Manual J or other methods approved by the code official.	Heating: Btu/hr Cooling: Btu/hr	Heating: Btu/hr Cooling: Btu/hr	□Complies □Does Not □Not Observable □Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Reg.ID	Foundation Inspection	Complies?	Comments/Assumptions
303.2.1 [FO11] ²	protect exposed exterior insulation	Complies Does Not	
٠	and extends a minimum of 6 in. below grade.	Not Observable	
403.8 [F012] ²	Snow- and ice-melting system controls installed.	Complies Does Not	
۲		□Not Observable □Not Applicable	

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section #	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
& Req.ID 402.1.1, 402.3.4 [FR1] ¹ @	Door U-factor.	U	U	Complies Does Not Not Observable Not Applicable	See the Envelope Assemblies table for values.
402.1.1, 402.3.1, 402.3.3, 402.3.6, 402.5 [FR2] ¹	Glazing U-factor (area-weighted average).	U	U	Complies Does Not Not Observable Not Applicable	See the Envelope Assemblies table for values.
303.1.3 [FR4] ¹ @	U-factors of fenestration products are determined in accordance with the NFRC test procedure or taken from the default table.			Complies	
402.4.3 [FR20] ¹	Fenestration that is not site built is listed and labeled as meeting AAMA /WDMA/CSA 101/I.S.2/A440 or has infiltration rates per NFRC 400 that do not exceed code limits.			Does Not Not Observable Not Applicable	
402.4.4 [FR16] ²	IC-rated recessed lighting fixtures sealed at housing/Interior finish and labeled to Indicate ≤2.0 cfm leakage at 75 Pa.			Complies	
403.2.1 [FR12] ¹ @	Supply ducts in attics are insulated to \geq R-8. All other ducts in unconditioned spaces or outside the building envelope are insulated to \geq R-6.	R R	R R	Complies Does Not Not Observable Not Applicable	
403.2.2 [FR13] ¹ 👻	All joints and seams of air ducts, air handlers, and filter boxes are sealed.			Complies	
403.3 [FR17] ²	HVAC piping conveying fluids above 105 °F or chilled fluids below 55 °F are insulated to $\geq R$ - 3.	R	R	Complies Does Not Not Observable Not Applicable	
403.3.1 [FR24] ²	Protection of insulation on HVAC piping.			Complies	
403.4.2 [FR18] ²	Hot water pipes are insulated to ≥R-3.	R	R	Complies Does Not Not Observable Not Applicable	
403.5 [FR19] ²	Automatic or gravity dampers are installed on all outdoor air intakes and exhausts.			Complies Does Not Not Observable	

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1 High	Impact (Tier 1)	2	Medium Impact (Tier 2)	3 Low Impact (Tier 3)
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Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
303.1 [IN13] ²	All Installed insulation is labeled or the installed R-values provided.		2000 2000 2000 2000 2000 2000 2000 200	Complies Does Not Not Observable Not Applicable	
402.1.1, 402.2.6 [IN1] ¹ @	Floor insulation R-value.	R Wood Steel	R Wood Steel	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
303.2, 402.2.7 [IN2] ¹ 💓	Floor insulation installed per manufacturer's instructions, and in substantial contact with the underside of the subfloor.	2 2 2		Complies Does Not Not Observable	
402.1.1, 402.2.5, 402.2.6 [IN3] ¹	Wall insulation R-value. If this is a mass wall with at least ½ of the wall insulation on the wall exterior, the exterior insulation requirement applies (FR10).	R Wood Mass Steel	R Wood Mass Steel	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
303.2 [IN4] ¹ 😧	Wall insulation is installed per manufacturer's instructions.			Complies Does Not Not Observable Not Applicable	

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1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section	Final Inspection Provisions	Plans Verified Value	Field Verified	Complies?	Comments/Assumptions
& Req.IC 402.1.1.	Ceiling insulation R-value.		Value		
402.2.1, 402.2.2, 402.2.6 [FI1] ¹		R Wood Steel	R] Wood] Steel	Complies Does Not Not Observable Not Applicable	See the Envelope Assemblies table for values.
	Celling insulation installed per manufacturer's instructions. Blown insulation marked every 300 ft ² .			□Complies □Does Not □Not Observable □Not Applicable	
402.2.3 [FI22] ³	Vented attics with air permeable insulation include baffle adjacent to soffit and eave vents that extends over insulation.			Complies Does Not Not Observable	
402.2.4 [FI3] ¹ ©	Attic access hatch and door insulation ≥R-value of the adjacent assembly.	R	R	Complies Does Not Not Observable Not Applicable	
	Duct tightness test result of <=10 cfm/100 ft2 across the system or <=7.5 cfm/100 ft2 without air handler @ 25 Pa. For rough-in tests, verification may need to occur during Framing Inspection.	cfm/100 ft²	cfm/100 ft ²	Complies Does Not Not Observable Not Applicable	
[[FI24] ¹	Air handler leakage designated by manufacturer at <=2% of design air flow.			□Complies □Does Not □Not Observable □Not Applicable	
403.1.1 [FI9] ²	Programmable thermostats installed on forced air furnaces.		 	Complies Does Not Not Observable	****
403,1.2 [F[10] ² 	Heat pump thermostat installed on heat pumps.] ال ال ا	Complies Does Not Not Observable Not Applicable	
[FI11] ²	Circulating service hot water systems have automatic or accessible manual controls.			Complies Does Not Not Observable Not Applicable	
[FI25] ²	All mechanical ventilation system ans not part of tested and listed HVAC equipment meet efficacy and air flow limits.			Complies Does Not Not Observable Not Applicable	
401.3 [FI7] ²	Compliance certificate posted.			Complies Does Not Not Observable	
(FI18) ³ n	fanufacturer manuals for nechanical and water heating ystems have been provided.			Not Applicable Complies Does Not Not Observable Not Applicable	

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Utah Energy Conservation Code Energy Efficiency Certificate

Insulation Rating	R-Value	
Above-Grade Wall	19.00	
Below-Grade Wall	0.00	
Floor	30.00	
Ceiling / Roof	49.00	
Ductwork (unconditioned spaces):		
Glass & Door Rating	U-Factor	SHGC
Window	0.33	
Door	0.35	
Heating & Cooling Equipment	Efficiency	
Heating System:		
Cooling System:		
Water Heater:		
Name:	Date:	
Commonto		

Comments

STRUCTURAL CALCULATIONS

FOR

Black Diamond Contractors

Kustom House Plans Plan # R1877A-18 Lot 100 - Green Hill Estates Huntsville, Utah 3/12/2018



Karras Engineering PLLC Pleasant View, Utah 801-786-0849

WARNING - Signature must be in red or

Plans and orderitations are very Plans part Galectetions, observed 30 days an obligation, day to a final sound Calculations are for some law of list above.

Design Criteria

Governing Code	9:	2015 IRC			
Seismic:	Category Ss= Fa= Ra= I=	1			
Wind:	Basic wind speed (mph 3 sec gust) Exposure I =	115 C 1			
Roof Loads	Dead (psf) Snow (psf)	15 65			
Floor Loads	Dead (psf) Live (psf)	10 40			
Soil Bearing Pre	essure (psf)	1500			
Steel	fy=	60 ksi			

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Footing Design - Interior

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Loads:	Live	Floor Load Tributary Width	40 12.0	(psf) (ft)		
	Floor:		12.0	(11)	Total	480 (plf)
			(psf)			
	Dead	Sub Total	10.0	(psf)		
		Tributary Width	2.0	(ft)		
					Total	20 (plf)
	Live	Live Load	40	(psf)		
		Tributary Width	2.0	(ft)	Total	80 (plf)
	161-11-				TOLA	80 (plf)
	Walls:	Framing	20.0			
		Sub Total	20.0	(psf)		
		Wall Height	18.0	(ft)		
		Ũ		• •	Total	360 (plf)
	Footing:	Concrete Unit Weight	145	(#/ft^3)		
	-	Footing Width	1.5	(ft)		
		Footing Height	0.83	(ft)		
					Total	180.53 (plf)
					Total:	1121 (plf)
	Assumed Soil Bearing Pressure		150	0 (#/ft^3)		
	Actu	ual Footing Width	0.	7 (ft)		

* Use 20" x 10" Conc. Footings W/ (2) # 4 Bars Running Continous

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Footing Design - Front and Back Walls

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Loads:					
Roof:		(nof)			
Dead	Plywood	(psf) 3.0			
Boud	Insulation	2.0			
	Shingles	2.0			
	Felt	1.5			
	Gypsum	2.5			
	Truss	4.0			
	Sub Total	15.0	(psf)		
	Tributary Width	20.0	(ft)	Total	300 (plf)
1	Boof Show Load	65	(psf)	TOtal	300 (pii)
Live	Roof Snow Load Tributary Width	20.0	(ft)		
		20.0	(19	Total	1300 (pif)
Floor:				(Otdi	1000 (pii)
FI001.		(psf)			
Dead	Sub Total	10.0	(psf)		
	Tributary Width	17.0	(ft)		
	•			Total	170 (plf)
Live	Live Load	40	(psf)		
	Tributary Width	17.0	(ft)		
				Total	680 (plf)
Walls:	<u> </u>				
	Framing	20.0			
	Sub Total	20.0	(psf)		
	Wall Height	27.0	(ft)		
	_			Total	540 (plf)
			(#1514.0)		
Foundation:	Concrete Unit Weight	145	(#/ft^3) (#)		
	Wall Width	0.67	(ft) (ft)		
	Wall Height	4	(19)	Total	388.6 (plf)
Footing:	Concrete Unit Weight	145	(#/ft^3)	, etc.	
r ooting.	Footing Width	2.5	(ft)		
	Footing Height	0.83	(ft)		
	00			Total	300.88 (plf)
Soil:	Soil Unit Weight	110	(#/ft^3)		
	Contributing Width	0.67	(ft)		
	Contributing Height	1	(ft)	T - 4 - 1	70 7 (=16)
				Total	73.7 (plf)
				Total:	3753 (plf)
Assumed Soi	Bearing Pressure	150	0 (#/ft^3)		
Δ	ctual Footing Width	2	.5 (ft)		
A	Stati Coung that	-	- \		

* Use 30" x 12" Conc. Footings W/ (3) # 4 Bars Running Continous

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Footing Design - Sides

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Loads:					
Roof:					
	Discussed	(psf)			
Dead	Plywood	3.0			
	Insulation	2.0			
	Shingles	2.0			
	Felt	1.5			
	Gypsum	2.5			
	Truss	4.0	(
	Sub Total	15.0	(psf)		
	Tributary Width	6.0	(ft)	Tabal	00 (=18)
		05	(Total	90 (plf)
Live	Roof Snow Load	65	(psf)		
	Tributary Width	6.0	(ft)	Tatal	200 (-10
				Total	390 (plf)
Floor:					
		(psf)	(. D		
Dead	Sub Total	10.0	(psf)		
	Tributary Width	4.0	(ft)	T . (.)	40 (-15
			<i>,</i> ,	Total	40 (plf)
Live	Live Load	40	(psf)		
	Tributary Width	4.0	(ft)	Tatal	100 (-15)
				Total	160 (plf)
Walls:		~~ ~			
	Framing	20.0			
	Siding	10.0	<i>,</i> ,		
	Sub Total	30.0	(psf)		
	Wall Height	27.0	(ft)	–	040 (**15)
			(Total	810 (plf)
Foundation:	Concrete Unit Weight	145	(#/ft^3)		
	Wall Width	0.67	(ft)		
	Wall Height	4	(ft)		000.0 (~10
				Total	388.6 (plf)
Footing:	Concrete Unit Weight	145	(#/ft^3)		
	Footing Width	2	(ft)		
	Footing Height	0.83	(ft)		040 70 /-10
			(Total	240.70 (plf)
Soil:	Soil Unit Weight	110	(#/ft^3)		
	Contributing Width	0.67	(ft)		
	Contributing Height	2.5	(ft)		404.05 (-10
				Total	184.25 (plf)
				T . (.).	0004 (mlf)
				Total:	2304 (plf)
		AE0	0 14144.01		
Assumed S	oil Bearing Pressure	150	00 (#/ft^3)		
	Actual Easting Midth	1	.5 (ft)		
	Actual Footing Width	1.			

* Use 24" x 10" Conc. Footings W/ (2) # 4 Bars Running Continous

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Shearwall & Connection Requirements

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Co	onnection	S							
Wall	Top f	Plate	Sill Plate						
	Uplift	Shear	Shear	1					
Transverse (lb)	13058	8402	10068						
Longitudinal (lb)	27964	7679	7679						
Roof	Diaphragn	n Connec	tion						
Wall	Uplift (@			024" O.C.)					
Transverse (plf)	(G)	293		221					
Longitudinal (plf)		132		124					
Simpson H1	490	OK	415	OK					
	nchor Bol			Strength					
Wall	0.0. Spa	icing (in) 5/8"		Fir (lb/bolt)					
Transverse (plf)	56	81	1/2"	620					
1/2 @ 32" O.C.	ок		5/8"	890					
5/8" @ 32" O.C.		OK							
Longitudinal (plf)	120	172							
1/2 @ 32" O.C.	ОК								
5/8" @ 32" O.C.		OK							
[Wall S						
	Shearwall	Tributary			Shear (nic Shea	
Transverse Walls	Length (ft)	Roof	Floor	Roof	Floor	Base	Roof	Floor	Base
Wall A	17	31	0	296	0	296		0	247
Wall B	33	31	0	153	0	153	127	0	127
Wall C	0	0	0						
Wall D	0	0	0						
Longitudinal Walls	10	19	o	98	0	98	263	0	263
Wall 1 Wall 2	16 19	19		83	0	83	200	0	221
Wall 3	0	19	0	00	Ŭ				
Wall 4	o	ŏ	Ő						
	Controllin	a Shear							
	Design		ling Sched	ule					
Transverse Walls	Shear (plf)	1441							
Wall A	296	8d w/4 ir	Edge, 12	in Field					
Wall B	153	8d w/ 6 i	n Edge, 12	2 in Field					
Wall C	0		n Edge, 12						
Wail D	0	8d w/ 6 ii	n Edge, 12	? in Field					
Longitudinal Walls									
Wall 1	263		Edge, 12						
Wall 2	221		n Edge, 12 Edge, 12						
Wall 3 Wall 4	0		n Edge, 12 n Edge, 12						
YV211 4			, Lugo, 14		ł				

Holdown Requirements

Gross Moment										
	Shear	Length	Moment							
Transverse Walls	(plf)	(ft)	(plf-lbs)							
Wall A	296	14	4146							
Wall B	153	14	2136							
Wall C	0	14	0							
Wall D	0	14	0							
Longitudinal Walls										
Wall 1	263	14	3676							
Wall 2	221	14	3095							
Wall 3	0	14	0							
Wall 4	0	14	0							

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	Resistive Moment										
Transverse Walls	Roof Dead (plf)	Roof Snow (plf)	Floor (plf)	Wali (plf)	Total (plf)						
Wall A	50	27	10	280	367						
Wall B	50	27	10	280	367						
Wall C	0	27	10	280	317						
Wall D	0	27	10	280	317						
Longitudinal Walls		1									
Wall 1	319	171	190	280	960						
Wall 2	319	171	190	280	960						
Wall 3	0	0	0	280	280						
Wall 4	0	0	0	280	280						

	Holdown R	equirem	ents				
	Shear Wall Length (ft)						
Transverse Walls	4	8	12	16	20		
Wall A	3705	3264	2823	2382	1941		
Wall B	1695	1254	813	372	-69		
Wall C							
Wall D							
Longitudinal Walls							
Wall 1	2524	1372	220	-932	-2084		
Wall 2	1944	792	-360	-1512	-2664		
Wall 3							
Wall 4							

Wind Analysis

		Horizor	ntal (psf)			Vertica	al (psf)			
Member vs Roof Angle	En			End		Interior Roof End		Roof End		terior
member ve meen age	Wall	Roof	Wall	Roof	Wind	Lee	Wind	Lee		
Transverse 20	22.4	-5.9	15.0	-3.3	-19.4	-13.5	-13.5	-10.2		
Transverse 30 to 45	18.1	12.5	14.5	10.0	7.1	-11.1	6.0	-9.5		
Transverse Interpolation	19.6	6.2	14.7	5.4	-2.0	-11.9	-0.7	-9.7		
Longitudinal	16.1	0.0	10.7	0.0	-19.4	-11.1	-13.5	-8.6		

* for a mean roof height of 30ft in Exposure B.

Roof Details		of Details Exposure C Factors		Design Factor	
Туре	Gable	Ht	Table Value		
Pitch	6/12	15	1.21	Bld Height	23.5
Angle (deg)	26.6	20	1.29	Roof	1.00
Roof Height (ft)	9.5	25	1.35	Wall	1.00
Mean Roof Height (ft)	18.8	30	1.4		

Diaphragm Dimens	sions			
Member	Transverse (ft)	Longitudinal (ft)	Height (ft)	Trib Length (ft)
Roof	38	62	14	7
Floor	0	0	0	0

Tributary Wall Distances							
End Interio							
Transverse (ft)	6.2	49.6					
Longitudinal (ft)	3.8	30.4					

[Hori	zontal				
Walls End		End			Interior	
	R Wall	F Wall	Roof	R Wall	F Wall	
Transverse (lb)	1703	0	725	5091	0	2548.986
Longitudinal (lb)	858	0	0	2279	0	0

		Vertical						
Walls	Roof	End	Roof Interior					
	Wind	Lee	Wind	Lee				
Transverse (lb)	-478.95	-2806.1	-622	-9150				
Longitudinal (lb)	-4571.6	-2612.3	-12705	-8074				

Totals										
Walls	Horizo	ontal	Vertical							
	Shear (lbs)	Shear (plf)	Uplift(lbs)	Uplift (plf)						
Transverse (lb) Longitudinal (lb)	10068	265 51	-13058 -27964	-344 -451						

Seismic Analysis

Seismic Coefficient										
Ss (%g)	103.10%	.2 sec Spectral Response								
Fa	1.09	Table 1615.1.2 (2)								
Ra	6	Table 1617.6								
le	1.0	Table 1604.5								
Sms=FaSs	1.12379	(Eq. 16-16)								
Sds=(2/3)Sms	0.75	(Eq. 16-18)								
S.D. Category	D2									
Response Coefficient	0.151	(Eq. 16-49)								

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Diaphraghm Dimensions									
Member	Transverse (ft)	Longitudinal (ft)	Height (ft)						
Roof	38	62	14						
Floor	0	0	0						

Base Shear												
Transverse												
Diaphraghm	Diaphragm (lb)	Wall Trib (ft)	Wall (lb)	Total (lb)	Shear (lb)***							
Roof*	60751	7.0	17360	78111	8402	221						
Floor**	0	0.0	0	0	0	0						
Total				78111	8402	221						
		Longitudin	al									
Diaphraghm												
Roof*	60751	7.00	10640	71391	7679	124						
Floor**	0	0	0	0	0	0						
Total				71391	7679	124						

*This value includes 20% of snow load over 30 psf.

**This value includes 10 psf for partition load.

***This value divided by 1.4

					COMPANY	PROJECT
61) W c) od /	Work	S [®]	Mar. 12, 2018 11:5	50 RB 1
<u></u>			Desi		alculation She	let
- مام.				AAOOOAAOIY2	5 SIZEF 10.42	
Loads:	Туре	Distribution	Pat- Location [1	[ft] Magnitu	ude Unit	
Load4 Load3 Load5	Snow Dead Dead			and Start 400.0 90.0 180.0	End plf plf plf	
Self-weight	Dead	Full UDL		16.1	plf	
Maximum Rea	ictions (lbs), B	learing Capac	ities (Ibs) and B	Jearing Lenç	yths (in) :	
	<u>}</u>				16'-2.1*	
	х С					¥ 16'
Unfactored: Dead Snow	2289 3200					2289 3200
Factored: Total Bearing:	5489			<u></u>		5489
Capacity Beam	5489					5489
Anal/Des Beam	1.00					1.00
Load comb Length Min reg'd Cb	#2 2.09 2.09 1.00					#2 2.09 2.09 1.00
Cb min 1	1.00					1.00
			Tota	Supports: All tal length: 16'-2.1"	-3/4"x16", 2-ply (3 II - Non-wood "; volume = 6.3 cu.ft.; pports, bottom= at su	
* A	Haumble Street	- and Doflact				
Criterion	and the second se		tion using NDS 2012	2: Analysis/Des	sian	
Shear	Analysis Valu fv = 121	Fv' = 3	328 psi	fv/Fv' =	- 0.37	
Bending(+) Live Defl'n	fb = 1764 0.27 = L/69	99 0.53 = L	L/360 in	14,10	0.51	
Total Defl'n	0.57 = L/33	37 <u>1.07 = L</u>	<u>/180 18</u>	<u> </u>		
Additional Dat	ta: (psi)CD CM	Ct CL	CV Cfu Cr	Cfrt Ci	Cn LC#	
Fv' 285	1.15 -	1.00 -	0,96 - 1.00	1.00 -	1.00 2	
Fb'+ 2600 Fcp' 750		1.00 -		1.00 -	2	
	million -	1.00 - 1.00 -		1.00 - 1.00 -	- 2	
Shear : LC Bending(+): LC Deflection: LC	C #2 = D+S, V = C #2 = D+S, N = C #2 = D+S {11	= 21956 lbs-ft ive)	sign - 4514 165 t			
D=dead L=live All LC's are 3 Load combinati	listed in the An	I=impact Lr=roo	of live Lc=concent	trated E=eart	chquake	
Total Deflecti	tion = Deflectio	on from all non Load Deflectio	n-dead loads (live on) + Live Load D 0.94" RB = 21.3	Deflection.	a)	
2 Discess uprify that	lysis and design are	on limite are genroes	vriete for vour annlicatio	ion		nal Design Specification (NDS 2012), and NDS Design Supplement.

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Size factors vary from one manufacturer to another for SCL materials. They can be changed in the database editor.
 BUILT-UP SCL-BEAMS: contact manufacturer for connection dataits when loads are not applied equally to all plys.

			A / 1	®	COMPANY	PROJECT	
U	J W		Norks	S SA	Mar. 12, 2018 11:51	RB 2	
			Desi	gn Check C WoodWorks	alculation Shee	t	
.oads:							
Load	Туре	Distribution		ft] Hagnitu nd Start	de Unit End		
Loadi	Dead	Full UDL	Cern Scare D	60.0 180.0	plf plf		
Load2 Load3 Self-weight	Dead Snow Dead	Full UDL Full UDL Full UDL		400.0	plf plf		
	actions (lbs),	Bearing Capac	ities (Ibs) and B	earing Leng	ths (in) :	·····	
	ł				9'-1.1'		
	¢					<u></u>	ی برج
Unfactored:	<u> </u>						11
Dead Snow	1134 1800						11
Factored: Total	2934						29
Bearing: Capacity							29
Beam Anal/Des	2934						1.0
Beam Load comb	1.00 #2						1.
Length Min reg'd	1.12						1.
Cb Cb min	1.00						1.
				Supports: Al al length: 9'-1.1";			
Analysis vs. /	Allowable Stre	ess and Deflect	ion using NDS 2012	:			
Criterion Shear	Analysis Va fv = 8		alue Unit 20 psi	Analysis/Des fv/Fv'	0.25		
Bending(+) Live Defl'r	fb = 96	3 17b'≃28	39 psi	fb/Fb' =	0.34		
Total Defl'r					0.22		
Additional Da	ita: (psi)CD CH	Ct CL	CV Cfu Cr	Cfrt Ci	Cn LC#		
Fv' 285 Fb'+ 2600	1.15 -	1.00 -	1.00 - 1.00	1.00 -	1.00 2 - 2		
Fcp' 750		1.00 -		1.00 - 1.00 -	- 2		
Eminy' 0.93	million - million -	1.00 - 1.00 -		1,00 -	- 2		
	C #2 = D+S, V		ign = 2258 lbs				
Deflection: 1	.C #2 ≕ D+S, H .C #2 ≕ D+S (live)					
I D=dead L=live	C #2 = D+S (S=snow W=wind	total) l=impact Lr=roc	f live Lc=concent	trated E=eart	hquake		
All LC's are	listed in the ions: ICC-IBC	Analysis output					
CALCULATIONS:		lb-in2/n)v					
Deflection: "Live" deflect	tion - Deflect	<pre>lb-in2/ply ion from all non i.lead Deficientic</pre>	-dead loads (live	, wind, snow	ı_)		
Lateral stabi	lity (+): Lu =	9' Le = 17'-7.	n) + Live Load D 69" RB = 14.3	2			
Design Notes							
Design Notes . WoodWorks an	alysis and design a	re in accordance with	the ICC International riate for your application	Building Code (II	3C 2012), the Nationa	Design Specification (NDS 2012), and ND	S Design Supplement.

SCL-BEAMS (Structural Composite Lumber): the attached SCL selection is for preliminary design only. For final mer
 Size factors vary from one manufacturer to another for SCL materials. They can be changed in the database editor.
 BUILT-UP SCL-BEAMS: contact manufacturer for connection details when loads are not applied equally to all plys.

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					I						
	2.			COMPANY	PROJECT						
6) Wo		orks®	Mar. 12, 2018 11:52	RB 3						
				alculation Sheet	ł						
Loads:											
Load	Type D	istribution Pat-	Location [ft] Magnitu Start End Start	ude Unit End							
Load2 Load3 Self-weight	Dead Fi	11 UDL	1240.0 285.0 9.6	plf plf plf							
Maximum Reactions (lbs), Bearing Capacities (lbs) and Bearing Lengths (in) :											
	F										
	hzp					-rezzi					
	0					5'					
Unfactored: Dead	736					736 3100					
Snow Factored:	3100					3836					
Total Bearing: Capacity	3030										
Beam Anal/Des	3836					3836					
Beam Load comb	1.00					1.00					
Length Min req'd	1.46					1.46 1.46 1.00					
Cb Cb min	1.00					1.00					
		L		II - Non-wood	1/2"x9-1/2")						
				"; volume = 1.2 cu.ft.; ull, bottom= at supports	5.						
· · · · ·											
Criterion	Allowable Stress	Design Value		sign							
Shear Bending(+)	fv = 114 fb = 1093	Fv' = 328 Fb' = 3086									
Live Defl'n Total Defl'n	0.04 = <l 999<="" td=""><td>0.17 = L/360 0.33 = L/100</td><td></td><td>0.23</td><td></td><td></td></l>	0.17 = L/360 0.33 = L/100		0.23							
Additional Da											
	(psi)CD CH C		Cfu Cr Cfrt Ci 1.00 -	Cn LC# 1.00 2							
Fb'+ 2600	1.15 - 1.	00 1.000 1.03		- 2							
E' 1.8	million - 1. million - 1.	00	1.00 -	- 2 - 2							
CRITICAL LOAD C		3036, V design	≠ 2528 lbs								
	C #2 = D+S, H ≈	4796 lbs-ft									
Ld D=dead L=live	C #2 = D+S {tota S=snow W=wind I=i	l) mpact Lr=roof li	ve Lc=concentrated E=ear	thquake							
All LC's are . Load combinat:	listed in the Anal	ysis output									
CALCULATIONS: Deflection: 1	EI = 225e06 lb-	in2/ply									
"Live" deflect	tion = Deflection	from all non-dea	d loads (live, wind, sno Live Load Deflection.)w}							
Design Notes	•										
1. WoodWorks ana	lysis and design are in a	- le con concencial à f	ar your opplication		I Design Specification (NDS 2012), and NDS Design Supplement.						
3 SCL BEAMS (St	the default deflection li ructural Composite Lum	her) the stiached SC	selection is for preliminary das	ign only. For final mem	ber design contact your local SCL manufacturer.						
4. Size lactors vary 5. BUILT-UP SCL-E	nom one manufacturer BEAMS: contact manufa	cturer for connection of	aterials. They can be changed in details when loads are not applie	ed equally to all plys.							

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			~ d		r co®	COMPANY	PROJECT					
V		WU	O U	SOFTWARE FOR V		Mar. 12, 2018 11:53	RB 4					
	Design Check Calculation Sheet WoodWorks Sizer 10.42											
Loads:												
Load	Туре	Distrib	ution Pat- tern	Location [ft] Start End	Nagnitude Unit Start End							
Load2 Load3 Self-weight	Snow Dead Dead	Full UD Full UD Full UD	u u		1246.0 plf 205.0 plf 6.6 plf							
Maximum R	eactions ((lbs), Bearing	Capacities	(lbs) and Be	aring Lengths (in) :	4'-1.6'						
			-									
	-222						4					
Unfactored:							583					
Dead Snow	583 2480						2480					
Factored: Total Bearing:	3063						3063					
Capacity Beam	3063						3063					
Anal/Des Beam	1.00						3.00					
Load comb Length	#2 1.63						1.63					
Hin req'd Cb Cb min	1.63 1.00 1.00						1.00					
							· • • • • • •					
						VI - Non-wood	"X9-1/4"")					
					Total length: 4-1.6 Lateral support: lop=	"; volume = 0.8 cu.ft.; full, bottom= at support:	5;					
Analysis vs.	Allowabl	e Stress and	Deflection	using NDS 2012 :								
Criterion	Analys	is Value Desi	an Value		alvsis/Design fv/Fv' = 0.46							
Shear Bending(+) Live Defl'		= 859 F1	3 = 1138 3 = 1/360	psi in	fb/Fb' = 0.75 0.17							
Total Defl'		- <1/999 0.2	7 = 1/180	in	0.11							
Additional D)ata: E(psi)CD	CH CL (:L CF	Cfu Cr C:	frt Ci Ca LCI							
FV' 18 Fb'+ 90	0 1.15	1.00 1.00		1.60 1.00 1	.00 1.00 1.00 2 .00 1.00 - 2							
Fcp' 62 E' 1.	5 - 6 million	1.00 1.00	: :	1.	.00 1.00 .00 1.00 - 2							
CRITICAL LOAD	COMBINATIO	1.00 1.00 DNS:			.00 1.00 - 2							
Bending(+):	LC #2 = D	+S, V = 3063, +S, H = 3063	lbs-ft	1//8 103								
Deflection:	LC #2 = D LC #2 = D	+5 (live) +5 (total) =wind Teimpact	Lr=roof liv	e Lesconcentrat	ted E-marthquake							
All LC's are Load combina	listed in	the Analysis o	output		-							
CALCULATIONS		59+06 1b-in2/n	ly									
"Live" defic Total Defice	ction = De tion = 1.5	flection from a O(Dead Load Dei	ll non-dead [lection] +	loads (live,) Live Load Defle	wind, show_] ection.							
Design Note	35:						A (JUR 2012) and NDR Daving Supplement					
2. Please verify ti	hai the defaul	i deflection bails ar	e appropriate to	r your application.	tere of MOR Change 4.4.1		n (NDS 2012), and NDS Design Supplement.					
A. BUILT-UP BEA	MMS: It is assu	ers shall be laterall med that each ply i	s a single conti	wous member (una	tions of NDS Clause 4.4.1. 1 is, no built joints are present) (astened together secur	ely at intervals not exceeding 4 times the depth and that					

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each ply is equally top-loaded. Where beams are side-loaded, special tastening details

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					COMPANY	PROJECT					
			Norks	Ð							
Q					Mar. 12, 2018 11:56	RB 5					
					alculation Sheet Sizer 10.42	t					
Loads:											
road	Туре	Distribution	Pat- Location [ft] tern Start End	Magnitu Start	End						
Loadl Load2 Self-weight	Dead Snow Dead	Full UDL Full UDL Full UDL		205.0 880.0 14.1	plf plf plf						
Maximum Reactions (Ibs), Bearing Capacities (Ibs) and Bearing Lengths (in) :											
	ł				12'-2.5"						
	φ										
Unfactored: Dead	1315						1315 5280				
Snow Factored: Total	5280 6595						6595				
Bearing: Capacity							6595				
Beam Anal/Des	6595						1.00				
Beam Load comb	1.00						#2 2.51				
Length Min req'd Cb	2.51 2.51 1.00						2.51 1.00				
Cb min	1.00						1.00				
				Supports: Al	-3/4"x14", 2-ply (3- I - Non-wood "; volume = 4.2 cu.fl.;	1/2"×14")	· · · · · · ·				
					oports, bottom= at supp	ports;					
Analysis vs.	Allowable S	tress and Deflect	tion using NDS 2012 :								
Criterion Shear	Analysis fv -	159 FV' =	328 psi	fv/fv'	0.49						
Bending(+) Live Defl'r		L/505 0.40 - 1	L/360 in	fb/fb'	0.71						
Total Defl'r	0.39 =	1/367 0.80 = 1	L/180 in		0.49		•••••••				
		M Ct CL		frt Ci	Cn LC#						
FV' 28		1.00 0.876	0.98 - 1.00 1		1.00 2 - 2						
	3 million -	1.00 -	1	.00 -	- 2						
CRITICAL LOAD	3 million - COMBINATIONS	1.00 -		.00 -	- 2						
Bending(+): 1	LC #2 = D+S, LC #2 ≏ D+S, LC #2 = D+S	V = 6595, V de: M = 19784 lbs-f	sign = 5197 lbs t								
i 1	LC 12 = D+S	(total)	of live Lc=concentra	ted E=ear	thquake						
All LC's are	listed in th Lions: ICC-IB	e Analysis output									
CALCULATIONS: Deflection:	EI = 720e	06 lb-in2/ply									
Total Deflect	tion = 1.50(D)	ead Load Deflecti	n-dead loads (live, t on) + Live Load Defle	wind, show ection.	n)						
		= 12' Le = 23'-	0.75" RB = 17.79								
Design Notes 1. WoodWorks an	S: elvsis and desion	n are in eccordance will	the ICC International Buik	ding Code (I	BC 2012), the National	Design Specification (NDS 2012), and NDS Design Supplement	nt.				
2. Please verify th	at the default def	lection limits are approp	priate for your application.			ber design contact your local SCL manufacturer.					

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SCL-BEAMS (Structural Composite Lumber): the attached SCL setection is for preliminary design only. For final mer
 Size factors vary from one manufacturer to another for SCL materials. They can be changed in the database editor.
 BUILT-UP SCL-BEAMS: contact manufacturer for connection details when loads are not applied equally to all plys.

_										COMPANY	PROJECT		
6	D	W	00	d				, ® > ^		Mar. 12, 2018 12:02	RB 6		
							Des			Calculation Shee			
Loads:								wo	DOCTANOL	iks Sizer 10.42			
Load	Type	Dia	scributio	n Pat- tern	Location Start	End S1	agnitud tart	End	nit				
Loadi Loadi	Dead Snow	Ful	LI UDL		3.10	1300	0.0 0.0 800	[p]	lí lf bs				
Load3 Load5 Self-weight	bead Snow boad	to	Lnt Lnt L1 UDL		3.10	[74	800	11	ba 11				
Maximum Re		bs), Bea	ring Cap	acities	(lbs) and	d Bearin	ıg Len	gths (in) :				
	}									6'-2.5°			
													Ì
	2224	+											
	r a												 6.
Unfactored: Dead	1854												1854 7800
Show Factored:	7800												 9654
Total Bearing: Capacity	9654												
Beam Anal/Des	9654												9654
Beam Load comb	1.00												2.45
Length Min req'd Cb	2.45 2.45 1.00												2.45 1.00 1.00
Cb min	1.00												
					I	LVL n-pij	y, 1.8E,			14"x11-7/8", 3-ply (5	1/4"x11-7/8")		
				t stead a	unnadi toon		Te bollom	otal lenai	th: 6-2.	All - Non-wood 5"; volume = 2.7 cu.fl.; contitive factor: applied y	there permitted (refer to c	alias help):	
							S, DOLIOIN	- at supp		epenavo tacios, appado (
Analysis vs.	Allowable		Design	Value	Unit	Analys	is/Desi]				
Shear Banding (+)	fv = fb =	190 2109	ED' =	328 3080	psi psi	fv. fb.	/fv' = /fb' =	0.68					
Live Defl'n Total Defl'n		L/963 L/711	0.20 =	L/360 L/180	in in			0.37 0.25					
Additional D						r Cfrt	Ci	Cn (LC				
Pv' 285	(psi)CD 1.15 1.15	CM Ct - 1.0 - 1.0	0 -	cv 1.00	Cfu Cr - 1.0	1.00			2 2				
Fcp' 750		- 1.0	o –			1.00	-	-	2				
Eminy' 0.93 CRITICAL LOAD	million	- 1.0		-		1.00	-	-	2				
Shear : 1 Bending(+): 1	C \$2 = D+ C \$2 = D+	S, V = S, H = 2	9654, V d 1681 lba-	esign = ft	7807 15	58							
Deflection: 1 I Dedcad Lelive	C 82 - D+	5 (total) Dact Lrer	oof live	· Lc=conce	untrated :	Erearth	nguake					
All LC's are Load combinat	listed in	the Analy						-					
CALCULATIONS: Deflection:	EI = 44	0e06 1b-1	n2/ply										
"Live" doflec Total Deflect Lateral stabi	tion = Def ion = 1.50	laction f	rom all n d Deflact	ion) + 1	Live Load	ive, wind Deflecti .99	on.	-1					
Decigo Noto													
Design Note 1. WoodWorks and 2. Disease works the	sively and dee	ign are in ac	cordance w	th the ICC	Internationa	el Building C stica	Code (IBC	c 2012), t	the Nati	ional Design Specificatio	n (NDS 2012), and NDS C	esign Supplement.	
2. Please verify th 3. System factor K 4. SCI -BEAMS (S	H may not ap	ply to field-a	ssembled m	ulti-ply be thed SCL	sins. selection is f	tor orelimioa	ary desig	n only. Fo	or final	member design contact	our local SCL manufactu	rcf.	
6. BUILT-UP SCL-	v from one mu	mulociurer t	o another to	r SCL mai	20215. 1027	can be cam	ոցըս ա տ	uc oman	ase enu	wi.			

						COMPANY		PROJECT	
Ð) Wo			ork wood desi	S	Mar. 12, 201	18 12:16	FB1	
				Desi	gn Check C		Shee	t	
					WoodWork	s Sizer 10.42			
Loads:	7уре	Distribution		Location [1					
Loadl	bead	Full UDL	tern	<u>Start Ei</u>	130.0 520.0	End plf plf	-1		
Load2 Self-weight	Live Dead	Full UDL Full UDL			12.0	plf			
Maximum Re	actions (lbs), E	Bearing Capa	cities (l	lbs) and B	earing Leng				£
	ł					12'-1.5" -			7
	ر چ								-¥ 12'
Unfactored: Dead Live	852 3120								852 3120
Factored: Total	3972								3972
Bearing: Capacity	2070								3972
Beam Anal/Des Beam	3972								1.00
Load comb Length	#2 1.51								#2 1.51
Min req'd Cb	1.51								1.51 1.00 1.00
Ch min	1.00			· · · · · · · · · · · · · · · · · · ·					
			LVL I	Tote	2600Fb, 1-3/4 Supports: A d length: 12'-1.5 I support: top= fi	ll - Non-wood "; volume = 3.	5 cu.ft.;		
Analysis vs. /	Allowable Stre	ss and Deflec	tion _{usi}	ing NDS 2012	:				
Criterion	Analysis Val		Value 285	Unit psi	Analysis/Des	0.41			
Bending(+) Live Defl'n	fb = 1738	Fb'= 2	603	psi in	fb/fb'	0.67 0.69			
Total Defl'n			L/180	in		0.49			
Additional Da	nta: :(psi)CD CM	Ct CL	cv	Cfu Cr	Cfrt Ci	Cn LC			
Fv' 205 Fb'+ 2600	1.00 -	1.00 -	1.00	- 1.00	1.00 - 1.00 -	1.00 2			
Fcp' 750		1.00 - 1.00 -	-		1.00 -	- 2			
CRITICAL LOAD C	million - COMBINATIONS:	1.00 -	-		1.00 -	- 2			
Bending(+): L	.C ∰2 = D+L, V .C ∰2 = D+L, M .C ∰2 = D+L (1	= 11916 lbs-f	sign = t	3275 lbs					
T.	C #2 = D+L (1 C #2 = D+L (t S=snow N≖wind	otall	of live	Lowconcent	trated Emear	thquake			
All LC's are	listed in the A ions: ICC-IBC	nalysis output							
CALCULATIONS:	FT = 440a06	lb-in2/ply		• d = - • • •					
"Live" dofler	tion = Deflecti ion = 1.50(Dead	on from all no Load Deflecti	n-dead on) + L	loads (live ive Load D	e, wind, sno eflection.	w)			
O Dianaa warifu ibr	alysis and design are at the default deflect tructural Composite	ion limits are appro Lumber): the allach	priate for red SCL s	your application relection is for	on. preliminary desi	gn only. For fi	nal memi	Design Specification (NDS 2012), and NDS Design Supplement. ber design contact your local SCL manufacturer.	

Size factors vary from one manufacturer to another for Soci internals. They can be using our internal database outer.
 BUILT-UP SCL-BEAMS: contact manufacturer for connection details when loads are not applied equality to all plys.

						COMPANY	PROJECT	
6	D I	Noo		DIR WOOD DESIGN		Mar. 12, 2016 12:18	RB 2	
					Check C	alculation Shee	t	
.oads:								
Load	Туре	Distribution	Pat- Location (f	d Start End	Unit			
Loadi Loadi	Luad Live	Fuli UDL Fuli UDL		60.0 240.0 400.0	plf plf plf			
Load3 Load4	Snow bead	Full UDL Full UDL		40.0	plf plf			
Load5 Self-weight	Dead Dead	Full UDL Full UDL		12.0	pli			
Maximum R	eactions (lbs), Bearing Capa	acities (lbs) and	Bearing Length	s (in) :			······································
	ł					8'-1*		
	¢ ۲							8.
Unfactored:								808
Dead Live	608 960 1600							960 1600
Snow Factored: Total	2728		<u></u>					2728
Bearing: Capacity								2728
Beam Anal/Des	2728							1.00
Beam Load comb	1.00							\$3 1.04
Length Him req'd	1.04 1.04 1.00							1.04 1.00 1.00
Cb Cb min	1.00							
			Ľ	VL n-ply, 1.8E, 260	OFb, 1-3/4	"x11-7/8", 2-ply (3-1/2"x11-7/8")	
				Total to	Supports: A engli: 8'-1.0"	I - Non-wood ; volume = 2.3 cu.ft.;		
					nt: top= at su	pports, bottom= at sup		
	and the second se		Value Unit	12: Analysis/Design				
Criterion Shear		73 Fv' *	326 psi	$\frac{fv/Fv' = 0.1}{fb/Fb' = 0.1}$	22			
Bending(+) Live Defl Total Defl	n 0.05 = < n 0.08 = <	L/999 0.27 =		0.	19			•
Additional I	_							
	E(pai)CD C	H Ct CL 1.00 -	CV Cíu Cr	Cfrt Ci Cn 1.00 - 1.0				
Fb'+ 260 Fcp' 7	0 1.15 -	1.00 0.957 1.00 -	1.00 - 1.00		3			
	8 million -	1.00 -		1.00	3 3			
CRITICAL LOAD	COMBINATIONS		26, V design = 2	024 lbs				
		5(L+S), N = 54 5(L+S) (live) 5(L+S) (cotal)	56 lbs-ft					
			of live Lo-concen	trated E=carthqua	ke			
Load combine	tions: ICC-18	e VUSTARYS Oncho	-					
CALCULATIONS Deflection:	E1 = 440a	06 lb-in2/ply	on-dead loads (liv	a, wind, snow_)				
			ion) + Live Load D 0.13" RB + 13.6					
Design Not 1. WoodWorks a	inalysis and design	are in accordance with	In the ICC International opriate for your application	Building Code (IBC 201 ion.	12), the Natio	nal Design Specificati	on (NDS 2012), and NDS Design Supplement.	
3. SCL-BEAMS	(Structural Compo	she Lumber): the stad	SCI meterials They C	r pressmeary design on			t your tocal SCL manufacturer.	
5. BUILT-UP SC	L-BEAMS: contac	manufacturer for con	nection details when los	ds are not applied equi	elly to all plys	<i>د</i>		

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[COMPANY	PROJECT
	A.				
		wood	Works [®]	Mar. 12, 2018 12:21	RB 3
				heck Calculation Shee boodWorks Sizer 10.42	et .
Loads:		Distribution Par-	Location [ft] Hagnitude U	nit	
Load Load1	Type	Full UDL	Start End Start End	If	
Load2 Load3 Load4	Live Snow Dead	Full UDL Full UDL Full UDL	1300.0	lf lf	
Load5 Self-weight	Dead Dead	Full UDL Full UDL) 300.0 p		
Maximum R	eactions (lb	s), Bearing Capacitie	s (Ibs) and Bearing Lengths	(in) :	
	<u>∤</u>			5'-2"	
			۰.		
	م ۳				4 5'
Unfactored: Dead	1374				1374 2000
Live Snow Factored:	2000 3250				3250
Total Bearing:	5311				5311
Capacity Beam Anal/Des	5311				5311
Bean Load comb Longth	1.00 #3 2.02				#3 2.02
Nin reg'd Cb Cb min	2.02 1.00 1.00				2.02 1.00 1.00
			. Su Totsi lengi	Fb, 1-3/4"x9-1/2", 2-ply (3- pports: All - Nen-wood h: 5'-2.0"; votume = 1.2 cu.fl.; pp= at supports, bottem= at supp	
Analysis vs.		tress and Deflection	the second s		
Criterion Shear Bending(+)	Analysis fy = fb = 1	156 Fv' - 328	Unit Analvais/Design psi fv/Fv' = 0.47 psi fb/Fb' = 0.50		
Live Defl'r Total Defl'r	1 0.05 = <1	L/999 0.17 = L/360	in 0.30 in 0.22		
Additional D	ata:				· · ·
FACTORS: F/F Fv' 285 Fb'+ 2600			1.00 - 1.00 - 1.00 1.00	12# 3 3	
Fcp' 750 E' 1.6	million -	1.00 1.00	1.00	3	
Shear : I	COMBINATIONS	5(L+S), V = 5311, V d	1.00 esign = 3450 lbs	-	
Sending(+): I	LC ∎3 ≃ D+.75	5(L+5), M = 6639 lbs- 5(L+5) (Live) 5(L+5) (total)			
D=dead L=live All LC's are	: S=snow H=wir listed in the	nd I=impact Lr=roof liv Analysis output	LC-concentrated E-carthquake		
Load combinat CALCULATIONS: Deflection:		: DG lb-in2/ply			
"Live" deflect Total Deflect	tion = Deflection = 1.50(De	ction from all non-dead and Load Deflection) + 1	loads (live, wind, snow…) dve Load Deflection. B ≠ 9.79		
Design Note	s:	= 5' Le = 10'-3.63"			
1. WoodWorks and 2. Ploase verify the	elysis and design at the default defi	action fimits are appropriate for	International Building Code (IBC 2012), (your application, selection is for preliminary design only. Fo		(NDS 2012), and NDS Design Supplement.
4. Size factors var	y from one manu	acturer to another for SCL mai	erials. They can be changed in the databa italis when loads are not applied equally to	ise edilar.	

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	······				COMPANY	PROJECT	
	N		A 7 1	Ø	COMPANT	FROJECT	
U			Works	÷	Mar. 12, 2018 12:25	FB4	
			Design		Iculation Sheet	tt	
Leader				WoodWorks	Sizer 10.42		
Loads:	Туре	Distribution					
Load1 Load2	Dead Live	Full UDL Full UDL	tern Start End	Start 130.0 520.0	End plf plf		
			ities (lbs) and Bea		ths (in) :		
					12'-2"		
	с. Ż.						? 12-1"
Unfactored: Dead	785	<u> </u>					785
Live Factored:	3142						3142
Total Bearing:	3927						3927
Capacity Beam Anal/Des	3927						3927
Beam Load comb	1.00 #2						1.00 #2 1.00
Length Min reg'd Cb	1.00 1.00 1.00						1.00
Cb min	1.00						1.00
			LVL n-ply, 1.8E, 260	0Fb, 1-3/4"	x11-7/8", 3-ply (5-1	1/4"x11-7/8")	
					volume = 5.3 cu.fl.;		
		Lateral support:	top= full, bottom= at supp	orts; Repetitiv	e factor: applied when	e permitted (refer to online help);	
			tion using NDS 2012 :	alysis/Des:	(an)		
Criterion Shear Bending(+)	Analysis V fv = fb = 11	78 FV'= 2	285 psi	fv/Fv' = fb/Fb' =			
Live Defl' Total Defl'	n 0.19 ⊨ L,	/766 0.40 ≂ 1	L/360 in L/240 in		0.47 0.43		
Additional D	ata:						
FACTORS: F/ Fv' 28	E(psi)CD CH 5 1.00 -	Ct CL 1.00 -	1	frt Ci .00 -	Cn LC# 1.00 2		
Fb'+ 260 Fcp' 75	0	1.00 1.000 1.00 - 1.00 -	1	.00 - .00 - .00 -	- 2 2		
Eminy' 0.9	B million - B million - COMBINATIONS:	1.00 - 1.00 -		.00 -	- 2		
Shear :	LC #2 = D+L, \	/ = 3927, V des 1 = 11863 lbs-ft	sign = 3257 lbs				
Deflection:	LC #2 = D+L → LC #2 = D+L →	(live) (total)		tod Farmer	muska		
All LC's are	2 S=snow M=wind listed in the tions: ASCE 7-1	Analysis output	of live Lc-concentra	Leo L=earti	щиале		
CALCULATIONS: Deflection:	EI = 440e0	5 lb-in2/ply					
"Live" defle	ction = Deflect	ion from all nor	n-dead loads (live, on) + Live Load Defl	wind, snow. ection.)		
Design Note	s:						
2. Please verify th	at the default defle	ction fimits are approp	riate for your application.	ding Code (IB	C 2012), the National	Design Specification (NDS 2012), and NDS	Design Supplement.
3. System factor H	H may not apply to	field-assembled mult	l-ply beams. of SCL coloction is for oral	liminan, dacia	only Forfinal memb	er design contact your local SCL manufactu	161

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Ster decisions very from one manufacturer to another for SCL materials. They can be changed in the database editor.
 BUILT-UP SCL-BEAMS: contact manufacturer for connection details when loads are not applied equally to all plys.

			 15 T	• • /		·····		COMPANY	P	PROJECT	<u></u>
		Wo	Day		WOOD DESI	S		Mar. 12, 2018 12:27	F	FB5	
					De			Calculation Shee	ət		
Loads:											
Load Load1 Load2	Type Usad Live	Distribut Full UDL Full UDL		ocation (ft) Start End		End P.	Jnit olf olf				
Maximum R	Reactions (Ibs	s), Bearing C	apacities (l	ibs) and Br			,				<u> </u>
								12'-8.2'		·····	<u> </u>
	X										12-6"
Uniactored: Dead Live	939 2005										939 2885
Factored: Total Bearing:	3824										3824
Capacity Beam Support	3824 5292										3824 5292
Anal/Des Beam Support	1.00										1.00
Load comb Length Hin reg'd Cb din Cb min Cb support Fep sup	#2 2.19 2.19 1.00 1.00 1.11 625										#2 2.19 2.19 1.00 1.00 1.11 625
					Sup Ti	8 taminati ipports: All Fotal length	tions, 3-1/ - Timber- h: 12-8.2*;	os, 24F-1.7E WS, 3- /2* maximum vidit, -soft Beam, D.Fir-L No.2 ; volume = 3.7 cu.fl. pports, bottom= at supports).2 ;		
Analysis vs.	Allowable S	Stress and De			nlysis/Des	-i <i>a</i> n	1				
Shear Bending(+) Live Defl'r Total Defl'r	fv = 1 fb = 16 n 0.29 = 1	111 FV' 683 FD' L/514 0.42	= 210 (= 2139) = L/360 :	psi psi in in	tv/Fv' = fb/Fb' =	0.53]			·	
Additional D	Data:	H CE CL	CV CE		frt Notes		TC!				
Fv' 210 Fb'+ 2400 Fcp' 500	10 1.00 1.0 10 1.00 1.0	00 1.00 -		00 1.00 1.	.00 1.00	-	2				
E' 1. Eminy' 0.69 CRITICAL LOAD	7 million 1.0 59 million 1.0 COMBINATIONS:	00 1.00 - 00 1.00 -		- 1.	.00 -	2	2 2				
Shear : 1 Bending(+): 1 Deflection: 1	LC #2 = D+L, LC #2 = D+L, LC #2 = D+L	<pre>V = 3770, V M = 11781 lb: (live)</pre>	design = : s-ft	3112 lbs							
D=dead L=liv All LC's are Load combinat CALCULATIONS:	LC #2 = D+L Te S=snow W=Win : listed in the tions: ASCE 7-	(total) nd 1=impact Lr- e Analysis outp	-roof live Lo put	c=concentrat	ted Emeart	.hguake					
Total Deflect	ction = Deflect tion = 1.50 (De	ction from all ead Load Deflec = 12'-6.00" 1	ction) + Live	e Load befle		r)					
Design Note 1. WoodWorks an 2. Please verify th	35: nalysis and design hal the default defin values are for mat	are in accordance laction limits are sp terials conforming t	with the ICC Inte	emational Build					n (NI	NDS 2012), and NDS Design Supplement.	

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6. GLULAM: bearing length based on smaller of Fcp(lension). Fcp(compin).

						COMPANY	PROJECT	
			.					
E	DI	Nood				Mer. 12, 2018 12:29	F86	
		<u> </u>		Design	Check	Calculation Shee	t	
					VV00GVV0	nis 51267 10.42		
Loads:	Type	Distribution Pat-	Location [ft] Start End	Magnitude Start End	Unit			
Load1 Load2	bead Live	Full UDL		160.0	plf plf			
Self-weight	Dead	Full UDL	I (the) and Rev	9.6	e (in) ·			
Maximum	Reactions (Ibs), Bearing Capaciti		aring Dengun	5 (ui) . 	6'-1"	······································	
}								
	X X							
Unfactored: Lead								516 1947
Live Factored:	1947							2463
Total Bearing: Capacity	2463							2669
Beam Support	2669 2463							2463
Anal/Des Beam Support	0.92							0.92
Load con	5 #2 1.02							1.02
Min reg'd Cb	1.02** 1.00 1.00							1.00 1.00 1.11
Cb min Cb support Fcp sup	t 1.11							625
**Minhmum be	saring length govern	ed by the required width of t						
			LVL	Supports: Total I	Ail - Timb enoth: 6'-1	-3/4"x9-1/2", 2-ply (er-soft Beam, D.Fir-L No .0"; volume = 1.4 cu.fi.; supports, bottom= at sup	2	
Analysis v	s. Allowable S	stress and Deflection	n using NDS 2012 :					
Criterio	n Analysis	Value Design Valu 79 FV' = 285	e Unit And psi	iv/fv' = 0.	28		·	
Bending +) fb = 1'n 0.04 = <	830 Fb' = 2635 L/999 0.20 = L/36	0 in	fb/Fb' = 0. 0. 0.	21			
Total Def		6/999 1 8.30 4 2/24						
Additional FACTORS:	F/E(psi)CD C 205 1.00 -		1	frt Ci Cn .00 - 1.0	0 2			
Eb+ 2	600 1.00 - 750	1.00 0.982 1.0	1	.00	2			
E' Eminy' 0	1.8 million - .93 million -	2.00		.00	2			
Shear Bending(+)	AD COMBINATIONS : LC #2 = D+L, : LC #2 = D+L,	V = 2429, V design N = 3643 lbs-ft	= 1754 lbs					
Deflection	1 LC #2 = D+L	{live}	ive Legeoncentra	ted Emearthqua	ske			
Load combi	ire listed in th Inations: ASCE 7	e vustante onchor		•				
CALCULATIO	NS:	06 lb-in2/ply ction from all non-de	ad loads (live	wind, snow_)				
		ection from all non-de bead Load Deflection) 1 = 6' Le = 12'-1.68'		ection.				
1						· · · · · · · · · · · · · · · · · · ·		
1. WoodWorks	s analysis and design	n are in accordance with the flection limits are appropriat	ICC International Bulk a for your application.	ting Cods (IBC 20	12), the N	ational Design Specificati	an (NDS 2012), and NDS Design Supplement.	
3. SCL-BEAM	S (Structural Compo	site Lumben: the attached a	meterials Three cap h				your local SCL manufacturer.	
E E101 T.189 5	SCI .BFAMS contec	I manufacturer for connections and multi-ply members and	NI COUDITE Address towards a	10 tios tehbuico odo	, in ori			

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					COMPANY	PROJECT	
E	A		dWa	orks [®]			
V.			SCIFIWARI FO		Mar. 12, 2018 12:30	FB7	
	<u></u>				Calculation Shee	ət	
Loads:							
Load Loadi	Type Dead	Distribution Full UDL	Pat- Location [fu tern Start End				
Load2 Self-weight	Live Dead	Full UDL Full UDL		480.0 plf 5.2 plf			
Maximum R	eactions (lb	s), Bearing Cap	acities (lbs) and l	Bearing Lengths (in) :			1
	<u> </u>				4'-0.7"		
	X						×
	¥ X						^x
Unfactored: Dead Live	254 973						254 973
Factored: Total Bearing:	1227						1227
Capacity Beam	1227						1227 1380
Support Anal/Des Beam	1390						1.00
Support Load comb	0.89 #2 0.65						0.89 #2 0.65
Length Min reg'd Cb	0.65						0.65 1.00 1.00
Cb min Cb aupport Fcp sup	1.00 1.13 625						1.13 625
				Lumber n-ply, D.Fir-L,	No 2 2x8 2-ply (3"	* ~7_1/ 4*')	= <u>= = = = = = = = = = = = = = = </u>
				Supports: All - Timbe Total length: 4'-0.7	r-soft Beam, D.Fir-L No. /"; volume = 0.6 cu.fl.;	.2	
				Leteral support: top= at s	upports, bottom= at sup	ports;	
Analysis vs	Allowable S		Value Unit	Analysis/Design			
Shear Bending(+)	fv = fb =	57 FV'= 553 Fb'=1	072 psi	fv/Fv' = 0.32 fb/Fb' = 0.52 0.14			
Live Defl Total Defl	n 0.02 • < n 0.03 • <		L/240 in	0.13			
	E(psi)CD C	M Ct CL	CF Cfu Cr	cfrt Ci Cn LCS			
Fv' 16 Fb'+ 90 Fcp' 63	1.00 1.	00 1.00 - 00 1.00 0.993 00 1.00 -	1.200 1.00 1.00	1.00 1.00 1.00 2 1.00 1.00 - 2 1.00 1.00			
E' 1. Emin' 0.5	6 million 1. 58 million 1.	00 1.00 - 00 1.00 -	: : :	1.00 1.00 - 2 1.00 1.00 - 2			
Shear : Bending(+);	LC 82 = D+L, LC 82 = D+L,	V = 1210, V de N = 1210 ibs-f	sign = 825 lbs				
Deflection:	LC #2 = D+L	(live) (total)	of live Lc=concent	rated Escarthquake			
All LC's are Load combine	e listed in th stions: ASCE 7	e Analysis output ~10 / IBC 2012					
"Live" dofle	EI = 76.2c	06 lb-in2/ply ction from all no	m-dead loads (live	, wind, snow)			
Total Dofler	stion = 1,50(D	cad Load Deflecti = 4' Le = 8'-2.	on + Live Load De	flection.			
Design Not	es:	ora in proordence	h the ICC International Re	uikien Code (IBC 2012), the Nati	onal Design Specificatio	m (NDS 2012), and NDS Design Supplement.	
2. Pleaso verify t	hat the datault de	floction limits are appro	priste for your spplication	0. Independent MDC Classics 4.4.1			
4. BUILT-UP BE	AMS: I is assume	d that each ply is a sing	tie continuous member (i	that is, no buil joints are present)	lastened togother secur	ely at intervals not exceeding 4 times the depth and that	

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4. BUILT-UP BEAMS: a is assumed that each py is a single commous memoer (that is, no built joints and each py is equably lop-loaded. Where beams are sick-odded, special fastening details may be required. 5, FIRE RATING: Joists, wall studs, and multi-ply members are not rated for fire endurance.

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	and more doing the mining th
	Title Block" selection.
	Title Block Line 6
r	

General Footing

Printed: 12 MAR 2018, 12:38PM File = C:\PROGRA-2\ENERCA-1

0.0 k

0.0 k

Lic.#:KW-06006759 Description : -None-

Code References

Calculations per

V-x

V-z

Load Combinations Used : IBC 2015

General Information

Material Properties f'c : Concrete 28 day streng fy : Rebar Yield Ec : Concrete Elastic Modu Concrete Density		=	3.0 ksi 60.0 ksi 122.0 ksi 145.0 pcf	Allowa Increas Soil Pa	sign Values ble Soil Bearing se Bearing By Fo assive Resistance oncrete Friction C	(for Sliding)	= = =	1.50 ksf No 250.0 pcf 0.30
φ Values Flexure Shear Analysis Settings Min Steel % Bending Reinf. Min Allow % Temp Reinf. Min. Overturning Safety Fac		=	0.90 0.750 0.00180 1.0 : 1	Footing Allow p whe	s based on footi g base depth belo ress, increase pe en footing base is	w soil surface r foot of depth below	= = =	3.0 ft 0.0 ksf 0.0 ft
Min. Sliding Safety Factor Add Ftg Wt for Soil Pressur Use ftg wt for stability, mom Add Pedestal Wt for Soil Pr Use Pedestal wt for stability	ents & shears essure	:	1.0 : 1 Yes Yes No No	Allowat	ole pressure incre	ng plan dimensic ase per foot of de th is greater than	pth = =	0.0 ksf 0.0 ft
Dimensions	tens fransje skale Long "steratense							
Width parallel to X-X Axis Length parallel to Z-Z Axis Footing Thickness	=======================================	3.(12.(3 ft			Z 	्र सम्बद्ध	
Pedestal dimensions px : parallel to X-X Axis pz : parallel to Z-Z Axis	=	0.0 0.0) in	x	5-		×	
Height Rebar Centerline to Edge of Co at Bottom of footing		0.0 3.0					Edge	
Reinforcing						2 3*0*		
Bars parallel to X-X Axis Number of Bars Reinforcing Bar Size	=	4 # 4						
Bars parallel to Z-Z Axis Number of Bars Reinforcing Bar Size	=	4 # 4						
Bandwidth Distribution Check Direction Requiring Closer Sep # Bars required within zone		2) n/a n/a	2. EUG13201178%	(iii)iea		н Н		
# Bars required on each side o	fzone	n/a		X-X Sector Listing	10+Z '		2 E Same Survey of	v
and the second								
P : Column Load OB : Overburden	=	D 2.40 0.0	Lr 0.0 0.0	L 2.0 0.0	<u>\$</u> 5.40 0.0	W 0.0 0.0	E 0.0	H 0.0 k
M-xx M-zz	= ·	0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0	0.0 0.0	0.0 0.0 0.0	0.0 ksf 0.0 k-ft 0.0 k-ft
V_v	-	0.0	0.0	0.0	0.0	00	0.0	0.01

0.0 0.0 0.0 0.0 0.0 0.0 0.0 Ξ 0.0 0.0 0.0 0.0 0.0 0.0 0.0 = 0.0 0.0 0.0 0.0 0.0 =

General Footing

Lic.#:KW-06005759 --None--Description :

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Profile = C/PROGRA-2(ENERCA-1 ENERCALC, INC. 1983-2017, Build:10.17.12.10, Ver.10.17.12.10 Liteensee, Kinston House Plans

	Min. Ratio	ltem	Applied	Capacity	Governing Load Combination
PASS	0.8320	Soil Bearing	1.248 ksf	1.50 ksf	+D+0.750L+0.750S+0.5250E+H about Z-
PASS	n/a	Overturning - X-X	0.0 k-ft	0.0 k-ft	No Overturning
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	Sliding - Z-Z	0.0 k	0.0 k	No Sliding
PASS	n/a	Uplift	0.0 k	0.0 k	No Uplift
PASS	0.1492	Z Flexure (+X)	1.565 k-ft/ft	10.486 k-ft/ft	+1.20D+0.50L+1.60S+1.60H
PASS	0.1492	Z Flexure (-X)	1.565 k-ft/ft	10.486 k-ft/ft	+1.20D+0.50L+1.60S+1.60H
PASS	0.1492	X Flexure (+Z)	1.565 k-ft/ft	10.486 k-ft/ft	+1.20D+0.50L+1.60S+1.60H
PASS	0.1492	X Flexure (-Z)	1.565 k-ft/ft	10.486 k-ft/ft	+1.20D+0.50L+1.60S+1.60H
PASS	0.1176	1-way Shear (+X)	9.660 psi	82.158 psi	+1.20D+0.50L+1.60S+1.60H
PASS	0.1176	1-way Shear (-X)	9.660 psi	82.158 psi	+1.20D+0.50L+1.60S+1.60H
PASS	0.1176	1-way Shear (+Z)	9.660 psi	82.158 psi	+1.20D+0.50L+1.60S+1.60H
PASS	0.1176	1-way Shear (-Z)	9,660 psi	82.158 psi	+1.20D+0.50L+1.60S+1.60H
PASS	0.2205	2-way Punching	36.227 psi	164.317 psi	+1.20D+0.50L+1.60S+1.60H

Soil Bearing

Soli Bearing		Xecc	Zecc	Actu	al Soil Bearing Stres	ss @ Locat	ion	Actual / Allow	
Rotation Axis & Load Combination	Gross Allowable	(in))	Bottom, -Z	Top, +Z	Left, -X	Right, +X	Ratio	
	1.50	n/a	0.0	0.6317	0.6317	n/a	n/a	0.421	
X-X. +D+H	1.50	n/a	0.0	0.8539	0.8539	n/a	n/a	0.569	
X-X, +D+L+H	1.50	n/a	0.0	0.6317	0.6317	n/a	n/a	0.421	
X-X, +D+Lr+H	1.50	n/a	0.0	1.232	1.232	n/a	n/a	0.821	
X-X, +D+S+H	1.50	n/a	0.0	0.7983	0.7983	n/a	n/a	0.532	
X-X, +D+0.750Lr+0.750L+H	1.50	n/a	0.0	1.248	1.248	n/a	n/a	0.832	
X-X. +D+0.750L+0.750S+H	1.50	n/a	0.0	0.6317	0.6317	n/a	n/a	0.421	
X-X, +D+0.60W+H	1.50	n/a	0.0	0.6317	0.6317	n/a	n/a	0.421	
X-X. +D+0.70E+H		n/a	0.0	0.7983	0.7983	n/a	n/a	0.532	
X-X, +D+0.750Lr+0.750L+0.450W++	1.50	n/a	0.0	1.248	1.248	n/a	n/a	0.832	
X-X, +D+0.750L+0.750S+0.450W+H		n/a	0.0	1.248	1.248	n/a	n/a	0.832	
X-X. +D+0.750L+0.750S+0.5250E+H	1.50	n/a	0.0	0.3790	0.3790	n/a	n/a	0.253	
X-X, +0.60D+0.60W+0.60H	1.50	n/a	0.0	0.3790	0.3790	n/a	n/a	0.253	
X-X, +0.60D+0.70E+0.60H	1.50	0.0	n/a	n/a	n/a	0.6317	0.6317	0.421	
Z-Z, +D+H		0.0	n/a	n/a	n/a	0.8539	0.8539	0.569	
Z-Z. +D+L+H	1.50 1.50	0.0	n/a	n/a	n/a	0.6317	0.6317	0.421	
Z-Z, +D+Lr+H	1.50	0.0	n/a	n/a	n/a	1.232	1.232	0.821	
Z-Z, +D+S+H	1.50	0.0	n/a	n/a	n/a	0.7983	0.7983	0.532	
Z-Z, +D+0.750Lr+0.750L+H	1.50	0.0	n/a	n/a	n/a	1.248	1.248	0.832	
Z-Z. +D+0.750L+0.750S+H		0.0	n/a	n/a	n/a	0.6317	0.6317	0.421	
Z-Z, +D+0.60W+H	1.50 1.50	0.0	n/a	n/a	n/a	0.6317	0.6317	0.421	
Z-Z. +D+0.70E+H		0.0	n/a	n/a	n/a	0.7983	0.7983	0.532	
Z-Z. +D+0.750Lr+0.750L+0.450W+H		0.0	n/a	n/a	n/a	1.248	1.248	0.832	
Z-Z. +D+0.750L+0.750S+0.450W+H		0.0	n/a	n/a	n/a	1.248	1.248	0.832	
Z-Z, +D+0.750L+0.750S+0.5250E+	i 1.50 1.50	0.0	n/a	n/a	n/a	0.3790	0.3790	0.253	
Z-Z, +0.60D+0.60W+0.60H	1.50	0.0	n/a	n/a	n/a	0.3790	0.3790	0.253	
Z-Z. +0.60D+0.70E+0.60H	1.50	0.0	100	1//4					
Overturning Stability									
Rotation Axis & Load Combination		Overturning	Moment		Resisting Moment	Sta	oility Ratio	Status	
Footing Has NO Overturning								A.U	
Sliding Stability								All units k	
Force Application Axis Load Combination		Sliding F	orce		Resisting Force	Sta	bility Ratio	Status	
Ecotion Has NO Sliding									

Footing Has NO Sliding

Title Block" selection. Title Block Line 6

Printed: 12 MAR 2018. 12:38PM

 File = CVPROGRA-ZENERCA-1

 General Footing

 ENERCALC, INC. 1983-2017, Build:10.17.12.10, Ver:10.17.12.10

 Life. # :: KW206005759

Description :

-None--

Flexure Axis & Load Combination	Mu k-ft	Side	Tension Surface	As Req'd in^2	Gvrn. As in^2	Actual As in^2	Phi*Mn k-ft		Status
X-X. +1.40D+1.60H	0.420	+Z	Bottom	0.2592	Min Temp %	0.2667	10.48	6	OK
X-X, +1.40D+1.60H	0.420	-Z	Bottom	0.2592	Min Temp %	0.2667			OK
X-X, +1.20D+0.50Lr+1.60L+1.60H	0.760	+-Z	Bottom	0.2592	Min Temp %	0.2667			OK
X-X, +1.20D+0.50Lr+1.60L+1.60H	0.760	+Z -Z -Z -Z -Z -Z	Bottom	0.2592	Min Temp %	0.2667			OK
X-X, +1.20D+1.60L+0.50S+1.60H	1.098	+Z	Bottom	0.2592	Min Temp %	0.2667			OK
X-X, +1.20D+1.60L+0.50S+1.60H	1.098	-Z	Bottom	0.2592	Min Temp %	0.2667			OK
X-X. +1.20D+1.60Lr+0.50L+1.60H	0.4850	+Z	Bottom	0.2592	Min Temp %	0.2667			OK
X-X, +1.20D+1.60Lr+0.50L+1.60H	0.4850	-Z	Bottom	0.2592	Min Temp %	0.2667			ŎК
X-X, +1.20D+1.60Lr+0.50W+1.60H	0.360	+Z -Z	Bottom	0.2592	Min Temp %	0.2667			OK
X-X. +1.20D+1.60Lr+0.50W+1.60H	0.360	-Z	Bottom	0.2592	Min Temp %	0.2667			OK
X-X, +1.20D+0.50L+1.60S+1.60H	1.565	+Z -Z	Bottom	0.2592	Min Temp %	0.2667	10.48		OK
X-X, +1.20D+0.50L+1.60S+1.60H	1.565	-Z	Bottom	0.2592	Min Temp %	0.2667			OK
X-X, +1.20D+1.60S+0.50W+1.60H	1.440	+Z	Bottom	0.2592	Min Temp %	0.2667	10.48		OK
X-X. +1.20D+1.60S+0.50W+1.60H	1.440	-Z	Bottom	0.2592	Min Temp %	0.2667			OK
X-X, +1.20D+0.50Lr+0.50L+W+1.60H		-Z +Z	Bottom	0.2592	Min Temp %	0.2667	10.48		ÖK
X-X. +1.20D+0.50Lr+0.50L+W+1.60H		-Z	Bottom	0.2592	Min Temp %	0.2667	10.48		OK
X-X, +1.20D+0.50L+0.50S+W+1.60H	0.8225	-Z +Z	Bottom	0.2592	Min Temp %	0.2667	10.48		ÖK
X-X, +1.20D+0.50L+0.50S+W+1.60H	0.8225	-Z	Bottom	0.2592	Min Temp %	0.2667	10.48		ÖK
X-X, +1.20D+0.50L+0.70S+E+1.60H	0.9575	+Z	Bottom	0.2592	Min Temp %	0.2667	10,480		OK
X-X, +1,20D+0.50L+0.70S+E+1.60H	0.9575	-Z	Bottom	0.2592	Min Temp %	0.2667	10.480		OK
X-X, +0.90D+W+0.90H	0.270	+Z	Bottom	0.2592	Min Temp %	0.2667	10,480		ÖK
X-X, +0.90D+W+0.90H	0.270	-Z	Bottom	0.2592	Min Temp %	0.2667	10.480		OK
X-X, +0.90D+E+0.90H	0.270	+Z	Bottom	0.2592	Min Temp %	0.2667	10.480		ÖK
X-X. +0.90D+E+0.90H	0.270	-7	Bottom	0.2592	Min Temp %	0.2667	10.486		ÖK
Z-Z, +1.40D+1.60H	0.420	-Z -X	Bottom	0.2592	Min Temp %	0.2667	10.486		ÖK
Z-Z, +1.40D+1.60H	0.420	+X	Bottom	0.2592	Min Temp %	0.2667	10.486		ÖK
Z-Z, +1.20D+0.50Lr+1.60L+1.60H	0.760	-X	Bottom	0.2592	Min Temp %	0.2667	10.486		ÖK
Z-Z, +1.20D+0.50Lr+1.60L+1.60H	0.760	+X	Bottom	0.2592	Min Temp %	0.2667	10.486		ÖK
Z-Z, +1.20D+1.60L+0.50S+1.60H	1.098	-X	Bottom	0.2592	Min Temp %	0.2667	10.486		ÖK
Z-Z, +1.20D+1.60L+0.50S+1.60H	1.098	+X	Bottom	0.2592	Min Temp %	0.2667	10.486		OK
Z-Z, +1.20D+1.60Lr+0.50L+1.60H	0.4850	-X	Bottom	0.2592	Min Temp %	0.2667	10.486		ÖK
Z-Z, +1.20D+1.60Lr+0.50L+1.60H	0.4850	+X	Bottom	0.2592	Min Temp %	0.2667	10.486		OK
Z-Z, +1.20D+1.60Lr+0.50W+1.60H	0.360	-X	Bottom	0.2592	Min Temp %	0.2667	10.486		OK
Z-Z, +1.20D+1.60Lr+0.50W+1.60H	0.360	+X	Bottom	0.2592	Min Temp %	0.2667	10.486		OK
Z-Z. +1.20D+0.50L+1.60S+1.60H	1.565	-X	Bottom	0.2592	Min Temp %	0.2667	10.486		OK
Z-Z, +1.20D+0.50L+1.60S+1.60H	1.565	+X	Bottom	0.2592	Min Temp %	0.2667	10.486		OK
Z-Z, +1.20D+1.60S+0.50W+1.60H	1.440	-X	Bottom	0.2592	Min Temp %	0.2667	10.486		OK
Z-Z, +1.20D+1.60S+0.50W+1.60H	1.440	+X	Bottom	0.2592	Min Temp %	0.2667	10.486		OK
Z-Z, +1.20D+0.50Lr+0.50L+W+1.60H	0.4850	-X	Bottom	0.2592	Min Temp %	0.2667	10.486		OK
Z-Z. +1.20D+0.50Lr+0.50L+W+1.60H	0.4850	+X	Bottom	0.2592	Min Temp %	0.2667	10.486		OK
Z-Z, +1.20D+0.50L+0.50S+W+1.60H	0.8225	-X	Bottom	0.2592	Min Temp %	0.2667	10.486		OK
Z-Z, +1.20D+0.50L+0.50S+W+1.60H	0.8225	+X	Bottom	0.2592	Min Temp %	0.2667	10.486		OK
Z-Z, +1.20D+0.50L+0.70S+E+1.60H	0.9575	-X	Bottom	0.2592	Min Temp %	0.2667	10.486		OK
Z-Z. +1.20D+0.50L+0.70S+E+1.60H	0.9575	+X	Bottom	0.2592	Min Temp %	0.2667	10.486	;	OK
Z-Z. +0.90D+W+0.90H	0.270	-X	Bottom	0.2592	Min Temp %	0.2667	10.486	;	OK
Z-Z. +0.90D+W+0.90H	0.270	+X -X	Bottom	0.2592	Min Temp %	0.2667	10.486		OK
Z-Z, +0.90D+E+0.90H	0.270	-X	Bottom	0.2592	Min Temp %	0.2667	10.486		OK
Z-Z, +0.90D+E+0.90H	0.270	+-X	Bottom	0.2592	Min Temp %	0.2667	10.486	i	OK
One Way Shear	<u> </u>	<u>, , , , , , , , , , , , , , , , , , , </u>	N N C						
oad Combination	Vu@-X	Vu @ +							Status
+1.40D+1.60H +1.20D+0.50Lr+1.60L+1.60H	2.59 DSi		2.59 psi	2.59 psi	2.59 psi	2.59 psi	82.16 psi	0.03	0.0
	4.69 psi		4.69 psi	4.69 psi	4.69 psi	4.69 psi	82.16 psi	0.06	0.0
+1.20D+1.60L+0.50S+1.60H	6.78 psi		6.78 psi	6.78 psi	6.78 psi	6.78 psi	82.16 psi	0.08	0.0
+1.20D+1.60Lr+0.50L+1.60H	2.99 psi		2.99 psi	2.99 psi	2.99 psi	2.99 psi	82.16 psi	0.04	0.0
+1.20D+1.60Lr+0.50W+1.60H	2.22 psi		2.22 psi	2.22 psi	2.22 psi	2.22 psi	82.16 psi	0.03	0.0
+1.20D+0.50L+1.60S+1.60H	9.66 psi		9.66 psi	9.66 psi	9.66 psi	9.66 psi	82.16 psi	0.12	0.0
-1.20D+1.60S+0.50W+1.60H	8.89 psi		8.89 psi	8.89 psi	8.89 psi	8.89 psi	82.16 psi	0.11	0.0
-1.20D+0.50Lr+0.50L+W+1.60H	2.99 psi		2.99 psi	2.99 psi	2.99 psi	2.99 psi	82.16 psi	0.04	0.0
-1.20D+0.50L+0.50S+W+1.60H	5.08 psi		5.08 psi	5.08 psi	5.08 psi	5.08 psi	82.16 psi	0.04	0.0
+1.20D+0.50L+0.70S+E+1.60H			5.91 psi	5.91 psi	5.91 psi	5.91 psi	82.16 psi	0.00	
	5.91 psi								0.0
+0.90D++W+0.90H	1.67 DSI		1.67 psi	1.67 psi	1.67 psi	1.67 psi	82.16 psi	0.02	0.0

Title Block Line 6							led 12 MAR 2018.	
General Footing			1		ENERCALC INC.	File = C:\P 1983-2017, Build: 10.17	ROGRA~2\ENE	
LIC. #:: KW:06006759	和中国的基本的					Licensee 3Ku	stom Hous	e Plans
Description : None								
One Way Shear		2						
Load Combination	Vu @ -X	Vu @ +X	Vu @ -Z	Vu @ +Z	Vu:Max	Phi Vn Vu	/ Phi*Vn	Status
0.000.5.0000	1.67	nei 167 r	nsi 1.67 ps	1.67 psi	1.67 psi	82.16 psi	0.02	0.00

+0.90D+E+0.90H Two-Way "Punching" Shear	1.67 psi	1.67 osi	1.67 psi	1.67 psi	1.67 psi	82.16 dsi	0.02 All units k	0.00
Load Combination	Vu		Phi*Vn		Vu / Phi*Vn			atus
+1.40D+1.60H +1.20D+0.50Lr+1.60L+1.60H +1.20D+1.60L+0.50S+1.60H +1.20D+1.60Lr+0.50S+1.60H +1.20D+1.60Lr+0.50W+1.60H +1.20D+0.50L+1.60S+1.60H +1.20D+0.50Lr+0.50S+1.60H +1.20D+0.50Lr+0.50S+W+1.60H +1.20D+0.50L+0.70S+W+1.60H +1.20D+0.50L+0.70S+E+1.60H +0.90D+W+0.90H +0.90D+W+0.90H	17 25 11 8 36 33 11 15 22	9.72 psi .59 psi .41 psi .23 psi .23 psi .23 psi .23 psi .23 psi .23 psi .23 psi .24 psi .26 psi .25 psi	164.32psi 164.32psi 164.32psi 164.32psi 164.32psi 164.32psi 164.32psi 164.32psi 164.32psi 164.32psi 164.32psi 164.32psi		0.05917 0.1071 0.1546 0.06832 0.05072 0.2205 0.2029 0.06832 0.1159 0.1349 0.03804 0.03804			DK DK DK DK DK DK DK DK DK DK DK DK

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