

STRUCTURAL ENGINEERING CALCULATIONS

CLIENT: <u>HUGHES UMBANHOWAR ARCHITECTS</u>

PROJECT: VILLAGE NEST - UNIT 18 AMENDMENT

LOCATION: 5754 DAYBREAK RIDGE, EDEN, UTAH

BUILDING CODE: 2015 IBC - ASCE 7-10 - WEBER COUNTY, UTAH

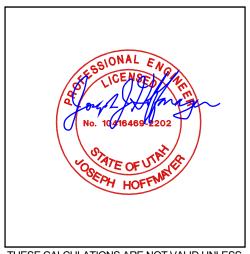
RHSE FILE NO.: 2017-0610

ENGINEER: J.J.H.

DATE: AUGUST 25, 2017

ISSUE: BLDG. DEPT. SUBMITTAL #1

NOTE: THIS BUILDING IS FELDSPAR LVN - REVERSED



THESE CALCULATIONS ARE NOT VALID UNLESS SIGNED AND SEALED IN THE SPACE ABOVE.





VERTICAL LOADS - ROOFS AND FLOORS:

LOCATION:

5754 DAYBREAK RIDGE, EDEN, UTAH

METAL ROOF	A		WEIGHTS	
METAL ROOFING			4.0 psf	
1/2" PLY			1.5 psf	
2x10 @ 16			2.6 psf	
INSULATION			1.0 psf	
MISC. MECH.			1.0 psf	
1/2" PLY			1.5 psf	
SPRINKLERS			1.0 psf	
5/8" GWB			3.1 psf	
-			- psf	
			- psf	
ADDITIONAL LOAD			0.0 psf	
DEAD	D	=	15.7 psf	
ROOF LIVE	Lo	=	20.0 psf	
ROOF PITCH	F	=	0.75 : 12	
PITCH REDUCTION	R2	=	1.00	
ROOF LIVE	Lr	=	20.0 psf	
PITCH ADJUSTED DEAD LOAD	D'	=	15.8 psf	

OPENED BALCONY	В		WE	IGHTS
DECKING				3.0 psf
FLOOR FRAMING				4.0 psf
79			-	psf
_			-	psf
4			*	psf
+			-	psf
t .			-	psf
H.			-	psf
7			7	psf
THE STATE OF THE S			+	psf
ADDITIONAL LOAD				0.0 psf
DEAD	D	=	_	7.0 psf
LIVE BALCONY (1.5 x RESIDENCIAL LIVE LOAD)	Lo	=		60.0 psf
FRAMING PITCH				0.00 : 12
				1.00
ADJUSTED LIVE BALCONY (1.5 x RESIDENCIAL LIV	E LOA Lo	20	_	60.0 psf
PITCH ADJUSTED DEAD LOAD	D'	=		7.0 psf

2nd FLOOR	C	Т	WEIGHTS	
HARDWOOD			4.0	psf
1-1/8" PLY			3.4	psf
MISC. MECH 3 WARMS	0220			psf
FLOOR FRAMING	7 4-			psf
5/8" PLY				psf
-			-	psf
8			2	psf
				psf
			2	psf
			8	psf
ADDITIONAL LOAD			0.0	
DEAD	D	88	14.3	
	2270		Ex-	
LIVE RESIDENCE	Lo	=	40.0	psf
FRAMING PITCH			0.00	: 12
			1.00	
ADJUSTED LIVE RESIDENCE	Lo	=	40.0	psf
DITOU AD HISTED DEAD LOAD	DI	-	440	
PITCH ADJUSTED DEAD LOAD	D'	=	14.3	psi

DRIVEWAY LOADS	D		WEIGHTS	
6" CONCRETE	- Camara		75.0 psf	
1-1/8" PLY			3.4 psf	
FLOOR FRAMING			4.0 psf	
SIDING			3.0 psf	
		19	- psf	
		- 3	- psf	
-		9	- psf	
-		- 2	- psf	
		- 9	- psf	
-		9	- psf	
ADDITIONAL LOAD		416	0.0 psf	
DEAD	D	= =	85.4 psf	
LIVE STAIRS AND EXIT	L	= _	100.0 psf	
FRAMING PITCH			0.00 : 12	N.
			1.00	
ADJUSTED LIVE STAIRS AND EXIT	L	= =	100.0 psf	
PITCH ADJUSTED DEAD LOAD	D'	=	85.4 psf	

20% SNOW LOAD FOR SEISMIC	E		WEIGHTS
			- psf
. 0			- psf
Pg = 264PSF			- psf
12-204121			- psf
			- psf
· 1-1=07(7(-4)			- psf
M-2.2(00+2)			- psf
· / W//.			- psf
H=0.2(264) SEISMIL W/SNOW			- psf
			- psf
ADDITIONAL LOAD			52.8 psf
	14	=	52.8 psf
*	*	=	0.0 psf
FRAMING PITCH			0.00 : 12
A ASSESSMENT OF STATE			1.00
ADJUSTED -	-	=	0.0 psf
PITCH ADJUSTED DEAD LOAD	D'	=	52.8 psf

GARAGE LOADS	F	\top	WEIGHTS
4" CONCRETE	7/4		50.0 psf
1-1/8" PLY			3.4 psf
FLOOR FRAMING			4.0 psf
INSULATION			1.0 psf
MISC, MECH.			1.0 psf
SPRINKLERS			1.0 psf
5/8" GWB			3.1 psf
Service Moderates			- psf
			- psf
			- psf
ADDITIONAL LOAD			0.0 psf
DEAD	D	=	63.5 psf
LIVE RESIDENTIAL & GARAGE	L	=	40.0 psf
FRAMING PITCH			0.00 : 12
			1.00
ADJUSTED LIVE RESIDENTIAL & GARAGE	L	=	40.0 psf
PITCH ADJUSTED DEAD LOAD	D'	=	63.5 psf



VERTICAL LOADS - WALLS:

LOCATION:

5754 DAYBREAK RIDGE, EDEN, UTAH

101	WEI	GHTS
		3.0 psf
		2.0 psf
		1.5 psf
		2.1 psf
		1.0 psf
		1.0 psf
		1.5 psf
		3.1 psf
	(2)	psf
		psf
		psf
- 1		15.2 psf

	W	WEIG	HTS
			psf
		2	psf
(4)			psf
		2	psf
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		2	psf
			psf
		-	psf
			psf
		2	psf
		-	psf
	-	=	0.0 psf

Х	WE	IGHTS
	-	psf
	2	psf
	7	psf
	-	psf
	-	psf
	-	psf
	7	psf
	-	psf
		0.0 psf

Y WEIGHTS
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	- DS
	- = 0.0 ps



PBS Panel R-Values

Type I modified EPS core

Core Thickness	R-Value at 75°	R-Value at 40°	R-Value at 25°	
3-1/2"	15	16	17	
5-1/2"	23	25	26	
7-1/4"	30	32	33	
9-1/4"	37	40	42	
11-1/4"	45	49	51	

PBS Panel Weights

Type I modified EPS core

· KIAILS

Thickness	7/16"	5/8"	3/4"
3-1/2"	3.3	4.6	5.5
5-1/2"	3.5	4.8	5.7
7-1/4"	3.7	5.0	5.9
9-1/4"	3.9	5.2	6.1
11-1/4"	4.0 (5.4	6.2

Load Charts with a Built in Safety Factor (Refer to current Listing Reports for up to date load tables)

All of Premier's load charts have a built-in safety factor. We have taken our SIPs products' ultimate load at failure and divided this number by 3. The result is then used as the design load value.

Table 1: Maximum Allowable Uniform Transverse Load (psf) - Type S Panels 1,3

Panel Core						Panel S	pan (ft)		V		
Thickness (in)	Deflection Limit ²	44	8	10	12	14	16	18	20	22	24
	L/360	100	43	29	21	16	10				
3.5	L/240	143	60	42	33	25	16				
	L/180	143*	61	57	46	34	22				
	L/360	105	52	39	30	24	18	15	11		
5.5	L/240	162	78	58	36	32	28	22	16		
	L/180	191*	80*	60*	46*	40	34	29	21		
	L/360	120	61	60	42	34	26	21	15	13	11
7.25	L/240	179*	85	75	61	50	39	31	23	21	18
MUNICIPAL STREET	L/180	179*	85	75	69	60	50	42	31	28	24
	L/360	131	80	66	52	43	33	28	22	20	18
9.25	L/240	168*	86	71	57°	51°	46	42*	34	30	26
	L/180	168*	86	71	57 [*]	51	46	42	39	37	34*
-	L/360	132	94	76	51	50	48	38	28	24	20
11.25	L/240	163*	94	76	59	55	51	45	39	36	31
	L/180	163*	94	76	59	55	51	45	39	36	33

Table values assume a simply supported panel with 1.5 in. of continuous bearing on facing at supports. Permanent loads, such as dead load, shall not exceed 0.25 times the tabulated load. Panels shall use OSB surface splines not less than 7/16 in. thick inserted below the facing on each side of

An asterisk (*) indicates the value shown is governed by the average peak load divided by 3.

the panel.

² Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of adopted

building code.

Tabulated values for 8 ft walls apply to panels constructed with the OSB strength axis oriented either parallel or perpendicular to supports. Tabulated values for 8 ft walls apply to panels constructed with the OSB strength axis oriented either parallel or perpendicular to supports. Tabulated values for other lengths are based on the strong-axis of the facing material oriented parallel to the span direction.

Panels spanning 4 ft shall be a minimum of 8 ft long spanning a minimum of two 4 ft spans. No single span condition is allowed.

For wall panel capacities utilizing a zero bearing configuration (Figure 2), the allowable load shall be determined using C_v=0.86.





PROJECT	VILLAGE NEST		JOB	2017	-0610
CLIENT					
ADDRESS	EDEN, UT			1 17	
DESIGN	HUUM				
ENGINEER	J.H.		DATE	6/14/2	2017
	RICHMOND PE 44628 HOP	FMAYER SE 3495	PHEET	7	OF

SHOW LOAPS:
ETEN, UT CASIO ELEV. 8040-E
EXPOSURE C Pg = 264 PSF PEN WEBER COUNTY
ROOF PITCH X 1:12 -> CONSIDER FLAT
Ps = 0.7 Ce Ca Is Pg ASUE 7-10 (7.3-1)
Ce= 1.0 PARTIALLY EXPOSED
CE= 1.2 UPHENTED (UNUSED VACATION HOME)
I,=1.0 RISK CATEGORY II
Py = 0.7(1.0) 1.2(1.0) 2604 = 221.8 (SF -> 214 PSF -> USE)
5= 24485

OVERHANG: ASCE 7-10 7.4.6 Son = 28f = 2(221,8) = 443.6 858

RICHMOND HOFFMAYER 16.



PROJECT	VILLAGE NEST	JOB	2017-0610
CLIENT	=		
ADDRESS	EDEN, UT		
DESIGN	HUUM		- 200
ENGINEER	J.H.	DATE	6/14/2017
	PICAMONO DE 40476 MOSENAVED SE BORS		//

	LOAD	COMBINATIONS
1	-	

1.20 + 1.6(Lr on 5)+L 1.20+1.0W+L+0.5(Lr on 5) 1.2P + LOE + L + 0,28 0.90 + 1.0 W 0,9D+1.0E

EFFECTIVE SEISMIL WEIGHT:

ASLE 7-10 12.7.2

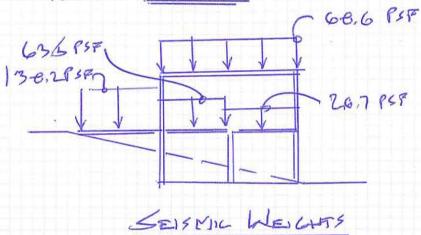
PS EXCEEDS 30 PSF : 20% OF UNIFORM DESIGN

WROOF = 14,8 + 0,2(264) = 68.615F

WFran = 26,7 857

WGARKE = 635 PSF

WORKE = 85,4 + 0.2(264) = 138,285F



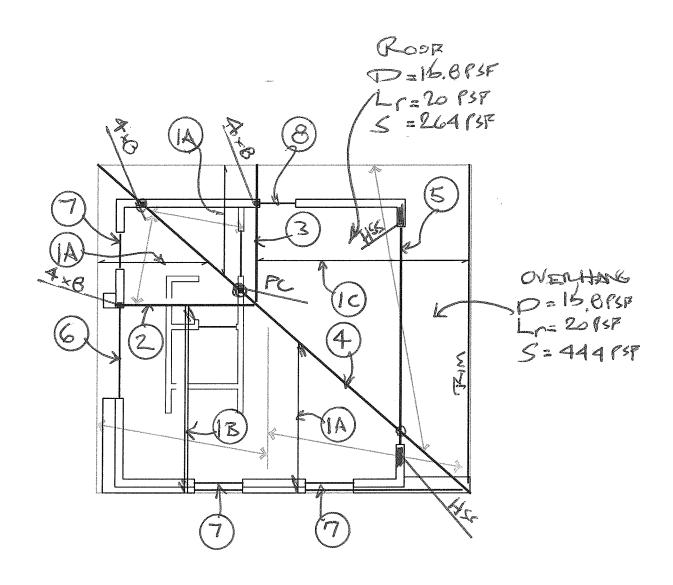
SEISMIL WEIGHTS





 PROJECT
 FELDSPAR LOWER
 JOB
 2017-0610

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FELOXPOL - LOVER
IN.T.S.

O: BERN #



VILLAGE NEST

1,555.0 psi

MULTI UNIT PROJECT

Project ID: 2017-0610

6

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Wood Beam

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Description: B1A - RAFTERS

CODE REFERENCES

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

Load Combination Set: ASCE 7-10

Material Properties

E: Modulus of Elasticity Analysis Method: Allowable Stress Design 2,600.0 psi Fb - Tension Fb - Compr 1,900.0ksi Load Combination :ASCE 7-10 2,600.0 psi Ebend-xx 965.71 ksi Fc - Prll 2,510.0 psi Eminbend - xx 750.0 psi Fc - Perp Wood Species : Trus Joist 285.0 psi F۷ : MicroLam LVL 1.9 E Wood Grade

Beam Bracing : Beam is Fully Braced against lateral-torsional buckling

Density 42.0 pcf Repetitive Member Stress Increase

D(0.021014) Lr(0.0266) S(0.35112)

Span = 14.0 ft

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Uniform Load: D = 0.01580, Lr = 0.020, S = 0.2640 ksf, Tributary Width = 1.330 ft, (ROOF LOADS)

DESIGN SUMMARY					Design OK
Maximum Bending Stress Ratio Section used for this span	=	0.774 1 1.75x11.875	Maximum Shear Stress Ratio Section used for this span	=	0.494 : 1 1.75x11.875
fb : Actual	=	2,660.07psi	fv : Actual	=	161.95 psi
FB : Allowable	i = i	3,438.50psi	Fv : Allowable	=	327.75 psi
Load Combination Location of maximum on span Span # where maximum occurs	=	+D+S 7.000ft Span # 1	Load Combination Location of maximum on span Span # where maximum occurs	=	+D+S 13.029 ft Span # 1
Maximum Deflection Max Downward Transient Deflection Max Upward Transient Deflection Max Downward Total Deflection Max Upward Total Deflection		0.658 in Ration 0.000 in Ration 0.697 in Ration 0.000 in Rat	0 = 0 < 240.0 0 = 240 > 240.0		

Vertical Reactions		Support notation : Far left is #1	Values in KIPS
Load Combination	Support 1	Support 2	
Overall MAXimum	2.605	2.605	
Overall MINimum	0.088	0.088	
D Only	0.147	0.147	
+D+Lr	0.333	0.333	
+D+S	2.605	2.605	
+D+0.750Lr	0.287	0.287	
+D+0.750S	1.990	1.990	
+0.60D	0.088	0.088	
Lr Only	0.186	0.186	
S Only	2.458	2.458	



VILLAGE NEST JJH

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Wood Beam

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Description: B1B - RAFTERS

CODE REFERENCES

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

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method: Allowable Stress Design 2,600.0 psi E: Modulus of Elasticity Fb - Tension 1,900.0ksi 2,600.0 psi Load Combination ASCE 7-10 Fb - Compr Ebend-xx 2,510.0 psi 965.71ksi Fc - Prll Eminbend - xx 750.0 psi Fc - Perp Wood Species : Trus Joist 285.0 psi Fv : MicroLam LVL 1.9 E Wood Grade 1,555.0 psi

Beam Bracing : Beam is Fully Braced against lateral-torsional buckling

Density 42.0 pcf Repetitive Member Stress Increase

D(0.021014) Lr(0.0266) S(0.35112)

2-1.75x11.87

Span = 15.0 ft

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Uniform Load: D = 0.01580, Lr = 0.020, S = 0.2640 ksf, Tributary Width = 1.330 ft, (ROOF LOADS)

DESIGN SUMMARY				4	Design OK
Maximum Bending Stress Ratio Section used for this span	=	0.444 1 2-1.75x11.87	Maximum Shear Stress Ratio Section used for this span	=	0.267 : 1 2-1.75x11.87
fb : Actual	=	1,526.82psi	fv : Actual	=	87.49 psi
FB : Allowable	=	3,438.50psi	Fv : Allowable	=	327.75 psi
Load Combination Location of maximum on span Span # where maximum occurs	=	+D+S 7.500ft Span # 1	Load Combination Location of maximum on span Span # where maximum occurs	= =	+D+S 14.015 ft Span # 1
Maximum Deflection Max Downward Transient Deflection Max Upward Transient Deflection Max Downward Total Deflection		0.434 in Rat 0.000 in Rat 0.459 in Rat 0.000 in Rat	io = 0<240.0 io = 391>=240.		

	Suppo	ort notation : Far left is #1	Values in KIPS	
Support 1	Support 2			
2.791	2.791			
0.095	0.095			
0.158	0.158			
0.357	0.357			
2.791	2.791			
0.307	0.307			
2.133	2.133			
0.095	0.095			
0.200	0.200			
2.633	2.633			
	2.791 0.095 0.158 0.357 2.791 0.307 2.133 0.095 0.200	Support 1 Support 2 2.791 2.791 0.095 0.095 0.158 0.158 0.357 0.357 2.791 2.791 0.307 0.307 2.133 2.133 0.095 0.095 0.200 0.200	2.791 2.791 0.095 0.095 0.158 0.158 0.357 0.357 2.791 2.791 0.307 0.307 2.133 2.133 0.095 0.095 0.200 0.200	Support 1 Support 2 2.791 2.791 0.095 0.095 0.158 0.158 0.357 0.357 2.791 2.791 0.307 0.307 2.133 2.133 0.095 0.095 0.200 0.200



VILLAGE NEST

MULTI UNIT PROJECT

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Wood Beam

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Description: B1C - RAFTERS w OVERHANG

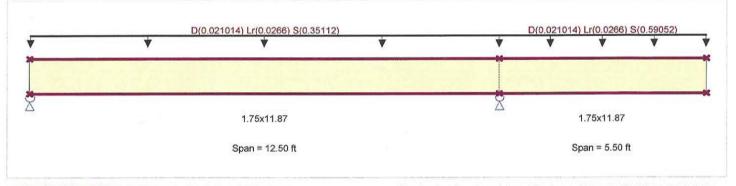
CODE REFERENCES

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

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method : Allowable Stress Design	Fb - Tension	2,600.0 psi	E : Modulus of Elasti	city
Load Combination ASCE 7-10	Fb - Compr Fc - Prll	2,600.0 psi 2,510.0 psi	Ebend- xx Eminbend - xx	1,900.0ksi 965.71ksi
Wood Species : Trus Joist Wood Grade : MicroLam LVL 1.9 E	Fc - Perp Fv	750.0 psi 285.0 psi		1940 IDC 1944
	Ft	1,555.0 psi	Density	42.0pcf
Beam Bracing : Beam is Fully Braced against lateral-torsional b	uckling	1000	Repetitive Member	er Stress Increase



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Load for Span Number 1

Uniform Load: D = 0.01580, Lr = 0.020, S = 0.2640 ksf, Tributary Width = 1.330 ft, (ROOF LOADS)

Load for Span Number 2

Max Upward Total Deflection

Uniform Load: D = 0.01580, Lr = 0.020, S = 0.4440 ksf, Tributary Width = 1.330 ft, (ROOF LOADS)

DESIGN SUMMARY					Design OK
Maximum Bending Stress Ratio Section used for this span	=	0.785 1 1.75x11.87	Maximum Shear Stress Ratio Section used for this span	=	0.608 : 1 1.75x11.87
fb : Actual	=	2,698.63psi	fv : Actual	=	199.37 psi
FB : Allowable	=	3,438.50psi	Fv : Allowable	=	327.75 psi
Load Combination Location of maximum on span	=	+D+S 12.500ft	Load Combination Location of maximum on span	=	+D+S 12.500 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1
Maximum Deflection Max Downward Transient Deflection	tion	0.428 in Ratio	o = 308>=240.		14.18
Max Upward Transient Deflection	n	-0.044 in Ratio	>= 2976>=240.		
Max Downward Total Deflection		0.429 in Ratio	306>-240		

3046>=240.

-0.043 in Ratio =

Vertical Reactions			oport notation : Far left is #1	Values in KIPS	
Load Combination	Support 1	Support 2	Support 3		
Overall MAXimum	1.586	6.429	10000		
Overall MINimum	-0.032	0.163			
D Only	0.106	0.272			
+D+Lr, LL Comb Run (*L)	0.074	0.451			
+D+Lr, LL Comb Run (L*)	0.272	0.439			
+D+Lr, LL Comb Run (LL)	0.240	0.617			
+D+S	1.586	6.429			
+D+0.750Lr, LL Comb Run (*L)	0.082	0.406			
+D+0.750Lr, LL Comb Run (L*)	0.231	0.397			
+D+0.750Lr, LL Comb Run (LL)	0.206	0.531			



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

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Wood Beam

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Description: B1C - RAFTERS w OVERHANG

Vertical Reactions		Support notation : Far left is #1		Values in KIPS	
Load Combination	Support 1	Support 2	Support 3		
+D+0.750S	1.216	4.890			
+0.60D	0.064	0.163			
Lr Only, LL Comb Run (*L)	-0.032	0.178			
Lr Only, LL Comb Run (L*)	0.166	0.166			
Lr Only, LL Comb Run (LL)	0.134	0.345			
S Only	1.480	6.157			



VILLAGE NEST

2,025.0 psi

MULTI UNIT PROJECT

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45.050pcf

Wood Beam

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Lic. #: KW-06002886

Description: B2 - ROOF BEAM

CODE REFERENCES

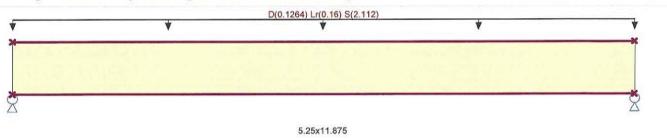
Calculations per NDS 2015, IBC 2015, CBC 2016, ASCE 7-10

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method: Allowable Stress Design 2,900.0 psi E: Modulus of Elasticity Fb - Tension 2,900.0 psi 2,000.0ksi Ebend-xx Load Combination :ASCE 7-10 Fb - Compr 1,016.54ksi Fc - Prll 2,900.0 psi Eminbend - xx Fc - Perp 625.0 psi : Trus Joist Wood Species 290.0 psi F۷ : Parallam PSL 2.0E Wood Grade

Beam Bracing : Beam is Fully Braced against lateral-torsional buckling



Span = 11.0 ft

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Density

Beam self weight calculated and added to loads

Uniform Load: D = 0.01580, Lr = 0.020, S = 0.2640 ksf, Tributary Width = 8.0 ft, (ROOF)

DESIGN SUMMARY					Design OK
Maximum Bending Stress Ratio Section used for this span fb : Actual FB : Allowable	= = =	0.996 1 5.25x11.875 3,321.29psi 3,335.00psi	Maximum Shear Stress Ratio Section used for this span fv : Actual Fv : Allowable	=	0.739 : 1 5.25x11.875 246.45 psi 333.50 psi
Load Combination Location of maximum on span Span # where maximum occurs	=	+D+S 5.500ft Span # 1	Load Combination Location of maximum on span Span # where maximum occurs	=	+D+S 10.036 ft Span # 1
Maximum Deflection Max Downward Transient Deflection Max Upward Transient Deflection Max Downward Total Deflection Max Upward Total Deflection	in	0.478 in Ratio 0.000 in Ratio 0.511 in Ratio 0.000 in Ratio	= 0<240.0 = 258>=240.		

Vertical Reactions		Support notation :	: Far left is #1	Values in KIPS	
Load Combination	Support 1	Support 2			
Overall MAXimum	12.418	12.418			
Overall MINimum	0.481	0.481			
D Only	0.802	0.802			
+D+Lr	1.682	1.682			
+D+S	12.418	12.418			
+D+0.750Lr	1.462	1.462			
+D+0.750S	9.514	9.514			
+0.60D	0.481	0.481		8	
Lr Only	0.880	0.880			
S Only	11.616	11.616			



VILLAGE NEST

MULTI UNIT PROJECT

Project ID: 2017-0610

11

Printed: 20 JUN 2017, 8:40AM

Wood Beam

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Licensee: RICHMOND HOFFMAYER

Lic. #: KW-06002886

Description: B3 - ROOF BEAM

CODE REFERENCES

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

Load Combination Set: ASCE 7-10

Material Properties

E: Modulus of Elasticity Analysis Method: Allowable Stress Design 2,900.0 psi Fb - Tension 2,000.0ksi Load Combination :ASCE 7-10 Fb - Compr 2,900.0 psi Ebend-xx 2,900.0 psi Eminbend - xx 1,016.54ksi Fc - Prll 625.0 psi Fc - Perp Wood Species : Trus Joist 290.0 psi : Parallam PSL 2.0E Fv Wood Grade 2,025.0 psi 45.050pcf Ft Density Beam Bracing : Beam is Fully Braced against lateral-torsional buckling



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loads

Uniform Load: D = 0.01580, Lr = 0.020, S = 0.2640 ksf, Tributary Width = 7.0 ft, (ROOF)

DESIGN SUMMARY					Design OK
Maximum Bending Stress Ratio Section used for this span fb : Actual	=	0.521: 1 5.25x11.875	Maximum Shear Stress Ratio Section used for this span fv: Actual	=	0.469 : 1 5.25x11.875 156.50 psi
FB : Allowable	=	1,737.41psi 3,335.00psi	Fv : Allowable	=	333.50 psi
Load Combination		+D+S	Load Combination		+D+S
Location of maximum on span Span # where maximum occurs	=	4.250ft Span # 1	Location of maximum on span Span # where maximum occurs	=	0.000 ft Span # 1
Maximum Deflection	ravan				200 minutes 19
Max Downward Transient Deflect Max Upward Transient Deflection		0.149 in Rat		4	
Max Downward Total Deflection		0.000 in Rat 0.159 in Rat	io = 639>=240.		
Max Upward Total Deflection		0.000 in Rat	io = 0<240.0		

Vertical Reactions		Support notation : Far left is #1	Values in KIPS
Load Combination	Support 1	Support 2	
Overall MAXimum	8.407	8.407	
Overall MINimum	0.332	0.332	
D Only	0.553	0.553	
+D+Lr	1.148	1.148	
+D+S	8.407	8.407	
+D+0.750Lr	0.999	0.999	
+D+0.750S	6.443	6.443	
+0.60D	0.332	0.332	
Lr Only	0.595	0.595	
S Only	7.854	7.854	



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

12

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Wood Beam

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Licensee: RICHMOND HOFFMAYER

Lic. # : KW-06002886

Description: B4 - RIDGE

CODE REFERENCES

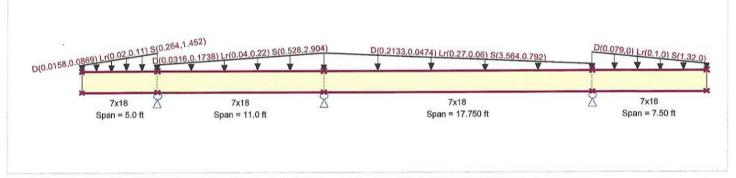
Calculations per NDS 2015, IBC 2015, CBC 2016, ASCE 7-10

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method : Allowable Stress Design	Eh Tanaian	2,900.0 psi	E : Modulus of Elast	ficity
Load Combination ASCE 7-10	Fb - Tension Fb - Compr Fc - Prll	2,900.0 psi 2,900.0 psi 2,900.0 psi	Ebend- xx Eminbend - xx	2,000.0ksi 1,016.54ksi
Wood Species : Trus Joist Wood Grade : Parallam PSL 2.0E	Fc - Perp Fv Ft	625.0 psi 290.0 psi 2,025.0 psi	Density	45.050pcf

Beam Bracing : Beam is Fully Braced against lateral-torsional buckling



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

V-I--- I- KIDO

Beam self weight calculated and added to loads

Load for Span Number 1

Varying Uniform Load: D(S,E) = 0.01580 - 0.01580, Lr(S,E) = 0.020 - 0.020, S(S,E) = 0.2640 - 0.2640 ksf, Extent = 0.0 -->> 5.0 ft, Trib Width = 1.0->5.50 ft, Load for Span Number 2

Varying Uniform Load: D(S,E) = 0.01580 -> 0.01580, Lr(S,E) = 0.020 -> 0.020, S(S,E) = 0.2640 -> 0.2640 ksf, Extent = 0.0 -->> 11.0 ft, Trib Width = 2.0->11.0 ft, Load for Span Number 3

Varying Uniform Load: D(S,E) = 0.01580 - 0.01580, Lr(S,E) = 0.020 - 0.020, S(S,E) = 0.2640 - 0.2640 ksf, Extent = 0.0 -->> 17.750 ft, Trib Width = 13.50->3. Load for Span Number 4

Varying Uniform Load: D(S,E) = 0.01580->0.01580, Lr(S,E) = 0.020->0.020, S(S,E) = 0.2640->0.2640 ksf, Extent = 0.0 -->> 7.50 ft, Trib Width = 5.0->0.0 ft, (

DESIGN SUMMARY					Design OK
Maximum Bending Stress Ratio Section used for this span	=	0.643 1 M 7x18	aximum Shear Stress Ratio Section used for this span	=	0.822 : 1 7x18
fb : Actual	=	2,049.11psi	fv : Actual	=	274.07 psi
FB : Allowable	=	3,188.23psi	Fv : Allowable	=	333.50 psi
Load Combination Location of maximum on span Span # where maximum occurs	=	+D+S 11.000ft Span # 2	Load Combination Location of maximum on span Span # where maximum occurs	= =	+D+S 11.000ft Span # 2
Maximum Deflection Max Downward Transient Deflect Max Upward Transient Deflection Max Downward Total Deflection Max Upward Total Deflection		0.357 in Ratio = -0.412 in Ratio = 0.382 in Ratio = -0.433 in Ratio =	436 >= 360 558 >= 240.		

Vertical Reactions		Support notation : Far left is #1					
Load Combination	Support 1	Support 2	Support 3	Support 4	Support 5		
Overall MAXimum		7.627	45.573	19.198			
Overall MINimum		0.012	-0.074	0.007			
D Only		0.799	3.111	1.712			
+D+Lr, LL Comb Run (***L)		0.825	3.016	2.156			



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

13

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Wood Beam

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Lic. # : KW-06002886 Description: B4 - RIDGE

/ertical Reactions		Sup	port notation	: Far left is #1		Values in KIPS	
oad Combination	Support 1 St	upport 2	Support 3	Support 4	Support 5		
-D+Lr, LL Comb Run (**L*)		0.419	5.502	2.630			
-D+Lr, LL Comb Run (**LL)		0.445	5.407	3.074			
-D+Lr, LL Comb Run (*L**)		1.278	4.107	1.668			
D+Lr, LL Comb Run (*L*L)		1.304	4.012	2.112			
D+Lr, LL Comb Run (*LL*)		0.897	6.498	2.586			
D+Lr, LL Comb Run (*LLL)		0.924	6.402	3.030			
D+Lr, LL Comb Run (L***)		1.192	3.037	1.719			
D+Lr, LL Comb Run (L**L)		1.218	2.941	2.163			
D+Lr, LL Comb Run (L*L*)		0.812	5.428	2.637			
D+Lr, LL Comb Run (L*LL)		0.838	5.332	3.081			
D+Lr, LL Comb Run (LL**)		1.670	4.033	1.675			
D+Lr, LL Comb Run (LL*L)		1.697	3.937	2.119			
D+Lr, LL Comb Run (LLL*)		1.290	6.423	2.593			
O+Lr, LL Comb Run (LLLL)		1.316	6.328	3.037			
+S		7.627	45.573	19.198			
0+0.750Lr, LL Comb Run (***L)		0.819	3.040	2.045			
TO A TO BOTH TO A STORE AND A		0.514	4.904	2.401			
D+0.750Lr, LL Comb Run (**L*) D+0.750Lr, LL Comb Run (**LL)		0.534	4.833	2.734			
			3.858	1.679			
0+0.750Lr, LL Comb Run (*L**)		1.158	3.786				
0+0.750Lr, LL Comb Run (*L*L)		1.178		2.012			
0+0.750Lr, LL Comb Run (*LL*)	MINNESS	0.873	5.651	2.368			
0+0.750Lr, LL Comb Run (*LLL)	ONG	0.893	5.580	2.701			
0+0.750Lr, LL Comb Run (L***)	almices ong cuk	1.094	3.055	1.717			
0+0.750Lr, LL Comb Run (L**L)	CK	1.113	2.984	2.050			
740.730LI, LE COMB Run (L. L.)		0.809	4.848	2.406			
0+0.750Lr, LL Comb Run (L*LL)		0.828	4.777	2.739			
0+0.750Lr, LL Comb Run (LL**)		1.452	3.802	1.684			
D+0.750Lr, LL Comb Run (LL*L)		1.472	3.731	2.017			
0+0.750Lr, LL Comb Run (LLL*)		1.167	5.595	2.373			
0+0.750Lr, LL Comb Run (LLLL)		1.187	5.524	2.706			
0+0.750S		5.920	34.958	14.826			
0.60D		0.479	1.867	1.027			
Only, LL Comb Run (***L)		0.026	-0.095	0.444			
Only, LL Comb Run (**L*)		-0.380	2.391	0.918			
Only, LL Comb Run (**LL)		-0.354	2.295	1.362			
Only, LL Comb Run (*L**)		0.478	0.996	-0.044			
Only, LL Comb Run (*L*L)		0.505	0.900	0.400			
Only, LL Comb Run (*LL*)		0.098	3.387	0.874			
Only, LL Comb Run (*LLL)		0.125	3.291	1.318			
Only, LL Comb Run (L***)		0.393	-0.074	0.007			
Only, LL Comb Run (L**L)		0.419	-0.170	0.451			
Only, LL Comb Run (L*L*)		0.012	2.316	0.925			
Only, LL Comb Run (L*LL)		0.039	2.221	1.369			
Only, LL Comb Run (LL**)		0.871	0.921	-0.038			
Only, LL Comb Run (LL*L)		0.897	0.826	0.407			
Only, LL Comb Run (LLL*)		0.491	3.312	0.881			
Only, LL Comb Run (LLLL)		0.517	3.217	1.325			
Only		6.828	42.462	17.485			



VILLAGE NEST

MULTI UNIT PROJECT

Project ID: 2017-0610

7-0610 14

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Wood Beam

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Description: B5 - BIG OPENING

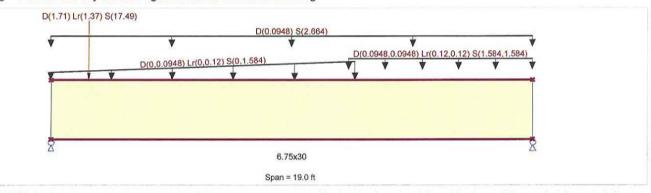
CODE REFERENCES

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

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method : Allowable Stress Design		Fb - Tension	2,400.0 psi	E : Modulus of Elasti	city
Load Combinati	ion ASCE 7-10	Fb - Compr	1,850.0 psi	Ebend- xx	1,800.0ksi
		Fc - Prll	1,650.0 psi	Eminbend - xx	950.0ksi
Wood Species	: DF/DF	Fc - Perp	650.0 psi	Ebend- yy	1,600.0ksi
Wood Species Wood Grade	24F - V4	Fv	265.0 psi	Eminbend - yy	850.0ksi
Wood Grade	· And · Vi	Ft	1,100.0 psi	Density	31.20pcf
Beam Bracing	: Beam is Fully Braced against lateral-torsional b	uckling		20110119	Control of the Park



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loads

Load for Span Number 1

Varying Uniform Load: D(S,E) = 0.01580 - 0.01580, Lr(S,E) = 0.020 - 0.020, S(S,E) = 0.2640 - 0.2640 ksf, Extent = 0.0 -->> 12.0 ft, Trib Width = 0.0->6.0 ft, (Varying Uniform Load: D(S,E) = 0.01580 - 0.01580, Lr(S,E) = 0.020 - 0.020, S(S,E) = 0.2640 - 0.2640 ksf, Extent = 11.750 -->> 19.0 ft, Trib Width = 6.0 ft, (Runiform Load: D = 0.01580, S = 0.4440 ksf, Tributary Width = 6.0 ft, (EAVE)

Point Load: D = 1.710, Lr = 1.370, S = 17.490 k @ 1.50 ft, (B4)

DESIGN SUMMARY

DESIGN SUMMARY					Design OK
Maximum Bending Stress Ratio	, =	CALL THE RESERVE THE PARTY OF T	Maximum Shear Stress Ratio	=	0.755 : 1
Section used for this span		6.75x30	Section used for this span		6.75x30
fb : Actual	=	2,350.85psi	fv : Actual	=	229.96 psi
FB : Allowable	=	2,474.58psi	Fv : Allowable	=	304.75 psi
Load Combination		+D+S	Load Combination		+D+S
Location of maximum on span	=	9.569ft	Location of maximum on span	=	16.504ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span #1
Maximum Deflection					
Max Downward Transient Deflect	tion	0.453 in Ratio	= 503>=360		
Max Upward Transient Deflection	1	0.000 in Ratio	= 0<360		
Max Downward Total Deflection		0.479 in Ratio	= 475>=240.		
Max Upward Total Deflection		0.000 in Ratio			

Vertical Reactions		Support notation : Far left is #1	Values in KIPS
Load Combination	Support 1	Support 2	
Overall MAXimum	52.463	42.232	
Overall MINimum	1.845	1.115	
D Only	3.353	2.248	
+D+Lr	5.198	3.363	
+D+S	52.463	42.232	
+D+0.750Lr	4.736	3.085	
+D+0.750S	40.186	32.236	
+0.60D	2.012	1.349	



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

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Wood Beam

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Description: **B5 - BIG OPENING**

Support notation : Far left is #1 **Vertical Reactions**

Values in KIPS

Support 2 Load Combination Support 1 Lr Only 1.115 1.845 39.983 49.111 S Only



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

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Steel Beam

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Lic. #: KW-06002886

Description : B5 - BIG OPENING - STEEL OPTION

CODE REFERENCES

Calculations per AISC 360-10, IBC 2015, ASCE 7-10

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method: Allowable Strength Design

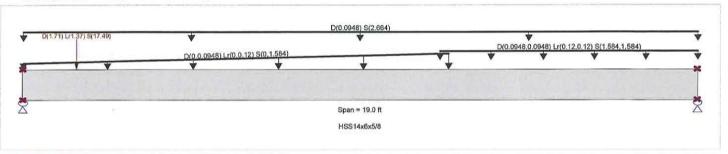
Beam Bracing : Bending Axis : Completely Unbraced
Major Axis Bending

Fy: Steel Yield:

46.0 ksi

E: Modulus :

29,000.0 ksi



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading

Load for Span Number 1

Uniform Load: D = 0.01580, S = 0.4440 ksf, Tributary Width = 6.0 ft, (EAVE) Point Load: D = 1.710, Lr = 1.370, S = 17.490 k @ 1.50 ft, (B4)

Design OK **DESIGN SUMMARY** Maximum Bending Stress Ratio = Maximum Shear Stress Ratio = 0.224:1 0.981:1 Section used for this span Section used for this span HSS14x6x5/8 HSS14x6x5/8 Ma: Applied Va : Applied 52.772 k 199.816 k-ft Mn / Omega: Allowable Vn/Omega: Allowable 235.387 k 203.603 k-ft +D+S Load Combination +D+S Load Combination 0.000 ft 9.554ft Location of maximum on span Location of maximum on span Span # where maximum occurs Span #1 Span # where maximum occurs Span #1 Maximum Deflection

 Max Downward Transient Deflection
 0.891 in Ratio = 255>=240.

 Max Upward Transient Deflection
 0.000 in Ratio = 0 < 240.0</td>

 Max Downward Total Deflection
 0.951 in Ratio = 240 >=240.

 Max Upward Total Deflection
 0.000 in Ratio = 0 < 240.0</td>

Maximum Forces & Stresses for Load Combinations

Load Combina	ation		Max Stress	ax Stress Ratios Summary of Moment Values				Summary of Shear Values						
Segmen		Span #	M	٧	Mmax +	Mmax -	Ma Max	Mnx	Mnx/Omega	Cb	Rm	Va Max	Vnx	Vnx/Omega
D Only Dsgn, L = +D+Lr	19.00 ft	1	0.060	0.016	12.25		12.25	340.02	203.60	1.12	1.00	3.66	393.10	235.39
The second secon	19.00 ft	1	0.085	0.023	17.39		17.39	340.02	203.60	1.12	1.00	5.51	393.10	235.39
	19.00 ft	1	0.981	0.224	199.82		199.82	340.02	203.60	1.13	1.00	52.77	393.10	235.39
Dsgn. L = +D+0.750S	19.00 ft	1	0.079	0.021	16.10		16.10	340.02	203.60	1.12	1.00	5.04	393.10	235.39
Dsgn. L = +0.60D	19.00 ft	1	0.751	0.172	152.92		152.92	340.02	203.60	1.13	1.00	40.49	393.10	235.39
	19.00 ft	1	0.036	0.009	7.35		7.35	340.02	203.60	1.12	1.00	2.20	393.10	235.39

Overall	Max	imum	Def	lect	ions
---------	-----	------	-----	------	------

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	400	Max. "+" Defl	Location in Span
+D+S	1	0.9512	9.500			0.0000	0.000
A CONTRACTOR OF THE PROPERTY OF THE PROPERTY OF						Values in KIDO	

+D+8	10	0.9512	9.500	0.0000	0.000
Vertical Reactions			Support notation : Far left is #1	Values in KIPS	
Load Combination	Support 1	Support 2			
Overall MAXimum	52.772	42.540			
Overall MINimum	1.845	1.115			



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

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Steel Beam

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Lic. #: KW-06002886 Description: B5-BIG B5 - BIG OPENING - STEEL OPTION

Vertical Reactions			Support notation : Far left is #1	Values in KIPS	
Load Combination	Support 1	Support 2			
D Only	3.661	2.556			
+D+Lr	5.506	3.672			
+D+S	52.772	42.540			
+D+0.750Lr	5.045	3.393			
+D+0.750S	40.494	32.544			
+0.60D	2.197	1.534			
Lr Only	1.845	1.115			
S Only	49.111	39.983			



VILLAGE NEST

MULTI UNIT PROJECT

Project ID: 2017-0610

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Wood Beam

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Lic. #: KW-06002886 **B6-HEADER** Description:

CODE REFERENCES

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

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method : Allowable Stress Design	Fb - Tension	2600 psi	E : Modulus of Elastic	ity
Load Combination ASCE 7-10	Fb - Compr	2600 psi	Ebend- xx	1900ksi
	Fc - Prll	2510 psi	Eminbend - xx	965.71 ksi
Wood Species : Trus Joist	Fc - Perp	750 psi		
Wood Grade : MicroLam LVL 1.9 E	Fv .	285 psi		
Wood Glade , Milerozam EVE 110 E	Ft	1555 psi	Density	42 pcf



Span = 8.0 ft

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Uniform Load: D = 0.01580, Lr = 0.020, S = 0.2640 ksf, Tributary Width = 3.0 ft, (ROOF)

DESIGN SUMMARY					Design OK
Maximum Bending Stress Ratio Section used for this span fb : Actual FB : Allowable	=	0.895 1 2-1.75x7.25 2,628.13psi	Maximum Shear Stress Ratio Section used for this span fv : Actual Fv : Allowable	=	0.517 : 1 2-1.75x7.25 169.50 psi
2 372 500 American	=	2,936.44psi	2 2366 73 70 70 70 70 70 70 70 70 70 70 70 70 70	=	327.75 psi
Load Combination Location of maximum on span Span # where maximum occurs	=	+D+S 4.000ft Span # 1	Load Combination Location of maximum on span Span # where maximum occurs	=	+D+S 7.416 ft Span # 1
Maximum Deflection Max Downward Transient Deflection	tion	0.348 in Rati	io = 276>=240.		
Max Upward Transient Deflection	n	0.000 in Rat	io = 0<240.0		
Max Downward Total Deflection Max Upward Total Deflection		0.368 in Rati 0.000 in Rati	io = 260>=240.		

Vertical Reactions		Support notation : Far left is #1		Values in KIPS	
Load Combination	Support 1	Support 2			
Overall MAXimum	3.358	3.358			
Overall MINimum	0.114	0.114			
D Only	0.190	0.190			
+D+Lr	0.430	0.430			
+D+S	3.358	3.358			
+D+0.750Lr	0.370	0.370			
+D+0.750S	2.566	2.566			
+0.60D	0.114	0.114			
Lr Only	0.240	0.240			
S Only	3.168	3.168			



VILLAGE NEST JJH

Project ID: 2017-0610 MULTI UNIT PROJECT

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Wood Beam

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Lic. #: KW-06002886

B7 - BEARING HEADERS Description:

CODE REFERENCES

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

Load Combination Set: ASCE 7-10

Material Properties

Wood Grade

Analysis Method: Allowable Stress Design Load Combination :ASCE 7-10 : Trus Joist Wood Species

: MicroLam LVL 1.9 E

Beam Bracing : Completely Unbraced

2,600.0 psi Fb - Tension 2,600.0 psi Fb - Compr 2,510.0 psi Fc - Prll 750.0 psi Fc - Perp 285.0 psi Fv 1,555.0 psi Ft

1,900.0ksi Ebend-xx Eminbend - xx

E: Modulus of Elasticity

Density

965.71 ksi

42.0pcf



Span = 4.50 ft

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Uniform Load: D = 0.01580, Lr = 0.020, S = 0.2640 ksf, Tributary Width = 8.0 ft, (ROOF)

DESIGN SUMMARY					Design OK
Maximum Bending Stress Ratio Section used for this span	=	0.749 1 2-1.75x7.25	Maximum Shear Stress Ratio Section used for this span	=	0.670 : 1 2-1.75x7.25
fb : Actual	=	2,217.49psi	fv : Actual	=	219.49 psi
FB : Allowable	=	2,960.54psi	Fv : Allowable	=	327.75 psi
Load Combination Location of maximum on span	=	+D+S 2.250ft	Load Combination Location of maximum on span	=	+D+S 3.909ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1
Maximum Deflection Max Downward Transient Deflect	ion	0.093 in Ratio	= 581>=240.		

Max Upward Transient Deflection 0.000 in Ratio = 0<240.0 548>=240. 0.098 in Ratio = Max Downward Total Deflection 0.000 in Ratio = Max Upward Total Deflection 0<240.0

	 cal	_			
•		20	120	-	ne

Vertical Reactions		Support notation : Far left is #1	Values in KIPS
Load Combination	Support 1 Su	pport 2	

Load Combination	oupport i	Support z.	
Overall MAXimum	5.036	5.036	
Overall MINimum	0.171	0.171	
D Only	0.284	0.284	
+D+Lr	0.644	0.644	
+D+S	5.036	5.036	
+D+0.750Lr	0.554	0.554	
+D+0.750S	3.848	3.848	
+0.60D	0.171	0.171	
Lr Only	0.360	0.360	
S Only	4.752	4.752	



VILLAGE NEST

MULTI UNIT PROJECT

Project ID: 2017-0610

18

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Wood Beam

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Description: B8 - BEARING HEADERS

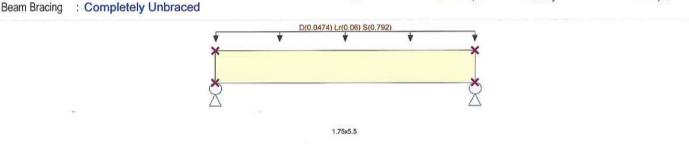
CODE REFERENCES

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

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method: Allowable Stress Design 2,600.0 psi E: Modulus of Elasticity Fb - Tension 1,900.0ksi 2,600.0 psi Load Combination :ASCE 7-10 Fb - Compr Ebend-xx 965.71ksi 2,510.0 psi Eminbend - xx Fc - Prll 750.0 psi Fc - Perp Wood Species : Trus Joist 285.0 psi Fv : MicroLam LVL 1.9 E Wood Grade 1,555.0 psi 42.0pcf Ft Density



Span = 3.50 ft

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Uniform Load: D = 0.01580, Lr = 0.020, S = 0.2640 ksf, Tributary Width = 3.0 ft, (ROOF)

Manifestore Danding Otrace Datie		0.000.4	Maximum Shear Stress Ratio	=	0.520 : 1
Maximum Bending Stress Ratio	=			.=	
Section used for this span		1.75x5.5	Section used for this span		1.75x5.5
fb : Actual	=	1,748.17psi	fv : Actual	=	170.44 psi
FB : Allowable	i = i	2,900.40psi	Fv : Allowable	=	327.75 psi
Load Combination		+D+S	Load Combination		+D+S
Location of maximum on span	=	1.750ft	Location of maximum on span	=	3.053 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1
Maximum Deflection					
Max Downward Transient Deflect	ion	0.058 in Ratio =	= 719>=240.		
Max Upward Transient Deflection		0.000 in Ratio =	= 0<240.0		
Max Downward Total Deflection		0.062 in Ratio =	= 679>=240.		
Max Upward Total Deflection		0.000 in Ratio =			

	Suppor	t notation : Far lett is #1	Values in KIPS	
Support 1	Support 2			
1.469	1.469			
0.050	0.050			
0.083	0.083			
0.188	0.188			
1.469	1.469			
0.162	0.162			
1.122	1.122			
0.050	0.050			
0.105	0.105			
1.386	1.386			
	1.469 0.050 0.083 0.188 1.469 0.162 1.122 0.050 0.105	Support 1 Support 2 1.469	1.469	Support 1 Support 2 1.469





PROJECT	VILLAGE NEST		JOB	2017-	0610	10
CLIENT	+					
ADDRESS	EDEN, UT					
DESIGN	HUUM					
ENGINEER	J.H.		DATE	6/14/2	017	
	RICHMOND PF 49628	HOFFMAYER SE 3495	CHIETE	2000	OF	

WIND ON EXTERIOR WALLS:
115 MPH - EXP"C" ASCE 7-10
WIMN = 16 PSF
9 = 0,00256 Kz Kz Kz Kz V2
Kz= 0.9 = 20 TABLE 30.3-1
KX= 0.65
9=0.00266(0.9X1X0.85>115 = 25.985F
P=26,9(64-642)
Asono= 10/x 1,23'= 13,362 -> 6/p= 1.0
GCP2 = 0.16
P = 25,9(1,++0,1+) = 51,2-0 PSP > 16 PSP
ALL WALL CLAPPING MUST RESIST 51,3151



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

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1.076 k 0.0 k

Tension

Wood Column

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Lic. #: KW-06002886 Description:

ROOF SUPPORT POSTS - EXTERIOR WALLS

Code References

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

Load Combinations Used: ASCE 7-10

General Information

Analysis Method End Fixities Overall Column F	Top & Bo	e Stress Des ottom Pinned	-	Wo	ood Section Name ood Grading/Manuf. ood Member Type		d Lumber	
Wood Species Wood Grade Fb + Fb - Fc - Prll Fc - Perp	Spruce - Pir No.1 850.0 psi 850.0 psi 700.0 psi 425.0 psi	re - Fir Fv Ft Density	125.0 psi 550.0 psi 26.210 pcf	Ex	act Width act Depth Area Ix Iy	3.50 in 7.250 in 25.375 in ² 111.148 in ⁴ 25.904 in ⁴	Cf or Cv for Tension	1.30 1.050 1.20 1.0 1.0
E: Modulus of El	asticity	x-x Bending	y-y Bending	Axial			Kf : Built-up columns	1.0 NDS 15.3.2
	Basic Minimum	1,300.0 470.0	1,300.0 470.0	1,300.0 ksi		effection (bucklin	Use Cr : Repetitive ?	No

Brace condition for deflection (buckling) along columns:

X-X (width) axis: Fully braced against buckling along X-X Axis

Y-Y (depth) axis:

Unbraced Length for X-X Axis buckling = 10 ft, K = 1.0

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Column self weight included: 48.495 lbs * Dead Load Factor

AXIAL LOADS . .

ROOF SUPPORT: Axial Load at 10.50 ft, D = 1.50, Lr = 1.50, S = 15.0 k

BENDING LOADS . . .

WIND: Lat. Uniform Load creating Mx-x, W = 0.2050 k/ft

DESIGN SUMMARY

Bending	185	Shear	Check	Results	
			m 15	01 0	2

PASS Max. Axial+Bending Stress Ratio = Load Combination Governing NDS Forumla	0.9256 : 1 +D+S Comp Only, fc/Fc'	Maximum SERV Top along Y-Y Top along X-X	/ICE Lateral Load 1.076 k 0.0 k	Reactions Bottom alon Bottom alon	ng Y-Y 1	1
Location of max.above base	0.0 ft	Maximum SERVICE	Load Lateral Deflec	tions		
At maximum location values are Applied Axial	16.549k	Along Y-Y for load co	0.3922 in atombination: W Only	5.285	ft above base	
Applied Mx Applied My Fc : Allowable	0.0 k-ft 0.0 k-ft 704.56 psi	Along X-X for load co	0.0 in at ombination : n/a	t 0.0	ft above base	
	701.00	Other Factors used	to calculate allowab	le stresses		
PASS Maximum Shear Stress Ratio = Load Combination	0.1272:1 +D+0.60W			Bending	Compression	
Location of max.above base	0.0 ft					

38.172 psi

200.0 psi

Load Combination Results

Allowable Shear

Applied Design Shear

	22	429	Maximum Axial	+ Bending	Stress Ratios	Maximu	Maximum Shear Ratios			
Load Combination	CD	CP	Stress Ratio	Status	Location	Stress Ratio	Status	Location		
D Only	0.900	0.877	0.1052	PASS	0.0ft	0.0	PASS	10.50 ft		
+D+Lr	1.250	0.815	0.1604	PASS	O.Oft	0.0	PASS	10.50 ft		
+D+S	1.150	0.834	0.9256	PASS	O.Oft	0.0	PASS	10.50 ft		
+D+0.750Lr	1.250	0.815	0.1407	PASS	O.Oft	0.0	PASS	10.50 ft		
+D+0.750S	1.150	0.834	0.7159	PASS	O.Oft	0.0	PASS	10.50 ft		
+D+0.60W	1.600	0.750	0.3970	PASS	5.285ft	0.1272	PASS	0.0 ft		
+D+0.750Lr+0.450W	1.600	0.750	0.3184	PASS	5.285ft	0.09543	PASS	0.0 ft		
+D+0.750S+0.450W	1.600	0.750	0.7653	PASS	5.215ft	0.09543	PASS	0.0 ft		
+0.60D+0.60W	1.600	0.750	0.3869	PASS	5.285ft	0.1272	PASS	0.0 ft		



VILLAGE NEST JJH

MULTI UNIT PROJECT

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Wood Column

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Description:

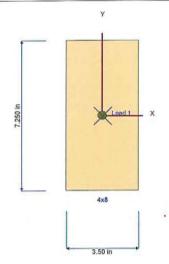
ROOF SUPPORT POSTS - EXTERIOR WALLS

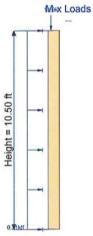
Load	Com	bination	Results
------	-----	----------	---------

				Maximum .	Axial +	- Bending	Stress Ratios		Maxim	um Sh	ear Ratio	OS
Load Combination	CD	CP		Stress R	atio	Status	Location	Stre	ess Ratio	Sta	atus L	ocation
+0.60D	1.600	0.750		0.041	53	PASS	0.0 ft		0.0	PA	ASS	10.50 ft
Maximum Reactions								Note: C	only non-	zero r	eactions	are listed
	X-X Axis R	teaction	k	Y-Y Axis	Reaction	n Ax	ial Reaction	My - End M	oments	k-ft	Mx - En	d Moments
Load Combination	@ Base	@ Тор		@ Base	@ To	p	@ Base	@ Base	@ Top		@ Base	@ Top
D Only	MIC. MAN.	2000					1.548					
+D+Lr							3.048					
+D+S							16.548					
+D+0.750Lr							2.673					
+D+0.750S							12.798					
+D+0.60W				0.646	0.	646	1.548					
+D+0.750Lr+0.450W				0.484	0.	484	2.673					
+D+0.750S+0.450W				0.484	0.	484	12.798					
+0.60D+0.60W				0.646	0.	646	0.929					
+0.60D							0.929					
Lr Only							1.500					
S Only							15.000					
W Only				1.076	1.	076						

Maximum Deflections for Load Combinations

Load Combination	Max. X-X Deflection	Distance	Max. Y-Y Deflection	Distance	
D Only	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+Lr	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+S	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+0.750Lr	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+0.750S	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+0.60W	0.0000 in	0.000 ft	0.235 in	5.285 ft	
+D+0.750Lr+0.450W	0.0000 in	0.000 ft	0.176 in	5.285 ft	
+D+0.750S+0.450W	0.0000 in	0.000 ft	0.176 in	5.285 ft	
+0.60D+0.60W	0.0000 in	0.000 ft	0.235 in	5.285 ft	
+0.60D	0.0000 in	0.000 ft	0.000 in	0.000 ft	
Lr Only	0.0000 in	0.000 ft	0.000 in	0.000 ft	
S Only	0.0000 in	0.000 ft	0.000 in	0.000 ft	
W Only	0.0000 in	0.000 ft	0.392 in	5.285 ft	
Sketches					





Loads are total entered value. Arrows do not reflect absolute direction.



Project Title: Engineer:

Project Descr:

VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

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0.0 k

Wood Column

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2ND FLOOR BEARING STUDS @ 48" o.c. - SIP SPLINES Description:

Code References

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

Load Combinations Used: ASCE 7-10

General Information

Analysis Method : End Fixities		e Stress Des ottom Pinned	-	W	ood Section Name ood Grading/Manuf.	2-2x8 Gradeo	d Lumber	
Overall Column H			10.50 ft	W	ood Member Type	Sawn		
(Used for	non-slender cald			Ex	act Width	3.0 in	Allow Stress Modification Factor	S
Wood Species	Spruce - Pir	ne - Fir		Ex	act Depth	7.250 in	Cf or Cv for Bending	1.20
Wood Grade	No.1				Area	21.750 in^2	Cf or Cv for Compression	1.050
Fb+	850.0 psi	Fv	125.0 psi		lx	95.270 in^4	O(- O (- T	1.20
Fb -	850.0 psi	Ft	550.0 psi		ly	16.313 in^4	and the second second	1.0
Fc - Prll	700.0 psi	Density	26.210 pc		3	10.010	Ct: Temperature Factor	1.0
Fc - Perp	425.0 psi						Cfu : Flat Use Factor	1.0
E: Modulus of Ela	asticity	x-x Bending	y-y Bending	Axial			Kf : Built-up columns	1.0 NDS 15.3.2
	Basic	1,300.0	1,300.0	1,300.0 ks	i		Use Cr : Repetitive ?	No
	Minimum	470.0	470.0	Bra	ace condition for def	flection (bucklir		

Fully braced against buckling along X-X Axis X-X (width) axis:

Unbraced Length for X-X Axis buckling = 10.50 ft, K = 1.0 Y-Y (depth) axis:

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Column self weight included: 41.567 lbs * Dead Load Factor

AXIAL LOADS . .

BEARING: Axial Load at 10.50 ft, D = 0.5040, Lr = 0.6390, S = 8.430 k

BENDING LOADS . . .

51.3 PSF WIND: Lat. Uniform Load creating Mx-x, W = 0.1020 k/ft

DESIGN SUMMARY

Bending & Shear Check Results	
PASS Max. Axial+Bending Stress Ratio = Load Combination	0.6013:1 +D+S
Governing NDS Forumla	Comp Only, fc/Fc'
Location of max.above base	0.0 ft
At maximum location values are	
Applied Axial	8.976k
Applied Mx	0.0 k-fi
Applied My	0.0 k-fi
Fc : Allowable	686.32 psi

0.07386:1 PASS Maximum Shear Stress Ratio = Load Combination +D+0.60W Location of max.above base 0.0 ft Applied Design Shear 22.159 psi Allowable Shear 200.0 psi Maximum SERVICE Lateral Load Reactions . .

Bottom along Y-Y 0.5355 k Top along Y-Y 0.5355 k Top along X-X 0.0 k Bottom along X-X

Maximum SERVICE Load Lateral Deflections . . .

Along Y-Y 0.2277 in at 5.285 ft above base for load combination: W Only 0.0 ft above base 0.0 in Along X-X

for load combination: n/a

Other Factors used to calculate allowable stresses . . .

Tension Bending Compression

Load Combination Results

	122		Maximum Axial	+ Bending	Stress Ratios	Maximum Shear Ratios			
Load Combination	CD	CP	Stress Ratio	Status	Location	Stress Ratio	Status	Location	
D Only	0.900	0.862	0.04401	PASS	0.0 ft	0.0	PASS	10.50 ft	
+D+Lr	1.250	0.791	0.07490	PASS	0.0 ft	0.0	PASS	10.50 ft	
+D+S	1.150	0.812	0.6013	PASS	O.Oft	0.0	PASS	10.50 ft	
+D+0.750Lr	1.250	0.791	0.06480	PASS	0.0 ft	0.0	PASS	10.50 ft	
+D+0.750S	1.150	0.812	0.4601	PASS	0.0ft	0.0	PASS	10.50 ft	
+D+0.60W	1.600	0.719	0.2416	PASS	5.285ft	0.07386	PASS	0.0 ft	
+D+0.750Lr+0.450W	1.600	0.719	0.1868	PASS	5.215ft	0.05540	PASS	0.0 f	
+D+0.750S+0.450W	1.600	0.719	0.3744	PASS	5.215ft	0.05540	PASS	0.0 ft	
+0.60D+0.60W	1.600	0.719	0.2391	PASS	5.285ft	0.07386	PASS	0.0 ft	



VILLAGE NEST JJH

MULTI UNIT PROJECT

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Wood Column

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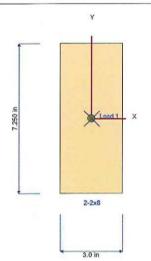
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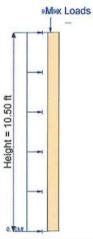
2ND FLOOR BEARING STUDS @ 48" o.c. - SIP SPLINES

Load Combination Results

	2		Max	mum Ax	ial + Bend	ding Stress Rat	tios		Maxim	um Sh	ear Ratio	S
Load Combination	CD	CP	Sti	ess Rat	io Sta	tus Locatio	n	Stre	ss Ratio	Sta	itus L	ocation
+0.60D	1.600	0.719	(0.01779	9 PAS	S 0	.Oft		0.0	PA	SS	10.50 ft
Maximum Reactions								Note: O	nly non-	zero re	eactions	are listed
21 W ==: (A.13 755	X-X Axis Reaction k		X-X Axis Reaction k Y-Y Axis Reaction Axial Reaction		kis Reaction k Y-Y Axis Reaction Axial Reaction			My - End Mo	ments	k-ft	Mx - En	d Moments
Load Combination	@ Base	@ Тор	@	Base (@ Тор	@ Base		@ Base	@ Top		@ Base	@ Top
D Only						0.546						
+D+Lr						1.185						
+D+S						8.976						
+D+0.750Lr						1.025						
+D+0.750S						6.868						
+D+0.60W				0.321	0.321	0.546						
+D+0.750Lr+0.450W)	0.241	0.241	1.025						
+D+0.750S+0.450W)	0.241	0.241	6.868						
+0.60D+0.60W			1	0.321	0.321	0.327						
+0.60D						0.327						
Lr Only						0.639						
S Only						8.430						
W Only			1	0.536	0.535							

oad Combination	Max. X-X Deflection	Distance	Max. Y-Y Deflection	Distance	
D Only	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+Lr	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+S	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+0.750Lr	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+0.750S	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+0.60W	0.0000 in	0.000 ft	0.137 in	5.285 ft	
+D+0.750Lr+0.450W	0.0000 in	0.000 ft	0.102 in	5.285 ft	
+D+0.750S+0.450W	0.0000 in	0.000 ft	0.102 in	5.285 ft	
+0.60D+0.60W	0.0000 in	0.000 ft	0.137 in	5.285 ft	
+0.60D	0.0000 in	0.000 ft	0.000 in	0.000 ft	
Lr Only	0.0000 in	0.000 ft	0.000 in	0.000 ft	
S Only	0.0000 in	0.000 ft	0.000 in	0.000 ft	
W Only	0.0000 in	0.000 ft	0.228 in	5.285 ft	





Loads are total entered value. Arrows do not reflect absolute direction.



VILLAGE NEST

JJH **MULTI UNIT PROJECT** Project ID: 2017-0610

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0.0ft above base

Steel Column

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RIDGE SUPPORT Description:

Code References

Calculations per AISC 360-10, IBC 2015, CBC 2016, ASCE 7-10

Load Combinations Used: ASCE 7-10

General Information

Steel Section Name:

Pipe4 Std

Analysis Method:

Allowable Strength

Steel Stress Grade

A-36, Carbon Steel, Fy = 36 ksi

Fy: Steel Yield E: Elastic Bending Modulus

36.0 ksi 29,000.0 ksi Overall Column Height

10.0 ft

Top & Bottom Fixity

Top & Bottom Pinned

Brace condition for deflection (buckling) along columns:

X-X (width) axis:

Fully braced against buckling along X-X Axis

Y-Y (depth) axis:

Fully braced against buckling along Y-Y Axis

Applied Loads

Column self weight included: 108.581 lbs * Dead Load Factor

AXIAL LOADS . . .

MAX ROOF: Axial Load at 10.0 ft, D = 3.110, LR = 3.390, S = 42.460 k

DESIGN SUMMARY

Bending & Shear Check Results		
PASS Max. Axial+Bending Stress Ratio =	0.7135 : 1	
Load Combination	+D+S	
Location of max.above base At maximum location values are	0.0 ft	
Pa : Axial	45.679 k	
Pn / Omega : Allowable	64.024 k	
Ma-x : Applied	O.O k-ft	
Mn-x / Omega : Allowable	7.275 k-ft	
Ma-y: Applied	O.O k-ft	
Mn-y / Omega : Allowable	7.275 k-ft	
PASS Maximum Shear Stress Ratio = Load Combination	0.0 :1	
Location of max.above base At maximum location values are	0.0 ft	
Va : Applied	0.0 k	
Vn / Omega : Allowable	0.0 k	

Maximum SERVICE Load Reactions

midili ofice ford itedonolis	
Top along X-X	0.0 k
Bottom along X-X	0.0 k
Top along Y-Y	0.0 k
Bottom along Y-Y	0.0 k

Maximum SERVICE Load Deflections . . .

0.0 in at 0.0ft above base Along Y-Y

Service loads entered. Load Factors will be applied for calculations.

for load combination:

0.0 in at Along X-X

for load combination:

Load Combination Results

	Maximum Axial +	Bending S	tress Ratios	Maximu	atios .	
Load Combination	Stress Ratio 3		Location	Stress Ratio	Status	Location
D Only	0.050	PASS	0.00 ft	0.000	PASS	0.00 ft
+D+Lr	0.103	PASS	0.00 ft	0.000	PASS	0.00 ft
+D+S	0.713	PASS	0.00 ft	0.000	PASS	0.00 ft
+D+0.750Lr	0.090	PASS	0.00 ft	0.000	PASS	0.00 ft
+D+0.750S	0.548	PASS	0.00 ft	0.000	PASS	0.00 ft
+0.60D	0.030	PASS	0.00 ft	0.000	PASS	0.00 ft

Maximum Reactions

Note: Only non-zero reactions are listed.

Axial Reaction X-X Axis Reaction k		Y-Y Axis	Reaction	Mx - End Moments k-ft			My - End Moments				
Load Combination	@ Base	@ Base	@ Тор		@ Base	@ Top	@ Base	@ Top		@ Base	@ Top
D Only	3.219					SAIR BOTTON					
+D+Lr	6.609										
+D+S	45.679										
+D+0.750Lr	5.761										
+D+0.750S	35.064										
+0.60D	1.931										
Lr Only	3.390										
S Only	42.460										



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

Steel Column

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ENERCALC, INC. 1983-2017, Build:6.17.3.17, Ver.6.17.3.17
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Lic. #: KW-06002886 Description:

RIDGE SUPPORT

Extreme Reactions	

	AND DESCRIPTION OF THE PROPERTY OF THE PROPERT	Axial Reaction	X-X Axis	Reaction	k	Y-Y Axis	Reaction	Mx - End M	oments k-ft	My - End	Moments
Item	Extreme Value	@ Base	@ Base	@ Тор		@ Base	@ Тор	@ Base	@ Тор	@ Base	@ Top
Axial @ Base	Maximum	45.679									
	Minimum	1.931									
Reaction, X-X Axis	Maximum	3.219									
	Minimum	3.219									
Reaction, Y-Y Axis	Maximum	3.219				.5					
•	Minimum	3.219									
Reaction, X-X Axis	Maximum	3.219									
•	Minimum	3.219									
Reaction, Y-Y Axis	Maximum	3.219									
	Minimum	3.219									
Moment, X-X Axis Ba	Maximum	3.219									
н	Minimum	3.219									
Moment, Y-Y Axis Ba	Maximum	3.219									
п	Minimum	3.219									
Moment, X-X Axis To	Maximum	3.219									
	Minimum	3.219									
Moment, Y-Y Axis To	Maximum	3.219									
K AND STATE OF STATE	Minimum	3.219									

Maximum Deflections for Load Combinations

Load Combination	Max. X-X Defle	ction	Distance		Max. Y-Y Defi	ection	Distanc	e
D Only	0.0000	in	0.000	ft	0.000	in	0.000	ft
+D+Lr	0.0000	in	0.000	ft	0.000	in	0.000	ft
+D+S	0.0000	in	0.000	ft	0.000	in	0.000	ft
+D+0.750Lr	0.0000	in	0.000	ft	0.000	in	0.000	ft
+D+0.750S	0.0000	in	0.000	ft	0.000	in	0.000	ft
+0.60D	0.0000	in	0.000	ft	0.000	in	0.000	ft
Lr Only	0.0000	in	0.000	ft	0.000	in	0.000	ft
S Only	0.0000	in	0.000	ft	0.000	in	0.000	ft

Stool	Section	Properties	Pipe4 Std
oreer	Decuon	FIUDEILIES	LIDEA OIL

orgon populari								
Depth	=	4.500 in	l xx	=	6.82 in^4	J	=	13.600 in^4
			S xx	=	3.03 in^3			
Diameter	=	4.500 in	R xx	=	1.510 in			
Wall Thick	=	0.237 in	Zx	=	4.050 in^3			
Area	.=	2.970 in^2	l yy	=	6.820 in^4			
Weight	=	10.858 plf	S yy	=	3.030 in^3			
			R yy	=	1.510 in			

Ycg

0.000 in



VILLAGE NEST JJH MULTI UNIT PROJECT

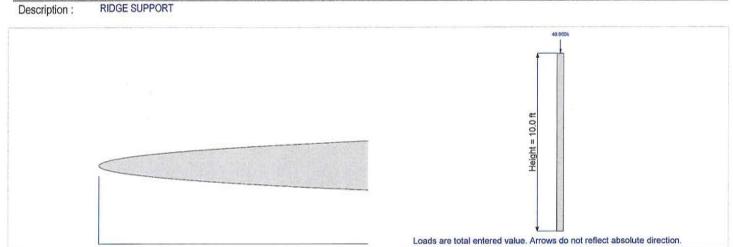
Project ID: 2017-0610

Steel Column

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RIDGE SUPPORT





VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

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Steel Column

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B5 SUPPORT Description:

Code References

Calculations per AISC 360-10, IBC 2015, CBC 2016, ASCE 7-10

Load Combinations Used: ASCE 7-10

General Information

Steel Section Name: Analysis Method:

HSS12x6x5/8

Steel Stress Grade

Fy: Steel Yield E: Elastic Bending Modulus 29,000.0 ksi

Allowable Strength

46.0 ksi

Overall Column Height Top & Bottom Fixity

10.0 ft Top & Bottom Pinned

Brace condition for deflection (buckling) along columns:

X-X (width) axis:

Unbraced Length for X-X Axis buckling = 10.0 ft, K = 1.0

Y-Y (depth) axis:

Unbraced Length for Y-Y Axis buckling = 10.0 ft, K = 2.1

Applied Loads

Column self weight included: 676.18 lbs * Dead Load Factor AXIAL LOADS . . .

B5: Axial Load at 10.0 ft, D = 3.350, LR = 1.840, S = 49.110 k

DESIGN SUMMARY

Bending & Shear Check Results

PASS Max. Axial+Bending Stress Ratio = 0.1324:1 Load Combination +D+S Location of max.above base 0.0 ft At maximum location values are . . .

> 53.136 k Pa: Axial Pn / Omega: Allowable 401.460 k Ma-x: Applied 0.0 k-ft Mn-x / Omega: Allowable 157.924 k-ft

> Ma-y: Applied 0.0 k-ft Mn-y / Omega: Allowable 96.637 k-ft

> > Axial Reaction

PASS Maximum Shear Stress Ratio = Load Combination

At maximum location values are . . .

Maximum SERVICE Load Reactions . .

0.0 k Top along X-X 0.0 k Bottom along X-X Top along Y-Y 0.0 k 0.0 k Bottom along Y-Y

Service loads entered. Load Factors will be applied for calculations.

Maximum SERVICE Load Deflections . . .

0.0 in at Along Y-Y

above base O.Oft for load combination:

0.0ft above base

My - End Moments

@ Top

@ Base

Along X-X 0.0 in at

for load combination:

Location of max.above base

Va : Applied Vn / Omega : Allowable

0.0 k 0.0 k

X-X Axis Reaction

@ Top

@ Base

Load Combination Results

	Maximum Axial +	Bending S	tress Ratios	Maximu	atios	
Load Combination	Stress Ratio	Status	Location	Stress Ratio	Status	Location
D Only	0.010	PASS	0.00 ft	0.000	PASS	0.00 ft
+D+Lr	0.015	PASS	0.00 ft	0.000	PASS	0.00 ft
+D+S	0.132	PASS	0.00 ft	0.000	PASS	0.00 ft
+D+0.750Lr	0.013	PASS	0.00 ft	0.000	PASS	0.00 ft
+D+0.750S	0.102	PASS	0.00 ft	0.000	PASS	0.00 ft
+0.60D	0.006	PASS	0.00 ft	0.000	PASS	0.00 ft

Y-Y Axis Reaction

@ Top

@ Base

0.0:1

0.0 ft

Maximum Reactions

Note: Only non-zero reactions are listed.

Mx - End Moments

@ Top

@ Base

Load Combination	@ Base				
D Only	4.026				
+D+Lr	5.866				
+D+S	53.136				
+D+0.750Lr	5.406				
+D+0.750S	40.859				
+0.60D	2.416				
Lr Only	1.840				
S Only	49.110				



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

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Steel Column

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Lic. # : KW-06002886

Description: **B5 SUPPORT**

Extreme	Reactions
---------	-----------

		Axial Reaction	X-X Axis	Reaction	k	Y-Y Axis	Reaction	Mx - End M	oments	k-ft	My - End	Moments
Item	Extreme Value	@ Base	@ Base	@ Тор		@ Base	@ Тор	@ Base	@ Top		@ Base	@ Тор
Axial @ Base	Maximum	53.136										
	Minimum	1.840										
Reaction, X-X Axis	Maximum	4.026										
•	Minimum	4.026										
Reaction, Y-Y Axis	Maximum	4.026										
	Minimum	4.026										
Reaction, X-X Axis	Maximum	4.026										
	Minimum	4.026										
Reaction, Y-Y Axis	Maximum	4.026										
	Minimum	4.026										
Moment, X-X Axis Ba	Maximum	4.026										
	Minimum	4.026										
Moment, Y-Y Axis Ba	Maximum	4.026										
•	Minimum	4.026										
Moment, X-X Axis To	Maximum	4.026										
	Minimum	4.026										
Moment, Y-Y Axis To	Maximum	4.026										
TOTAL STREET,	Minimum	4.026										

Maximum Deflections for Load Combinations

Load Combination	Max. X-X Deflect	ction	Distance		Max. Y-Y Defi	ection	Distanc	е
D Only	0.0000	in	0.000	ft	0.000	in	0.000	ft
+D+Lr	0.0000	in	0.000	ft	0.000	in	0.000	ft
+D+S	0.0000	in	0.000	ft	0.000	in	0.000	ft
+D+0.750Lr	0.0000	in	0.000	ft	0.000	in	0.000	ft
+D+0.750S	0.0000	in	0.000	ft	0.000	in	0.000	ft
+0.60D	0.0000	in	0.000	ft	0.000	in	0.000	ft
Lr Only	0.0000	in	0.000	ft	0.000	in	0.000	ft
S Only	0.0000	in	0.000	ft	0.000	in	0.000	ft

Steel	Section	Properties:	HSS12x6x5/8

Depth	=	12.000	in	l xx	=	321.00 in^4	J	=	271.000 in^4
Design Thick	=	0.581	in	S xx	=	53.40 in^3	Cw	=	71.10 in^6
Width	=	6.000	in	R xx	=	4.140 in			
Wall Thick	=	0.624	in	Zx	=	68.800 in^3			
Area	=	18.700	in^2	l yy	=	107.000 in^4	С	=	71.100 in^3
Weight	=	67.618	plf	S yy	=	35.500 in^3			
				R yy	=	2.390 in			
7,200				Zy	=	42.100 in^3			

Ycg 0.000 in



VILLAGE NEST JJH **MULTI UNIT PROJECT**

Project ID: 2017-0610

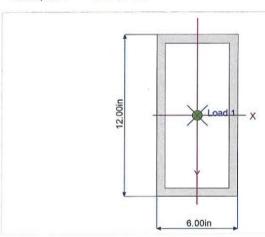
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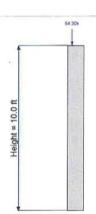
Steel Column

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Description: **B5 SUPPORT**



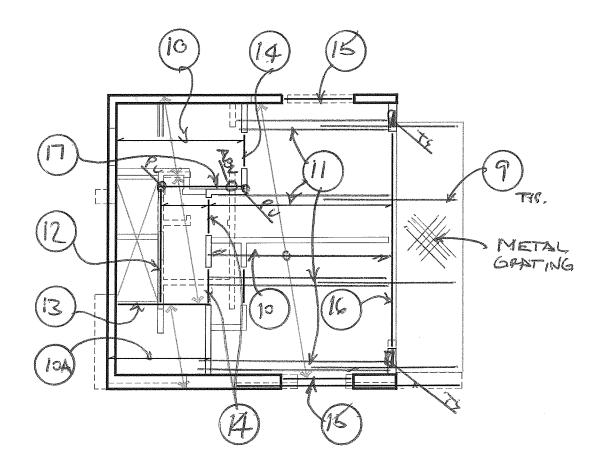


Loads are total entered value. Arrows do not reflect absolute direction.



 PROJECT
 FELDSPAR LOWER
 JOB
 2017-0610

 CLIENT
 VILLAGE NEST
 VILLAGE NEST</t



2 NO FOOR FRANKO PLAN
FELDSPAR LOWER
N.T.S.

D: BEAM#

RICHMOND HOFFMAYER INC. STRUCTURAL ENGINEERING



PROJECT	VILLAGE NEST	_ JOB	2017-0610	
CLIENT				
ADDRESS	EDEN, UT			
DESIGN	ниим			
ENGINEER	J.H.	DATE	6/14/2017	27/40
	ENGLOSON DE ANADO MOREO ANTO AN THOU	000	g 2 :	-

MEJAL GRATING:
D = 12-PSF L = 60 PSP 3 = 264PSF - (OPENED GRATING - POINT DBL SHOW)
LOAD COMSONASTIONS:
D+L = 72837
P+3 = 27683F & GOVERNS
P+0.76L+0.765 = 266858
SPAN M = W9 (2- SPAN OF)
32" 2944 W- W
46" 6624 11-11
64" 1177612-12
MAT. ALDMINUM STEEL
E = 10000 km 29000 km SAN IN MAES F = 12000 psi 16000 psi MIN (SAN IN MAES FSK>M & EIK > 5 US/4000 × 240
FSK>M & EIK > 5 WS/460 = x 240
C BARA/FE LZTROSF
K=12/(1/6)=274
12000 (S)274 > 2944 -> 5= 0.009 1, (AL
12000 (S)27,4 > 2944 -> 5 = 0.009 12 AL. 12000 (S)27,4 > 6614 -> 5 = 0.020 12 S 12000 (S)27,4 > 11776 -> 5 = 0.035 12 S

RICHMOND HOFFMAYER INC. STRUCTURAL ENGINEERING



 PROJECT
 VILLAGE NEST
 JOB
 2017-0610

 CLIENT

 ADDRESS
 EDEN, UT

 DESIGN
 HUUM

 ENGINEER
 J.H.
 DATE
 6/14/2017

 $|\frac{2}{16}(0,000) = 0.00611^{3} | \frac{1}{16}(0.02) = 0.013311^{3} | \frac{1}{16}(0.036) = 0.023311^{3} | \frac{1}{16}(0.036) = 0.023311^{3} | \frac{1}{16}(0.036) = 0.023311^{3} | \frac{1}{16}(0.036) = 0.023311^{3} | \frac{1}{16}(0.036) = 0.000111^{4} | \frac{1}{16}(0.0109(32^{3})^{2})| \frac{1}{10} = 0.0001111^{4} | \frac{1}{16}(0.0109(64^{3})^{2})| \frac{1}{10} = 0.00031111^{4} | \frac{1}{16}(0.0003) = 0.00031311^{4} | \frac{1}{16}(0.0003) = 0.00031511^{4} | \frac{1}{16}(0.0003) = 0.0003111^{4} | \frac{1}{16}(0.0003) = 0.0003$

| DEED X 3/6" AL = S = 0.03/3/10"

HOSE UP TO 4-6" SPANK U/ BARUE MODILAND HILLS CA 91364

425 CANOGA AVENUE WOODLAND HILLS CA 91364 PHONE (818) 347-7008 FAX (818) 883-8869 Info@RichmondHoffmayer.com



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

Printed: 21 JUN 2017; 8:57AM

Steel Beam

File = d:\ENERCALC Projects\2017-0610.ec6 ENERCALC, INC. 1983-2017, Build:6.17.3.17, Ver:6.17.3.17

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B9 - DECK SUPPORT Description:

CODE REFERENCES

Calculations per AISC 360-10, IBC 2015, ASCE 7-10

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method: Allowable Strength Design

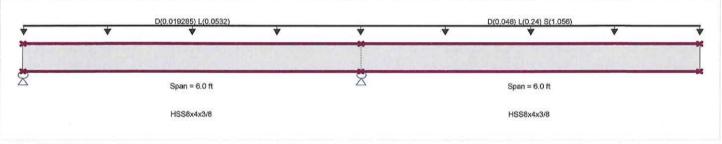
Beam Bracing: Beam is Fully Braced against lateral-torsional buckling

Major Axis Bending Bending Axis:

Fy: Steel Yield:

50.0 ksi

29,000.0 ksi E: Modulus:



Applied Loads

Load Combination

Service loads entered. Load Factors will be applied for calculations.

Max. "+" Defl

-0.0430

Location in Span

3.504

Beam self weight calculated and added to loading

Load for Span Number 1

Uniform Load: D = 0.01450, L = 0.040 ksf, Tributary Width = 1.330 ft, (FLOOR)

Load for Span Number 2

Uniform Load: D = 0.0120, L = 0.060, S = 0.2640 ksf, Tributary Width = 4.0 ft, (DECK)

DESIGN SUMMARY			Design OK
Maximum Bending Stress Ratio = Section used for this span Ma : Applied Mn / Omega : Allowable	0.434 : 1 HSS8x4x3/8 20.367 k-ft 46.906 k-ft	Maximum Shear Stress Ratio = Section used for this span Va : Applied Vn/Omega : Allowable	0.078 : 1 HSS8x4x3/8 6.789 k 87.183 k
Load Combination Location of maximum on span Span # where maximum occurs Maximum Deflection	+D+S 6.000ft Span # 1	Load Combination Location of maximum on span Span # where maximum occurs	+D+S 6.000 ft Span # 1

Max Downward Transient Deflection 0.089 in Ratio = 1,616>=360. Max Upward Transient Deflection -0.009 in Ratio = 7.748 >= 360.Max Downward Total Deflection 0.397 in Ratio = 363 >= 240. Max Upward Total Deflection -0.043 in Ratio = 1675 >= 240.

Maximum Forces & Stresses for Load Combinations

Span

1

Max. "-" Defl

0.0000

Load Combin	ation		Max Stress	Ratios		Summary of Moment Values			es Summary of Shear		ear Values			
Segmen	it Length	Span #	M	V	Mmax +	Mmax -	Ма Мах	Mnx	Mnx/Omega	Cb	Rm	Va Max	Vnx	Vnx/Omega
D Only														
Dsgn. L =	6.00 ft	1	0.029	0.005		-1.36	1.36	78.33	46.91	1.00	1.00	0.45	145.60	87.18
Dsgn. L =	6.00 ft	2	0.029	0.005		-1.36	1.36	78.33	46.91	1.00	1.00	0.45	145.60	87.18
+D+L														
Dsgn. L =	6.00 ft	1	0.121	0.022		-5.68	5.68	78.33	46.91	1.00	1.00	1.89	145.60	87.18
Dsgn. L =	6.00 ft	2	0.121	0.022		-5.68	5.68	78.33	46.91	1.00	1.00	1.89	145.60	87.18
+D+S														
Dsgn. L =	6.00 ft	1	0.434	0.078		-20.37	20.37	78.33	46.91	1.00	1.00	6.79	145.60	87.18
Dsgn. L =	6.00 ft	2	0.434	0.078		-20.37	20.37	78.33	46.91	1.00	1.00	6.79	145.60	87.18
+D+0.750L														
Dsgn. L =	6.00 ft	1	0.098	0.018		-4.60	4.60	78.33	46.91	1.00	1.00	1.53	145.60	87.18
Dsgn. L =	6.00 ft	2	0.098	0.018		-4.60	4.60	78.33	46.91	1.00	1.00	1.53	145.60	87.18
+D+0.750L+0.	.750S													
Dsgn. L =	6.00 ft	1	0.402	0.072		-18.85	18.85	78.33	46.91	1.00	1.00	6.28	145.60	87.18
Dsgn. L =	6.00 ft	2	0.402	0.072		-18.85	18.85	78.33	46.91	1.00	1.00	6.28	145.60	87.18
+0.60D														
Dsgn. L =	6.00 ft	1	0.017	0.003		-0.82	0.82	78.33	46.91	1.00	1.00	0.27	145.60	87.18
Dsgn. L =	6.00 ft	2	0.017	0.003		-0.82	0.82	78.33	46.91	1.00	1.00	0.27	145.60	87.18
Overall	Maximu	m Deflec	tions											

Load Combination

+D+0.750L+0.750S

Location in Span

0.000



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

34

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Steel Beam

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Description:

B9 - DECK SUPPORT

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+0.750L+0.750S	2	0.3967	6.000		0.0000	3.504
Vertical Reactions			Support	notation : Far left is #1	Values in KIPS	
Load Combination	Support 1	Support 2	Support 3			
Overall MAXimum	-3.254	10.324	N-90000000			
Overall MINimum	-0.052	0.492				
D Only	-0.086	0.820				
+D+L	-0.647	3.139				
+D+S	-3.254	10.324				
+D+0.750L	-0.506	2.559				
+D+0.750L+0.750S	-2.882	9.687				
+0.60D	-0.052	0.492				
L Only	-0.560	2.320				
S Only	-3.168	9.504				



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

Printed: 20 JUN 2017. 1:50PM

Wood Beam

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Description:

B10 - FLOOR JOISTS w/ PARTITION

CODE REFERENCES

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

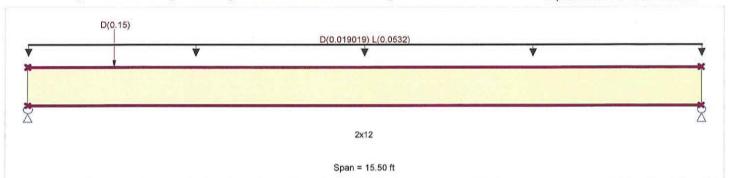
Load Combination Set: ASCE 7-10

Material Properties

Analysis Method: Allowable Stress Design 875.0 psi E: Modulus of Elasticity Fb - Tension 1,400.0ksi 875.0 psi Ebend-xx Load Combination ASCE 7-10 Fb - Compr 510.0ksi Fc - Prll 1,150.0 psi Eminbend - xx Fc - Perp 425.0 psi : Spruce - Pine - Fir Wood Species 135.0 psi F۷ Wood Grade : No. 1/No. 2 450.0 psi

Beam Bracing : Beam is Fully Braced against lateral-torsional buckling

Density 26.210 pcf Repetitive Member Stress Increase



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Uniform Load: D = 0.01430, L = 0.040 ksf, Tributary Width = 1.330 ft, (FLOOR) Point Load: D = 0.150 k @ 2.0 ft, (WALL)

I Offit Load . D Office it (a) Lie it, (* * / 11/				
DESIGN SUMMARY					Design OK
Maximum Bending Stress Ratio Section used for this span	=	0.875 1 P 2x12	Maximum Shear Stress Ratio Section used for this span	=	0.412 : 1 2x12
fb : Actual	=	880.42psi	fv : Actual	=	55.55 psi
FB : Allowable	=	1,006.25psi	Fv : Allowable	=	135.00 psi
Load Combination Location of maximum on span Span # where maximum occurs	=	+D+L 7.467ft Span # 1	Load Combination Location of maximum on span Span # where maximum occurs	= =	+D+L 0.000 ft Span # 1
Maximum Deflection Max Downward Transient Deflection Max Upward Transient Deflection Max Downward Total Deflection Max Upward Total Deflection	n	0.279 in Ratio 0.000 in Ratio 0.409 in Ratio 0.000 in Ratio	= 0<360.0 = 454>=240.		

Vertical Reactions		Support notation : Far left is #1	Values in KIPS
Load Combination	Support 1	Support 2	
Overall MAXimum	0.690	0.579	
Overall MINimum	0.167	0.100	
D Only	0.278	0.167	
+D+L	0.690	0.579	
+D+0.750L	0.587	0.476	
+0.60D	0.167	0.100	
L Only	0.412	0.412	



VILLAGE NEST JJH MULTI UNIT PROJECT Project ID: 2017-0610

Printed: 7 JUL 2017, 10:46AM

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Description:

B10A - FLOOR JOISTS ABV. LANDING

CODE REFERENCES

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

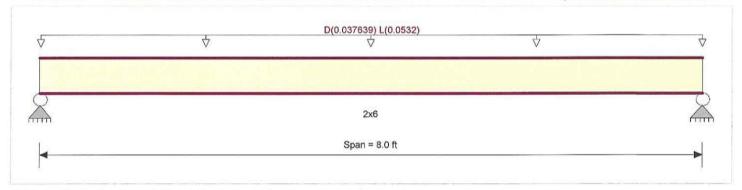
Load Combination Set: ASCE 7-10

Material Properties

E: Modulus of Elasticity Analysis Method: Allowable Stress Design 875.0 psi Fb+ 875.0 psi 1,150.0 psi 1,400.0ksi Load Combination :ASCE 7-10 Fb -Ebend-xx 510.0ksi Fc - Prll Eminbend - xx 425.0 psi Fc - Perp Spruce - Pine - Fir Wood Species 135.0 psi F۷ Wood Grade : No. 1/No. 2 450.0 psi

Beam Bracing : Beam is Fully Braced against lateral-torsional buckling

Density 26.210pcf Repetitive Member Stress Increase



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Values in KIPS

Uniform Load: D = 0.02830, L = 0.040 ksf, Tributary Width = 1.330 ft, (FLOOR)

DESIGN SUMMARY					Design OK
Maximum Bending Stress Ratio Section used for this span	=	0.882 1 N 2x6	Maximum Shear Stress Ratio Section used for this span	=	0.436 : 1 2x6
fb : Actual	=	1,153.13psi	fv : Actual	=	58.83 psi
FB : Allowable	=	1,308.13psi	Fv : Allowable	=	135.00 psi
Load Combination Location of maximum on span Span # where maximum occurs	=	+D+L 4.000ft Span # 1	Load Combination Location of maximum on span Span # where maximum occurs	=	+D+L 7.562ft Span # 1
Maximum Deflection Max Downward Transient Deflect Max Upward Transient Deflection Max Downward Total Deflection Max Upward Total Deflection		0.169 in Ratio = 0.000 in Ratio = 0.289 in Ratio = 0.000 in Ratio =	= 0<360.0 = 331>=240.		*

			and a	4 *	
1/	OPT-	00	Rea	A * 1 A	me
·v			Red		113

Load Combination	Support 1	Support 2	
Overall MAXimum	0.363	0.363	
Overall MINimum	0.090	0.090	
D Only	0.151	0.151	
+D+L	0.363	0.363	
+D+0.750L	0.310	0.310	
+0.60D	0.090	0.090	
L Only	0.213	0.213	

Support notation: Far left is #1



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

Printed: 21 JUN 2017, 9:06AM

Design OK

Wood Beam

File = d:\ENERCALC Projects\2017-0610.ec6 ENERCALC, INC. 1983-2017, Build:6.17.3.17, Ver:6.17.3.17 Licensee: RICHMOND HOFFMAYER

Lic. # : KW-06002886

Description: B11 - FLOOR JOISTS w/ DECK SUPPORT

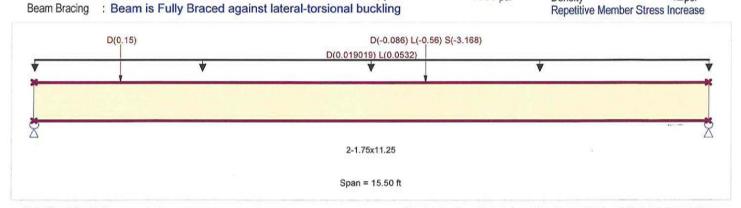
CODE REFERENCES

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

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method : Allowable Stress Design	Fb - Tension	2600 psi	E : Modulus of Elastic	city
Load Combination ASCE 7-10	Fb - Compr	2600 psi	Ebend-xx	1900ksi
	Fc - Prll	2510 psi	Eminbend - xx	965.71 ksi
Wood Species : Trus Joist	Fc - Perp	750 psi		
Wood Grade : MicroLam LVL 1.9 E	Fv	285 psi		
Hood Glado , Illiandeann EVE 110 E	Ft.	1555 psi	Density	42 ncf



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loads

Uniform Load: D = 0.01430, L = 0.040 ksf, Tributary Width = 1.330 ft, (FLOOR)

Point Load: D = 0.150 k @ 2.0 ft, (WALL)

Point Load: D = -0.0860, L = -0.560, S = -3.168 k @ 9.0 ft, (B9)

		D	Е	S	IG	N	S	U	M	N		4/	₹	Υ	
--	--	---	---	---	----	---	---	---	---	---	--	----	---	---	--

DECICIT COMMITTIE					
Maximum Bending Stress Ratio Section used for this span fb : Actual FB : Allowable	= =	0.532 1 A 2-1.75x11.25 1,829.45psi 3,438.50psi	Maximum Shear Stress Ratio Section used for this span fv : Actual Fv : Allowable	= = =	0.213 : 1 2-1.75x11.25 69.73 psi 327.75 psi
Load Combination Location of maximum on span Span # where maximum occurs	=	+D+S 8.995ft Span # 1	Load Combination Location of maximum on span Span # where maximum occurs	=	+D+S 9.051 ft Span # 1
Maximum Deflection Max Downward Transient Deflection Max Upward Transient Deflection Max Downward Total Deflection Max Upward Total Deflection		0.002 in Ratio -0.005 in Ratio -0.046 in Ratio -0.350 in Ratio	= 33909>=360. = 4026>=240.		

Vertical Reactions		Support notation : Far left is #1	Values in KIPS
Load Combination	Support 1	Support 2	
Overall MAXimum	-1.329	-1.839	
Overall MINimum	0.177	0.087	
D Only	0.331	0.206	
+D+L	0.508	0.293	
+D+S	-0.998	-1.634	
+D+0.750L	0.464	0.271	
+D+0.750L+0.750S	-0.532	-1.108	
+0.60D	0.199	0.123	
L Only	0.177	0.087	
S Only	-1.329	-1.839	

RICHMOND HOFFMAYER INC. STRUCTURAL ENGINEERING



PROJECT VILLAGE NEST JOB 2017-0610

CLIENT
ADDRESS EDEN, UT

HUUM

ENGINEER J.H. DATE 6/14/2017

RICHARD PE 49628 HOFFMAYER SE 5435 SHEFT 27 OF

(2) 13/4×11	-7/8 1-9E	LVL, 15
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ر ۱ مرادی	~ HSSE	3×4-3/e
10 L		
		M,N.
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Min.	2"	13/4 p 13/4 p 13/4 p 13/4 p 24/04.
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VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID:

2017-0610 3*C*

Printed: 21 JUN 2017, 9:13AM

Design OK

Wood Beam

Lic. #: KW-06002886

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Description:

B11 - FLOOR JOISTS w/ DECK SUPPORT

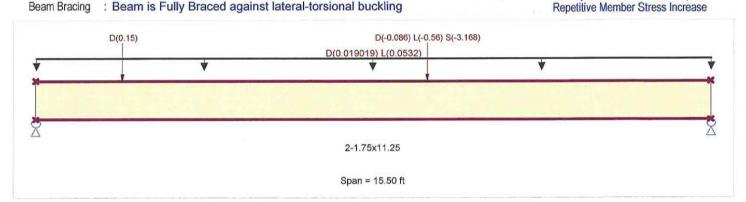
CODE REFERENCES

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

Load Combination Set: ASCE 7-10

Material Properties

E: Modulus of Elasticity Analysis Method: Allowable Stress Design 2600 psi Fb - Tension 1900ksi Load Combination ASCE 7-10 Fb - Compr 2600 psi Ebend-xx 2510 psi Fc - Prll Eminbend - xx 965.71ksi 750 psi Fc - Perp Wood Species : Trus Joist 285 psi Fv : MicroLam LVL 1.9 E Wood Grade 42pcf Ft 1555 psi Density



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loads

Uniform Load: D = 0.01430, L = 0.040 ksf, Tributary Width = 1.330 ft, (FLOOR)

Point Load: D = 0.150 k @ 2.0 ft, (WALL)

Point Load: D = -0.0860, L = -0.560, S = -3.168 k @ 9.0 ft, (B9)

DESIGN SUMMARY

Max Upward Total Deflection

Maximum Bending Stress Ratio	=	0.532 1 N	Maximum Shear Stress Ratio	=	0.213:1
Section used for this span		2-1.75x11.25	Section used for this span		2-1.75x11.25
fb : Actual	=	1,829.45psi	fv : Actual	=	69.73 psi
FB : Allowable	=	3,438.50psi	Fv : Allowable	=	327.75 psi
Load Combination		+D+S	Load Combination		+D+S
Location of maximum on span	=	8.995ft	Location of maximum on span	=	9.051 ft
Span # where maximum occurs	=	Span #1	Span # where maximum occurs	=	Span # 1
Maximum Deflection					
Max Downward Transient Deflect	ion	0.002 in Ratio	= 92810>=360.		
Max Upward Transient Deflection	1000	-0.005 in Ratio	= 33909>=360.		
Max Downward Total Deflection		0.046 in Ratio			

531>=240.

-0.350 in Ratio =

Vertical Reactions		Support notation : Far left is #1	Values in KIPS
Load Combination	Support 1	Support 2	
Overall MAXimum	-1.329	-1.839	
Overall MINimum	0.177	0.087	
D Only	0.331	0.206	
+D+L	0.508	0.293	
+D+S	-0.998	-1.634	
+D+0.750L	0.464	0.271	
+D+0.750L+0.750S	-0.532	-1.108	
+0.60D	0.199	0.123	
L Only	0.177	0.087	
S Only	-1.329	-1.839	



VILLAGE NEST JJH MULTI UNIT PROJECT

1555 psi

Project ID: 2017-0610

Printed: 21 JUN 2017, 9:51AM

42pcf

Wood Beam

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Lic. #: KW-06002886

Description : B12 - FLOOR SUPPORT

CODE REFERENCES

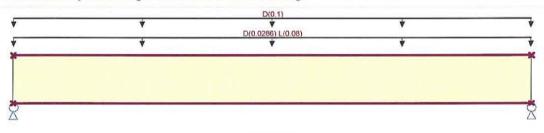
Calculations per NDS 2015, IBC 2015, CBC 2016, ASCE 7-10

Load Combination Set : ASCE 7-10

Material Properties

Analysis Method: Allowable Stress Design Fb - Tension 2600 psi E: Modulus of Elasticity 2600 psi 1900ksi Load Combination :ASCE 7-10 Ebend-xx Fb - Compr Fc - Prll 2510 psi Eminbend - xx 965.71ksi Fc - Perp 750 psi Wood Species : Trus Joist 285 psi : MicroLam LVL 1.9 E F٧ Wood Grade

Beam Bracing : Beam is Fully Braced against lateral-torsional buckling



2-1.75x11.87

Span = 10.0 ft

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Density

Beam self weight calculated and added to loads

Uniform Load: D = 0.01430, L = 0.040 ksf, Tributary Width = 2.0 ft, (FLOOR)

Uniform Load: D = 0.10, Tributary Width = 1.0 ft, (WALL)

DESIGN SUMMARY					Design OK
Maximum Bending Stress Ratio Section used for this span fb : Actual	=	2-1.75x11.87	Maximum Shear Stress Ratio Section used for this span fv : Actual	=	0.112 : 1 2-1.75x11.87
FB : Allowable	=	402.49psi 2,600.00psi	Fv : Allowable	=	31.98 psi 285.00 psi
Load Combination Location of maximum on span Span # where maximum occurs	=	+D+L 5.000ft Span # 1	Load Combination Location of maximum on span Span # where maximum occurs	=	+D+L 0.000 ft Span # 1

6150>=360
0<360
2229>=240.
0<240.0

Vertical Reactions		Support notation : Far left is #1	Values in KIPS
Load Combination	Support 1	Support 2	
Overall MAXimum	1.104	1.104	
Overall MINimum	0.400	0.400	
D Only	0.704	0.704	
+D+L	1.104	1.104	
+D+0.750L	1.004	1.004	
+0.60D	0.422	0.422	
I. Only	0.400	0.400	



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

A

Printed: 7 JUL 2017, 10:44AM

Wood Beam

Lic. #: KW-06002886

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Description:

B13 - FLOOR SUPPORT ABV. STAIR

CODE REFERENCES

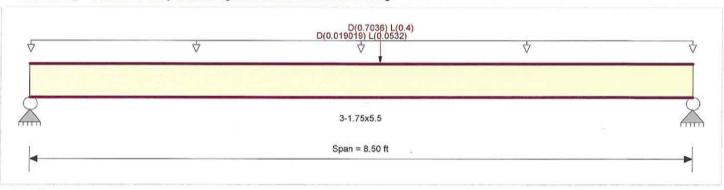
Calculations per NDS 2015, IBC 2015, CBC 2016, ASCE 7-10

Load Combination Set: ASCE 7-10

Material Properties

E: Modulus of Elasticity Analysis Method: Allowable Stress Design 2,600.0 psi Fb+ Load Combination ASCE 7-10 1,900.0ksi Fb-2,600.0 psi Ebend-xx Fc - Prll 2,510.0 psi Eminbend - xx 965.71ksi 750.0 psi Fc - Perp Wood Species Trus Joist Fv 285.0 psi Wood Grade : MicroLam LVL 1.9 E 1,555.0 psi Density 42.0pcf

Beam Bracing : Beam is Fully Braced against lateral-torsional buckling



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loads

Uniform Load: D = 0.01430, L = 0.040 ksf, Tributary Width = 1.330 ft, (FLOOR)

Point Load: D = 0.7036, L = 0.40 k @ 4.50 ft, (B12)

	(0, 1,00 11)	(-,-/			
DESIGN SUMMARY				200	Design OK
Maximum Bending Stress Ratio Section used for this span	=	0.534 1 3-1.75x5.5	Maximum Shear Stress Ratio Section used for this span	=	0.163 : 1 3-1.75x5.5
fb : Actual	=	1,388.15psi	fv : Actual	=	46.34 psi
FB : Allowable	=	2,600.00psi	Fv : Allowable	=	285.00 psi
Load Combination Location of maximum on span Span # where maximum occurs	=	+D+L 4.498ft Span # 1	Load Combination Location of maximum on span Span # where maximum occurs	=	+D+L 8.066 ft Span # 1
Maximum Deflection Max Downward Transient Deflect Max Library Transient Deflection		0.109 in Ratio	= 932>=360		-pairir 1

0.109 in	Ratio =	932>=360
0.000 in	Ratio =	0<360
0.245 in	Ratio =	415>=240.
0.000 in	Ratio =	0<240.0
	0.000 in 0.245 in	0.109 in Ratio = 0.000 in Ratio = 0.245 in Ratio = 0.000 in Ratio =

Vertical Reactions		Support notation : Far left is #1	Values in KIPS
Load Combination	Support 1	Support 2	
Overall MAXimum	0.862	0.927	
Overall MINimum	0.269	0.293	
D Only	0.448	0.489	
+D+L	0.862	0.927	
+D+0.750L	0.758	0.818	
+0.60D	0.269	0.293	
L Only	0.414	0.438	¥



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

Printed: 21 JUN 2017, 10:01AM

Wood Beam

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Lic. # : KW-06002886

Description: **B14 - HEADERS**

CODE REFERENCES

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

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method:	Allowable Stress Design	
Load Combination	'ASCE 7-10	

Wood Species Wood Grade

: Spruce - Pine - Fir : No. 1/No. 2

Beam Bracing : Completely Unbraced

Fb - Tension

875 psi 875 psi Fb - Compr 1150 psi Fc - Prll Fc - Perp 425 psi Fv

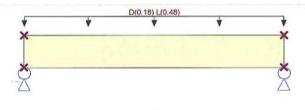
135 psi 450 psi Ft

E: Modulus of Elasticity

Ebend-xx Eminbend - xx

1400ksi 510ksi

26.21 pcf Density



4x6

Span = 3.50 ft

Applied Loads

Beam self weight calculated and added to loads Uniform Load: D = 0.0150, L = 0.040 ksf, Tributary Width = 12.0 ft, (FLOOR)

DESIGN	SUMM	ARY
Maximum	Bending	Stress

s Ratio 0.610 1 Section used for this span 4x6 fb: Actual 690.92psi FB: Allowable 1,133.19psi +D+L

1.750ft Location of maximum on span Span # where maximum occurs Span #1

Maximum Shear Stress Ratio Section used for this span fv : Actual

Fv : Allowable Load Combination Location of maximum on span Span # where maximum occurs

Service loads entered. Load Factors will be applied for calculations.

135.00 psi +D+L 3.053ft Span #1

Design OK

0.499:1

4x6

67.36 psi

Maximum Deflection

Load Combination

Max Downward Transient Deflection Max Upward Transient Deflection Max Downward Total Deflection Max Upward Total Deflection

0.024 in Ratio = 0.000 in Ratio = 0.033 in Ratio = 0.000 in Ratio =

1750>=360 0<360 1266>=240. 0<240.0

Vertical Reactions

Support notation: Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
Overall MAXimum	1.161	1.161
Overall MINimum	0.193	0.193
D Only	0.321	0.321
+D+L	1.161	1.161
+D+0.750L	0.951	0.951
+0.60D	0.193	0.193
L Only	0.840	0.840



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

92

Printed; 21 JUN 2017, 10:11AM

Design OK

Wood Beam

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Licensee: RICHMOND HOFFMAYER

Lic. #: KW-06002886

Description:

B15 - HEADERS

CODE REFERENCES

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

Load Combination Set : ASCE 7-10

Material Properties

Fb - Tension	2600 psi	E: Modulus of Elastic	city
Fb - Compr	2600 psi	Ebend-xx	1900ksi
Fc - Prll	2510 psi	Eminbend - xx	965.71ksi
Fc - Perp	750 psi		
Fv	285 psi		
Ft	1555 psi	Density	42pcf
	Fb - Compr Fc - PrII Fc - Perp	Fb - Compr 2600 psi Fc - Prll 2510 psi Fc - Perp 750 psi Fv 285 psi	Fb - Compr 2600 psi Ebend- xx Fc - Prll 2510 psi Eminbend - xx Fc - Perp 750 psi Fv 285 psi

Beam Bracing : Completely Unbraced



2-1.75x9.5

Span = 6.50 ft

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loads

Max Downward Total Deflection

Max Upward Total Deflection

Uniform Load: D = 0.0150, L = 0.040 ksf, Tributary Width = 2.0 ft, (FLOOR)

Uniform Load : D = 0.120 , Tributary Width = 1.0 ft, (EXTERIOR WALL) Uniform Load : D = 0.01580, Lr = 0.020, S = 0.2640 ksf, Tributary Width = 7.0 ft, (ROOF)

DESIGN SUMMARY

DECIGIT COMMINATOR					The second section of the second section is a second section of the second section of the second section is a second section of the section of
Maximum Bending Stress Ratio Section used for this span	=	0.872 1 2-1.75x9.5	Maximum Shear Stress Ratio Section used for this span	=	0.719 : 1 2-1.75x9.5
fb : Actual	=	2,550.00psi	fv : Actual	=	235.77 psi
FB : Allowable	=	2,925.88psi	Fv : Allowable	=	327.75 psi
Load Combination Location of maximum on span	=	+D+S 3.250ft	Load Combination Location of maximum on span	. =	+D+S 5.717 ft
Span # where maximum occurs	=	Span #1	Span # where maximum occurs	=	Span # 1
Maximum Deflection Max Downward Transient Deflection Max Upward Transient Deflection		0.157 in Ratio			

433>=240.

0<240.0

0.180 in Ratio =

0.000 in Ratio =

Vertical Reactions		Support notation : Far	r left is #1	Values in KIPS	
Load Combination	Support 1	Support 2			
Overall MAXimum	6.884	6.884			
Overall MINimum	0.260	0.260			
D Only	0.878	0.878			
+D+L	1.138	1.138			
+D+Lr	1.333	1.333			
+D+S	6.884	6.884			
+D+0.750Lr+0.750L	1.415	1.415			
+D+0.750L+0.750S	5.578	5.578			
+0.60D	0.527	0.527			
I r Only	0.455	0.455			



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

Wood Beam

Printed: 21 JUN 2017, 10:11AM

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ENERCALC, INC. 1983-2017, Build:6.17.3.17, Ver.6.17.3.17

Licensee: RICHMOND HOFFMAYER

Lic. # : KW-06002886 Description : B15 - HEADERS

Vertical Reactions		Support notation : Far left is #1	Values in KIPS
Load Combination	Support 1	Support 2	
L Only	0.260	0.260	
S Only	6.006	6.006	



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

94

Steel Beam

Printed: 21 JUN 2017, 10:48AM File = d:\ENERCALC Projects\2017-0610.ec6 ENERCALC, INC. 1983-2017, Build:6.17.3.17, Ver:6.17.3.17

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Design OK

Lic. #: KW-06002886

Description: B16

B16 - BALCONY SUPPORT

CODE REFERENCES

Calculations per AISC 360-10, IBC 2015, ASCE 7-10

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method: Allowable Strength Design

Beam Bracing: Beam is Fully Braced against lateral-torsional buckling

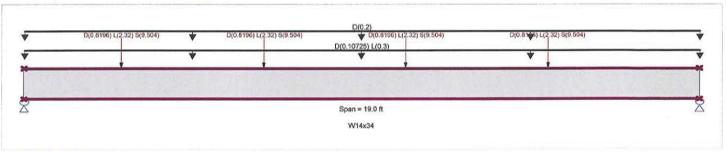
Bending Axis: Major Axis Bending

Fy: Steel Yield:

E: Modulus :

50.0 ksi

29,000.0 ksi



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading

Uniform Load : D = 0.01430, L = 0.040 ksf, Tributary Width = 7.50 ft, (FLOOR)

Uniform Load: D = 0.20 k/ft, Tributary Width = 1.0 ft, (GLASS)

Point Load: D = 0.8196, L = 2.320, S = 9.504 k @ 2.750 ft, (BALCONY - B9) Point Load: D = 0.8196, L = 2.320, S = 9.504 k @ 6.750 ft, (BALCONY - B9) Point Load: D = 0.8196, L = 2.320, S = 9.504 k @ 10.750 ft, (BALCONY - B9) Point Load: D = 0.8196, L = 2.320, S = 9.504 k @ 14.750 ft, (BALCONY - B9)

DESIGN SUMMARY

Maximum Bending Stress Ratio =	0.981:1	Maximum Shear Stress Ratio =	0.329:1
Section used for this span	W14x34	Section used for this span	W14x34
Ma : Applied	133.584 k-ft	Va : Applied	26.284 k
Mn / Omega : Allowable	136.228 k-ft	Vn/Omega : Allowable	79.80 k
Load Combination Location of maximum on span	+D+0.750L+0.750S 10.749ft	Load Combination Location of maximum on span	+D+0.750L+0.750S 0.000 ft
Span # where maximum occurs	Span # 1	Span # where maximum occurs	Span # 1

Maximum Deflection

naximum Deliection		
Max Downward Transient Deflection	0.259 in Ratio =	878>=360
Max Upward Transient Deflection	0.000 in Ratio =	0 < 360
Max Downward Total Deflection	0.421 in Ratio =	541 >=240.
Max Upward Total Deflection	0.000 in Ratio =	0 < 240.0

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress	Max Stress Ratios Summary of Moment Values					Summary of Shear Values					
Segment Length	Span #	M	V	Mmax +	Mmax -	Ma Max	Mnx	Mnx/Omega	Cb	Rm	Va Max	Vnx	Vnx/Omega
D Only	100		A ST IDAN ST AT			U LOUTE AL TRACT	0.000						
Dsgn. L = 19.00 ft	1	0.179	0.063	24.44		24.44	227.50	136.23	1.00	1.00	5.01	119.70	79.80
+D+L													
Dsgn. L = 19.00 ft	1	0.467	0.161	63.66		63.66	227.50	136.23	1.00	1.00	12.87	119.70	79.80
+D+S													
Dsgn. L = 19.00 ft	1	0.960	0.320	130.73		130.73	227.50	136.23	1.00	1.00	25.52	119.70	79.80
+D+0.750L													
Dsgn. L = 19.00 ft	1	0.395	0.137	53.85		53.85	227.50	136.23	1.00	1.00	10.90	119.70	79.80
+D+0.750L+0.750S													
Dsgn. L = 19.00 ft	1	0.981	0.329	133.58		133.58	227.50	136.23	1.00	1.00	26.28	119.70	79.80
+0.60D													
Dsgn. L = 19.00 ft	1	0.108	0.038	14.66		14.66	227.50	136.23	1.00	1.00	3.01	119.70	79.80

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+L	1	0.4214	9.500		0.0000	0.000
Vertical Reactions			Support	notation : Far left is #1	Values in KIPS	

Load Combination	Support 1	Support 2
Overall MAXimum	26.284	23.225



VILLAGE NEST JJH MULTI UNIT PROJECT

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Steel Beam

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Lic. #: KW-06002886 Description: B16 - BA

B16 - BALCONY SUPPORT

Vertical Reactions			Support notation : Far left is #1	Values in KIPS
Load Combination	Support 1	Support 2		
Overall MINimum	3.006	2.851		
D Only	5.010	4.752		
+D+L	12.867	11.875		
+D+S	25.519	22.259		
+D+0.750L	10.903	10.094		
+D+0.750L+0.750S	26.284	23.225		
+0.60D	3.006	2.851		
L Only	7.856	7.124		
S Only	20.509	17.507		



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID:

2017-0610

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Design OK

W10x22

0.801:1

39.237 k

48.960 k

+D+S

Span #1

7.000 ft

Steel Beam

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icensee : RICHMOND HOFFMAYE

Lic. #: KW-06002886 Description: B17 -

B17 - RIDGE SUPPORT

CODE REFERENCES

Calculations per AISC 360-10, IBC 2015, ASCE 7-10

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method: Allowable Strength Design

Beam Bracing: Beam is Fully Braced against lateral-torsional buckling

Bending Axis: Major Axis Bending

Fy: Steel Yield: E: Modulus: 50.0 ksi

29,000.0 ksi

D(0.0288) L(0.08)

D(0.0288) L(0.08)

W10x22

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading

Uniform Load: D = 0.01430, L = 0.040 ksf, Tributary Width = 2.0 ft, (FLOOR) Point Load: D = 3.110, Lr = 3.390, S = 42.460 k @ 6.0 ft, (RIDGE B4 ABV.)

DESIGN SUMMARY

Maximum Bending Stress Ratio = 0.604:1 Maximum Shear Stress Ratio = Section used for this span W10x22 Section used for this span Ma: Applied Va : Applied 39.212 k-ft Vn/Omega: Allowable Mn / Omega: Allowable 64.870 k-ft +D+S Load Combination Load Combination Location of maximum on span 6.000ft Location of maximum on span Span # where maximum occurs Span #1 Span # where maximum occurs

Maximum Deflection

 Max Downward Transient Deflection
 0.005 in Ratio = 16,041 >= 360

 Max Upward Transient Deflection
 0.000 in Ratio = 0 < 360</td>

 Max Downward Total Deflection
 0.011 in Ratio = 0 < 240.0</td>

 Max Upward Total Deflection
 0.000 in Ratio = 0 < 240.0</td>

Maximum Forces & Stresses for Load Combinations

Load Combina	ation		Max Stress	Ratios		8	Summary of M	loment Valu	es			Summa	ary of Sh	ear Values
Segment	t Length	Span #	M	V	Mmax +	Mmax -	Ма Мах	Mnx	Mnx/Omega	Cb	Rm	Va Max	Vnx	Vnx/Omega
D Only	A 100 (A 100 (A))(A 100 (A 100 (A 100 (A 100 (A 100 (A))(A 100 (A 100 (A 100 (A))(A 100 (A 100 (A))(A 100 (A))(A 100 (A 100 (A))(A 100 (0.00	0.003.000000	1030900000000	UWWWW		000,0000	0.907.0000.000.000	#1000F00	(SAC) 9 82 404A		1007/00/1940	, www.com	25000 0 00000
Dsgn. L =	7.00 ft	1	0.043	0.058	2.82		2.82	108.33	64.87	1.00	1.00	2.84	73.44	48.96
+D+L														
Dsgn. L =	7.00 ft	1	0.047	0.064	3.06		3.06	108.33	64.87	1.00	1.00	3.12	73.44	48.96
+D+Lr														
Dsgn. L =	7.00 ft	1	0.088	0.117	5.72		5.72	108.33	64.87	1.00	1.00	5.75	73.44	48.96
+D+S														
Dsgn. L =	7.00 ft	1	0.604	0.801	39.21		39.21	108.33	64.87	1.00	1.00	39.24	73.44	48.96
+D+0.750Lr+0	.750L													
Dsgn. L =	7.00 ft	1	0.080	0.107	5.18		5.18	108.33	64.87	1.00	1.00	5.23	73.44	48.96
+D+0.750L+0.	750S													
Dsgn. L =	7.00 ft	1	0.467	0.620	30.29		30.29	108.33	64.87	1.00	1.00	30.35	73.44	48.96
+0.60D														
Dsgn. L =	7.00 ft	1	0.026	0.035	1.69		1.69	108.33	64.87	1.00	1.00	1.71	73.44	48.96

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+Lr	1	0.0108	3.980		0.0000	0.000
Vertical Reactions			Support	t notation : Far left is #1	Values in KIPS	
Load Combination	Support 1	Support 2	1016			

moud communication	- approx.	- arte to - c - m
Overall MAXimum	6.687	39.237
Overall MINimum	0.280	0.280
D Only	0.621	2.843



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

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Steel Beam

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Description: B17 - RIDGE SUPPORT

Vertical Reactions			Support notation : Far left is #1	Values in KIPS
Load Combination	Support 1	Support 2		
+D+L	0.901	3.123		
+D+Lr	1.106	5.749		
+D+S	6.687	39.237		
+D+0.750Lr+0.750L	1.195	5.232		
+D+0.750L+0.750S	5.381	30.349		
+0.60D	0.373	1.706		
Lr Only	0.484	2.906		
L Only	0.280	0.280		
S Only	6.066	36.394		



VILLAGE NEST JJH

MULTI UNIT PROJECT

2017-0610 Project ID:

Printed: 21 JUN 2017, 11:03AM

Steel Column

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Lic. #: KW-06002886

B17 SUPPORT Description:

Code References

Calculations per AISC 360-10, IBC 2015, CBC 2016, ASCE 7-10

Load Combinations Used: ASCE 7-10

General Information

Steel Section Name:

Pipe4STD

Analysis Method:

Allowable Strength

Steel Stress Grade

Fy: Steel Yield

36.0 ksi

E: Elastic Bending Modulus

29,000.0 ksi

Overall Column Height

10.0 ft

Top & Bottom Fixity

Top & Bottom Pinned

Brace condition for deflection (buckling) along columns:

X-X (width) axis:

Unbraced Length for X-X Axis buckling = 10.0 ft, K = 1.0

Y-Y (depth) axis:

Unbraced Length for Y-Y Axis buckling = 10.0 ft, K = 1.0

Applied Loads

Column self weight included: 108.0 lbs * Dead Load Factor

AXIAL LOADS ...

B17: Axial Load at 10.0 ft, D = 2.843, LR = 2.906, L = 0.280, S = 36.394 k

DESIGN SUMMARY

Bending & Shear Check Results

PASS Max. Axial+Bending Stress Ratio = 0.8598:1 Load Combination +D+S Location of max.above base 0.0 ft At maximum location values are . . . Pa: Axial 39.345 k Pn / Omega: Allowable 45.760 k Ma-x: Applied 0.0 k-ft 7.275 k-ft

Mn-x / Omega: Allowable Ma-y: Applied Mn-y / Omega: Allowable

PASS Maximum Shear Stress Ratio = Load Combination

Location of max.above base At maximum location values are . . . Va: Applied

Vn / Omega: Allowable

Maximum SERVICE Load Reactions . .

0.0 k Top along X-X 0.0 k Bottom along X-X 0.0 k Top along Y-Y 0.0 k Bottom along Y-Y

Service loads entered. Load Factors will be applied for calculations.

Maximum SERVICE Load Deflections . . .

Along Y-Y 0.0 in at

for load combination: Along X-X 0.0 in at

0.0ft above base

0.0ft above base

for load combination:

0.000

Load Combination Results

Maximum Axial + Bending Stress Ratios Maximum Shear Ratios Stress Ratio Location Stress Ratio Load Combination Status Location Status 0.000 PASS 0.00 ft D Only 0.064 PASS 0.00 ft 0.00 ft 0.000 PASS 0.00 ft +D+L 0.071 PASS 0.00 ft 0.000 PASS 0.00 ft +D+Lr 0.128 PASS +D+S 0.860 0.00 ft 0.000 PASS 0.00 ft PASS +D+0.750Lr+0.750L 0.117 PASS 0.00 ft 0.000 PASS 0.00 ft +D+0.750L+0.750S 0.666 0.00 ft 0.000 PASS 0.00 ft PASS

PASS

0.039

0.0 k-ft

7.275 k-ft

0.0:1

0.0 ft

0.0 k 0.0 k

Maximum Reactions

+0.60D

Note: Only non-zero reactions are listed. nts

PASS

0.00 ft

maximi i todotiono								Character and an expression of the second		
	Axial Reaction	Reaction X-X Axis Reaction		k	Y-Y Axis	Reaction	Mx - End M	loments k-ft	My - End	Moments
Load Combination	@ Base	@ Base	@ Тор		@ Base	@ Top	@ Base	@ Тор	@ Base	@ Top
D Only	2.951	AND PARTY OF THE	100000000000000000000000000000000000000							
+D+L	3.231									
+D+Lr	5.857									
+D+S	39.345									
+D+0.750Lr+0.750L	5.341									
+D+0.750L+0.750S	30.457									
+0.60D	1.771									

0.00 ft



VILLAGE NEST

JJH Pri MULTI UNIT PROJECT

Project ID: 2017-0610

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13.600 in^4

File = d:\ENERCALC Projects\2017-0610.ec6 Steel Column ENERCALC, INC. 1983-2017, Build:6.17.3.17, Ver:6.17.3.17 Lic. #: KW-06002886 Licensee: RICHMOND HOFFMAYER **B17 SUPPORT** Description: **Maximum Reactions** Note: Only non-zero reactions are listed. My - End Moments Axial Reaction X-X Axis Reaction Y-Y Axis Reaction Mx - End Moments k-ft @ Base @ Base @ Top Load Combination @ Base @ Base @ Тор @ Base @ Top @ Top 2.906 Lr Only L Only 0.280 36.394 S Only **Extreme Reactions** Axial Reaction X-X Axis Reaction Y-Y Axis Reaction Mx - End Moments My - End Moments Item Extreme Value @ Base @ Base @ Top @ Base @ Top @ Base @ Top @ Base @ Top Axial @ Base Maximum 39.345 0.280 Minimum 2.951 Reaction, X-X Axis Maximum Minimum 2.951 2.951 Reaction, Y-Y Axis Maximum 2.951 Minimum Reaction, X-X Axis Maximum 2.951 2.951 Minimum 2.951 Reaction, Y-Y Axis Maximum Minimum 2.951 2.951 Moment, X-X Axis Ba Maximum Minimum 2.951 Moment, Y-Y Axis Ba Maximum 2.951 2.951 Minimum 2.951 Moment, X-X Axis To Maximum Minimum 2.951 2.951 Moment, Y-Y Axis To Maximum Minimum 2.951 **Maximum Deflections for Load Combinations**

Load Combination	Max. X-X Defle	ection	Distance		Max. Y-Y Def	Max. Y-Y Deflection		Distance	
D Only	0.0000	in	0.000	ft	0.000	in	0.000	ft	
+D+L	0.0000	in	0.000	ft	0.000	in	0.000	ft	
+D+Lr	0.0000	in	0.000	ft	0.000	in	0.000	ft	
+D+S	0.0000	in	0.000	ft	0.000	in	0.000	ft	
+D+0.750Lr+0.750L	0.0000	in	0.000	ft	0.000	in	0.000	ft	
+D+0.750L+0.750S	0.0000	in	0.000	ft	0.000	in	0.000	ft	
+0.60D	0.0000	in	0.000	ft	0.000	in	0.000	ft	
Lr Only	0.0000	in	0.000	ft	0.000	in	0.000	ft	
L Only	0.0000	in	0.000	ft	0.000	in	0.000	ft	
S Only	0.0000	in	0.000	ft	0.000	in	0.000	ft	
	Accessor of the Committee of the Committ								

Steel Section Properties	s: Pi	pe4STD
--------------------------	-------	--------

OLCOL GOOGIGI	100011100	and the second	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Depth	=	4.500	in	l xx	=	6.82 in^4	
				S xx	=	3.03 in^3	
Diameter	=	4.500	in	R xx	=	1.510 in	
Wall Thick	=	0.237	in	Zx	=	4.050 in^3	
Area	=	2.960	in^2	l yy	=	6.820 in^4	
Weight	=	10.800	plf	S yy	=	3.030 in^3	
				R yy	=	1.510 in	

Ycg

=

0.000 in



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610



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NOTE: PAGES 51 - 98 OMITTED FROM THIS SET OF CALCS...

RICHMOND HOFFMAYER



PROJECT	VILLAGE NEST	JOB	2017-0610	
CLIENT				
ADDRESS	EDEN, UT			
DESIGN	HUUM			
ENGINEER	J.H.	DATE	6/14/2017	
	RICHMOND PE 44628 HOFFMAYER SE 5455	SHEET	QQ OF	

01	0	1414	INFORMATION	-
9	-	MAL	11410101 121120	-

TRY TYPE "S" PANELS

SEISMIL DESIGN CATEGORY D -FERIOPIL SPECIAL INSPECTION RELOVIRED FOR FASTENING AND ANCHORNING OF SHEAR WALLS.

TRY 7-4" TANEL CORE THICKNESS.

->MAX HEIGHT = 10-6"

WONIF = (16.8p+20L,+264,) 14 = 2099 PLF

ROST

WUNIES (14.30+40L) 8' = 217 PLF

WMX = 2099 + 217 = 2316 PLF

SEE TABLE 5 NEXT PAGE, CAR = 4326 PLF/

- MAX HEADEN SPAN W/O P.INT LOAD = 45'

WMANE 2099 PLF

SEE TABLE 14, PG #101, CASP = 2620PLF /

DBL TRAMPER, PREMIER INSUL-BERN 11

TABLE 4—UNIFORM TRANSVERSE LOADS FOR FACE SUPPORTED PREMIER TYPE L PANELS^{1,2,3} (psf)

PANEL CORE	DEFLECTION					PANE	L SPAN				
THICKNESS (inches)		4 ft⁴	8 ft	10 ft	12 ft	14 ft	16 ft	18 ft	20 ft	22 ft	24 ft
	L/ ₃₆₀	98	45	32	24	16	11				
3 ¹ / ₂ ⁵	^L / ₂₄₀	215	67	47	34	24	16				
	^L / ₁₈₀	298*	90	61	44	34	22				
	L/ ₃₆₀	241	128	57	41	33	25	20	15		
5 ¹ / ₂ ⁶	L/ ₂₄₀	288*	182*	86	60	49	37	29	22		
	L/ ₁₈₀	288*	182*	112*	. 79	65	49	39	29		
	L/ ₃₆₀	241	168	80	65	54	42	33	24		
71/47	L/ ₂₄₀	288*	188*	126	99	81	61	49	34		
	L/ ₁₈₀	288*	188*	133*	117*	105	80	62	44		
	^L / ₃₆₀	274	188*	116	100	80	62	47	35	32	28
9 ¹ / ₄ ⁸	L/ ₂₄₀	326*	188*	147*	134*	120	92	70	52	46	41
	· L/ ₁₈₀	326*	188*	147*	134*	121*	108*	93	68	61	53
	^L / ₃₆₀	327*	188*	167*	140	116	90	75	57	47	36
11 ¹ / ₄ ⁸	L/ ₂₄₀	327*	188*	167*	153*	132*	110*	97*	83*	69	53
	L/ ₁₈₀	327*	188*	167*	153*	132*	110*	97*	83*	83*	70

For **Si**: 1 inch = 25.4 mm, 1 psf = 47.9 Pa, 1 foot = 304.8 mm.

TABLE 5—ALLOWABLE UNIFORM AXIAL LOADS FOR PREMIER TYPE S PANELS (plf)1.2.3.4

PANEL CORE		PANEL SPAN											
THICKNESS (inches)	8 ft	10 ft	12 ft	16 ft	20 ft	24 ft							
31/2	3,500	2,555	2,450	2,120									
5 ¹ / ₂	4,250	4,040	3,375	3,920	2,815								
71/4	4,915	4,325	4,475	4,195	3,495	3,065							
9 ¹ / ₄	4,200	4.200	4,200	4,200	3,389	3,247							
1111/4	3,890	3,890	3,890	3,890	3,890	3,333							

For SI: 1 inch = 25.4 mm, 1 plf = 14.6 N/m, 1 foot = 304.8 mm.

TABLE 6-ALLOWABLE UNIFORM AXIAL LOADS FOR PREMIER TYPE L PANELS (plf) 1,2,3,4

PANEL CORE	PANEL SPAN											
THICKNESS (inches)	8 ft	10 ft	12 ft	16 ft	20 ft	24 ft						
31/2	4,725	3,905	3,095	2,350								
5 ¹ / ₂	5,850	5,890	4,280	4,310	2,933							
71/4	6,850	6,110	5,555	5,180	4,835	4,080						
91/4	5,470	5,470	5,470	5,470	5,470	4,250						
11 ¹ / ₄	4,500	4,333	4,167	3,750	3,750	3,333						

For SI: 1 inch = 25.4 mm, 1 plf = 14.6 N/m, 1 foot = 304.8 mm.

¹Floor panels must have a minimum ³/₄-inch-thick top skin or a minimum ⁷/₁₆-inch-thick top skin overlaid with minimum ⁷/₁₆-inch-thick finish flooring perpendicular to the panels.

²The tabulated values are for roof and floor panels installed with simply supported single span conditions with panels supported at each end on a minimum 1¹/₂-inch-wide continuous support in contact with the panel face. Tabulated values are applicable to panels installed with the strong axis of the OSB panel facers parallel to the panel span.

³Allowable loads with an asterisk, *, indicates a capacity based on the average peak test load divided by 3.

⁴Panels spanning 4 feet shall be a minimum of 8 feet long spanning a minimum of two 4 foot spans. No single span conditions must be

 $^{^{5}}$ 3 1 / $_{2}$ -inch thick core panels must be limited to a maximum span of 10 feet when used in roof applications.

⁶5¹/₂-inch thick core panels must be limited to a maximum span of 14 feet when used in roof applications.

 $^{^{77}}l_{4}$ -inch thick core panels must be limited to a maximum span of 18 feet when used in roof applications.

 $^{^89^1}$ /₄ and 11 1 /₄-inch thick core panels shall be limited to a maximum span of 20 feet when used in roof applications.

¹For the allowable axial load on the fire-resistance-rated assembly, see Section 4.2.6.

²For combined loads; requirements in Section 4.1 must be applied.

³The tabulated loads are uniform axial loads applied concentrically to the full thickness of the panels, including panel facings.

⁴The tabulated values are for panels installed with strong axis of the OSB panel facers parallel to the wall height (panel span) and on concrete foundations. The member, element, or structure supporting the bearing wall panels, as shown in Figures 7, 8 and 9, must be designed for the bearing stress of the wall panels to the satisfaction to the code official.

¹For the allowable axial load on fire-resistance-rated assembly, see Section 4.2.7.

²For combined loads; requirements in Section 4.1 must be applied.

³The tabulated loads are uniform axial loads applied concentrically to the full thickness of the panels, including panel facings.

⁴The tabulated values are for panels installed with strong axis of the OSB panel facers parallel to the wall height (panel span) on concrete foundations. The member, element, or structure supporting the bearing wall panels, as shown in Figures 7, 8 and 9, must be designed for the bearing stress of the wall panels to the satisfaction to the code official.

Table 13: Wind Speed vs. Pressure

	Wall Loads (psf) - End Zone (Zone 5) for 100sf to 500 sf effective wind area													
Mean Roof		90 MPH			100 MPH			110 MPH			120 MPH			
Height (ft)	Exp B	Exp C	Exp D	Exp B	Exp C	Exp D	Exp B	Exp C	Exp D	Exp B	Exp C	Exp D		
15	-15.1	-18.3	-22.2	-18.7	-22.6	-27.5	-22.6	-27.3	-33.2	-26.9	-32.5	-39.5		
· 20	-15.1	-19.5	-23.4	-18.7	-24.1	-29.0	-22.6	-29.2	-35.0	-26.9	-34.7	-41.7		
25	-15.1	-20.4	-24.3	-18.7	-25.2	-30.1	-22.6	-30.5	-36.4	-26.9	-36.3	-43.3		
30	-15.1	-21.1	-25.1	-18.7	-26.2	-31.0	-22.6	-31.6	-37.5	-26.9	-37.7	-44.7		
35	-15.9	-21.9	-25.7	-19.6	-27.1	-31.8	-23.7	-32.8	-38.4	-28.2	-39.0	-45.7		
40	-16.5	-22.5	-26. 3	-20.4	-27.9	-32.5	-24.6	-33.7	-39.3	-29.3	-40.1	-46.8		
45	-16.9	-23.1	-26.9	-20.9	-28.6	-33.3	-25.3	-34.6	-40.2	-30.1	-41.2	-47.9		
50	-17.5	-23.6	-27.3	-21.7	-29.2	-33.8	-26.2	-35.3	-40.9	-31.2	-42.0	-48.7		
55	-18.0	-24.0	-27.8	-22.3	-29.7	-34.4	-26.9	-35.9	-41.6	-32.0	-42.8	-49.5		
60	-18.4	-24.5	-28.2	-22.8	-30.3	-35.0	-27.6	-36.6	-42.3	-32.8	-43.6	-50.3		
Net Design wind pressure		-15.1			-18.7			-22.6			-26.9			

	Wall Loads (psf) - End Zone (Zone 5) for 100sf to 500sf effective wind area												
Mean Roof		130 MPH			140 MPH			150 MPH			170 MPH		
Height (ft)	Ехр В	Exp C	Exp D	Exp B	Exp C	Exp D	Ехр В	Exp C	Exp D	Ехр В	Exp C	Exp D	
15	-31.6	-38.2	-46.5	-36.7	-44.4	-53.9	-42.1	-50.9	-61.9	-54.1	-65.5	-79.5	
20	-31.6	-40.8	-49.0	-36.7	-47.3	-56.9	-42.1	-54.3	-65.3	-54.1	-69.8	-83.9	
25	-31.6	-42.7	-50.9	-36.7	-49.5	-59.1	-42.1	-56.8	-67.8	-54.1	-73.0	-87.1	
30	-31.6	-44.2	-52.5	-36.7	-51.4	-60.9	-42.1	-58.9	-69.9	-54.1	-75.7	-89.8	
35	-33.2	-45.8	-53.7	-38.5	-53.2	-62.4	-44.2	-61.1	-71.6	-56.8	-78.4	-92.0	
40	-34.4	-47.1	-55.0	-40.0	-54.7	-63.9	-45.9	-62.7	-73.3	-59.0	-80.6	-94.1	
45	-35.4	-48.3	-56.2	-41.1	-56.2	-65.3	-47.2	-64.4	-74.9	-60.6	-82.8	-96.3	
50	-36.7	-49.3	-57.2	-42.6	-57.3	-66.4	-48.8	-65.7	-76.2	-62.8	-84.4	-97.9	
55	-37.6	-50.2	-58.1	-43.7	-58.4	-67.5	-50.1	-66.9	-77.5	-64.4	-86.0	-99.5	
60	-38.6	-51.2	-59.1	-44.8	-59.5	-68.6	-51.4	-68.2	-78.7	-66.0	-87.6	-101.2	
Net Design wind pressure		-31.6			-36.7			-42.1			-54.1		

More information on this chart can be found in Technical Bulletin #15 (www.premiersips.com).

Table 14: Premier Insul-Beam II Header Loads (plf)

No. of	Deflection	Header Span (ft.)								
Trimmer Studs	Denection	2'	3'	4'	5'	6'	7'	8'		
	L/480	3150	2100	1575	1260	1050	900	788		
1	L/360	3150	2100	1575	1260	1050	900	788		
	L/240	3150	2100	1575	1260	1050	900	788		
	L/480	6300	4200	3150 (2520	2100	1800	1545		
2	L/360	6300	4200	3150	2520	2100	1800	1575		
	L/240	6300	4200	3150	2520	2100	1800	1575		

No. of	Deflection	Header Span (ft.)							
Trimmer Studs	Deflection	9'	10'	11'	12'	13'	14'	15'	16'
	L/480	700	630	573	458	360	288	234	193
1	L/360	700	630	573	525	480	384	313	257
	L/240	700	630	573	525	485	450	420	386
	L/480	1085	791	594	458	360	288	234	193
2	L/360	1400	1055	792	610	480	384	313	257
	L/240	1400	1245	792	864	720	577	469	386

Values listed for each deflection represent the least value of the bearing capacity of the trimmer, shear or bending capacity of the header or the actual deflection at the design load.

Refer to Technical Bulletin #30 for supporting headers in Premier SIPs wall panels (www.premiersips.com).

Note: Trimmer stud design capacities must be reviewed.

SINGLE TOP PLANTE W/ CAN

Top Plate

Table 6: Maximum Allowable Axial Compression Point Loads (ibs) - Type S Panels 1,2,3,4

		7-1/
Top Plate	1.5" Minimum	/ 3" Minimum
Configuration	Bearing Width /	Bosrina-Width
Single 2x4 #2 or Better	2040	
Hem-Fir Plate	2040	2450
Single 2x4 #2 or Better		
Hem-Fir Plate	4030	4678
with 1-1/8 in. wide,	4030	40/0
1.3E Rim Board Cap Plate	- Constant C	
T		

Top plate secured to facings as required in Section 6.3

² Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.

³ Concentrated loads shall be applied concentrically to the top of the panel.

⁴ Tabulated values are based on the strong-axis of the facing material oriented parallel to the span direction.

2099 PLF × 16/12

= 2799 LOAD FACE



Top Plate

Cap Plate

Table 7: Maximum Allowable Uniform SIP Header Vertical Loads (plf) 3-1/2 in, through 11-1/4 in, Core Thickness^{1,2}

Header	Deflection	Header Span (ft)						
Depth ³ (in)	Limit ⁴	4	6	8	10			
	L/480	740	384	228	142			
12	L/360	740	384	229	142			
	L/240	740	384	229	142			
	L/480	798	574	385	311			
18	L/360	798	574	385	311			
	L/240	798	574	385	311			
	L/480	886	629	429	361			
24	L/360	886	629	429	361			
	L/240	886	629	429	361			

over opening

¹ Vertical loads only. Lateral loads shall be transferred to the edges of the openings through continuous plate(s) designed in accordance with accepted engineering practice. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.

² Tabulated values are based on the strong-axis of the facing material oriented perpendicular to the direction of header span.

³ Minimum depth of facing above opening.

⁴ Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of adopted building code.

Table 8: Maximum Allowable Uniform Header Loads (plf)
(Panel Splice a minimum of 6 in. from edge of opening) 3-1/2 in. through 11-1/4 in. Core Thickness^{1,2}

Header	Deflection	Header Span (ft)						
Depth ³ (in)	Limit⁴	4	6	8	10			
	L/480	345	243	156	99			
12	L/360	450	295	190	125			
	L/240	630	382	236	153			
	L/480	705	388	. 254	235			
18	L/360	750	482	302	281			
	L/240	750	482	302	281			
	L/480	698	556	368	350			
24	L/360	896	556	368	350			
	L/240	896	556	368	350			

SIPs wall panel spline minimum 6" from edge of opening

Vertical loads only. Lateral loads shall be transferred to the edges of the openings through continuous plate(s) designed in accordance with accepted engineering practice. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.

² Tabulated values are based on the strong-axis of the facing material oriented perpendicular to the direction of header span.

³ Minimum depth of facing above opening.

⁴ Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of adopted building code.

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DESIGN	HUUM		
ENGINEER	J.H.	DATE	g 6/16/2017

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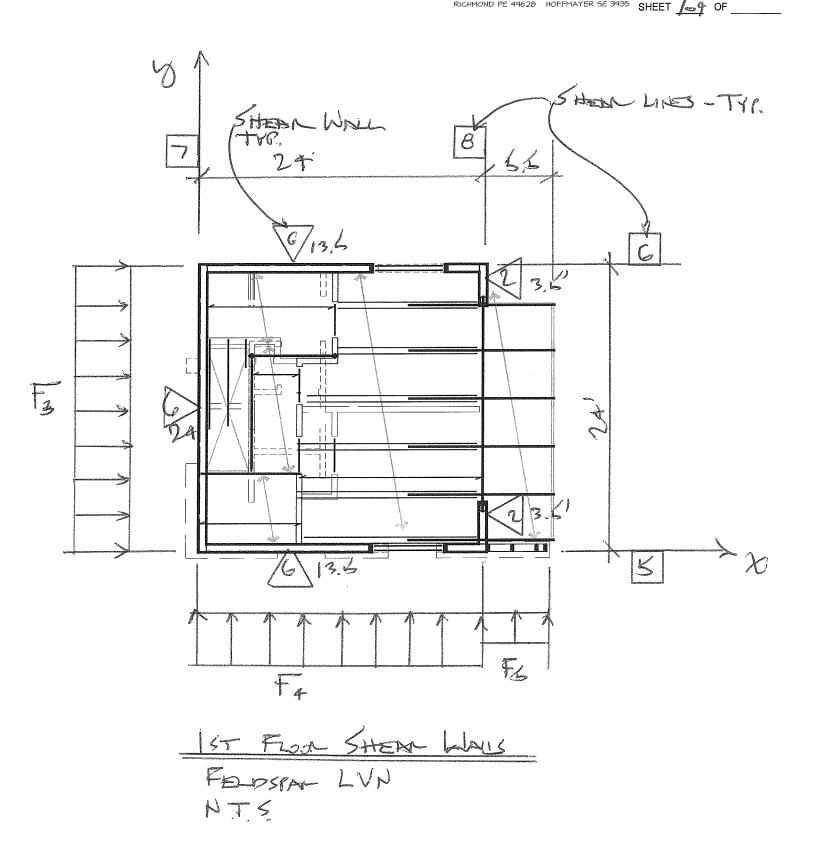
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PROJECT	FELDSPAR LOWER	JOB	2017-0610
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PROJECT FELDSPAR LOWER

CLIENT VILLAGE NEST

ADDRESS EDEN, UTAH

DESIGN HUUM

ENGINEER

VILLAGE NEST
EDEN, UTAH
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J.H. DATE 6/16/2017

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4425 CANOGA AVENUE WOODLAND HILLS CA 91364 PHONE (818) 347-7008 FAX (818) 883-8869 Info@RichmondHoffmayer.com





PROJECT FELDSPAR LOWER CLIENT VILLAGE NEST **ADDRESS** EDEN, UTAH HUUM DESIGN **ENGINEER**

JOB 2017-0610 DATE J.H. 6/16/2017 RICHMOND PE 49628 HOFFMAYER SE 3935 SHEET OF

	5 HEM WALL B 5.5'	LLINES-TYP
-3	2/3/5	
	13- From SHOPE WALLS QUARTZ LVN NTS	

USGS Design Maps Detailed Report

2012/2015 International Building Code (41.36°N, 111.74°W)

Site Class D - "Stiff Soil", Risk Category I/II/III

Section 1613.3.1 — Mapped acceleration parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain S_{s}) and 1.3 (to obtain S_{i}). Maps in the 2012/2015 International Building Code are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 1613.3.3.

From Figure 1613.3.1(1)[1]

 $S_s = 0.806 g$

From Figure 1613.3.1(2)[2]

 $S_1 = 0.267 g$

Section 1613.3.2 — Site class definitions

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class D, based on the site soil properties in accordance with Section 1613.

2010 ASCE-7 Standard - Table 20.3-1 SITE CLASS DEFINITIONS

Site Class	\overline{v}_s	\overline{N} or \overline{N}_{ch}	- s.
A. Hard Rock	>5,000 ft/s	N/A	N/A
B. Rock	2,500 to 5,000 ft/s	N/A	N/A
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50	>2,000 psf
D. Stiff Soil	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf
E. Soft clay soil	<600 ft/s	<15	<1,000 psf
	Any profile with more characteristics: Plasticity inde Moisture conte	$x PI > 20$, ent $w \ge 40$?	∕₀, and

F. Soils requiring site response analysis in accordance with Section 21.1

See Section 20.3.1

For SI: $1ft/s = 0.3048 \text{ m/s} 1lb/ft^2 = 0.0479 \text{ kN/m}^2$

Section 1613.3.3 — Site coefficients and adjusted maximum considered earthquake spectral response acceleration parameters

TABLE 1613.3.3(1)
VALUES OF SITE COEFFICIENT F_a

Site Class	Марр	oed Spectral Re	sponse Accelera	ation at Short P	eriod		
	S _s ≤ 0.25	$S_s = 0.50$	$S_s = 0.75$	$S_s = 1.00$	S _s ≥ 1.25		
Α	0.8	0.8	0.8	0.8	0.8		
В	1.0	1.0	1.0	1.0	1.0		
С	1.2	1.2	1.1	1.0	1.0		
D	1.6	1.4	1.2	1.1	1.0		
Е	2.5	1.7	1.2	0.9	0.9		
F		See Se	ction 11.4.7 of	ASCE 7			

Note: Use straight-line interpolation for intermediate values of $S_{\!\scriptscriptstyle S}$

For Site Class = D and $S_s = 0.806 g$, $F_a = 1.178$

TABLE 1613.3.3(2)
VALUES OF SITE COEFFICIENT F_v

Site Class	Мар	ped Spectral R	esponse Accele	ration at 1–s Pe	eriod
	S₁ ≤ 0.10	$S_i = 0.20$	$S_i = 0.30$	$S_1 = 0.40$	S₁ ≥ 0.50
А	0.8	0.8	0.8	0.8	0.8
В	1.0	1.0	1.0	1.0	1.0
С	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
E	3.5	3.2	2.8	2.4	2.4
F		See Se	ction 11.4.7 of	ASCE 7	

Note: Use straight-line interpolation for intermediate values of S₁

For Site Class = D and S, = 0.267 g, F_{ν} = 1.866

Equation (16-37):

 $S_{MS} = F_a S_S = 1.178 \times 0.806 = 0.949 g$

Equation (16-38):

 $S_{M1} = F_{\nu}S_1 = 1.866 \times 0.267 = 0.498 g$

Section 1613.3.4 — Design spectral response acceleration parameters

Equation (16-39):

 $S_{DS} = \frac{2}{3} S_{MS} = \frac{2}{3} \times 0.949 = 0.633 g$

Equation (16-40):

 $S_{D1} = \frac{2}{3} S_{M1} = \frac{2}{3} \times 0.498 = 0.332 g$

Section 1613.3.5 — Determination of seismic design category

TABLE 1613.3.5(1)

SEISMIC DESIGN CATEGORY BASED ON SHORT-PERIOD (0.2 second) RESPONSE ACCELERATION

MALLIE OF C		RISK CATEGORY	
VALUE OF S _{DS}	I or II	III	IV
S _{ps} < 0.167g	Α	A	А
0.167g ≤ S _{DS} < 0.33g	В	В	С
0.33g ≤ S _{DS} < 0.50g	С	С	D
0.50g ≤ S _{ps}	D	D	D

For Risk Category = I and S_{DS} = 0.633 g, Seismic Design Category = D

TABLE 1613.3.5(2)

SEISMIC DESIGN CATEGORY BASED ON 1-SECOND PERIOD RESPONSE ACCELERATION

VALUE OF C		RISK CATEGORY	
VALUE OF S _{D1}	I or II	III	IV
S _{D1} < 0.067g	А	A	А
0.067g ≤ S _{D1} < 0.133g	В	В	С
0.133g ≤ S _{D1} < 0.20g	С	С	D
0.20g ≤ S _{D1}	D	D	D

For Risk Category = I and S_{D1} = 0.332 g, Seismic Design Category = D

Note: When S_1 is greater than or equal to 0.75g, the Seismic Design Category is **E** for buildings in Risk Categories I, II, and III, and **F** for those in Risk Category IV, irrespective of the above.

Seismic Design Category \equiv "the more severe design category in accordance with Table 1613.3.5(1) or 1613.3.5(2)" = D

Note: See Section 1613.3.5.1 for alternative approaches to calculating Seismic Design Category.

References

- 1. Figure 1613.3.1(1): https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(1).pdf
- $2. \ \textit{Figure 1613.3.1(2)}: \ https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(2).pdf$



SEISMIC DESIGN:

ADDRESS		5754 DAYBREAK RIDGE, EDEN, UTAH				The contract of	
		GOOGLE EARTH LATITUDE	N	=	41,360	0	
		LONGTITUDE	w	=	-111.740		
		USGS NSHMP - 2012 IBC		-21	0.000		
		BASED ON SITE CLASS B, Fa = 1.0 AND Fv = 1.0	Ss S1	=	0.806 0.267		
16CBC /	ASCE	E 7-10					
03.1.5		THQUAKE DESIGN DATA	w.				
	1	SEISMIC IMPORTANCE FACTOR AND OCCUPANCY OCCUPANCY	1	=	1.00 II		ASCE 7-10 TABLE 11.5-1
	2	MAPPED SPECTRAL RESPONSE ACCELERATIONS	Ss	=	0.81		USGS MAPS OF SPECTRAL RESPONSE
			S1	=	0.27	3	
	3	SITE CLASS	10111023250		D		IBC DEFAULT
		SITE COEFFICIENTS	1.00 Fv	-	1.18 1.87	_	TABLE 11.4-1 TABLE 11.4-2
	4	SPECTRAL RESPONSE COEFFICIENTS	SMS		0.949		
		of Editorial Grant Gold Told Told Told Told Told Told Told T	SM1	= -	0.498		
			SDS SD1	= =	0.633 0.332	= 2/3 SMS = 2/3 SM1	ASCE 7-10 (11.4-3) ASCE 7-10 (11.4-4)
			301			2/3 5/4/1	
		SEISMIC DESIGN CATEGORY		-	D		IBC2012 TABLES 1613.5.6(1) & 1613.5.6(2)
AIN BUILD		DIRECTION - X BASIC SEISMIC-FORCE-RESISTING SYSTEM					
		A. BEARING WALL SYSTEMS					
		A-LIGHT-FRAMED WALLS SHEATHED WITH WOOD P	R		6.50		ASCE 7-10 TABLE 12.2-1
			Ωο	-	3.00	_	ASCE 7-10 TABLE 12:2-1
			Cd	= -	4.00	-	ASCE 7-10 TABLE 12.2-1
	7	DESIGN BASE SHEAR	V	=	Cs W	-0	
	8	SEISMIC RESPONSE COEFFICIENT	Cs	=	0.097	= SDS / (R / I)	ASCE 7-10 (12.8-2)
			Cu	=	Cu Ta 1.40		ASCE 7-10 TABLE 12.8-1
			hn	=	10.00	ft	NOOL PTO PROLET LEGY
			Ct	=	0.02	(6)	ASCE 7-10 TABLE 12.8-2
			×	=	0.75		ASCE 7-10 TABLE 12.8-2
			Та	=	0.112	= Ct hn^x	ASCE 7-10 (12.8-7)
			T	=	0.157	S	ASCE 7-10 12.8.2
			TL Cs'	=	8.00 0.325	MAX	ASCE 7-10 FIG.22-16 ASCE 7-10 (12.8-3)
			Cs"	=	0.010	MIN	ASCE 7-10 (12.8-5)
			Cs'''	=	0.010	MIN.	ASCE 7-10 (12.8-6)
			Cs US		0.097	10.1	Cs OVERIDE 0.000
	9	RESPONSE MODIFICATION FACTOR	R	= _	6.50		S TV SV V V V SV SV SV V SV V SV SV SV SV S
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AIN BOILD		BASIC SEISMIC-FORCE-RESISTING SYSTEM					
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		THE STATE OF THE STATE OF THE WOOD PA	R	-	6.50		ASCE 7-10 TABLE 12.2-1
			Ωο	= -	3.00		ASCE 7-10 TABLE 12.2-1
			Cd	= _	4.00	_	ASCE 7-10 TABLE 12.2-1
		DESIGN BASE SHEAR SEISMIC RESPONSE COEFFICIENT	V Cs	=	Cs W 0.097	= SDS / (R / I)	ASCE 7-10 (12.8-2)
	2		T	=	Cu Ta		
			Cu	=	1.40		ASCE 7-10 TABLE 12.8-1
			hn Ct	=	0.02	ft	ASCE 7-10 TABLE 12.8-2
			×	=	0.75		ASCE 7-10 TABLE 12.8-2
			Ta	=	0.112	= Ct hn^x	ASCE 7-10 (12.8-7)
			T	=	0.157	s	ASCE 7-10 12.8.2
			TL	=	8.00	S	ASCE 7-10 FIG.22-16
			Cs'	==	0.325	MAX	ASCE 7-10 (12.8-3)
			Cs"	=	0.010	MIN	ASCE 7-10 (12.8-5)
					0.010	MIN'	ASCE 7-10 (12.8-6) Cs OVERIDE 0.000
	9	RESPONSE MODIFICATION FACTOR	Cs USE R		6.50	•	0.000 0.000
		RESPONSE MODIFICATION FACTOR ANALYSIS PROCEDURE USED		= =	6.50	- ĪT LATERAL FOR W	RCE PROCEDURE Y-DIRECTION BASE SHEAR FORCE



AREA WEIGHTS - 2ND LEVEL:

ROOF

9.00 ft WALL HT.

WEIGHT TABULATIONS:

2X = 62496.90 lb 2Y = 58787.95 lb

WEIGH	VEIGHT TYPES:				
A	METAL ROOF	15.76 psf	Ω	EXTERIOR	15.23 psf
В	OPENED BALCONY	7.00 psf	>	INTERIOR	8.85 psf
O	2nd FLOOR	14.25 psf	>	t	0:00 pst
Ω	DRIVEWAY LOADS	85.38 psf	×	ŧ	0.00 psf
ш	20% SNOW LOAD FOR SEISM	52.80 psf	>	1	0.00 psf
ᄔ	GARAGE LOADS	63.50 psf	Z	t	0.00 psf

TOTAL WEIGHT	17194.50 lb	45302 40 lb	0 00 lb	0.00 dl 00.0	62496.90 lb	13485.55 lb	45302 40 lb	0 00 lb	0.00	di 68./8/86	0.00 lb	0.00 lb	0.00 lb	0.00 lb	0:00 lp	0.00 lb	d) 00.00	di 00.0	0.00 lb	ql 00:0	0:00 lp	0.00 lb	di 00.0	0.00	qi 00.0	dl 00:00	al 00.0	0.00 lb	0.00 lb 0.00 lb
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R UNIT WEIGH	+ 8,85 pst			d 00'0 +		d 00:00 +	00:00 +				4 00.00 t	d 00:00 +	d 00:00 +	d 00'00 +		d 00.00 +	d 00:00 +		d 00:00 +		d 00.0 +	d 00:00 +	d 00:00 +	4 00:00 h		d 00:00 +			d 00:00 +
NUMBER	ft × 2,00	ft x 0.00		ft x 0.00		ft x 2.00	ft x 0.00	×	ft × 0.00		ft x 0,00	×	ft x 0.00	ft x 0.00		ft x 0.00	×	ft x 0.00	ft × 0.00		ft x 0.00	ft x 0.00	×	ft x 0,00		ft × 0,00	ft x 0.00	×	ft × 0.00
HEIGHT	x 5,00 ft	00.00		00'0		00'S × .	x 0.00	00.00	0.00		00.00 ×			00'0		x 0.00		00.00	00'00 ×		× 0.00	00.00 ×		00'0		00'00 ×			00.00
UNIT WEIGHT TYPE	15.23 psf U	0.00 psf -	.00 psf	.00 psf		15.23 psf U	.00 psf -	0.00 psf	.00 psf -		0.00 psf -	0.00 psf -	.00 psf -	.00 psf -		0.00 psf	.00 psf _	0.00 psf	.00 psf		0.00 psf -	.00 psf _	0.00 psf -	.00 psf -		0.00 psf	.00 psf .	.00 psf -	.00 psf
LENGTH UNIT	+	+	0.00 ft + 0	+		+	+	+	+		+	0.00 ft + 0	+	+ #		+	+	0.00 ft + 0	+ #		+	+	0.00 ft + 0	+		+	0.00 ft + 0.00	+	+ #
TYPE LEN	×	×	×	×		×	×	×	×		×	×	1			×	ŧ	×	3		×	1	×			*	1	×	
UNIT WEIGHT	15.76 psf	52.80 psf	o.00 psf	b 0,00 psf		15.76 psf	52.80 psf	+ 0.00 psf	0.00 psf		0.00 psf	n 0.00 psf		+ 0.00 psf		0.00 psf	+ 0.00 psf	- 0.00 psf	+ 0.00 psf		0.00 psf	- 0.00 psf	- 0.00 psf	o.00 psf		0.00 psf	n 0.00 psf	- 0.00 psf	• 0.00 psf
W# F#	2-1 1 2X	+	+	+		2-2 2 2Y	+	+	+		2	+	+	-		2	+	+	+		2	+	+	1		2	+	+	*



AREA WEIGHTS - 1ST LEVEL:

2ND FLOOR

9.00 ft WALL HT.

1X = 18564.00 lb 1Y = 18564.00 lb WEIGHT TABULATIONS:

WEIGHT TYPES:	PES;				
A	METAL ROOF	15.76 psf	U.	EXTERIOR	15.23 psf
В	OPENED BALCONY	7.00 psf	>	INTERIOR	8.85 psf
S	2nd FLOOR	14.25 psf	3	1	0.00 pst
Ω	DRIVEWAY LOADS	85.38 psf	×	,	0.00 psf
Ш	20% SNOW LOAD FOR SEISM	52.80 psf	>		0.00 nsf
L.	GARAGE LOADS	63.50 psf	Z	,	0.00 psf

OTAL WEIGHT	17640.00 lb	924 00 lb	00 O	0.00 lb	18564.00 lb	17640 OO IB	d 00.0	gi 00:0	dl 00.0	17640.00 lb	92 4 .00 lb	d 00.0	q1 00 0	g 000 g 000	924.00 lb		0:00 lb	q 00:0	00°0	00'0	ql 00'0		0.00 lb	q 00'0	0.00 lb	dl 00.0	0.00 ID
WIDTH TOTA	x 24.00 ft ==	x 24.00 ff ==	0.00	0.00		= 54.00 #	4	: #	x 0.00 ft =		< 5.50 ft =	× 0.00 # =					x 0,00 ft =	× 0.00 ft ≈	< 0.00 ft =	× 0.00 ft ≈			× 0.00 ft ==	x 0.00 ft ==	× 0,00 ft ==	x 0.00 ft =	
TRIB. WEIGHT	735,00 plf	<u> </u>	: "	Ē	•	735 00 plf		00.00 Jid 00.00	. ₩		168.00 plf	0.00 plf					0.00 pif	0.00 plf	0.00 pif	0.00 plf)			0.00 pff 3	0.00 plf		0.00 plf	
ER	=	11	11	н		#1	11	11	11		11	H	!!	H			11	11	H	11			В	11	11	H	
NUMBER	1.00	0.00	0.00	00'0		5	00.0	0.00	0.00		0.00	0.00	0.00	0.00			0.0	0.00	0.00	0.00			0.00	0.00	0.00	0.00	
HEIGHT	10,00 ft x	0.00 ft ×		#		10.00 ff ×	=	0.00 ft x	0.00 ft x		0,00 ft ×	0.00 ft x	0.00 ft x	0.00 ft ×			0.00 ft ×	0.00 ft ×	0.00 ft ×	0.00 ft ×			0.00 ft ×	0.00 ft ×	0.00 ft ×	0.00 ft ×	
T	×	×	×	×		×	×	×	×		×	×	×	×			×	×	×	×			×	×	×	×	
TYPE	>	,	,	,		>	. 1		1		ı	1	,	ı			1		ŀ	1			,	ı	,	1	
UNIT WEIGHT	8.85 psf	0.00 psf	0.00 psf	0.00 psf		8.85 psf			0.00 psf		0.00 psf	0.00 psf					0.00 pst			0.00 psf			0.00 psf	0.00 psf	0.00 psf	0.00 psf	
	+	+	+	+		+	+	+	+		+	+	+	+			+	+	+	+			+	+	+	+	
NUMBER	2.00	0.00	0.00	0.00		2.00	0.00	0.00	00:00		00.00	00.00	00.00	0.00			0.00	00.00	00.00	0.00			00.00	00'0	00.00	00'0	
HEIGHT	10.00 ft ×	0.00 ft x	0.00 ft x	0.00 ft x		10.00 ft ×	0.00 ft ×	0.00 ft x	0.00 ft x		0.00 ft x	0.00 ft x	0.00 ft x	0.00 ft ×		6				0.00 ft x			0.00 ft ×		0.00 ft x	0.00 ft ×	
H	×	×	×	×		×	×	×	×		×	×	×	×			×	×	×	×			×	×	×	×	
. TYPE	D	,	i	,		⊃	,	ŧ	ı			3	ı	ı			,	ī		,			1	,	,	ŧ	
UNIT WEIGHT TYPE	15.23 psf	0.00 psf	0.00 psf	0.00 psf		15.23 psf	0.00 psf	0.00 psf	0.00 psf		0.00 psf	0.00 psf	0.00 psf	0.00 psf		9	o.oo psr	0.00 psf	0.00 psf	0.00 psf		:	0.00 psf	0.00 psf	0.00 psf	0.00 psf	
	+	+	+	+		+	+	+	+		+	+	+	+		-	+	+	+	+			+	+	+	+	
LENGTH	24.00 ft	5.50 ft	0,00 ft	0.00		24.00 ft	0.00	0.00 ft	0.00		24.00 €	0.00	0.00	0.00		4	20,0	0.00	0.00	0.00			0.00	0,00	00.00	0.00	
	×	×	×	×		×	×	×	×		×	×	×	×		;	<	×	×	×			×	×	×	×	
B R	14.25 psf C		0.00 psf -	0.00 psf -		14.25 psf C	0.00 psf -	0.00 psf	0.00 pst				0.00 psf -				15d 00.0	0.00 psf -		0.00 psf -			0.00 bst -	0.00 psf -	St	0.00 psf -	
ń	Ž	+	+	+		_	+	+	+		_	+	+	+				+	+	+				+	+	+	
	1-3 3 1X					1-4 4 1					1-5 5 17					Temperature contractor man	- Processon of the last of the					A STATE OF THE PARTY OF THE PAR	-				



EQUIVALENT LATERAL FORCE PROCEDURE:

BASE SHEAR	V	=	Cs W	ASCE 7-10 (12.8-1)	
TOTAL BUILDING DEAD WEIGHT - X DIRECTION X-DIRECTION SEISMIC RESPONSE COEFICIEN' STRENGTH LEVEL BASE SHEAR FORCE - X		= = =	81060.90 lb 0.0973 7891.14 lb	SEE PREVIOUS PAGES Rx =	6.50
TOTAL BUILDING DEAD WEIGHT - Y DIRECTION Y-DIRECTION SEISMIC RESPONSE COEFICIENT STRENGTH LEVEL BASE SHEAR FORCE - Y	•	= = = =	77351.95 lb 0.0973 7530.08 lb	SEE PREVIOUS PAGES Ry =	6.50

0.2648 s

ASCE 7-10

12.8.3 VERTICAL DISTRIBUTION OF SEISMIC FORCES

PER EACH ORTHOGONAL DIRECTION x & y

X-DIRECTION BUILDING PERIOD

F = CvV $Cv = wh^k$ $\Sigma wi hi^k$

ASCE 7-10 (12.8-11) ASCE 7-10 (12.8-12)

SEE PREVIOUS PAGES

		k =_	1.00	<u>)</u>	ASCE 7-1	0 12.8.3
LEVEL	wx	hx	hx ^ k	wx hx ^ k	Cvx	STREI SHEAI FORC LEVEL
-	0.00	0.00	0.000	0.00	0.000	
-	0.00	0.00	0.000	0.00	0.000	
-	0.00	0.00	0.000	0.00	0.000	
-	0.00	0.00	0.000	0.00	0.000	
2	62496.90	20.00	20.000	1249938.02	0.871	
1	18564.00	10.00	10.000	185640.00	0.129	
SUM	81060.90			1435578.02	1.000	

Т

STRENGTH		
SHEAR		DISTRIBUTION
FORCE PER		FACTOR
LEVEL Fx	Wx Csx	Fx/(WxCsx)
0.00	0.00	0.000
0.00	0.00	0.000
0.00	0.00	0.000
0.00	0.00	0.000
6870.71	6083.96	1.129
1020.43	1807.17	0.565
7891.14		

Y-DIRECTION BUILDING PERIOD

T = 0.2648 s k = 1.00 SEE PREVIOIUS PAGES ASCE 7-10 12.8.3

- FVE		.	ban A Is	6 6.1.	Come
LEVEL	wy	hy	hxy ^ k	wy hy ^ k	Cvy
-	0.00	0.00	0.000	0.00	0.000
-	0.00	0.00	0.000	0.00	0.000
-	0.00	0.00	0.000	0.00	0.000
-	0.00	0.00	0.000	0.00	0.000
2	58787.95	20.00	20.000	1175758.92	0.864
1	18564.00	10.00	10.000	185640.00	0.136
SUM	77351.95	1 '		1361398.92	1.000

	STRENGTH		
	SHEAR		DISTRIBUTION
	FORCE PER		FACTOR
	LEVEL Fy	Wy Csy	Fy / (Wy Csy)
	0.00	0.00	0.000
	0.00	0.00	0.000
	0.00	0.00	0.000
	0.00	0.00	0.000
	6503.28	5722.90	1.136
	1026.80	1807.17	0.568
ı	7530.08		





SEISMIC FORCES:

-	EVEL FORCES	-				********		ABAE /		DIOTEIN COMME	I D 0) ****
F#		TOTAL TRIB. WEIGH	our month transitivities in	CONTRACTOR OF THE PARTY OF THE	Cs	CHICAGO CONTRACTOR CON	ESIGN SHEAR F	the region was the military and the second second second	CONTRACTOR OF THE PROPERTY OF	DISTRIBUTION OVERIDE	R OVERIDE
-	-	0.00 plf	x 0.00	x	0.0000	=	0.00 plf	R =	0.00		
-	-	0.00 plf	x 0.00	х	0.0000	=	0.00 plf	R =	0.00		
-	-	0.00 plf	x 0.00	×	0.0000	=	0.00 plf	R =	0.00		ļ
-	**	0.00 plf	x 0.00	×	0.0000	=	0.00 plf	R =	0.00		
-	-	0.00 plf	x 0.00	х	0.0000	=	0.00 plf	R =	0.00		
-	-	0.00 plf	x 0.00	X	0.0000	=	0.00 plf	R=	0.00		
-	-	0.00 plf	x 0.00	×	0.0000	=	0.00 plf	R =	0.00		ļ
-	-	0.00 plf	x 0.00	X	0.0000	=	0.00 plf	R=	0.00 0.00		-
-	-	0.00 plf 0.00 plf	x 0.00 x 0.00	x	0.0000	=	0.00 plf 0.00 plf	R = R =	0.00		
-	-	0.00 pif	x 0.00 x 0.00	X	0.0000	=	0.00 plf	R=	0.00		
-	-	0.00 plf	x 0.00	x x	0.0000	=	0.00 plf	R=	0.00		
_	-	0.00 plf	x 0.00	×	0.0000	=	0.00 plf	R=	0.00		
_	_	0.00 plf		x	0.0000	=	0.00 plf	R=	0.00		<u> </u>
		0.00 pii	x 0.00	^	0.0000		0.00 pii	11.	0.00	L.,	<u> </u>
RD LE	EVEL FORCES	-									
F#		TOTAL TRIB. WEIGHT	the state of the s		Cs		ESIGN SHEAR FO	THE PERSON NAMED IN COLUMN TO PERSON ASSESSED.	THE R. P. LEWIS CO., LANSING MICH. LANSING MICH. SHIPPING AND PROPERTY AND PARTY AND P	DISTRIBUTION OVERIDE	R OVERIDE
-	-		x 0.00	X	0.0000	=	0.00 plf	R =	0.00		
-	-		x 0.00	x	0.0000	=	0.00 plf	R =	0.00		
-	-	0.00 plf		×	0.0000	=	0.00 plf	R =	0.00		
-	-	0.00 plf	x 0.00	Х	0.0000	=	0.00 plf	R =	0.00		
-	-	0.00 plf	x 0.00	х	0.0000	=	0.00 plf	R=	0.00		
-	-	0.00 plf	x 0.00	х	0.0000	=	0.00 plf	R =	0.00		
-	-	0.00 plf	x 0.00	×	0.0000	=	0.00 plf	R =	0.00		
-	~	0.00 plf	x 0.00	x	0.0000	=	0.00 plf	R=	0.00		
-	-	0.00 plf	x 0.00	X	0.0000	=	0.00 plf	R=	0.00		
-	-	0.00 plf	x 0.00	х	0.0000	=	0.00 plf	R=	0.00		
-	-	0.00 plf	x 0.00	х	0.0000	=	0.00 plf	R=	0.00		
-	-	0.00 plf	x 0.00	X	0.0000	=	0.00 plf	R =	0.00		
-	-	0.00 plf 0.00 plf	x 0.00 x 0.00	X	0.0000	=	0.00 plf	R =	0.00 0.00		
-	-	0.00 pii	X 0.00	x	0.0000	=	0.00 plf	R =	0.00	<u> </u>	
ND LE	EVEL FORCES	ROOF									
F#		TOTAL TRIB. WEIGHT	DIST. FA	CTOR	Cs	DI	ESIGN SHEAR FO	ORCE (STRE	NGTH LEVEL)	DISTRIBUTION OVERIDE	R OVERIDE
1	2X	2403.73 plf	x 1.13	×	0.0973	=	264.26 plf	R =	6.50		
2	2Y	1781.45 plf	x 1.14	х				11			
-	-				0.0973	=	197.07 plf	R=	6.50		
-		0.00 plf	x 0.00	x	0.0973 0.0000	=	0.00 plf		6.50 0.00		
	-	0.00 plf	x 0.00				0.00 plf 0.00 plf	R =	0.00 0.00		
-	-	0.00 plf 0.00 plf		x	0.0000	=	0.00 plf	R = R =	0.00		
-	- -	0.00 plf 0.00 plf 0.00 plf	x 0.00 x 0.00 x 0.00	x x	0.0000 0.0000 0.0000 0.0000	=======================================	0.00 pif 0.00 pif 0.00 pif 0.00 pif	R = R = R = R =	0.00 0.00 0.00 0.00		
-	- - -	0.00 plf 0.00 plf 0.00 plf 0.00 plf	x 0.00 x 0.00 x 0.00 x 0.00	x x x	0.0000 0.0000 0.0000 0.0000 0.0000	= =	0.00 pif 0.00 pif 0.00 pif 0.00 pif 0.00 pif	R = R = R = R = R =	0.00 0.00 0.00 0.00 0.00		
-	- - - -	0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf	x 0.00 x 0.00 x 0.00 x 0.00 x 0.00	x x x x x	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	= =	0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf	R = R = R = R = R = R =	0.00 0.00 0.00 0.00 0.00 0.00		
- - -	- - - -	0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf	x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00	x x x x x	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	= = =	0.00 pif 0.00 pif 0.00 pif 0.00 pif 0.00 pif 0.00 pif 0.00 pif	R = R = R = R = R = R = R = R = R = R =	0.00 0.00 0.00 0.00 0.00 0.00 0.00		
-	- - - -	0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf	x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00	x x x x x x	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	= = = = = = = = = = = = = = = = = = = =	0.00 pif 0.00 pif 0.00 pif 0.00 pif 0.00 pif 0.00 pif 0.00 pif 0.00 pif	R = R = R = R = R = R = R =	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		
-	- - - - -	0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf	x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00	x x x x x x x	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	= = = = =	0.00 pif 0.00 pif 0.00 pif 0.00 pif 0.00 pif 0.00 pif 0.00 pif 0.00 pif 0.00 pif	R = R = R = R = R = R = R = R =	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		
-		0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf	x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00	x x x x x x x	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000		0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf	R = R = R = R = R = R = R = R =	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		
-		0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf	x 0.00	x x x x x x x x	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000		0.00 pif 0.00 pif	R = = = = = = = = = = = = = = = = = = =	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		
-		0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf	x 0.00	x x x x x x x	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000		0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf	R = R = R = R = R = R = R = R =	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		
- - - - - - - - STLF	- - - - - - - - - - - - - - - - - - -	0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf	x 0.00	x x x x x x x x	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000		0.00 pif 0.00 pif	R = = = = = = = = = = = = = = = = = = =	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		
- - - - - - - - ST LE	- - - - - - - - - VEL FORCES	0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf	x 0.00 x 0.00	x x x x x x x x x x	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000		0.00 plf 0.00 plf	= = = = = = = = = = = = = = = = = = =	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	DISTRIBUTION OVERIDE	R OVERIDE
F#	- - - - - - - - - VEL FORCES	0.00 plf 0.00 plf	x 0.00 x 0.00	x x x x x x x x x x	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000		0.00 plf 0.00 plf	= = = = = = = = = = = = = = = = = = =	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	DISTRIBUTION OVERIDE	R OVERIDE
-		0.00 plf	x 0.00 x 0.00	X X X X X X X X X X	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	= = = = = = = = =	0.00 plf 0.00 plf	R = R = R = R = R = R = R = R = R = R =	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	DISTRIBUTION OVERIDE	R OVERIDE
F# 3	1X	0.00 plf 0.00 plf TOTAL TRIB. WEIGHT 773.50 plf	x 0.00 x 0.00	X X X X X X X X X X	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	= = = = = = = = = = = = = = = = = = =	0.00 plf 0.00 plf	R = R = R = R = R = R = R = R = R = R =	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	DISTRIBUTION OVERIDE	R OVERIDE
F# 3 4	1X 1Y	0.00 plf 0.00 plf TOUD PLOOR TOTAL TRIB. WEIGHT 773.50 plf 735.00 plf	x 0.00 x 0.00	X X X X X X X X X X X X	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	= = = = = = = = = = = = = = = = = = =	0.00 plf 0.00 plf 42.52 plf	R = R = R = R = R = R = R = R = R = R =	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	DISTRIBUTION OVERIDE	R OVERIDE
F# 3 4	1X 1Y	0.00 plf 7.00 plf 0.00 plf	x 0.00 x 0.05 7 0.56	X X X X X X X X X X X X X X X X X X X	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	= = = = = = = = = = = = = = = = = = =	0.00 plf 42.52 plf 40.65 plf 9.29 plf	R = R = R = R = R = R = R = R = R = R =	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	DISTRIBUTION OVERIDE	R OVERIDE
F# 3 4	1X 1Y	0.00 plf TOTAL TRIB. WEIGHT 773.50 plf 735.00 plf 168.00 plf 0.00 plf	x 0.00 x 0.00	X X X X X X X X X X X X X X X X X X X	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	= = = = = = = = = = = = = = = = = = =	0.00 plf 40.00 plf 0.00 plf	R = R = R = R R = R R = R R = R R = R R = R R = R R = R R = R R = R R = R R = R R = R R =	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	DISTRIBUTION OVERIDE	R OVERIDE
F# 3 4	1X 1Y	0.00 plf	x 0.00 x 0.56 x 0.57 x 0.57 x 0.57 x 0.57 x 0.57 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.00 x 0.57 x 0.57 x 0.57 x 0.57 x 0.57 x 0.57 x 0.00 x 0.00 x 0.00 x 0.00 x 0.57 x 0.57 x 0.57 x 0.57 x 0.00 x 0.00 x 0.00 x 0.00 x 0.57 x 0.00 x 0.00	X X X X X X X X X X X X X X X X X X X	0.0000 0.0000	= = = = = = = = = = = = = = = = = = =	0.00 plf 0.00 plf 42.52 plf 40.65 plf 9.29 plf 0.00 plf	R = R = R = R = R = R = R = R = R = R =	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	DISTRIBUTION OVERIDE	R OVERIDE
F# 3 4	1X 1Y	0.00 plf	x 0.00 x 0.56 x 0.57 x 0.57 x 0.57 x 0.50 x 0.00 x 0.00	X	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0973 0.0973 0.0973 0.0000 0.0000		0.00 plf 42.52 plf 40.65 plf 9.29 plf 0.00 plf 0.00 plf	R = R C = R C R C R C R C R C R C R C R C R C R	0.00 0.00	DISTRIBUTION OVERIDE	R OVERIDE
F# 3 4	1X 1Y	0.00 plf 7735.00 plf 735.00 plf 168.00 plf 0.00 plf 0.00 plf 0.00 plf 0.00 plf	x 0.00 x 0.57 x 0.57 x 0.57 x 0.00 x 0.00 x 0.00 x 0.00	x x x x x x x x x x x x x x x x x x x	0.0000 0.0000		0.00 plf 42.52 plf 40.65 plf 9.29 plf 0.00 plf 0.00 plf 0.00 plf	R = R = R = R R R R R R R R R R R R R R	0.00 0.00	DISTRIBUTION OVERIDE	R OVERIDE
F# 3 4	1X 1Y	0.00 plf	X 0.00 X 0.57 X 0.57 X 0.50 X 0.00 X 0.00 X 0.00 X 0.00 X 0.00 X 0.00 X 0.00 X 0.00 X 0.00 X 0.57 X 0.57 X 0.00 X 0.00	x x x x x x x x x x x x x x x x x x x	0.0000 0.0000	= = = = = = = = = = = = = = = = = = =	0.00 plf	R = R = R = R = R R = R R R R R R R R R	0.00 0.00	DISTRIBUTION OVERIDE	R OVERIDE
F# 3 4	1X 1Y	0.00 plf	X 0.00 X 0.57 X 0.57 X 0.00 X 0.00 X 0.00 X 0.00 X 0.00 X 0.00 X 0.00 X 0.00 X 0.57 X 0.00 X 0.00	X X X X X X X X X X X X X X X X X X X	0.0000 0.0000	DP:	0.00 plf	R = R = R = R = R = R = R = R R R R R R	0.00 0.00	DISTRIBUTION OVERIDE	R OVERIDE
F# 3 4	1X 1Y	0.00 plf	x 0.00 x 0.00	X	0.0000 0.0000	DE	0.00 plf	R = = = = = = = = = = = = = = = = = = =	0.00 0.00	DISTRIBUTION OVERIDE	R OVERIDE
F# 3 4	1X 1Y	0.00 plf	X 0.00 X 0.57 X 0.57 X 0.57 X 0.00 X 0.57 X 0.00 X 0.00 X 0.00 X 0.00 X 0.00 X 0.00 X 0.57 X 0.00 X 0.00 X 0.00 X 0.00 X 0.00 X 0.00 X 0.00 X 0.00 X 0.57 X 0.00 X 0.00	X	0.0000 0.0000	DE DE E E E E E E E E E E E E E E E E E	0.00 plf	R C C C C C C C C C C C C C C C C C C C	0.00 0.00	DISTRIBUTION OVERIDE	R OVERIDE



SEISMIC FORCES TO SHEAR LINES:

2ND LEVEL

ROOF

and the same of	RLINE	FORCES						111100000		WEAT				D DEG: CI		D DEOIS	_	W 1 0 1 5	FFF	FOT		
INE		F#			FORCE			WIDTH		X BAR		L		R DESIGN	V 1	R REQ'D		% LOAD	EFF			0474 00 11
1		F1	-	(264.26 ptf) ×	24.00	×	1.00	1	2.00	×	6.50	/	6.50	X	1.00	1	1.00	=	3171.09 lb
	+		7	() ×	0.00	×	0.00	/	0.00	×	0.00	/	0.00	×	1.00	1	1.00	=	0.00 lb
	+		-	() x	0.00	×	0.00	1	0.00	X	0.00	1	0.00	×	1.00	- 1	1.00	=	0.00 1
	+		7	() ×	0.00	×	0.00	1	0.00	×	0.00	1	0.00	×	1.00	1	1.00	=	0.00 18
	+	4	-	() x	0.00	×	0.00	1	0.00	X	0.00	1	0.00	×	1.00	1	1.00	=	0.00 lb
	+		*	() x	0.00	×	0.00	1	0.00	×	0.00	1	0.00	×	1.00	1	1.00	=	0.00 15
	+				() x			0.00	1	0,00	×	0.00	1	0.00	×	1.00	1	1.00	=	0.00 lb
														6.50							_	3171.09 lb
HEA	R LINE F	FORCES			00 00000 pp.			100000000000000000000000000000000000000	_		_		_									
NE		F#			FORCE			WIDTH		X BAR		L		R DESIGN	1 1	R REQ'D		% LOAD	EFF			
2		F1	-	(264.26 plf) x	24.00	×	1.00	1	2.00	X	6.50	1	6.50	X	1.00	1	1.00	=	3171.09 lb
	#0	-	+	() x	0.00	×	0.00	1	0.00	×	0.00	1	0.00	×	1.00	1	1.00	=	0.00 lb
	+		2	() x	0.00	×	0.00	1	0.00	X	0.00	1	0.00	×	1.00	1	1.00	=	0.00 lb
	+	-	2	() x	0.00	x	0.00	1	0.00	×	0.00	1	0.00	×	1.00	1	1.00	=	0.00 lb
	+			1) x	0.00	×	0.00	1	0.00	×	0.00	1	0.00	×	1.00	1	1.00	=	0.00 lb
	+	2	2	1) x	0.00	×	0.00	1	0.00	X	0.00	1	0.00	×	1.00	1	1.00		0.00 lb
			7	1		5) x	0.00	^	0.00	1	0.00	×	0.00	1	0.00	x	1.00	1	1.00		0.00 lb
	70				V		/^			0.00	,	0.00	^	6.50		0.00	Ŷ	1.00		1.00		3171.09 lb
IEA	R LINE F	ORCES					_		_		_		-								_	
VE.		F#			FORCE			WIDTH		X BAR		L		R DESIGN	4 F	REQ'D	9	% LOAD	EFF	ECT		
3		F2	-	(197.07 plf) ×	24.00	×	1.00	1	2.00	×	6.50	1	6.50	x	1.00	1	1.00	=	2364.83 lb
	+	1,500	2	(109/2010/04/1/1002) x	0.00	×	0.00	1	0.00	×	0.00	1	0.00	×	1.00	1	1.00	=	0.00 lb
	+			1) x	0.00	×	0.00	1	0.00	×	0.00	1	0.00	x	1.00	1	1.00	=	0.00 lb
	+			ì) x	0.00	×	0.00	1	0.00	×	0.00	1	0.00	×	1.00	1	1.00	=	0.00 lb
	+			,) ×	0.00	×	0.00	1	0.00	×	0.00	1	0.00	x	1.00	1	1.00	10	0.00 lb
	_	- 5	- 7	,) ×	0.00	×	0.00	,	0.00	×	0.00	1	0.00	×	1.00	,	1.00	=	0.00 lb
	7			,	,			0.00	^	0.00	- 3	0.00	×	0.00	1	0.00	x	1.00	1	1.00	_	0.00 lb
	+	*				-) x			0.00	,	0.00	×	6.50	1	0.00	^	1.00	,	1.00	=	2364.83 lb
HEAL	R LINE F	ORCES							_		_		_		_		_			_		
NE		F#			FORCE		1000	WIDTH		X BAR		L		R DESIGN	N F	REQ'D	0	% LOAD	EFF	ECT		ANADAM DINAKA
4		F2	(1±)	(197.07 plf) x	24.00	×	1.00	1	2.00	×	6.50	1	6.50	×	1.00	1	1.00	=	2364.83 lb
	+	F2	-	(197.07 plf) x	5.50	x	26.75	1	24.00	×	6.50	1	6.50	×	1.00	1	1.00	=	1208.07 lb
	+	202	-	(West State of the) x	0.00	x	0.00	1	0.00	×	0.00	1	0.00	×	1.00	1	1.00	=	0.00 lb
	+		-	1) ×	0.00	x	0.00	1	0.00	×	0.00	1	0.00	×	1.00	1	1.00		0.00 lb
	+		-	ì) ×	0.00	x	0.00	1	0.00	×	0.00	1	0.00	×	1.00	1	1.00	=	0.00 lb
	1	8	12	1) x	0.00	x	0.00	1	0.00	×	0.00	1	0.00	×	1.00	1	1.00	=	0.00 lb
				,	,)×	0.00	^	0.00	,	0.00	×	0.00	1	0.00	×	1.00	1	1.00	=	0.00 lb
	*	-			(15	10			0.00	6	0.00	^	6.50		0.00	^	1,00		1.00		3572.90 lb
IEAF	LINEF	ORCES							_				-		_		_	_	_			
1E		F#	-	TW.	FORCE		50.00	WIDTH	195	X BAR		L	644	R DESIGN	I F	REQ'D		% LOAD	EFF		200	SCASONANNS.
-			-	() ×	0.00	×	0.00	1	0.00	×	0.00	1	0.00	×	1.00	1	1.00	=	0.00 lb
	+		-	() x	0.00	×	0.00	1	0.00	×	0.00	1	0.00	×	1.00	1	1.00	=	0.00 lb
	+			()×	0.00	×	0.00	1	0.00	×	0.00	1	0.00	×	1.00	1	1.00	=	0.00 lb
	+		-	ì)×	0.00	×	0.00	1	0.00	×	0.00	1	0.00	×	1.00	1	1.00		0.00 lb
		- 5))×	0.00	×	0.00	1	0.00	x	0.00	1	0.00	X	1.00	1	1.00	=	0.00 lb
		-		>)×	0.00	×	0.00	,	0.00	×	0.00	,	0.00	×	1.00	1	1.00	=	0.00 lb
	45	*		(5			0.00	×	0.00	',	0.00	×	0.00	1	0.00	×	1.00	1	1.00	_	0.00 lb
	-2												×									
	+				(*) ×			0.00		0.00	**	100.00	10.1	0.00	***	1750.00	60	1,00	_	0.00 lb



SEISMIC FORCES TO SHEAR LINES:

1ST LEVEL

2ND FLOOR

	RLINE	FORCES													_	U I A I	and product	COL		
INE		F#	100		FORCE		WIDTH		X BAR		L		R DESIGN	R REQ'D		% LOAD		171111111111111111111111111111111111111		
5		F3	1000	(42.52 plf) x	24.00	×	1.00	1	2.00	×	6.50	6.50	X	1.00	1	1.00	=	510.22 lb
	+	-	LINE1	(3171.09 lb) x	1.00	×	1.00	1	1.00	×	6.50	6.50	×	1.00	1	1.00	=	3171.09 lb
	+		-	() x	0.00	×	0.00	1	0.00	×	0.00	0.00	×	1.00	1	1.00	=	0.00 18
	+	*	-	() ×	0.00	×	0.00	1	0.00	×	0.00	0.00	×	1.00	1	1.00	=	0.00 1
	+		-	() ×	0.00	×	0.00	1	0.00	×	0.00	0.00	X	1.00	1	1,00	=	0.00 18
	+	-		() ×	0.00	×	0.00	1	0.00	×	0.00	0.00	x	1.00	1	1.00		0.00 1
	+	~			(-)×			0.00	1	0.00	×	0.00 / 6.50	0.00	×	1.00	1	1.00	=_	0.00 lk 3681.31 lk
													0.00						=	0001101 12
-	R LINE	FORCES F#			FORCE		WIDTH		X BAR		L	_	R DESIGN	R REQ'D		% LOAD	ccc	ECT		
NE				1		17	24.00	v	1.00	,	2.00	x	6.50 /	6.50	x	1.00	1	1.00	=	510.22 lb
6		F3	LINES	,	42.52 plf	3171.09 lb) x	1.00	×	1.00	,	1.00	×	6.50 /	6.50	X	1.00	,	1.00	=	3171.09 lb
	7	-	LINE2	,		200		×		,	0.00		0.00 /	0.00	×	1.00	,	1.00	_	0.00 lb
	+	-	7	() ×	0.00	×	0.00	',		X				1.00	1		-	0.00 lb
	+			,) x	0.00	×	0.00	',	0.00	X	0.00	0.00	X		',	1.00		0.00 lb
	+	-		()×	0.00	×	0.00	'	0.00	X	0.00	0.00	X	1.00	,	1.00		
	+	(4)	*	(4) x	0.00	×	0.00	,	0.00	X	0.00 /	0.00	X	1.00	1	1.00	=	0.00 18
	+				(-)×			0.00	1	0.00	X	0.00 /	0.00	х	1.00	1	1.00	=	0.00 lb
													6.50						-	3681.31 lb
	R LINE	FORCES																		
NE		F#			FORCE	Yw.	WIDTH 24.00		X BAR 1.00		2.00	x	R DESIGN 6.50 /	R REQ'D 6.50	×	% LOAD 1.00	EFF!	1.00	=	487.85 Ib
7	100	F4	VIII.	Ç	40.65 plf) X		×		1			6.50 /	6.50		1.00	1	1.00	=	2364.83 lb
	+	*:	LINE3	,		2364.83 lb) x	1.00	×	1.00	1.	1.00	X			×		',	1,00	-	0.00 lb
	+	*	-	() ×	0.00	X	0.00	1	0.00	×	0.00 /	0.00	X	1.00	',			
	+	-		() ×	0.00	X	0.00	1	0.00	×	0.00 /	0.00	×	1,00	',	1.00	=	0.00 1
	+	-	*	() ×	0.00	×	0.00	1	0,00	×	0.00 /	0.00	X	1.00	1	1.00	=	0.00 lb
	+	-	-	(ä) ×	0.00	×	0.00	1	0.00	×	0.00 /	0.00	×	1.00	1	1.00	=	0.00 lb
	+				(-)×			0.00	1	0.00	X	0.00 / 6.50	0.00	X	1.00	1	1.00	-	0.00 lb 2852.67 lb
													170071		_					
HEAL	PLINE	EORCES		_																
****	R LINE	FORCES			FORCE		WIDTH		X BAR		L	_	R DESIGN	R REQ'D	9	% LOAD	EFF	ECT		
NE	RLINE	F#	_	(FORCE 40.65 plf) x	WIDTH 24.00	×	X BAR	,		×	R DESIGN 6.50 /	R REQ'D 6.50	×	% LOAD 1.00	EFF	ECT 1.00	-	487.85 lb
-	R LINE	F# F4	:	(40.65 plf) x) x	WIDTH 24.00 5.50	×	X BAR 1.00 26.75	1	L 2,00 24,00	×					EFFI		= =	
NE	R LINE	F#	H. W. Toward	() x	24.00 5.50	×	1.00 26.75	1	2,00 24.00	×	6.50 / 6.50 /	6.50 6.50	x	1.00	EFFI / /	1.00		56.96 lb
NE	+	F# F4		(40.65 plf) x 3572.90 lb) x	24.00 5.50 1.00	×	1.00 26.75 1.00	1	2,00 24.00 1.00	×	6.50 / 6.50 /	6.50	x x x	1.00	1	1.00	=	56.96 lb 3572.90 lb
NE	+	F# F4	LINE4	((((((((((((((((((((40.65 plf	3572.90 lb) x	24.00 5.50 1.00 0.00	× ×	1.00 26.75 1.00 0.00	1 1 1 1 1 1	2,00 24.00 1.00 0.00	×××	6.50 / 6.50 / 6.50 / 0.00 /	6.50 6.50 6.50 0.00	x x x	1.00 1.00 1.00 1.00	1	1.00 1.00 1.00 1.00	=	56,96 lb 3572,90 lb 0,00 lb
NE	+	F# F4	H. W. Toward	((((((((((((((((((((40.65 plf	3572.90 lb) x) x) x) x	24.00 5.50 1.00 0.00 0.00	× × ×	1.00 26.75 1.00 0.00 0.00	1	2.00 24.00 1.00 0.00 0.00	× × ×	6.50 / 6.50 / 6.50 / 0.00 /	6.50 6.50 6.50 0.00 0.00	x x x x	1.00 1.00 1.00 1.00 1.00	1111	1.00 1.00 1.00 1.00 1.00	= = =	56.96 lb 3572.90 lb 0.00 lb 0.00 lb
NE	+	F# F4	LINE4	((((((((((((((((((((40.65 plf	3572.90 lb) x) x) x) x) x	24.00 5.50 1.00 0.00	× ×	1.00 26.75 1.00 0.00 0.00 0.00	1 1 1 1 1 1 1 1 1	2,00 24.00 1.00 0.00 0.00 0.00	× × × ×	6.50 // 6.50 // 6.50 // 0.00 // 0.00 //	6.50 6.50 6.50 0.00 0.00	x x x x	1.00 1.00 1.00 1.00 1.00	1	1.00 1.00 1.00 1.00 1.00 1.00	= =	56.96 lb 3572.90 lb 0.00 lb 0.00 lb 0.00 lb
NE	+	F# F4	LINE4	((((((((((((((((((((40.65 plf	3572.90 lb) x) x) x) x	24.00 5.50 1.00 0.00 0.00	× × ×	1.00 26.75 1.00 0.00 0.00	! ! ! !	2.00 24.00 1.00 0.00 0.00	× × ×	6.50 / 6.50 / 6.50 / 0.00 /	6.50 6.50 6.50 0.00 0.00	x x x x	1.00 1.00 1.00 1.00 1.00	1111	1.00 1.00 1.00 1.00 1.00		487.85 lb 56.96 lb 3572.90 lb 0.00 lb 0.00 lb 0.00 lb 4117.71 lb
NE 8	+ + + + +	F# F4 F5 - - -	LINE4	((((((((((((((((((((40.65 plf	3572.90 lb) x) x) x) x) x	24.00 5.50 1.00 0.00 0.00	× × ×	1.00 26.75 1.00 0.00 0.00 0.00	1 1 1 1 1 1	2,00 24.00 1.00 0.00 0.00 0.00	× × × ×	6.50 / 6.50 / 6.50 / 0.00 / 0.00 / 0.00 /	6.50 6.50 6.50 0.00 0.00	x x x x	1.00 1.00 1.00 1.00 1.00	1111	1.00 1.00 1.00 1.00 1.00 1.00		56.96 lb 3572.90 lb 0.00 lb 0.00 lb 0.00 lb
NE 8	+ + + + +	F# F4	LINE4	((((((((((((((((((((40.65 plf	3572.90 lb) x) x) x) x) x	24.00 5.50 1.00 0.00 0.00 0.00	× × ×	1.00 26.75 1.00 0.00 0.00 0.00 0.00	1 1 1 1 1 1 1 1	2,00 24.00 1.00 0.00 0.00 0.00 0.00	× × × ×	6.50 / 6.50 / 6.50 / 0.00 / 0.00 / 0.00 / 6.50	6.50 6.50 6.50 0.00 0.00 0.00 0.00	× × × × ×	1.00 1.00 1.00 1.00 1.00 1.00 1.00	11111	1.00 1.00 1.00 1.00 1.00 1.00		56,96 lb 3572,90 lb 0,00 lb 0,00 lb 0,00 lb 4117,71 lb
NE 8	+ + + + +	F# F4 F5 - - - - -	LINE4	((((((((((((((((((((40.65 plf 9.29 plf	3572.90 lb) x) x) x) x) x	24.00 5.50 1.00 0.00 0.00 0.00	× × ×	1.00 26.75 1.00 0.00 0.00 0.00 0.00	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2,00 24.00 1.00 0.00 0.00 0.00 0.00	× × × ×	6.50 / 6.50 / 6.50 / 0.00 / 0.00 / 0.00 / 6.50	6.50 6.50 6.50 0.00 0.00 0.00 0.00	x x x x x	1.00 1.00 1.00 1.00 1.00 1.00 1.00	11111	1.00 1.00 1.00 1.00 1.00 1.00 1.00		56,96 lb 3572,90 lb 0.00 lb 0.00 lb 0.00 lb 4117.71 lb
NE 8	+ + + + +	F# F4 F5 - - - - -	LINE4	(((40.65 plf 9.29 plf	3572.90 lb) x 3572.90 lb) x) x) x) x	24.00 5.50 1.00 0.00 0.00 0.00	x x x x	1.00 26.75 1.00 0.00 0.00 0.00 0.00	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2,00 24.00 1.00 0.00 0.00 0.00 0.00	× × × ×	6.50 / 6.50 / 6.50 / 0.00 / 0.00 / 0.00 / 6.50	6.50 6.50 6.50 0.00 0.00 0.00 0.00	× × × × ×	1.00 1.00 1.00 1.00 1.00 1.00 1.00	11111	1.00 1.00 1.00 1.00 1.00 1.00 1.00		56.96 lb 3572.90 lb 0.00 lb 0.00 lb 0.00 lb 4117.71 lb 0.00 lb
NE 8	+ + + + +	F# F4 F5 - - - - -	LINE4	((((((((((((((((((((40.65 plf 9.29 plf) x 3572.90 lb) x) x) x) x -) x	24.00 5.50 1.00 0.00 0.00 0.00	x x x x	1.00 26.75 1.00 0.00 0.00 0.00 0.00 0.00	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2,00 24.00 1.00 0.00 0.00 0.00 0.00	× × × × ×	6.50 / 6.50 / 6.50 / 0.00 / 0.00 / 0.00 / 6.50	6.50 6.50 6.50 0.00 0.00 0.00 0.00	× × × × × × ×	1.00 1.00 1.00 1.00 1.00 1.00 1.00	11111	1.00 1.00 1.00 1.00 1.00 1.00 1.00		56.96 lb 3572.90 lb 0.00 lb 0.00 lb 0.00 lb 4117.71 lb 0.00 lb
NE 8	+ + + + +	F# F4 F5 - - - - -	LINE4	((()	40.65 plf 9.29 plf) x 3572.90 lb) x) x) x) x -) x	24.00 5.50 1.00 0.00 0.00 0.00 0.00	x x x x	1.00 26.75 1.00 0.00 0.00 0.00 0.00 X BAR 0.00 0.00	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2,00 24.00 1.00 0.00 0.00 0.00 0.00	× × × × × ×	6.50 / 6.50 / 6.50 / 0.00 / 0.00 / 0.00 / 6.50	6.50 6.50 6.50 0.00 0.00 0.00 0.00 R REQ'D 0.00 0.00	× × × × × × × ×	1.00 1.00 1.00 1.00 1.00 1.00 1.00	11111	1.00 1.00 1.00 1.00 1.00 1.00 1.00		56.96 lb 3572.90 lb 0.00 lb 0.
NE 8	+ + + + +	F# F4 F5 - - - - -	LINE4	((((40.65 plf 9.29 plf) x 3572.90 lb) x) x) x) x -) x	24.00 5.50 1.00 0.00 0.00 0.00 0.00	× × × × × ×	1.00 26.75 1.00 0.00 0.00 0.00 0.00 0.00	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2,00 24.00 1.00 0.00 0.00 0.00 0.00 0.00	× × × × × ×	6.50 / 6.50 / 6.50 / 0.00 / 0.00 / 0.00 / 6.50 / R DESIGN 0.00 / 0.00 /	6.50 6.50 6.50 0.00 0.00 0.00 0.00 0.00	× × × × × × × ×	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	EFFE	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		56.96 lt 3572.90 lt 0.00 lt 0.
NE 8	+ + + + +	F# F4 F5 - - - - -	LINE4	((((((((((((((((((((40.65 plf 9.29 plf) x 3572.90 lb) x) x) x) x -) x	24.00 5.50 1.00 0.00 0.00 0.00 0.00 0.00 0	x x x x	1.00 26.75 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2,00 24,00 1,00 0,00 0,00 0,00 0,00 0,00 0,00	× × × × × ×	6.50 / 6.50 / 6.50 / 0.00 / 0.00 / 0.00 / 6.50 / R DESIGN 0.00 / 0.00 / 0.00 / 0.00 /	6.50 6.50 6.50 0.00 0.00 0.00 0.00 0.00	× × × × × × × × × × ×	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	EFFE	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		56.96 lt 3572.90 lt 0.00 lt 0.
NE 8	+ + + + +	F# F4 F5 - - - - -	LINE4		40.65 plf 9.29 plf) x 3572.90 lb) x) x) x) x -) x	24.00 5.50 1.00 0.00 0.00 0.00 0.00 0.00 0	x x x x	1.00 26.75 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2,00 24.00 1.00 0.00 0.00 0.00 0.00 0.00 0.00	x x x x x x x x x x x x x x x x x x x	6.50 / 6.50 / 6.50 / 0.00 / 0.00 / 0.00 / 6.50 / R DESIGN 0.00 / 0.00 / 0.00 / 0.00 /	6.50 6.50 0.00 0.00 0.00 0.00 0.00 0.00	× × × × × × × × × × × × × × ×	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	EFFE	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		56.96 lb 3572.90 lb 0.00 lb 0.00 lb 0.00 lb 0.00 lb



REDUNDANCY CHECK:

IN LIEU OF CHECKING REDUNDANCY ON EACH SHEAR LINE, USE DEFAULT VALUE OF rho = 1.3

STRENGTH DESIGN SHEAR FORCE SUMMARY:

STRENG	Management of the Control of the Con	ON SHEAR FORCE SUN		diam'r day	V OCIONAO (OTOCNOTA)	Agardan and and and and and and and and and	aunderstresser automateur	none service service	1/05/04/07/
-	LINE	FORCE	rho	tificarios trac	V SEISMIC (STRENGTH)		φ 0.70		V SEISMIC (ASD)
	-	0.00 lb x 0.00 lb x	1.30	=	·0.00 lb 0.00 lb	X	0.70 0.70	=	0.00 lb di 00.0
	-	0.00 lb x	1.30 1.30		0.00 lb	Х	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
		0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
200		0.00 lb x	1.30	=	0.00 lb	x	0.70	=	0.00 lb
		0.00 lb x	1.30	=	0.00 lb	X	0.70	=	0.00 lb
	l -	0.00 lb x	1.30	=	0.00 lb	X	0.70	=	0.00 lb
	I -	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
'	1 -	0.00 lb x	1.30	=	0.00 lb	х	0.70	=	0.00 lb
] -	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	х	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	X	0.70 0.70	=	0.00 lb dl 00.0
	-	0.00 lb x 0.00 lb x	1.30 1.30	=	0.00 lb 0.00 lb	X	0.70	_ 	di 00.0
		0.00 lb x	1.30	=	0.00 lb	X X	0.70	=	0.00 lb
	_	0.00 lb x	1.30	=	0.00 lb	x	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	х	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	dl 00.0
	-	0.00 lb x	1.30	=	df 00.0	х	0.70	=	0.00 lb
l	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	Х	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	X	0.70	=	0.00 lb
	[-	0.00 lb x 0.00 lb x	1.30	=	0.00 lb	X	0.70 0.70	=	0.00 lb 0.00 lb
		0.00 lb x 0.00 lb x	1.30 1.30	=	0.00 lb 0.00 lb	×	0.70	=	0.00 lb
	1 -	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	l -	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	Х	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	х	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	1	3171.09 lb x	1.30	=	4122.42 lb	х	0.70	=	2885.70 lb
	2	3171.09 lb x	1.30	=	4122.42 lb	×	0.70	=	2885.70 lb
	3 4	2364.83 lb x 3572.90 lb x	1.30 1.30	=	3074.28 lb 4644.77 lb	X	0.70 0.70	=	2151.99 lb 3251.34 lb
l	4	3572.90 lb x 0.00 lb x	1.30	=	0.00 lb	X X	0.70	=	0.00 lb
		0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	۱.	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	- 1	0.00 lb x	1.30	=	0.00 lb	X	0.70	=	0.00 lb
ROOF	-	0.00 lb x	1.30	=	0.00 lb	х	0.70	=	0.00 lb
8	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
_	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	Х	0.70	=	0.00 lb
	8 - 8	0.00 lb x	1.30	=	0.00 lb	X	0.70	=	0.00 lb
	-	0.00 lb x 0.00 lb x	1.30 1.30	=	0.00 lb 0.00 lb	X	0.70 0.70	=	0.00 lb 0.00 lb
	_	0.00 lb x	1.30	=	0.00 lb	X X	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	5	3681.31 lb x	1.30	=	4785.70 lb	X	0.70	=	3349.99 lb
	6	3681.31 lb x	1.30	=	4785.70 lb	x	0.70	=	3349.99 lb
	7	2852.67 lb x	1.30	=	3708.48 lb	х	0.70	=	2595.93 lb
	8	4117.71 lb x	1.30	=	5353.03 lb	x	0.70	=	3747.12 lb
	-	0.00 lb x	1.30	=	0.00 lb	X	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	X	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	X	0.70	=	0.00 lb 0.00 lb
	l <u> </u>	0.00 lb x 0.00 lb x	1.30 1.30	=	0.00 lb 0.00 lb	X X	0.70 0.70	=	0.00 lb
HC	_	0.00 lb x	1.30	_	0.00 lb	X	0.70	=	0.00 lb
ŏ	-	0.00 lb x	1.30	=	0.00 lb	x	0.70	=	0.00 lb
Ĭ,	-	0.00 lb x	1.30	=	0.00 lb	x	0.70	=	0.00 lb
2ND FLOOR	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
2	-	0.00 lb x	1.30	=	0.00 lb	х	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
	-	0.00 lb x	1.30	=	0.00 lb	X	0.70	=	0.00 lb
l l	-	0.00 lb x	1.30	=	0.00 lb	X	0.70	=	0.00 lb
	-	0.00 lb x 0.00 lb x	1.30	=	0.00 lb 0.00 lb	X	0.70 0.70	=	di 00.0 di 00.0
	_	0.00 lb x	1.30 1.30	=	0.00 lb	X X	0.70		0.00 lb
	_	0.00 lb x	1.30	=	0.00 lb	×	0.70	=	0.00 lb
				-				maran van	



WIND LOAD DESIGN:

-001014	DIRE	CTIONAL PROCEDURE - MWFRS ENCLOSED BUILDING					ASCE 7-10 27.4.1
5-1A	BASI	C WIND SPEEDS FOR RISK CATEGORY II	BUILDING	38			
	1	BASIC WIND SPEED WIND DIRECTIONALLY FACTOR	V Kd	=	115.00 MP 0.85	н	ASCE 7-10 FIG 26.5-1 ASCE 7-10 TABLE 26.6-1
	2	IMPORTANCE FACTOR, CATEGORY II	1	-	1.00		ASCE 7-10 TABLE 6-1
II DIN	3 DIRE	CTION - X					
LUIIV	3	EXPOSURE CATEGORY		С	-		ASCE 7-10 26.7.3
				CASE 1			ASCE 7-10 TABLE 6-3
		HEIGHT ABOVE GROUND LEVEL	Z	=	20.00 ft		MEAN ROOF HEIGHT
		TERRAIN EXPOSURE CONSTRANT TERRAIN EXPOSURE CONSTRANT	α.	=	9.50 900.00 ft		ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 26.9-1
		VELOCITY PRESSURE	zg Kz	=	0.90		ASCE 7-10 TABLE 27.3-1
	0		2357		WW.		SAMOURE AND
	4	TOPOGRAPHY FACTOR	Kzt	=	1.000	5	ASCE 7-10 26.8.2
	5	VELOCITY PRESSURE	qz	= .00256 Kz	Kzt Kd V^2 I		ASCE 7-10 (27.3-1)
			qz	=	25.954 psf	_	PRESSURE AT MEAN ROOF HEIGHT
		CHET FACTOR	G	_	0.95		ASCE 7-10 26.9.1
	6	GUST FACTOR	G	7	0.85		ASCE 7-10 26.9.1
	7-	ENCLOSURE CLASSIFICATION		ENCLOSE	D		ASCE 7-10 26.10
	8	INTERNAL PRESSURE	GCpi	= -	0.18 +/-		ASCE 7-10 TABLE 26.11-1
	9	EXTERNAL PRESSURE COEFFICIENTS	esteration (_			ASCE 7-10 FIG 27.4.1
	Э	EXTERNAL PRESSURE COEFFICIENTS	В	=	24.00		ASCE 7-10 FIG 27.4.1 ASCE 7-10 FIG 27.4.1
			L/B	=	1.000		ASCE 7-10 FIG 27.4.1
			h/L	=	0.833		ASCE 7-10 FIG 27.4.1
			Cp 1	=	0.800	WINDWARD WALL	ASCE 7-10 FIG 27.4.1
			Cp 2		-0.500	LEEWARD WALL	ASCE 7-10 FIG 27.4.1
		COUNTY PARTY SE	Ср 3	=	-0.700	SIDE WALLS	ASCE 7-10 FIG 27.4.1
		PARALLEL TO RIDGE	Cp 4	=	-0.900	ROOF 1 0.00 deg	ASCE 7-10 FIG 27.4.1 PITCH 0.00 :12
	10	DESIGN WIND LOAD	Cp 5	= qGCp - qi (-0.900 Gcpi)	ROOF 2 0.00 deg	PITCH 0.00 :12 ASCE 7-10 TABLE 26.11-1
	10	WINDWARD q = qz & qi = qh	p	= 4000 4.1	17.649 -	-4.672 = 22.	321 psf LATERAL FORCE
		LEEWARD q = qh	p	=	-11.030 -		702 psf P WIND 38.02 psf
		SIDE WALLS qi = qh	p	=	-15.443 -	4,672 = -20.	114 psf
		ROOF 1 qi = qh	p	=	-19.855 +	-4.672 = -24.	527 psf — WIND -24.53 psf
		ROOF 2 qi = qh	p	=	-19.855 +	-4,672 = -24.	527 psf LEE -24.53 psf
		DESIGN WIND LOAD x DIRECTION	p WALL	=	22.32 -	(M. 7473/8)	
						*15.70 = 38	3.02 psf UPLIFT FORCE
			p ROOF		0.00 -		0.00 psf UPLIFT FORCE
LDING		CTION - Y					0.00 psf
ILDING				c			0.00 psf ASCE 7-10 26.7.3
ILDING		CTION - Y EXPOSURE CATEGORY	p ROOF		0.00 -		ASCE 7-10 26.7.3 ASCE 7-10 TABLE 6-3
ILDING		CTION - Y	p ROOF	C CASE 1	0.00 - 20.00 ft		0.00 psf ASCE 7-10 26.7.3
ILDING		CTION - Y EXPOSURE CATEGORY HEIGHT ABOVE GROUND LEVEL	p ROOF z α	C CASE 1	0.00 -		2.00 psf ASCE 7-10 26.7.3 ASCE 7-10 TABLE 6-3 MEAN ROOF HEIGHT
ILDING		CTION - Y EXPOSURE CATEGORY HEIGHT ABOVE GROUND LEVEL TERRAIN EXPOSURE CONSTRANT	p ROOF z a zg	C CASE 1	0.00 - 20.00 ft 9.50		ASCE 7-10 26.7.3 ASCE 7-10 TABLE 6-3 MEAN ROOF HEIGHT ASCE 7-10 TABLE 26.9-1
ILDING	3	EXPOSURE CATEGORY HEIGHT ABOVE GROUND LEVEL TERRAIN EXPOSURE CONSTRANT TERRAIN EXPOSURE CONSTRANT VELOCITY PRESSURE	p ROOF z α zg Kz	C CASE 1	20.00 ft 9.50 900.00 ft 0.90		ASCE 7-10 26.7.3 ASCE 7-10 TABLE 6-3 MEAN ROOF HEIGHT ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 27.3-1
ILDING	3	EXPOSURE CATEGORY HEIGHT ABOVE GROUND LEVEL TERRAIN EXPOSURE CONSTRANT TERRAIN EXPOSURE CONSTRANT	p ROOF z α zg Kz	C CASE 1	20.00 ft 9.50 900.00 ft		ASCE 7-10 26.7.3 ASCE 7-10 TABLE 6-3 MEAN ROOF HEIGHT ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 26.9-1
ILDING	3	EXPOSURE CATEGORY HEIGHT ABOVE GROUND LEVEL TERRAIN EXPOSURE CONSTRANT TERRAIN EXPOSURE CONSTRANT VELOCITY PRESSURE	p ROOF z α zg Kz	C CASE 1	20.00 ft 9.50 900.00 ft 0.90		ASCE 7-10 26.7.3 ASCE 7-10 TABLE 6-3 MEAN ROOF HEIGHT ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 27.3-1
ILDING	3 4 5	EXPOSURE CATEGORY HEIGHT ABOVE GROUND LEVEL TERRAIN EXPOSURE CONSTRANT TERRAIN EXPOSURE CONSTRANT VELOCITY PRESSURE TOPOGRAPHY FACTOR	p ROOF z α zg Kz Kzt	C CASE 1	20.00 ft 9.50 900.00 ft 0.90 1.000		ASCE 7-10 26.7.3 ASCE 7-10 TABLE 6-3 MEAN ROOF HEIGHT ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 27.3-1 ASCE 7-10 (27.3-1)
ILDING	3 4 5	EXPOSURE CATEGORY HEIGHT ABOVE GROUND LEVEL TERRAIN EXPOSURE CONSTRANT TERRAIN EXPOSURE CONSTRANT VELOCITY PRESSURE TOPOGRAPHY FACTOR VELOCITY PRESSURE	p ROOF z α zg Kz Kzt qz qz	C CASE 1	20.00 ft 9.50 900.00 ft 0.90 1.000 Kzt Kd V^2 I 25.954 psf		ASCE 7-10 26.7.3 ASCE 7-10 TABLE 6-3 MEAN ROOF HEIGHT ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 27.3-1 ASCE 7-10 26.8.2 ASCE 7-10 (27.3-1) PRESSURE AT MEAN ROOF HEIGHT
ILDING	3 4 5	EXPOSURE CATEGORY HEIGHT ABOVE GROUND LEVEL TERRAIN EXPOSURE CONSTRANT TERRAIN EXPOSURE CONSTRANT VELOCITY PRESSURE TOPOGRAPHY FACTOR VELOCITY PRESSURE GUST FACTOR	z α zg Kz Kzt qz qz G	C CASE 1	20.00 ft 9.50 900.00 ft 0.90 1.000 Kzt Kd V^2 I 25.954 psf		ASCE 7-10 26.7.3 ASCE 7-10 7ABLE 6-3 MEAN ROOF HEIGHT ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 27.3-1 ASCE 7-10 (27.3-1) PRESSURE AT MEAN ROOF HEIGHT ASCE 7-10 26.9.1
ILDING	3 4 5 6 7 8	EXPOSURE CATEGORY HEIGHT ABOVE GROUND LEVEL TERRAIN EXPOSURE CONSTRANT TERRAIN EXPOSURE CONSTRANT VELOCITY PRESSURE TOPOGRAPHY FACTOR VELOCITY PRESSURE GUST FACTOR ENCLOSURE CLASSIFICATION INTERNAL PRESSURE	p ROOF z α zg κz κzt σz σ G GCpi	C CASE 1 = = = .00256 Kz I = = ENCLOSE	20.00 - 20.00 ft 9.50 900.00 ft 0.90 1.000 Kzt Kd V^2 I 25.954 psf 0.85		ASCE 7-10 26.7.3 ASCE 7-10 TABLE 6-3 MEAN ROOF HEIGHT ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 27.3-1 ASCE 7-10 (27.3-1) PRESSURE AT MEAN ROOF HEIGHT ASCE 7-10 26.9.1 ASCE 7-10 26.9.1 ASCE 7-10 26.10 ASCE 7-10 TABLE 26.11-1
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LDING	3 4 5 6 7 8	EXPOSURE CATEGORY HEIGHT ABOVE GROUND LEVEL TERRAIN EXPOSURE CONSTRANT TERRAIN EXPOSURE CONSTRANT VELOCITY PRESSURE TOPOGRAPHY FACTOR VELOCITY PRESSURE GUST FACTOR ENCLOSURE CLASSIFICATION INTERNAL PRESSURE	p ROOF z α zg κz κzt qz qz G GCpi L B L/B h/L	C CASE 1	0.00 - 20.00 ft 9.50 900.00 ft 0.90 1.000 Kzt Kd V^2 I 25.954 psf 0.85 0.18 +/- 24.00 24.00	0.00 =	ASCE 7-10 26.7.3 ASCE 7-10 7ABLE 6-3 MEAN ROOF HEIGHT ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 27.3-1 ASCE 7-10 (27.3-1) PRESSURE AT MEAN ROOF HEIGHT ASCE 7-10 26.9.1 ASCE 7-10 26.9.1 ASCE 7-10 TABLE 26.11-1 ASCE 7-10 TABLE 26.11-1 ASCE 7-10 TABLE 26.11-1 ASCE 7-10 FIG 27.4.1
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LDING	3 4 5 6 7 8	EXPOSURE CATEGORY HEIGHT ABOVE GROUND LEVEL TERRAIN EXPOSURE CONSTRANT TERRAIN EXPOSURE CONSTRANT VELOCITY PRESSURE TOPOGRAPHY FACTOR VELOCITY PRESSURE GUST FACTOR ENCLOSURE CLASSIFICATION INTERNAL PRESSURE	p ROOF z α α zg Kz Kzt qz qz G GCpi L B L/B h/L Cp 1 Cp 2	C CASE 1 = = .00256 Kz = = = = = = = = = = = = = = = = = =	0.00 - 20.00 ft 9.50 900.00 ft 0.90 1.000 Kzt Kd V^2 I 25.954 psf 0.85 0.18 +/- 24.00 24.00 1.000 0.833 0.800 -0.500	WINDWARD WALL LEEWARD WALL	ASCE 7-10 26.7.3 ASCE 7-10 7ABLE 6-3 MEAN ROOF HEIGHT ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 27.3-1 ASCE 7-10 TABLE 27.3-1 ASCE 7-10 (27.3-1) PRESSURE AT MEAN ROOF HEIGHT ASCE 7-10 26.9.1 ASCE 7-10 TABLE 26.11-1 ASCE 7-10 FIG 27.4.1
ILDING	3 4 5 6 7 8	EXPOSURE CATEGORY HEIGHT ABOVE GROUND LEVEL TERRAIN EXPOSURE CONSTRANT TERRAIN EXPOSURE CONSTRANT VELOCITY PRESSURE TOPOGRAPHY FACTOR VELOCITY PRESSURE GUST FACTOR ENCLOSURE CLASSIFICATION INTERNAL PRESSURE EXTERNAL PRESSURE COEFFICIENTS	p ROOF z α zg kz Kzt qz qz G GCpi L B L/B h/L Cp 1 Cp 2 Cp 3	C CASE 1 = = .00256 Kz I = = = .00256 Kz I = = = = = = = = = = = = = = = = = =	0.00 - 20.00 ft 9.50 900.00 ft 0.90 1.000 Kzt Kd V^2 I 25.954 psf 0.85 0.18 +/- 24.00 24.00 1.000 0.833 0.800 -0.500 -0.700	0.00 =	ASCE 7-10 26.7.3 ASCE 7-10 7ABLE 6-3 MEAN ROOF HEIGHT ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 27.3-1 ASCE 7-10 TABLE 27.3-1 ASCE 7-10 (27.3-1) PRESSURE AT MEAN ROOF HEIGHT ASCE 7-10 26.9.1 ASCE 7-10 26.10 ASCE 7-10 TABLE 26.11-1 ASCE 7-10 FIG 27.4.1
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LDING	3 4 5 6 7 8 9	EXPOSURE CATEGORY HEIGHT ABOVE GROUND LEVEL TERRAIN EXPOSURE CONSTRANT TERRAIN EXPOSURE CONSTRANT VELOCITY PRESSURE TOPOGRAPHY FACTOR VELOCITY PRESSURE GUST FACTOR ENCLOSURE CLASSIFICATION INTERNAL PRESSURE EXTERNAL PRESSURE COEFFICIENTS	z α α zg Kz Kzt qz qz G GCpi L B L/B h/L Cp 1 Cp 2 Cp 3 Cp 4 Cp 4	C CASE 1	0.00 - 20.00 ft 9.50 900.00 ft 0.90 1.000 Kzt Kd V^2 I 25.954 psf 0.85 0.18 +/- 24.00 1.000 0.833 0.800 -0.500 -0.700 -0.900	0.00 =	ASCE 7-10 26.7.3 ASCE 7-10 7ABLE 6-3 MEAN ROOF HEIGHT ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 26.9-1 ASCE 7-10 TABLE 27.3-1 ASCE 7-10 7ABLE 27.3-1 ASCE 7-10 26.8.2 ASCE 7-10 (27.3-1) PRESSURE AT MEAN ROOF HEIGHT ASCE 7-10 26.9.1 ASCE 7-10 TABLE 26.11-1 ASCE 7-10 FIG 27.4.1
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HOFFMAVER INC. STRUCTURAL ENGINEERING

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WIND FORCES TO SHEAR LINES:

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WIND FORCES TO SHEAR LINES:

1ST LEVEL

2ND FLOOR

SHEAR LINE	ENDOES	NEWSCHIMOTORIUM	of feet agency of the				***************************************			-	*****	y and the second			***************************************			**************************************
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5	F3	_	1	380.23 plf) x	24.00	×	1.00	1	2.00	×	1.00 /	1.00	x	1.00	/ 1.00	=	4562.73 lb
+	-	F1	ì	000.20 pii	2281.36 lb) x	1.00	x	1.00	ï	1.00	×	1.00 /	1.00	X	1.00	/ 1.00		2281.36 lb
+	-		ì) x	0.00	x	0.00	,	0.00	×	1.00 /	1.00	×	1.00	/ 1.00	=	0.00 lb
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LINE	F#			FORCE		WIDTH		X BAR		L		FACTORS	4.00		LOAD E			4500 70 11
6	F3	-	(380.23 plf) x	24.00	Х	1.00	1,	2.00	Х	1.00 /	1.00	X	1.00	/ 1.00	=	4562.73 lb
+	-	F2	(2281.36 lb) x	1.00	X	1.00	1	1.00	X	1.00 /	1.00	X	1.00	/ 1.00 / 1.00	=	2281.36 lb
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SHEAR LINE	FORCES	·		-										Saž artuvevi tes		***************************************	11/20/22/54 5	
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7	F4	-	(380.23 plf) x	24.00	x	1.00	1	2.00	×	1.00 /	1.00	×	1.00	/ 1.00	=	4562.73 lb
+	-	F3	(2281.36 lb) x	1.00	x	1.00	1	1.00	х	1.00 /	1.00	×	1.00	/ 1.00	=	2281.36 lb
+	-	-	() x	0.00	×	0.00	1	0.00	х	1.00 /	1.00	×	1.00	/ 1.00	=	0.00 lb
+	-	-	() x	0.00	х	0.00	1	0.00	×	1.00 /	1.00	×	1.00	/ 1.00	=	0.00 lb
+	-	-	() x	0.00	х	0.00	1	0.00	х	1.00 /	1.00	X	1.00	/ 1.00	==	0.00 lb
+	-	-	() x	0.00	х	0.00	1	0.00	×	1.00 /	1.00	x	1.00	/ 1.00	=	0.00 lb
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LINE	F#		- tames in special particular	FORCE	**************************************	WIDTH	-	X BAR	IIVTEVATED	L		FACTORS		%	LOAD E	FFECT	***************************************	
8	F4	_	(380.23 plf) x	24.00	х	1.00	1	2.00	×	1.00 /	1.00	х	1.00	/ 1.00	=	4562.73 lb
+	F5	_	ì	380.23 plf) x	5,50	X	26.75	i	24.00	x	1.00 /	1.00	X	1.00	/ 1.00	=	2330.87 lb
+	-	F4	ì		3446.80 lb) x	1.00	X	1.00	1	1.00	×	1.00 /	1.00	x	1.00	/ 1.00	=	3446.80 lb
+	-	-	ì) x	0.00	X	0,00	1	0.00	×	1.00 /	1.00	Х	1.00	/ 1.00	=	0.00 lb
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+	-		,	() x			0.00	1	0.00	×	1.00 /	1.00	×	1.00	/ 1.00	=	0.00 lb
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IOUEAD LIVE	CODOCC	***************************************							***************************************	************	States and an income							
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+	-	-	ì) x	0.00	X	0.00	1	0.00	×	1.00 /	1.00	х		/ 1.00	=	0.00 lb
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				·	,												_	0.00 lb
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WIND FORCE SUMMARY:

ALLOWABLE STRESS DESIGN SHEAR FORCE SUMMARY:

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	-	_	0.00 lb 0.00 lb	X	0.60 0.60	=	0.00 lb 0.00 lb
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	-	_	0.00 lb	X	0.60	_	0.00 lb
	-		0.00 lb	×	0.60	=	0.00 lb
	8 -	-	0.00 lb	X	0.60	=	0.00 lb
		_	0.00 lb	x	0.60	=	0.00 lb
		=	0.00 lb	x	0.60	=	0.00 lb
			0.00 lb	x	0.60	=	0.00 lb
ı		=	0.00 lb	x	0.60	=	0.00 lb
I		=	0.00 lb	x	0.60	=	0.00 lb
ĺ		=	0.00 lb	x	0.60	=	0.00 lb
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	-	=	0.00 lb	х	0.60	=	0,00 lb
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l '	-	=	0.00 lb	х	0.60	=	0.00 lb
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	-	=	0.00 lb	х	0.60	=	0.00 lb
	-	=	0.00 lb	х	0.60	=	0.00 lb
	-	=	0.00 lb	х	0.60	=	0.00 lb
	-	=	0.00 lb	х	0.60	=	0.00 lb
	-	=	0.00 lb	×	0.60	=	0.00 lb
	-	=	0.00 lb	×	0.60	=	0.00 lb
	-	=	0.00 lb	×	0.60	=	0.00 lb
	1	=	2281.36 lb	×	0.60	=	1368.82 lb
	2	=	2281.36 lb	×	0.60	=	1368.82 lb
	3	=	2281.36 lb	×	0.60	=	1368.82 lb
	4	=	3446.80 lb	X	0.60	=	2068.08 lb
	-	=	0.00 lb	Х	0.60	=	0.00 lb
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	_	=	0.00 lb	x	0.60	=	0.00 lb
	-	=	0.00 lb	×	0.60	=	0.00 lb
	-	=	0.00 lb	x	0.60	=	0.00 lb
	-	=	0.00 lb	Х	0.60	=	0.00 lb
	5	=	6844.09 lb	×	0.60	=	4106.46 lb
	6	=	6844.09 lb	х	0.60	=	4106.46 lb
	7	=	6844.09 lb	х	0.60	=	4106.46 lb
	8	=	10340.41 lb	×	0.60	=	6204.24 lb
	-	=	0.00 lb	X	0.60	=	0.00 lb
	-	=	0.00 lb	×	0.60	=	0.00 lb
	-	=	0.00 lb	х	0.60	=	0.00 lb
	-	=	0.00 lb	×	0.60	=	0.00 lb
<u>س</u> ا	-	=	0.00 lb	х	0.60	=	0.00 lb
Ŏ	-	=	0.00 lb	×	0.60	=	0.00 lb
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\2	-	=	0.00 lb	Х	0.60	=	0.00 lb
	-	=	0.00 lb	Х	0.60	=	0.00 lb
	-	=	0.00 lb	Х	0.60	=	0.00 lb
	-	=	0.00 lb	X	0.60	=	0.00 lb
	-	==	0.00 lb	X	0.60	=	0.00 lb
	-	=	0.00 lb	Х	0.60	=	0.00 lb
	-	=	0.00 lb	Х	0.60	=	0.00 lb
	-	=	0.00 lb	X	0.60	=	0.00 lb
	-	=======================================	0.00 lb	X	0.60	=	0.00 lb
	_		0.00 lb	X	0.60		0.00 lb

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Table 10: Allowable In-Plane Shear Strength (Pounds per Foot) for SIP Shear Walls (Seismic Loads in Seismic Design Categories A, B, C, D, E and F)^{1,2}

	Framing	M	inimum Facing Connection		Shear Strengt
Spline Type ³	Minimum SG ⁴	Chord ²	Plate ²	Spline ³	h ⁵ (plf)
	0.50	0.113"x 2-1/4" nails, 6" on center	0.113"x 2-1/4" nails, 3" on center	(7/16" thick, 3" wide spline) 0.113"x 2-1/4" nails 6" on center	360
	0.50	0.113"x 2-1/4" nails, 6" on center	0.113"x 2-1/4" nails, 6" on center	(3/4" thick, 3" wide spline) 0.113"x 2-1/4" nails, 6" on center	360
Block, Surface, or Lumber Spline (Type S, Type L)	0.50	0.113" x 2-3/8" nails, 3" on center Staggered (3/8" edge distance and 3/4" edge distance)	0.113" x 2-3/8" round head nails, 3" on center Staggered (3/8", 3/4" edge distance)	(23/32" thick, 3" wide spline) 0.413" x 2-3/8" nails 3" on center Staggered (3/8" edge distance and 3/4" edge distance)	720
	0.50	0.113" x 2-3/8" nails, 2" on center Staggered (3/8" edge distance and 3/4" edge distance)	0.113" x 2-3/8" round head nails, 2" on center Staggered (3/8", 3/4" edge distance)	(23/32" thick, 3" wide spline) 0.113" x 2-3/8" nails, 2" on center Staggered (3/8" edge distance and 3/4" edge distance)	920

¹ Shear strength values, as published in this table, are limited to assemblies resisting wind or seismic forces where the aspect ratio (height:width) does not exceed 1:1 for Type S panel connections or 2:1 for Type L panel connections. (IM 014 ACU17)

² Chords, hold-downs and connections to other structural elements must be designed by a registered design professional in accordance with accepted engineering practice.

³ Spline type at interior panel-to-panel joints only, solid chord members are required at each end of each shear wall segment.

⁴ Required connections must be made on each side of the panel. Dimensional or engineered lumber shall have an equivalent specific gravity not less than specified.

⁵ For design to resist seismic forces, shear wall height-width ratios greater than 2:1, but not exceeding 3.5:1, are permitted for assemblies using lumber splines provided the allowable shear strength values in this table are multiplied by 2w/h.

OSE FOR THE SIGN NEW PO SIP G = 16 SIP 3 = 16 SIP 2 = 16

This listing report is intended to indicate that NTA, Inc. has evaluated the product described and found it to be eligible for labeling. Product not labeled as specified herein is not covered by this report. NTA, Inc. makes no warranty, either expressed or implied, regarding the product covered by this report.





1,2,4,2,16 5,00 ft	LINE VS	VSTRENGTH	A	8	ပ	٥	Е	ıL	9	I	LENGTH	v ASD = 0.7 V / L	TYPE	CAPACITY	I	M	M/H	2 W/H	2 W / H AD III STED CAPACI	VEION
1,224,24 2,50 ft + 7,00 ft + ft	- Character	4122.42 lb	+ H 00'9	5.00 ft +	4.00 ft +	##	ft +	ff+		42		192.38 plf	Sipe	360.00	10.00	4 00	. 13		200 000	
3774.28 lb 7.00 ft	2	4122.42 lb	5.50 ft +	7.00 ft +	##	##	##	##		#	12.50 ft		Sibe	360.00	10.00	25.50			200.00	
464.77 lb 3.50 ft	7157	3074.28 lb	7.00 ft +	##	+#	##	+ 4=	##		4	7 00 #		SIDE	360.00	10.00	200	1.02		360.00	
478570 b 1350 ft		4644.77 lb	3.50 ft +		+	+	+#	##	+	#	7.00 #		CID	920.00	10.00	2,50	30.0	0.70	300.00	
4785.70 lb 13.50 ft ## ft		4785.70 lb	13.50 ft+		##	##	##	##	+#	#	= 13.50 ft	123	Sipe	360.00	000	13.50	0.00	0.70	380.00	
370848 lb 24,00 ft		4785.70 lb	13.50 ft+	##	+ #	##	+#	##	##	: #	= 13.50 ft	248 15 nif	Sibe	360.00	0000	12.50	0.07		360.00	
5353.03 lb		3708.48 lb	24.00 ft +	ff+	+#	##	#	+#	##	4	= 24 00 ft	108 16 off	Sibe	360.00	000	24.00	0.00		200.00	
## ## ## ## ## ## ## ## ## ## ## ## ##			3.50 ft+	3,50 ft +	+	##	##	##	±	#	7 00 €	535.30 plf	SID	920.00	00.0	2.50	25.50	0.70	245 56	
## ## ## ## ## ## ## ## ## ## ## ## ##		Q	##	##	##	##	##	##	+#	#	#	Jo	1	200000	2000	200	10.4	0.10	15.00	
## ## ## ## ## ## ## ## ## ## ## ## ##		Q	##	+#	+#	##	##	##	##	#	#	Jio Dif	,							
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+ fi+ fi+		Q	+#	##	+#	##	+#	##	##	#	#	. Jo	,							
		Q	##	+#	##	##	+#	##	##	#	#	plf								



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SD	A	В	၁	D	ш	T. Company	9	T		ENGTH	v ASD = V / L	TYPE	CAPACITY	I	M	H/W<35	AD III STED CABACITY
1368.82 lb	6.00 ft +	5.00 ft +	4.00 ft +	+ 1			+	ft +	# 	ı	91.25 nlf	SIPA	360.00	00.01	. 00 %	2.50	260 OO 26
1368.82 lb	5.50 ft +	7.00 ft +		#			+	+	# #	12.50 #	100 51 plf	9010	360.00	20.00	5 4	2.00	390.00
1368 92 lb	7 00 #	4		: 4					1	2.00	0.60	D L	390.00	10.00	0.50	1.82	360.00 pit
1300.02	+ 1 00.7	+		+			+	+ #	H ≓	7.00 #	195.55 pif	SIP6	360.00	10.00	7.00	1.43	360.00 plf
Z068.08 ID	3,50 ft +	3.50 # +		+ #			+	+	Ħ	7.00 ft	295.44 plf	SIP2	920.00	10.00	3.50	2.86	920.00 nlf
4106.46 lb	13.50 ft +	+		+			+	+ #	#	13,50 ft	304.18 plf	SIP6	360.00	00	13.50	0.67	360.00 24
4106.46 lb	13.50 ft +	+ #		##			+	+	11	13.50 ft	304 18 pif	S IS	360.00	8 6	2 5	0.07	300.000 340.00.000
4106.46 lb	24.00 ft +	+#		+			+	±	: #=	24 00 #	171 10 pf	9 4 5	360.00	90.0	2.50	0.0	300.00 pil
6204.24 lb	3.50 ft +	3.50 ft +		+			, +	· +	 	4 00 4	086 27 PH		330.00	9.00	24.00	0 C	350.00 pir
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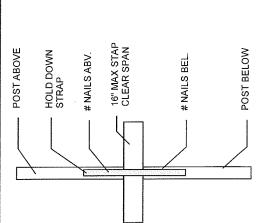
STRAP HOLD DOWN CAPACITY SCHEDULE:

UPLIFT CAPACITY IS BASED ON THE MINIMUM RATING x 0.75 SIMPSON STRAPS

SIMPSON SI KAPS	AAPS								
HOLD DOWN	HOLD DOWN MFG RATING	POST	TEST RATING	LA REPORT	ICC REPORTIL	TEST RATING LA REPORT ICC REPORT LARR 25910 25% REDUCTION MAX DEFLECTION NAIL SIZE	MAX DEFLECTION 1		TOTAL NAILS
MST37 MST48 MST60 MST72	2710.00 lbs 4205.00 lbs 4605.00 lbs 6505.00 lbs	4 4 4 4	2710.00 lbs 4205.00 lbs 4605.00 lbs 6505.00 lbs	RR25713 RR25713 RR25713 RR25713	ESR-2105 ESR-2105 ESR-2105 ESR-2105	2032.50 lbs 3153.75 lbs 3453.75 lbs 4878.75 lbs	0.030 0.030 0.030 0.030	16d 16d 16d	22 34 34 48
CMST12-42 CMST14-33 CS16-11	10710.00 lbs 7755.00 lbs 2080.00 lbs	4 4 4	9215.00 lbs 6490.00 lbs 1705.00 lbs	RR25713 RR25713 RR25713	ESR-2105 ESR-2105 ESR-2105	6911.25 lbs 4867.50 lbs 1278.75 lbs	0.030 0.030 0.030	16d 16d	84 66 22

MST STRAP CALCULATION	ICULATION		
STRAP	GAGE	NAIL CAPACITY	# NAILS
MST37	12	149.00	11.00
MST48	12	149.00	17.00
MST60	10	154.00	17.00
MST72	10	154.00	24.00

TOTAL CAP. 1639.00 2633.00 2618.00 3696.00





HOLD DOWN CAPACITY SCHEDULE:

HOLDOWN CAPACITIES BASED ON CODE TABLES AND RESEARCH REPORTS

SIMPSON HOLD DOWN CAPACITIES

SIMPSON	POST	ANCHOR	CATALOG CAPACITY	da	ICC	ICC CAPACITY	ICC STRENGTH	da	LARR	75% CAP.
HOLD DOWN	SIZE	DIAMETER	lbs	in	REPORT	lbs	lbs	in	REPORT	lbs
HDU2-SDS2.5	4x4	0.625	3075,00	0.088	ICC-ESR 2330	3505.00	4907.00	0.088	25720	2628.75
HDU4-SDS2.5	4x4	0.625	4565.00	0.114	ICC-ESR 2330	4990.00	6986.00	0.114	25720	3742.50
HDU5-SDS2.5	4x4	0.625	5645.00	0.115	ICC-ESR 2330	5670.00	7938.00	0.115	25720	4252.50
HDQ8-SDS3	4x6	0.875	9230.00	0.095	ICC-ESR 2330	9230.00	12922.00	0.095	25720	6922.50
HDU11-SDS2.5	6x6	1.000	11175.00	0.137	ICC-ESR 2330	11175.00	15645.00	0.137	25270	8381.25
HHDQ14-SDS2.5	6x6	1.000	13710.00	0.107	ICC-ESR 2330	13710.00	19194.00	0.107	25270	10282.50
HD19	6x6	1.25	19070.00	0.137	ICC ES-0143	19070.00	26698.00	0.137	25828	19371.00
				1 1						
ZONE FOUR 48-9X	(2) 6x6	1.125	31174.00	0.032	ICC-ESR 5302	31174.00	43643.60	0.032	25334	31174.00

ANCHOR BOLTS IN 2,500 psi CONCRETE TABLES FROM SIMPSON CATALOG C-2009

SIMPSON	ANCHOR	ANCHOR	CAPACITY	de	F	ICC	ICC CAPACITY	ICC STRENGTH	LARR	LARR CAP
ANCHOR	BOLT	DIAMETER	lbs	in	in	REPORT	lbs	lbs	REPORT	lbs
SSTB16	5/8	0.625	4420.0	12.6	1.75	N.A.			25248	2695.00
SSTB20	5/8	0.625	4600.0	16.6	1.75	N.A.	l		25248	2987.00
SSTB24	5/8	0.625	5175.0	20.6	1.75	N.A.			25248	3360.00
SSTB28	7/8	0.875	10100.0	24.9	1.75	N.A.		1	25248	6558.00
	1	1.00	14120.0	10.0	15.00	N.A.		1	-	-
	1 1/8	1.13	45808.0	14.0	7.00	ICC-ESR 5302			25828	45808.00
	1 1/4	1.250	22580.0	14.0	21.00	N.A.		:	-	-

HOLD DOWN SUMMARY

SIMPSON	POST	ANCHOR	ANCHOR	75% ASSEMBLY CAPACITY
HOLD DOWN	SIZE	LA CITY	ALTERNATE	lbs
HDU2-SDS2.5	4x4	SSTB16	5/8	2628.75
HDU4-SDS2.5	4x4	SSTB24	5/8	3360.00
HDU5-SDS2.5	4x4	SSTB24	5/8	3360.00
HDQ8-SDS3	4x6	SSTB28	7/8	6558.00
HDU11-SDS2.5	6x6	SEE ALT >	1	8381.25
HHDQ14-SDS2.5	6x8	SEE ALT >	1	10282.50
HD19	6x6	SEE ALT >	1 1/4	19371.00
ocuments and the second				
ZONE FOUR 48-9X	(2) 6x6	SEE ALT >	1 1/8	31174.00
				USE FOR UPLIFT DESIGN

100% ASSEMBLY CAPACITY	ds
lbs	in
2695.00	0.1180
3360.00	0.1540
3360.00	0.1580
9230.00	0.1300
11175.00	0.1820
13710.00	0.1440
25828.00	0.1855
31174.00	0.032



SEISMIC OVERTURNING DESIGN:
ASD LEVEL FORCES
USE EQUATION ASCE 7:41 12.4.2.3 #8
(0.6 - 0.14 Sds) D + 0.7 p Qe
Sds = 0.633
0.6 - 0.14 Sds = 0.633
USE THE LESSER OF TCC-ES AND LARR VALUES FOR HOLD DOWNS... CAPACITY IS BASED ON 0.75 x HOLD DOWN ALLOWABLE STRESS DESIGN CAPACITY

LINE#	LENGTH	T HEIGHT	ADJUSTED ASD	OVERTURNING	0.7 p Qe	WEIGHT	ADD LOAD AL	LOAD ADD LOAD (0.6-0.14Sds) D RST (14Sds) D RST	OVERTURNING +/- LEVER ARM ADDED UPLIFT WALL	· LEVER ARM	ADDED UPLIF		NET UPLIFT	HOLDOWN	CAPACITY
##	#	₽	plf	ft-lb	q	plf	þlf	Q	ft-lb	ft-lb	Ħ	Q	ABV.	Q	TYPE	q
1 A	6.00	10.00	192.38	11542.8	1923.8	150.0	370.0		4786.8	6756.0	-0.50		1	1228 4	MST37	2032 5
1 8	5.00	10.00	192.38	9619.0	1923.8	150.0	370.0		3324.2	6294.8	-0.50		,	1398.8	MST37	2032 5
1	4.00	10.00	192.38	7695.2	1923.8	150.0	100.0		1022.8	6672.4	-0.50		,	1906.4	MST37	2032.5
2 A	5.50	10.00	230.86	12697.1	2308.6	150.0	100.0		1933.8	10763.3	-0.50		,	2152.7	MST48	3153.8
2 B	7.00	10.00	230.86	16159.9	2308.6	150.0	50.0		2505.9	13654.0	-0.50			2100.6	MST48	3153.8
8	7.00	10.00	307.43	21519.9	3074.3	150.0	50.0		2505.9	19014.0	-0.50		,	2925.2	MSTAR	3153.8
4 A	3.50	10.00	464.48	16258.7	4644.8	150.0	100.0		783.1	15473.6	-0.50		,	5157.9	CMST12-45	69113
4 B	3.50	10.00	464.48	16256.7	4644.8	150.0	100.0		783.1	15473.6	-0.50			5157 9	CMST12.45	60113
5 A	13.50	9.00	55.77	6775.8	501.9	100.0	100.0		9320.5	-2544 7	-0.50	1228 36	1.0	1032 6	HDOR CHES	65580
9 9	13.50	9.00	17.29	2101.0	155.6	100.0	100.0		9320.5	-7219.5	-0.50	2152.66	DA.	1597.3	HDO8-SDS3	6558.0
7 A	24.00	9.00	-199.26	-43041.0	-1793.4	100.0	100.0	S18	29457.4	-72498.4	-0.50	2925 23	3A	-159.8	HDO8-SDS3	6558.0
89 W	3.50	9.00	70.83	2231.0	637.4	100.0	100.0		626.5	1604.5	-0.50	5157.87	44	5692 7	HHD014-SDS2 5	10282.5
8 B	3.50	9.00	70.83	2231.0	637.4	100.0	100.0		626.5	1604.5	-0.50	5157.87	48	5692.7	HHDQ14-SDS2.5	10282.5



WIND OVERTURNING DESIGN:
ASD LEVEL FORCES
USE EQUATION ASCE 7-11 2.4.1 #7
0.6D + W
USE THE LESSER OF ICC-ES AND LARR VALUES FOR HOLD DOWNS

VEIO VO V		2032 50	2032.30	2032.30	2452.30	3153.73	3153.75	6911.25	6911.25	6558 00	6558.00	6558 00	10282.50	10282.50								
NWOO IOO		MST37	MST37	MCT37	WCT48	MST48	MST48	CMST12-45	CMST12-45	HDO8-SDS3	HDO8-SDS3	HDQ8-SDS3	HDQ14-SDS2 5	HDQ14-SDS2.5					•		ı	
TELLIOI LET	7 4	-25.59	147.07	70.007	750.81	726.98	1653.57	3140.55	3140.55	1148.90	1729 13	-41.74	H 08.6606									
10/01	ABV		•		•			,		4	2A	e e	4	49	1	•	Í	,	ı	1	ι	
AAAAEN I IDI IET		Market and the second s									750.81	1653.57	3140.55	3140.55								
- I EVER ARM	# #	-0.50	-0.50	0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50								
FRTHRNING+/	유	-140.72	662.73	2450 18	3754.05	4725.39	10748.19	9421.66	9421.66	14935.68	12718.19	-39839.73	17877.73	17877.73								
WEIGHT ADDIOAD ADDIOAD 06 D RST OVERTIIRNING 1.1 EVER ARMADDED IIDIIET	P # 원	ĵ	3900.00	1200.00	2268.75	2940.00	2940.00	918.75	918.75	10935.00	10935.00	34560.00	735.00	735.00								
DD LOAD ADD	pif		370.0	100.0	100.0	50.0	50.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0								
WEIGHT A	늅	150.00	150,00	150.00	150.00	150.00	150.00	150.00	150.00	100.00	100.00	100.00	100.00	100.00								
W	a	912.55	912.55	912.55	1095.06	1095.06	1955.46	2954.40	2954.40	1916.35	1752.09	-219.99	5317.92	5317.92								
ASD FORCE OVERTURNING	유	5475.28	4562.73	3650,18	6022.80	7665.39	13688.19	10340.41	10340.41	25870.68	23653.19	-5279.73	18612.73	18612.73								
ASD FORCE (plf	91.25	91.25	91.25	109.51	109.51	195.55	295.44	295.44	212.93	194.68	-24.44	590.88	590.88								
HEIGHT	¥	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	9.00	9.00	9.00	9.00	9.00								
		A	В	ပ	∢	ω	⋖	∢	Ω	⋖	∢	∢	∢	ω								
# LENGTH	#	6.00	5.00	4.00	5.50	7.00	7.00	3.50	3.50	13.50	13.50	24.00	3.50	3.50								
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PER ASCE 7-10 12.3.4.1 $\,\rho$ = 1.0 FOR DRIFT CALCULATIONS - ADJUST v ASD BY 1 / ρ

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	Rvh/3 /Ea	3 .	⊆	0.013	0.015	0.019	0.016	0.013	0.012	0.052	0.052	0000	0 003	000	0.013	0.013
	ZHPINK		⊑	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0,050
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NO IA IA	1	,	-													
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-	ď	}		13.0	13.0	13.0	13.0	13.0	13.0	24.0	24.0	13.0	13.0	13.0	24.0	24.0
USE	ds D/C		U?	0.014	0.016	0,022	0.016	0.015	0.07	0.017	0.017	0.016	0.024		0.061	0.061
	sp	۱. ا	III	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.130	0.130	0.130	0.144	0.144
HOLDOWN	D/C	F	אאווס	0.4649	0.5294	0.7215	0.5251	0.5124	0.7135	0.5741	0.5741	0.1211	0.1874	-0.0187	0.4259	0.4259
	TaHD	4	3	2033	2033	2033	3154	3154	3154	6911	6911	6558	6558	6558	10283	10283
ASD	THD/p	<u>۔</u>	2	945	1076	1466	1656	1616	2250	3968	3968	794	1229	-123	4379	4379
	A POST	CVai	7 11 7	12.25	12.25	12.25	12.25	12.25	12.25	12.25	12.25	19.25	19.25	19.25	39.88	39.88
	HOLDOWN	TVBE		MST37	MST37	MST37	MST48	MST48	MST48	CMST12-45	CMST12-45	HDQ8-SDS3	HDQ8-SDS3	HDQ8-SDS3	HHDQ14-SDS2.5	HHDQ14-SDS2.5
STRENGTH	1.4 v / p	<u>+</u>	Ē.	207.2	207.2	207.2	248.6	248.6	331.1	500.2	500.2	267.2	267.2	116.5	576.5	576.5
	v ASD	¥		192.4	192.4	192.4	230.9	230.9	307.4	464.5	464.5	248.1	248.1	108.2	535.3	535.3
	PLΥ	TVDE		S 150	SIP6	SIP6	SIP6	SIP6	SIP6	SIP2	SIP2	SIP6	SIP6	SIP6	SIP2	SIP2
	ᆮ	¢	WARRACT CONTRACTOR	10.00	10,00	10.00	10.00	10.00	10.00	10.00	10.00	9.00	9.00	00.6	9.00	9.00
	LENGTH	#	· ·	9.00	5.00	4.00	5.50	7.00	7.00	3.50	3.50	13.50	13.50	24.00	3.50	3.50
	LINE	#	,	_	-	-	2	7	က	4	4	ıO	မ	7	ω	œ



SHEAR WALL SUMMARY:

COMPARE SEISMIC AND WIND REQUIREMENTS FOR FINAL RESULTS

NE	LENGTH	SEISMIC FORCE	WIND FORCE	GOVERNING FORCE	WALL TYPE	HOLD DOWN	WALL CAPAC	CITY
#	ft	plf	plf	plf	PER SCHED.	SIMPSON	plf	
1	6.0	192.4	91.3	192.4	SIP6	MST37	360.0	S
1	5.0	192.4	91.3	192.4	SIP6	MST37	360.0	S
1	4.0	192.4	91.3	192.4	SIP6	MST37	360.0	S
2	5.5	230.9	109.5	230.9	SIP6	MST48	360.0	S
2	7.0	230.9	109.5	230.9	SIP6	MST48	360.0	S
3	7.0	307.4	195.5	307.4	SIP6	MST48	360.0	S
4	3.5	464.5	295.4	464.5	SIP2	CMST12-45	920.0	S
4	3.5	464.5	295.4	464.5	SIP2	CMST12-45	920.0	S
5	13.5	248.1	304.2	304.2	SIP6	HDQ8-SDS3	360.0	W
6	13.5	248.1	304.2	304.2	SIP6	HDQ8-SDS3	360.0	W
7	24.0	108.2	171.1	171.1	SIP6	HDQ8-SDS3	360.0	V
8	3.5	535.3	886.3	886.3	SIP2	HHDQ14-SDS2.5	920.0	V
8	3.5	535.3	886.3	886.3	SIP2	HHDQ14-SDS2.5	920.0	V
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	ADDED UPLIFT	Q	American service and a service								3972.79	5473.43	7254.69	12244.13	12244.13
	+/- LEVER ARIV	#	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50
	NET O.T.	ff-lb	21850.4	18873.5	16735.3	27367.1	34786.2	47155.5	36732.4	36732.4	6316.0	-4472.1	-128782.7	4522.0	4522.0
	(0.6-0.14Sds) D RST	#-P	4786.8	3324.2	1022.8	1933.8	2505.9	2505.9	783.1	783.1	9320.5	9320.5	29457.4	626.5	626.5
	ADD LOAD ADD LOAD	olf fig	370.0	370.0	100.0	100.0	50.0	50.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	WEIGHT	pg	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	100.0	100.0	100.0	100.0	100.0
	20 Qe	q	10245.1	10245.1	10245.1	12294.1	12294.1	16371.9	24735.5	24735.5	2672.9	828.8	-9550.5	3394.6	3394.6
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	ADJUSTED V ASD 320 OVERT	plf	192.38	192.38	192.38	230.86	230.86	307.43	464.48	464.48	55.77	17.29	-199.26	70.83	70.83
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	LENGT	¥	6.00	5.00	4.00	5.50	7.00	7.00	3.50	3.50	13.50	13.50	24.00	3.50	3.50
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PROJECT VILLAGE NEST JOB 2017-0610

CLIENT
ADDRESS EDEN, UT

DESIGN HUUM

ENGINEER J.H. DATE 6/14/2017

RICHMOND PE 44628 HOFFMAYER SE 3433 SHEET 3 OF

DINHRAGMS:	18 Mr.
Fx = 264 } 264 PLF	12ª Mr.
FUROSE 1978 1978	24' 6'
STREWETH SEISMIC DE	
Duns = 0.7 (264)24/2(20) ASP = 93PLF	Dus Rook
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) = 0.6(3-80)24/ MIX 2(24) SEP = 114-PLF 2ND FLOR	Vis Vo Fron
ROOF: THE 1/2 COX /03	B W/ Blech = - CAP = 1 to 12

4425 CANOGA AVENUE WOODLAND HILLS ČA 91364 PHONE (818) 347-7008 FAX (818) 883-8869 Info@RichmondHoffmayer.com



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ADDRESS EDEN, UT

DESIGN HUUM

ENGINEER J.H. DATE 6/14/2017

RICHMOND PE 44628 HOPFMAYER SE 5495 SHEET OF

PLY Y/SNOW LOAD: SPAN = 16" SL WS = LL4 PSF PEN APPA REDID SPAN RATING A9/20	FALE JULY S GRAIN ACLOSS SOPPERS
Co=1.16 -> 264/1.16	MAX (BENDING GOVERNS) = 229 PSF & 293 PSF OX
ROSE REQUIES & 5/	100 e 6,12



PROJECT VILLAGE NEST JOB 2017-0610

CLIENT ADDRESS EDEN, UT

DESIGN HUUM

ENGINEER J.H. BACK-POINT PE 44628 HOPPMAYER SE 5435 SHEET SG OF

CHORDS & DRAGS:
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USE NOLE SIG TO PLOTE WI LSTAIR STOPP - UPP = 795 16
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PEQUILES
SEE PLOTE STUKE, PG # 22-8



PROJECT	VILLAGE NEST	JOB	2017-0610
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ADDRESS	EDEN, UT		
DESIGN	HUUM		
ENGINEER	J.H.	DATE	6/14/2017
	RICHMOND PE 49428 HOFFMAT	CER SE 3933 CHIEFE	EDA OF

SIP WALL INFORMATION:

TRY TYPE "S" PANELS

SEISMIL PESIGN CATEGORY DO -TECHOPIL SPECIAL INSCECTION RELOWFED FOR FASTENING AND ANKHOLING OF SHEAR WALLS.

TRY 7-4" TANEL CORE THICKNESS

WONE = (16.60+20L,+264,) 19/2 = 2099 PLF

WUNDES (14.30+40L) 0/2 = 217 PLF

Wines = 2099 + 217 = 2316 PLF

SEE TABLE 5 NEST PAGE, CASE 4326 PLF

The Trimper PLEND HORE INSUL-BERN II

TABLE 4—UNIFORM TRANSVERSE LOADS FOR FACE SUPPORTED PREMIER TYPE L PANELS^{1,2,3} (psf)

PANEL CORE						PANE	L SPAN				
THICKNESS (inches)	DEFLECTION	4 ft⁴	8 ft	10 ft	12 ft	14 ft	16 ft	18 ft	20 ft	22 ft	24 ft
	L/ ₃₆₀	98	45	32	24	16	11				
3 ¹ / ₂ ⁵	L/ ₂₄₀	215	67	47	34	24	16				
	L/ ₁₈₀	298*	90	61	44	34	22				
	L/ ₃₆₀	241	128 ·	57	41	33	25	20	15		
5 ¹ / ₂ ⁶	L/ ₂₄₀	288*	182*	86	60	49	37	29	22		
	L/ ₁₈₀	288*	182*	112*	79	65	49	39	29		
	^L / ₃₆₀	241	168	80	65	54	42	33	24		
7 ¹ / ₄ ⁷	L/ ₂₄₀	288*	188*	126	99	81	61	49	34		
	^L / ₁₈₀	288*	188*	133*	117*	105	80	62	44		
	L/ ₃₆₀	274	188*	116	100	80	62	47	35	32	28
9 ¹ / ₄ ⁸	L/ ₂₄₀	326*	188*	147*	134*	120	92	70	52	46	41
	· L/ ₁₈₀	326*	188*	147*	134*	121*	108*	93	68	61	53
11 ¹ / ₄ ⁸	L/ ₃₆₀	327*	188*	167*	140	116	90	75	57	47	36
	L/ ₂₄₀	327*	188*	167*	153*	132*	110*	97*	83*	69	53
	^L / ₁₈₀	327*	188*	167*	153*	132*	110*	97*	83*	83*	70

For SI: 1 inch = 25.4 mm, 1 psf = 47.9 Pa, 1 foot = 304.8 mm.

TABLE 5-ALLOWABLE UNIFORM AXIAL LOADS FOR PREMIER TYPE S PANELS (plf) 1,2,3,4

PANEL CORE	PANEL SPAN										
THICKNESS (inches)	8 ft	10 ft	12 ft	16 ft	20 ft	24 ft					
31/2	3,500	2,555	2,450	2,120							
5 ¹ / ₂	4,250	4,040-	3,375	3,920	2,815						
71/4	4,915	4,325	4,475	4,195	3,495	3,065					
91/4	4,200	4.200	4,200	4,200	3,389	3,247					
11 ¹ / ₄	3,890	3,890	3,890	3,890	3,890	3,333					

For SI: 1 inch = 25.4 mm, 1 plf = 14.6 N/m, 1 foot = 304.8 mm.

TABLE 6-ALLOWABLE UNIFORM AXIAL LOADS FOR PREMIER TYPE L PANELS (plf) 1.2.3.4

PANEL CORE	PANEL SPAN										
THICKNESS (inches)	8 ft	10 ft	12 ft	16 ft	20 ft	24 ft					
31/2	4,725	3,905	3,095	2,350							
5 ¹ / ₂	5,850	5,890	4,280	4,310	2,933						
71/4	6,850	6,110	5,555	5,180	4,835	4,080					
91/4	5,470	5,470	5,470	5,470	5,470	4,250					
1111/4	4,500	4,333	4,167	3,750	3,750	3,333					

For SI: 1 inch = 25.4 mm, 1 plf = 14.6 N/m, 1 foot = 304.8 mm.

¹Floor panels must have a minimum ³/₁₋inch-thick top skin or a minimum ⁷/₁₆-inch-thick top skin overlaid with minimum ⁷/₁₆-inch-thick finish flooring perpendicular to the panels.

²The tabulated values are for roof and floor panels installed with simply supported single span conditions with panels supported at each end on a minimum 11/2-inch-wide continuous support in contact with the panel face. Tabulated values are applicable to panels installed with the strong axis of the OSB panel facers parallel to the panel span.

³Allowable loads with an asterisk, *, indicates a capacity based on the average peak test load divided by 3.

Panels spanning 4 feet shall be a minimum of 8 feet long spanning a minimum of two 4 foot spans. No single span conditions must be permitted. $3^{1}/_{2}$ -inch thick core panels must be limited to a maximum span of 10 feet when used in roof applications.

 $^{^{6}5^{1/2}}$ -inch thick core panels must be limited to a maximum span of 14 feet when used in roof applications.

⁷7¹/₄-inch thick core panels must be limited to a maximum span of 18 feet when used in roof applications.

 $^{^{8}}$ 9 1 /₄ and 11 1 /₄-inch thick core panels shall be limited to a maximum span of 20 feet when used in roof applications.

¹For the allowable axial load on the fire-resistance-rated assembly, see Section 4.2.6.

²For combined loads; requirements in Section 4.1 must be applied.

³The tabulated loads are uniform axial loads applied concentrically to the full thickness of the panels, including panel facings.

⁴The tabulated values are for panels installed with strong axis of the OSB panel facers parallel to the wall height (panel span) and on concrete foundations. The member, element, or structure supporting the bearing wall panels, as shown in Figures 7, 8 and 9, must be designed for the bearing stress of the wall panels to the satisfaction to the code official.

¹For the allowable axial load on fire-resistance-rated assembly, see Section 4.2.7.

²For combined loads; requirements in Section 4.1 must be applied.

³The tabulated loads are uniform axial loads applied concentrically to the full thickness of the panels, including panel facings.

⁴The tabulated values are for panels installed with strong axis of the OSB panel facers parallel to the wall height (panel span) on concrete foundations. The member, element, or structure supporting the bearing wall panels, as shown in Figures 7, 8 and 9, must be designed for the bearing stress of the wall panels to the satisfaction to the code official.

Table 13: Wind Speed vs. Pressure

		Wal	Loads (ps	f) - End Zor	e (Zone 5)	for 100sf t	o 500 sf et	fective win	d area				
Mean Roof		90 MPH		1	100 MPH			110 MPH			120 MPH		
Height (ft)	Ехр В	Ехр С	Exp D	Exp B	Exp C	Exp D	Ехр В	Exp C	Exp D	Exp B	Ехр С	Exp D	
15	-15.1	-18.3	-22.2	-18.7	-22.6	-27.5	-22.6	-27.3	-33.2	-26.9	-32.5	-39.5	
20	-15.1	-19.5	-23.4	-18.7	-24.1	-29.0	-22.6	-29.2	-35.0	-26.9	-34.7	-41.7	
25	-15.1	-20.4	-24.3	-18.7	-25.2	-30.1	-22.6	-30.5	-36.4	-26.9	-36.3	-43.3	
30	-15.1	-21.1	-25.1	-18.7	-26.2	-31.0	-22.6	-31.6	-37.5	-26.9	-37.7	-44.7	
35	-15.9	-21.9	-25.7	-19.6	-27.1	-31.8	-23.7	-32.8	-38.4	-28.2	-39.0	-45.7	
40	-16.5	-22.5	-26.3	-20.4	-27.9	-32.5	-24.6	-33.7	-39.3	-29.3	-40.1	-46.8	
45	-16.9	-23.1	-26.9	-20.9	-28.6	-33.3	-25.3	-34.6	-40.2	-30.1	-41.2	-47.9	
50	-17.5	-23.6	-27.3	-21.7	-29.2	-33.8	-26.2	-35.3	-40.9	-31.2	-42.0	-48.7	
55	-18.0	-24.0	-27.8	-22.3	-29.7	-34.4	-26.9	-35.9	-41.6	-32.0	-42.8	-49.5	
60	-18.4	-24.5	-28.2	-22.8	-30.3	-35.0	-27.6	-36.6	-42.3	-32.8	-43.6	-50.3	
Net Design wind pressure		-15.1			-18.7		-22.6			-26.9			

		Wal	I Loads (ps	f) - End Zor	ne (Zone 5)	for 100sf	to 500sf ef	fective win	d a re a			
Mean Roof		130 MPH			140 MPH			150 MPH			170 MPH	
Height (ft)	Exp B	Exp C	Exp D	Ехр В	Exp C	Exp D	Ехр В	Exp C	Exp D	Ехр В	Exp C	Exp D
15	-31.6	-38.2	-46.5	-36.7	-44.4	-53.9	-42.1	-50.9	-61.9	-54.1	-65.5	-79.5
20	-31.6	-40.8	-49.0	-36.7	-47.3	-56.9	-42.1	-54.3	-65.3	-54.1	-69.8	-83.9
25	-31.6	-42.7	-50.9	-36.7	-49.5	-59.1	-42.1	-56.8	-67.8	-54.1	-73.0	-87.1
30	-31.6	-44.2	-52.5	-36.7	-51.4	-60.9	-42.1	-58.9	-69.9	-54.1	-75.7	-89.8
35	-33.2	-45.8	-53.7	-38.5	-53.2	-62.4	-44.2	-61.1	-71.6	-56.8	-78.4	-92.0
40	-34,4	-47.1	-55.0	-40.0	-54.7	-63.9	-45.9	-62.7	-73.3	-59.0	-80.6	-94.1
45	-35.4	-48.3	-56.2	-41.1	-56.2	-65.3	-47.2	-64.4	-74.9	-60.6	-82.8	-96.3
50	-36.7	-49.3	-57.2	-42.6	-57.3	-66.4	-48.8	-65.7	-76.2	-62.8	-84.4	-97.9
55	-37.6	-50.2	-58.1	-43.7	-58.4	-67.5	-50.1	-66.9	-77.5	-64.4	-86.0	-99.5
60	-38.6	-51.2	-59.1	-44.8	-59.5	-68.6	-51.4	-68.2	-78.7	-66.0	-87.6	-101.2
Net Design wind pressure		-31.6			-36.7		-42.1			-54.1		

More information on this chart can be found in Technical Bulletin #15 (www.premiersips.com).

Table 14: Premier Insul-Beam II Header Loads (plf)



No. of	Deflection		Header Span (ft.)							
Trimmer Studs		2'	3'	4'	5'	6'	7'	8'		
	L/480	3150	2100	1575	1260	1050	900	788		
1	L/360	3150	2100	1575	1260	1050	900	788		
	L/240	3150	2100	1575	1260	1050	900	788		
	L/480	6300	4200	3150 (2520	2100	1800	1545		
2	L/360	6300	4200	3150	2520	2100	1800	1575		
Γ	L/240	6300	4200	3150	2520	2100	1800	1575		

No. of	Deflection		Header Span (ft.)									
Trimmer Studs	Deliection	9'	10'	11'	12'	13'	14'	15'	1.6'			
	L/480	700	630	573	458	360	288	234	193			
1	L/360	700	630	573	525	480	384	313	257			
	L/240	700	630	573	525	485	450	420	386			
	L/480	1085	791	594	458	360	288	234	193			
2	L/360	1400	1055	792	610	480	384	313	257			
	L/240	1400	1245	792	864	720	577	469	386			

Values listed for each deflection represent the least value of the bearing capacity of the trimmer, shear or bending capacity of the header or the actual deflection at the design load.

Refer to Technical Bulletin #30 for supporting headers in Premier SIPs wall panels (www.premiersips.com).

Note: Trimmer stud design capacities must be reviewed.

SINGLE TOS FLAME WY COM

Table 6: Maximum Allowable Axial Compression Point Loads (lbs) - Type S Panels 1,2,3,4

186	O. Maximum Milovadie Maiai C	ompression runn Loc	ius (ius) – i ype o raile	713	
	Top Plate	1.5" Minimum	/ 3" Minimum		
	Configuration	Bearing Width /	Bosrina-Width		
	Single 2x4 #2 or Better Hem-Fir Plate	2040	245U	Top Plate —	Cap Plate
	Single 2x4 #2 or Better Hem-Fir Plate	4030	4678		
	with 1-1/8 in. wide,	4030	4070		
	1.3E Rim Board Cap Plate	A STATE OF THE PROPERTY OF THE PARTY OF THE			Top Plate
	Top plate secured to facings as req	uired in Section 6.3			
	² Permanent loads, such as dead loa				
	Concentrated loads shall be applied				
	Tabulated values are based on the	strong-axis of the facing ma	aterial oriented parallel to		
	the span direction.			11000001	

2099 PLF x 14/12

= 2777 Low French Figure 3: Top Plate Configurations

Table 7: Maximum Allowable Uniform SIP Header Vertical Loads (plf) 3-1/2 in. through 11-1/4 in. Core Thickness^{1,2}

Header	Deflection		Header S	Span (ft)	
Depth ³ (in)	Limit ⁴	4	6	8	10
	L/480	740	384	228	142
12	L/360	740	384	229	142
	L/240	740	384	229	142
	L/480	798	574	385	311
18	L/360	798	574	385	311
	L/240	798	574	385	311
	L/480	886	629	429	361
24	L/360	886	629	429	361
	L/240	886	629	429	361

¹ Vertical loads only. Lateral loads shall be transferred to the edges of the openings through continuous plate(s) designed in accordance with accepted engineering practice. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.

Tabulated values are based on the strong-axis of the facing material oriented perpendicular to the direction of header span.

Table 8: Maximum Allowable Uniform Header Loads (plf) (Panel Splice a minimum of 6 in. from edge of opening) 3-1/2 in. through 11-1/4 in. Core Thickness^{1,2}

Header	Deflection		Span (ft)		
Depth ³ (in)	Limit ⁴	4	6	8	10
	L/480	345	243	156	99
12	L/360	450	295	190	125
	L/240	630	382	236	153
	L/480	705	388	254	235
18	L/360	750	482	302	281
	L/240	750	482	302	281
	L/480	698	556	368	350
24	L/360	896	556	368	350
Ĩ	L/240	896	556	368	350

Vertical loads only. Lateral loads shall be transferred to the edges of the openings through continuous plate(s) designed in accordance with accepted engineering practice. Permanent loads, such as dead load, shall not exceed 0.50 times the tabulated load.

² Tabulated values are based on the strong-axis of the facing material oriented perpendicular to the direction of header span.

Continuous

SIPs wall panel spline minimum 6" from edge of opening

Minimum depth of facing above opening.
 Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of adopted building code.

Minimum depth of facing above opening.
 Deflection limit shall be selected by building designer based on the serviceability requirements of the structure and the requirements of adopted building code.



 PROJECT
 VILLAGE NEST
 JOB
 2017-0610

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 ENGINEER
 J.H.

 DATE
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= 1-81-4)
1) Vy Roof
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C MIND STRENGTS UX
F = 42 } 332 FLR
F 39 3 2-807 5
tours 39 3-0084
V = 0.6 (30) 34 = 11960 0x Vy
244 From 2NP From
"KOP W/ SNOW PERVICES PIT 40/20 FOR ZEAPSF & LG SPOR
REF W/ SNOW PEDDULLES PIT 40/20 FOR 264 PSF \$ 16"SPING ROSE I SNOW PEDDULLES PIT 40/20 FOR 264 PSF \$ 16"SPING ROSE I SNOW OF OSB PLY GIT 40/20 T \$ 6 W/ LOX & 4", 12"
1 10 1 4 4 , 10
200 Front Bre" STWAT I ON THICKEN TEG PIT 48/14
1 100 0 6,12





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ADDRESS	EDEN, UT	
DESIGN	HUUM	
ENGINEER	J.H.	DATE 6/14/2017
	RICHMOND PE 44628 HOFFMAYER SE	5435 SHEET 22°C OF

CHOPDS & DRASGE: [MAX CHOPD => (0.6(3-0=)24/6)/4 = 6-041]
USE SINGRE 2x TOR PLOTE W/ 1. 2x RIM PLODED CASP PLOTE SEE PG. #157
LAP CAR (L W) (2) BD NOILS e 6" OL ZINNOIL = 63 11/NAIL × 2 × 12/6 = 25211/6 LAS LAS CAR (R C-84/262 = 2.71 -> 3'
1.3E RIM CAS + 3'LAS PLATE + 3'LAS THE
51P) [] [] [] [] [] [] [] [] [] [] [] [] []

PEROPE SHEATHING FIRE OF SHEAT		STANGERS PER PLAN - ZXI4 & 6" 0.2. MN	FOCK TORAGE SOUR	3638 2538	STRINGERS PER PLAN	2x4 FLATE NALED TO WOOD FLR.	SHOT TO CONG. FLR. © 18" oc.	10 CONC. FLR. W/ (2) 5/8"0 A.B. MIN.		Stan	
					SHEAR CAPACITY	1166.67 lbs 2600.00 lbs	2900.00 lbs 4200.00 lbs	1958.33 lbs 4900.00 lbs	5800.00 lbs	2565.57 lbs 6766.67 lbs	5483.33 lbs 7466.67 lbs
DEAD LOAD MAX. RISE MIN. RUN ACTORED DEAD LOAD FOR SLOPE ESEDENTAL LIVE LOAD PLACED ON TREADS FOR MAXIMUM STRESS	INGERS	TRESS Y	TRESS TRESS	IESS TRESS Y	MOMENT CAPACITY	369.40 ft-lbs 421.18 ft-lbs	857.43 ft-lbs 999.14 ft-lbs	1019.67 ft-lbs 1282.23 ft-lbs	1714.85 ft-lbs	1862.29 IT-lbs 2222.96 ft-lbs	4871,40 ft-lbs 8869.16 ft-lbs
DEAD LOAD MAX. RISE MIN. RUN FACTORED DEAD LOAD FOR SLOPE RESIDENTIAL LIVE LOAD PLACED ON TREADS FOR MAXIMUM	MAXIMUM NOTCH IN STRINGERS ALLOWABLE SHEAR STRESS	ALLOWABLE BENDING STRESS MODULUS OF ELASTICITY	ALLOWABLE SHEAK STRESS ALLOWABLE BENDING STRESS MODULUS OF ELASTIGITY	ALLOWABLE SHEAR STRESS ALLOWABLE BENDING STRESS MODULUS OF ELASTICITY	'n	3.50 3.25	7.25 5.25	5.88 5.25	7.25	7.25	5.88 8.00
DEAD LOAD MAX. RISE MIN. RUN FACTORED RESIDENTIA	MAXIMU	ALLOW, MODULI	ALLOW! ALLOW! MODUL!	ALLOW, ALLOW MODULI	ద						.50 11.88 .50 14.00

STAIR STRINGERS AND TREADS:

10.00 psf 7.50 in 10.00 in 15.54 psf 40.00 psf 300.00 lbs

UNIFORM LOAD
WD
RISE
RUN
WD'
WI
PL

6.00 in

DF#2 TIMBER PROPERTIES
FV = 95.00 psi
Fb = 870.00 psi
E = 1.60E+06 psi

1736.93 psi 957.00 psi 783.00 psi 770.00 psi 1701.64 psi 957.00 psi 783.00 psi 1676.06 psi 870.00 psi 2903.00 psi

2470 LSI 1.02 DBL 2470 DF 1.10 244 DF 0.90 DBL 242 DF 1.00 4472 DF 1.10 BL 244 DF 0.90 244 LSI 0.99 444 DF 1.00 4474 DF 1.00

PSL LUMBER PROPERTIES

FV = 290.00 psi

Fb = 2900.00 psi

E = 2.00E+06 psi

LSL LUMBER PROPERTIES
FV = 400.00 psi
Fb = 1700.00 psi
E = 1.30E+06 psi

STRINGER	TOTAL UNIF.		HORIZONTAL PRO	JECTED SPAN VS. S	STRIINGER MOMENT	AND SHEAR				-			-
SPACING	LOAD	(III—V C.	6.00 ft	7.00 ft	6.00 ft 7.00 ft 8.00 ft 9.00 ft	9.00 #	10.00 ft	11,00 ft	12.00 #	13.00 ft	14.00 ft	15.00 ft	
12 in o.c.	55.5 plf	MOMENT	249.93	340.18	444.32	562.34	694.25	840.04	999.72	1173.28	1360.73	1562.06	L
		œ	166.62	194.39	222.16	249.93	277.70	305.47	333.24	361.01	388.78	416.55	
			2x10 LSL	2x10 LSL	2x14 DF	2x14 DF	2x14 DF	2x14 DF	2x12 LSL	4×12 DF	DBL 2x14 DF	DBL 2x14 DF	
16 in o.c.	74.1 plf	-	333,24	453.58	592.43	749.79	925.67	1120.06	1332.96	1564.38	1814.31	2082.75	
		SHEAR	222.16	259.19	296.21	333.24	370.27	407.29	444.32	481.35	518.37	\$ 555.40	
			2x10 LSL	2x14 DF	2x14 DF	2x14 DF	DBL 2x12 DF	4x12 DF	DBL 2x14 DF	DBL 2x14 DF	Zx14 LSL	4x14 DF	
18 in o.c.	83.3 plf	MOMENT	374.89	510.27	666.48	843.51	1041.37	1260.06	1499.58	1759.92	Z0#4:68	2343.09	
****		SHEAR	249.93	291.58	333.24	374.89	416.55	458.20	499.86	541.51	583.17	624.82	
		SIZE	DBL 2x10 DF	2x14 DF	2x14 DF	2x14 DF	4x12 DF	4x12 DF	DBL 2x14 DF	2x14 LSL	4x14 DF	4x12 PSL	
24 in o.c.	111.1 plf	MOMENT	499.86	980.36	888.64	1124.68	1388.50	1680.08	1999.44	2346.56	2721.46	3124.12	L
		n	333,24	388.78	444.32	499.86	555.40	610.94	666.48	722.02	777.56	833.10	
		SIZE	2x14 DF	2x14 DF	DBL 2x12 DF	4x12 DF	DBL 2x14 DF	DBL 2x14 DF	4x14 DF	4x12 PSL	4x12 PSL	4x12 PSL	
30 in a.c.	138.8 plf	MOMENT	624.82	850.46	1110.80	1405.86	1735.62	2100.11	2499.30	2933.21	3401.82	3905.16	
		SHEAR	416.55	485.97	555.40	624.82	694.25	763.67	833.10	902.52	971.95	1041.37	
			2x14 DF	2x14 DF	4x12 DF	DBL 2x14 DF	2x14 LSL	4x14 DF	4x12 PSL	4x12 PSL	4x12 PSL	4x12 PSL	
32 in o.c.	148.1 plf	-	666.48	907.15	1184.85	1499,58	1851.33	2240.11	2665.92	3128.75	3628.61	4165.50	
		SHEAR	444.32	518.37	592.43	666.48	740.53	814.59	888.64	962.69	1036.75	1110.80	
		SIZE	2x14 DF	DBL 2x12 DF	4x12 DF	DBL 2x14 DF	2x14 LSL	4x12 PSL	4x12 PSL	4x12 PSL	4x12PSL	4x12 PSL	
36 in o.c.	166.6 plf	MOMENT	749.79	1020.55	1332.96	1687.03	2082.75	2520.13	2999.16	3519.85	4082.19	4686.19	
		œ	499.86	583.17	666.48	749,79	833,10	916.41	999.72	1083.03	1166.34	1249.65	
			2x14 DF	4x12 DF	DBL 2x14 DF	DBL 2x14 DF	4x14 DF	4x12 PSL	4x12 PSL	4x12 PSL	4x12 PSL	4x12 PSL	
48 in o.c.	222.2 plf	-	999.72	1360.73	1777.28	2249.37	2777.00	3360.17	3998.88	4693.13	5442.92	6248.25	L
		œ	666.48	777.56	888.64	999.72	1110.80	1221.88	1332.96	1444.04	1555.12	1666.20	
		SIZE	2x12 LSL	DBL 2x14 DF	2x14 LSL	4x12 PSL	4x12 PSL	4x12 PSL	4x12 PSL	4x12 PSL	4x14 PSL	4x14 PSL	
TREAD DESIGN									-	0	(
	300.00 lbs		T LOAD - APPLY AND	POINT LOAD - APPLY ANYWHERE ON TREAD				4000	ナシー	\ \ \	マンナン		
" "	48.00 in	_	MAXIMUM TREAD SPAN						J. Comment	Consumos N	8 /		9
∼ MAX	300.00 lbs		MUM TREAD SHEAR	MAXIMUM TREAD SHEAR - LOAD AT SIDE REACTION	ACTION				etastral http://www. et.essorh	Service Comments		,	
M MAX	3600.00 in-l		MUM TREAD MOMER	NT - LOAD AT MID SP.	AN					2 - 1	during.	· _ /	
A REQ'D =	4.74 in^2		٠,							Service	Same Charles		
Cicro	4.4		,							di di			

16 00 ft 177 28 444.32 2x14 LSL 2368.71 2868.71 2868.81 4412 PSL 244 LSL 2568.81 4412 PSL 4413.20 1110.80 4413.20 4413

	POINT LOAD - APPLY ANYWHERE ON TREAD	MAXIMUM TREAD SPAN	MAXIMUM TREAD SHEAR - LOAD AT SIDE REACTION	MAXIMUM TREAD MOMENT - LOAD AT MID SPAN	DF#2	DF #2	FLAT TREAD - TRUE SIZE = 2" x 8" MIN.	O.K.	o.K	
	300.00 lbs	48.00 in	300.00 lbs	3600.00 in-lbs	4.74 in^2	4.11 in^3	2x8 MIN	18.13 in^2	4.83 in^3	
IGN	II	11	ŧŧ	ū	н	и		Ħ	н	
TREAD DESIGN	۵	_	V MAX	M MAX	A REQ'D	S REQ'D	TRY	∢	s	

ll.	300.00 lbs	MAXIMUM TREAD SHEAR - LOAD AT SIDE RE
a	3600.00 in-lbs	MAXIMUM TREAD MOMENT - LOAD AT MID SE
н	4.74 in^2	DF#2
H	4.11 in/3	DF #2
	2x8 MIN	FLAT TREAD - TRUE SIZE = $2" \times 8"$ MIN.
Ħ	18.13 in^2	O.K.
н	4.83 in^3	0.K



PROJECT VILLAGE NEST JOB 2017-0610

CLIENT
ADDRESS EDEN, UT

DESIGN HUUM

ENGINEER J.H. DATE 6/14/2017

RICHMOND PE 44628 HOFFMAYER SE 3495 SHEET 73 OF

TSALCONY GUARD:
PESIDENTIAL LOD 20011 1 200 12 1 200 14 200
CLOSET BALUSTRADE SUCH THAT B SCHELL 4"D AND LARGER CAN NOT PASS TOPPOUR 42"
2'n"
MILGHATING 7
+++3"+/_
V = 200 H
$M = 200 \times 45 = 9000 \text{ IN-IL}$ THY CIOID STEEL - $S_y = 16-600 \text{ PSI}$ $S_{PRODED} = 9000/16-600 = 0.5361N^3$
USE TS 2/2 × 1/2 C1010 MELH, WELDED TOBING - WELD - ROLE TO HSS S= 0,5931, AT 11gr



TIT - 1155 0 1 4 3	Renac
TOLT TO HSS & x 4 x 3/	2360 IL
FB = 200/2 +/- 900-0/4 =	
= 100 +/ 2250	4" + -> -
= 2350 lL \$ 215016	* + -> <
DBL SHEW 5/8" & MB	A307
1 n/a = 7.36 k/But >>2	, 3 k k √
	+5 2/2×1/2×1194
Was:	45/e" \$ M.B.)
$l=4$ $e_{x}=al=45$	
a = 45/4 = 11.25	3 ex 43/8
K = O	3//40
C=0.439 -> AISCTA. 8-4	TO 1/2" SISPOLE
TK AK	3ex4×1/8
$P_{MN} = \frac{2(0.2k)}{0.439(1)4} = 0.23$	PLAN
	H <u>as</u>
)SE 1 4 SARDLE "& MO	
)SE 1 5 MOLE 1 M. S.	FILLERS to TX

RICHMOND HOFFMAYER INC.



PROJECT VILLAGE NEST JOB 2017-0610

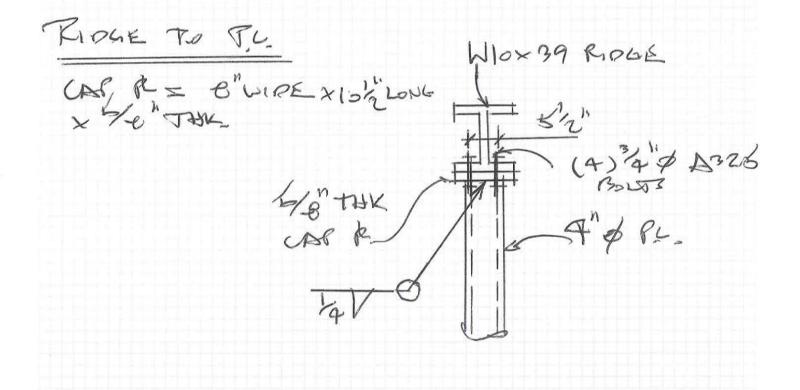
CLIENT
ADDRESS EDEN, UT

DESIGN HUUM

ENGINEER J.H. DATE 6/14/2017

RICHMOND PE 44628 HOFFMAYER SE 3435 SHEET 737.0F

B3 & B4 TO B6	-> PELDSPAR UVN
TEN AISC TA10-90	1994 BE) B3
(2) 3/4 & ASSES BOLTE 3/6" PE - N THERESE CAP = 21.2 L V	
3/6" TE - N THREATS	中 建国 中
CAR = 21.2 K	
L= 5" MIN OK	W10x39 W10x26
Han= 6/e (3/e)	(3/11) WIO~26
20.23 % /2"	A226 POLUE





Project Title: Engineer: Project Descr:

VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID:

2017-0610

Printed: 10 JUL 2017, 1:27PM

Steel Base Plate

File = d:\ENERCALC Projects\2017-0610.ec6 ENERCALC, INC. 1983-2017, Build:10.17.6.29, Ver:10.17.6.29

Licensee: RICHMOND HOFFMAYE

Lic. #: KW-06002886

Description: P.C. BASE PLATE RIPOLE

SUPPORT MAX

Code References

Calculations per AISC Design Guide # 1, IBC 2015, CBC 2016, ASCE 7-10

Load Combination Set: ASCE 7-10

General Information

Material Properties

AISC Design Method Load Resistance Factor Design Steel Plate Fy

36.0 ksi Concrete Support f'c 2.50 ksi

Assumed Bearing Area: Full Bearing

Φ c : LRFD Resistance Factor

0.60

Allowable Bearing Fp per J8

4.250 ksi

Column & Plate

Column Properties

Steel Section: Pipe4STD

2.96 in^2 Depth 4.5 in Area 4.5 in Width 6.82 in^4 lxx Flange Thickness 6.82 in^4 0.221 in lyy

10.50 in

10.50 in

Web Thickness

Plate Dimensions

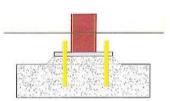
N: Length

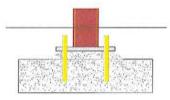
0 in

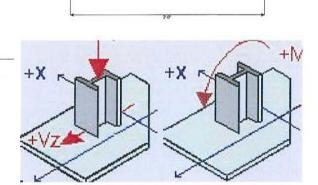
Support Dimensions

Width along "X" 24.0 in Length along "Z" 24.0 in

B: Width 0.750 in Thickness Column assumed welded to base plate.







Applied Loads

	P-Y		V-Z		M-X	
D : Dead Load	3.807	k		k		k-ft
L : Live		k		k		k-ft
Lr: Roof Live	4.015	k		k		k-ft
S : Snow	49.381	k		k		k-ft
W : Wind		k		k		k-ft
E : Earthquake		k		k		k-ft
H : Lateral Earth		k		k		k-ft
	4 000 50		AND OF SECTION 12		5.50	

" P " = Gravity load, "+" sign is downward. "+" Moments create higher soil pressure at +Z edge.

"+" Shears push plate towards +Z edge.

0.000 k-ft

GOVERNING DESIGN LOAD CASE SUMMARY

Plate Design Summary

Design Method Load Resistance Factor Design

Governing Load Combination +1.20D+1.60S Governing Load Case Type

Axial Load Only

Design Plate Size Pu : Axial Mu: Moment

10 -1/2" x 10 -1/2" x 0 -3/4" 83.578 k

fu: Max. Plate Bearing Stress

Mu : Max. Moment fb: Max. Bending Stress

Fb: Allowable:

Fy * Phi

Fp: Allowable: min(0.85*fc*sqrt(A2/A1), 1.7* fc)*Phi

Bending Stress Ratio

Bearing Stress Ratio

Bending Stress OK 0.758 ksi 2.550 ksi

0.297

4.512 k-in

32.082 ksi

32.400 ksi

0.990

Bearing Stress OK



Project Title: Engineer: Project Descr:

VILLAGE NEST JJH

Project ID: MULTI UNIT PROJECT

2017-0610

Printed: 10 JUL 2017, 1:46PM

Steel Base Plate

File = d:\ENERCALC Projects\2017-0610.ec6 ENERCALC, INC. 1983-2017, Build:10.17.6.29, Ver:10.17.6.29 Licensee: RICHMOND HOFFMAYER

Lic. #: KW-06002886

Description:

HSS BASE PLATE

Code References

Calculations per AISC Design Guide # 1, IBC 2015, CBC 2016, ASCE 7-10

Load Combination Set: ASCE 7-10

General Information

Material Properties

AISC Design Method Load Resistance Factor Design Steel Plate Fy 36.0 ksi

Concrete Support f'c 2.50 ksi

Assumed Bearing Area: Full Bearing

Φ c : LRFD Resistance Factor

0.60

Allowable Bearing Fp per J8

4.250 ksi

Column & Plate

Column Properties

Steel Section: HSS6x6x3/8

7.58 in^2 Depth 6 in Area 6 in 39.5 in^4 Width lxx 0.349 in Flange Thickness lyy 39.5 in^4 Web Thickness in

Plate Dimensions

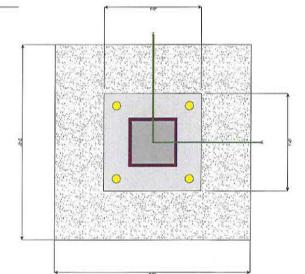
N: Length 12.0 in 12.0 in B: Width Thickness 0.8750 in

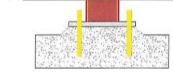
Column assumed welded to base plate.

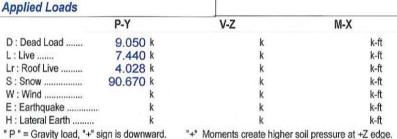
Support Dimensions

Width along "X" 24.0 in 24.0 in Length along "Z"

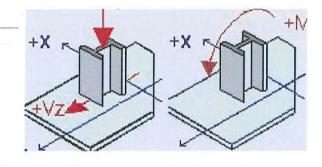








"+" Shears push plate towards +Z edge.



GOVERNING DESIGN LOAD CASE SUMMARY

Plate Design Summary

Design Method Load Resistance Factor Design Governing Load Combination +1.20D+0.50L+1.60S

Governing Load Case Type Axial Load Only

Design Plate Size 1'-0" x 1'-0" x 0 -7/8" Pu: Axial Mu: Moment

159.652 k 0.000 k-ft Mu : Max. Moment fb : Max. Bending Stress Fb: Allowable: Fy * Phi

Bending Stress Ratio

fu: Max. Plate Bearing Stress Fp: Allowable:

> min(0.85*fc*sqrt(A2/A1), 1.7* fc)*Phi Bearing Stress Ratio

5.501 k-in 28.737 ksi 32.400 ksi

0.887

Bending Stress OK

1.109 ksi 2.550 ksi

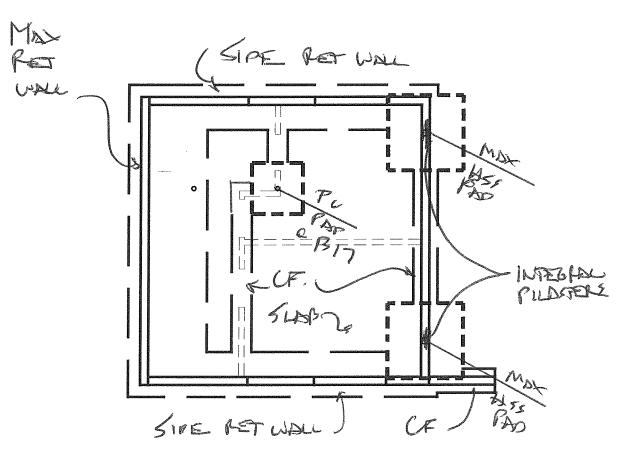
0.435

Bearing Stress OK





PROJECT	FELDSPAR LOWER	JOB	2017-0610
CLIENT	VILLAGE NEST		
ADDRESS	EDEN, UTAH		
DESIGN	HUUM		
ENGINEER	J.H.	DATE	6/16/2017
	RICHMOND PE 49628 HOFFMAYER SE 3935	SHEET	235 OF



FELDSPAR LVN

FOUNDATION	PLAN	
FELOSPAC	LVN	noosensensensensensensensensensensensensens
NTS		





PROJECT	FELDSPAR LOWER	JOB	2017-0610
CLIENT	VILLAGE NEST		
ADDRESS	EDEN, UTAH		
DESIGN	HUUM		
ENGINEER	J.H.	DATE	6/16/2017
	RICHMOND PE 49628 HOFFMAYER SE 3935	SHEET	36 OF

SIDE RETURN

QUARTZ LVN

Fourdattap	PLAN
Contract of the Contract of th	
QUART L	-VN
NTS	



PROJECT	VILLAGE NEST		JOB	2017-0610	
CLIENT					
ADDRESS	EDEN, UT				
DESIGN	HUUM				
ENGINEER	J.H.		DATE	6/14/2017	
	RICHMOND PE 4962B	HOFFMAYER SE 3435	CHEET	120 DE	

SOILS REPORT:
1 GES 01628-003 Nov. 9, 2012 01628-015 DEC. 1, 2016
OVER EXCAVATE 24" BELOW FOOTING BOTTOM FOOTINGS ON 24" STRUCTURAL FILL
RALLOW = 2600 PSI? BENERING CAPACITY
RECOMMENDED 42" BELOW LOWEST APPRIENT GERRE FOR FROST
MIN FOOTING = 20" MAX FOOTING = 5' CONTINUOUS & 7' SOUBLE
WERE ABRILLIE & GA (LF 2:1
PASSIVE = 360 PCF PASSIVE RETULED BY 1/2 WHEN USED WITH FRICTION
MIN. 5" SLAB VI # A @ 16" OL EDLA WAY OVER 10 MIL VAROR BARRIER ON GROWER ON ARRENTED GRAPPE.

RICHMOND
HOFFMAYER INC.
STRUCTURAL ENGINEERING



PROJECT	VILLAGE NEST	JOB	2017-0610	
CLIENT		7 15-2.1.		
ADDRESS	EDEN, UT			
DESIGN	HUUM			
ENGINEER	J.H.	DATE	6/14/2017	
	RICHMOND PE 49828 HOFFMAYER SE 5455	CHEET	2 A OF	

CONTINUOUS FOOTINGS:	
MAX LONE = (15.e + 20 + 264) 1/2	ROSP
+ 15.2× 20'	Lhus
+(14-3+40)1.33	2007 From
W = 2625 PLF	
20" WIPE X AT" MEDON GABRE WIGHT = 2500 PSF X 20/12 = 4167 PLF	/
보다 보고 그 그릇을 하다 하나 아이들이 되는 아이들이 되는 아이들이 하는데 되어 하면 하는데 되는데 하는데 되었다.	
)SE 20" WIDE X AL" BROW GRAPE WITHURK FOOTINGS WITH 4 EDIH WAY & 24" 55 -T	36.



0.00 in

VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

File = d:\ENERCALC Projects\2017-0610.ec6

Printed: 11 JUL 2017, 3:33PM

Cantilevered Retaining Wall

Retained Height

Wall height above soil

Height of Soil over Toe

Water height over heel

Vertical component of active

Lateral soil pressure options:

Slope Behind Wall

Description:

Criteria

MAX RETAINING WALL - FELDSPAR & QUARTZ LVN

9.00 ft

1.00 ft

2.00:1

0.0 ft

30.00 in

Soil Data

Allow Soil Bearing 2,500.0 psf Equivalent Fluid Pressure Method Heel Active Pressure 64.0 psf/ft Toe Active Pressure 40.0 psf/ft Passive Pressure 360.0 psf/ft Soil Density, Heel 110.00 pcf Soil Density, Toe 110.00 pcf Friction Coeff btwn Ftg & Soil = 0.450

Calculations per ACI 318-14, ACI 530-11, IBC 2015, CBC 2016, ASCE 7-10

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Surcharge Loads

Surcharge Over Heel = 0.0 psf NOT Used To Resist Sliding & Overturning Surcharge Over Toe 0.0 psf NOT Used for Sliding & Overturning

USED for Soil Pressure.

USED for Sliding Resistance.

USED for Overturning Resistance.

Axial Load Applied to Stem

Axial Dead Load 600.0 lbs 2,000.0 lbs 0.0 in Axial Live Load Axial Load Eccentricity

Lateral Load Applied to Stem

Soil height to ignore for passive pressure

Lateral Load	=	0.0 plf
Height to Top	=	0.00 ft
Height to Bottom	=	0.00 ft

Wind on Exposed Stem = 0.0 psf

Adjacent Footing Load

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

Design Summary

Wall Stability Ratios Overturning Sliding	=	2.73 OK 1.49 Ratio < 1.5!
Total Bearing Loadresultant ecc.	=	8,913 lbs 3.18 in
Soil Pressure @ Toe Soil Pressure @ Heel	=	1,036 psf OK 1,706 psf OK
Allowable Soil Pressure Less	= Than A	2,500 psf
ACI Factored @ Toe ACI Factored @ Heel	=	1,089 psf 1,792 psf
Footing Shear @ Toe Footing Shear @ Heel Allowable	=	27.2 psi OK 21.8 psi OK 75.0 psi
Sliding Calcs (Vertical C Lateral Sliding Force less 50 % Passive Force less 100% Friction Force	=	ent Used) 3,311.1 lbs 1,822.5 lbs 3,11 0 .0 lbs
Added Force Req'dfor 1.5 : 1 Stability	=	0.0 lbs OK 33.0 lbs NG

1.200
1.600
1.600
1.600
1.000

S	tem Construction	$\sqcap =$	Top Stem	2nd	
	Design Height Above Ftg	 ft =	Stem OK 4.00	Stem OK 0.00	
2	Wall Material Above "Ht"	=	Concrete	Concrete	
!	Thickness	in =	8.00	8.00	
	Rebar Size	=	# 5	# 5	
	Rebar Spacing	in =	12.00	6.00	
	Rebar Placed at	=	Edge	Edge	
	Design Data —		DOMESTIC OF THE PARTY OF THE PA	10-10-10-00-00-00-00-00-00-00-00-00-00-0	
	fb/FB + fa/Fa	=	0.263	0.806	
	Total Force @ Section	lbs =	1,280.0	3,947.2	
	MomentActual	ft-I =	2,133.3	12,274.9	
	MomentAllowable	ft-I =	8,121.3	15,222.0	
	ShearActual	psi =	17.2	53.2	
	ShearAllowable	psi =	75.0	75.0	
	Wall Weight	psf =	100.0	100.0	
	Rebar Depth 'd'	in =	6.19	6.19	
	Lap splice if above	in =	23.40	23.40	
	Lap splice if below	in=	23.40	4.94	
	Hook embed into footing	in=	23.40	4.94	
	Concrete Data	188,000	375 SECTION (SECTION)	V1040E0041	
	f'c	psi =	2,500.0	2,500.0	
	Fy	psi =	60,000.0	60,000.0	



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Project Title: Engineer: Project Descr: VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID:

File = d:\ENERCALC Projects\2017-0610.ec6

Licensee: RICHMOND HOFFMAYER

ENERCALC, INC. 1983-2017, Build:10.17.6.29, Ver:10.17.6.29

17-0610

Printed: 11 JUL 2017, 3:33PM

Cantilevered Retaining Wall

Footing Dimensions & Strengths

f'c = 2,500 psi Footing Concrete Density

2.00

Lic. #: KW-06002886

Total Footing Width

Key Distance from Toe

Footing Thickness

Description:

Toe Width Heel Width

Key Width Key Depth

Min. As %

Cover @ Top

MAX RETAINING WALL - FELDSPAR & QUARTZ LVN

4.75 ft

1.75

6.50

12.00 in

12.00 in

12.00 in

5.00 ft 60,000 psi 150.00 pcf

0.0018

@ Btm.= 3.00 in

Footing Design Results

		Toe	Heel
Factored Pressure	=	1,089	1,792 psf
Mu': Upward	=	14,214	1,184 ft-lb
Mu': Downward	=	5,753	3,912 ft-lb
Mu: Design	=	8,461	2,727 ft-lb
Actual 1-Way Shear	=	27.24	21.81 psi
Allow 1-Way Shear	=	75.00	75.00 psi
Toe Reinforcing	=	#5@8.00 in	Ň
Heel Reinforcing	=	None Spec'd	
Key Reinforcing	=	None Spec'd	

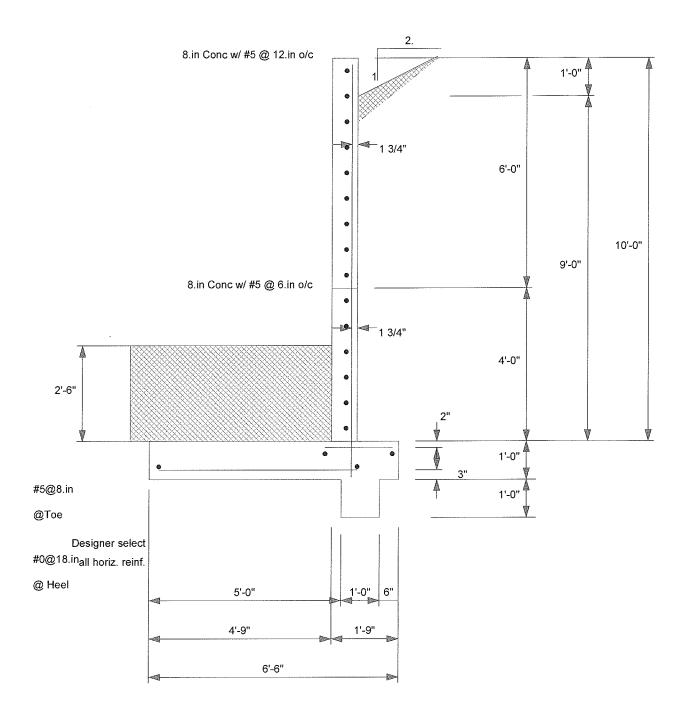
Other Acceptable Sizes & Spacings

Toe: #4@ 8.00 in, #5@ 12.25 in, #6@ 17.50 in, #7@ 23.75 in, #8@ 31.25 in, #9@ 39 Heel: #4@ 11.75 in, #5@ 18.25 in, #6@ 25.75 in, #7@ 35.25 in, #8@ 46.25 in, #9@ 4 Key: #4@ 12.50 in, #5@ 19.25 in, #6@ 27.25 in, #7@ 37.25 in,

Summary of Overturning & Resisting Forces & Moments

		0	VERTURN	ING	MARKET LA			RI	ESISTING	
Item		Force lbs	Distanc ft	е	Moment ft-lb	_		Force lbs	Distance ft	Moment ft-lb
Heel Active Pressure	=	3,556.1	3.5	1	12,495.6	Soil Over Heel	=	1,072.5	5.96	6,390.3
Surcharge over Heel	=					Sloped Soil Over Heel	=	32.3	6.14	198.1
Toe Active Pressure	=	-245.0	1.17	7	-285.8	Surcharge Over Heel	=			
Surcharge Over Toe	=					Adjacent Footing Load	i=1			
Adjacent Footing Load	=					Axial Dead Load on Stem	=	600.0	5.08	3,050.0
Added Lateral Load	=					* Axial Live Load on Stem	=	2,000.0	5.08	10,166.7
Load @ Stem Above Soil	=					Soil Over Toe	=	1,306.3	2.38	3,102.3
						Surcharge Over Toe	=			
						Stem Weight(s)	=	1,000.0	5.08	5,083.3
	_	Andrew Commencer		-		Earth @ Stem Transitions	=			
Total	=	3,311.1	O.T.M.	=	12,209.8	Footing Weight	=	975.0	3.25	3,168.8
Resisting/Overturning	Ratio		=		2.73	Key Weight	=	150.0	5.50	825.0
Vertical Loads used	for S	oil Pressure	= 8	913.4	lbs	Vert. Component	=	1,777.4	6.50	11,553.2
Vertical component of activ	ve pre	ssure used f	for soil pre	ssure		Tota	al =	6,913.4 I	bs R.M. =	33,371.1

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





0.00 in

VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID:

File = d:\ENERCALC Projects\2017-0610.ec6

244

2017-0610

Printed: 11 JUL 2017, 3:32PM

Cantilevered Retaining Wall

Lic. # : KW-06002886

Retained Height

Slope Behind Wall

Wall height above soil

Height of Soil over Toe

Water height over heel

Vertical component of active

Lateral soil pressure options:

Description:

Criteria

MAX RETAINING WALL - FELDSPAR UVN

9.00 ft

0.00 ft

0.00:1

30.00 in

0.0 ft

Soil Data

Allow Soil Bearing 2,500.0 psf Equivalent Fluid Pressure Method Heel Active Pressure 40.0 psf/ft Toe Active Pressure 40.0 psf/ft Passive Pressure 360.0 psf/ft Soil Density, Heel 110.00 pcf Soil Density, Toe 110.00 pcf Friction Coeff btwn Ftg & Soil = 0.450 Soil height to ignore

Calculations per ACI 318-14, ACI 530-11, IBC 2015, CBC 2016, ASCE 7-10

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Surcharge Loads

Surcharge Over Heel = 100.0 psf Used To Resist Sliding & Overturning Surcharge Over Toe = 0.0 psf NOT Used for Sliding & Overturning

USED for Soil Pressure.

USED for Sliding Resistance.

USED for Overturning Resistance.

Axial Load Applied to Stem

Axial Dead Load = 200.0 lbs Axial Live Load = 200.0 lbs Axial Load Eccentricity = 0.0 in

Design Summary

		77
Wall Stability Ratios Overturning	=	1.59 OK
Sliding	=	1.73 OK
Total Bearing Load	=	4,275 lbs
resultant ecc.	=	14.35 in
Soil Pressure @ Toe	=	2,185 psf OK
Soil Pressure @ Heel	=	0 psf OK
Allowable	_=	2,500 psf
Soil Pressure Less	Than /	
ACI Factored @ Toe	=	2,662 psf
ACI Factored @ Heel	=	0 psf
Footing Shear @ Toe	=	29.3 psi OK
Footing Shear @ Heel	=	14.5 psi OK
Allowable	=	75.0 psi
Sliding Calcs (Vertical C	ompor	ent Used)
Lateral Sliding Force	=	2,118.6 lbs
less 50 % Passive Force	= -	1,822.5 lbs
less 100% Friction Force	= .	1,830.6 lbs
Added Force Reg'd	=	0.0 lbs OK
for 1.5 : 1 Stability	=	0.0 lbs OK
Load Factors —		

oad Factors —	
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.600
Seismic, E	1.000

Lateral Load Applied to Stem

for passive pressure

Lateral Load	=	0.0 plf
Height to Top	=	0.00 ft
Height to Bottom	=	0.00 ft

Wind on Exposed Stem = 0.0 psf

Adjacent Footing Load

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

Stem Construction	7	Top Stem	2nd	
Design Height Above Ftg	ft =	Stern OK 4.00	Stem OK 0.00	
Wall Material Above "Ht"	=	Concrete	Concrete	
Thickness	in =	8.00	8.00	
Rebar Size	=	# 5	# 5	
Rebar Spacing	in =	12.00	6.00	
Rebar Placed at	=	Edge	Edge	
Design Data			-	
fb/FB + fa/Fa	=	0.254	0.655	
Total Force @ Section	lbs =	1,090.9	2,915.6	
MomentActual	ft-l =	2,060.6	9,965.7	
Moment,Allowable	ft-I =	8,121.3	15,222.0	
ShearActual	psi =	14.7	39.3	
ShearAllowable	psi =	75.0	75.0	
Wall Weight	psf =	100.0	100.0	
Rebar Depth 'd'	in =	6.19	6.19	
Lap splice if above	in =	23.40	23.40	
Lap splice if below	in =	23.40	3.93	
Hook embed into footing	in =	23.40	3.93	
Concrete Data	14000	100 DAMESTANIA	Waterman and	S
f'c	psi =	2,500.0	2,500.0	
Fy	psi =	60,000.0	60,000.0	



VILLAGE NEST JJH **MULTI UNIT PROJECT**

Project ID: 2017-0610

Printed: 11 JUL 2017, 3:32PM

Cantilevered Retaining Wall

Lic. #: KW-06002886

Description:

MAX RETAINING WALL - FELDSPAR UVN

File = d:\ENERCALC Projects\2017-0610.ec6 ENERCALC, INC. 1983-2017, Build:10.17.6.29, Ver:10.17.6.29

Licensee: RICHMOND HOFFMAYER

Footing Dimensions & Strengths

Toe Width	=	3.25 ft
Heel Width	= _	1.75
Total Footing Width	=	5.00
Footing Thickness	=	12.00 in
Key Width	=	12.00 in
Key Depth	=	12.00 in
Key Distance from Toe	=	3.00 ft
f'c = 2,500 psi	Fy =	60,000 psi 150.00 pcf
Footing Concrete Density	=	
Min. As %	=	0.0018
Cover @ Top 2.00	@ Bt	m.= 3.00 in

Footing Design Results

		Toe	Heel
Factored Pressure	=	2,662	0 psf
Mu': Upward	=	10,168	0 ft-lb
Mu': Downward	=	2,693	897 ft-lb
Mu: Design	=	7,475	897 ft-lb
Actual 1-Way Shear	=	29.35	14.52 psi
Allow 1-Way Shear	=	75.00	75.00 psi
Toe Reinforcing	=	#5@8.00 in	2
Heel Reinforcing	=	None Spec'd	
Key Reinforcing	=	None Spec'd	

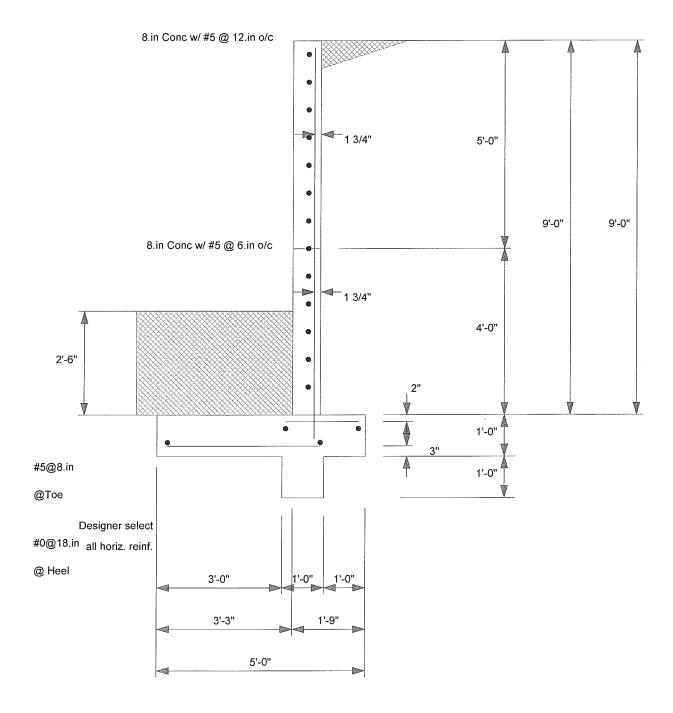
Other Acceptable Sizes & Spacings

Toe: #4@ 9.00 in, #5@ 14.00 in, #6@ 19.75 in, #7@ 27.00 in, #8@ 35.50 in, #9@ 45 Heel: Not req'd, Mu < S * Fr Key: #4@ 12.50 in, #5@ 19.25 in, #6@ 27.25 in, #7@ 37.25 in,

Summary of Overturning & Resisting Forces & Moments

		0	VERTURN	ING	••• (SSS)/ SF			R	ESISTING	
Item		Force lbs	Distanc ft	е	Moment ft-lb	_		Force lbs	Distance ft	Moment ft-lb
Heel Active Pressure	=	2,000.0	3.33	3	6,666.7	Soil Over Heel	=	1,072.5	4.46	4,781.6
Surcharge over Heel	=	363.6	5.00)	1,818.2	Sloped Soil Over Heel	=			
Toe Active Pressure	=	-245.0	1.17	7	-285.8	Surcharge Over Heel	=	108.3	4.46	483.0
Surcharge Over Toe	=					Adjacent Footing Load	=			
Adjacent Footing Load	$\dot{x}=\dot{x}$					Axial Dead Load on Stem	=	200.0	3.58	716.7
Added Lateral Load	=					* Axial Live Load on Stem	=	200.0	3.58	716.7
Load @ Stem Above Soil	=					Soil Over Toe	=	893.8	1.63	1,452.3
						Surcharge Over Toe	=			
						Stem Weight(s)	=	900.0	3.58	3,225.0
	_		7	-		Earth @ Stem Transitions	=			
Total	=	2,118.6	O.T.M.	=	8,199.0	Footing Weight	i=i	750.0	2.50	1,875.0
Resisting/Overturning	Ratio		=		1.59	Key Weight	=	150.0	3.50	525.0
Vertical Loads used		oil Pressure	= 4	274.6	6 lbs	Vert. Component	=	201000	5.00	
						Tota	al =	4,074.6	lbs R.M.=	13,058.6

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





VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID:

File = d:\ENERCALC Projects\2017-0610.ec6

2017-0610

Printed: 11 JUL 2017, 3:31PM

Cantilevered Retaining Wall

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Lic. #: KW-06002886

Description:

Retained Height

Slope Behind Wall

Wall height above soil

Height of Soil over Toe

Water height over heel

Vertical component of active

Lateral soil pressure options:

Criteria

SIDE RETAINING WALLS - FELDSPAR & QUARTZ LVN & UVN

7.50 ft

1.00 ft

0.00:1

30.00 in

0.0 ft

Soil Data

Allow Soil Bearing = 2,500.0 psf
Equivalent Fluid Pressure Method
Heel Active Pressure = 40.0 psf/ft
Toe Active Pressure = 40.0 psf/ft
Passive Pressure = 360.0 psf/ft
Soil Density, Heel = 110.00 pcf
Soil Density, Toe = 110.00 pcf
Friction Coeff btwn Ftg & Soil = 0.450

Soil height to ignore

for passive pressure = 0.00 in

Calculations per ACI 318-14, ACI 530-11, IBC 2015, CBC 2016, ASCE 7-10

ENERCALC, INC. 1983-2017, Build:10.17.6.29, Ver:10.17.6.29 Literases: RICHMOND HOFFMAYER

Surcharge Loads

Surcharge Over Heel = 0.0 psf NOT Used To Resist Sliding & Overturning Surcharge Over Toe = 0.0 psf NOT Used for Sliding & Overturning

USED for Soil Pressure.

USED for Sliding Resistance.

USED for Overturning Resistance.

Axial Load Applied to Stem

Axial Dead Load = 600.0 lbs Axial Live Load = 2,000.0 lbs Axial Load Eccentricity = 0.0 in

Design Summary

Wall Stability Ratios Overturning 2.06 OK 2.21 OK Sliding 5,456 lbs 3.34 in Total Bearing Load = ...resultant ecc. Soil Pressure @ Toe 2,102 psf OK = Soil Pressure @ Heel = 808 psf OK 2,500 psf Allowable Soil Pressure Less Than Allowable ACI Factored @ Toe ACI Factored @ Heel 2,831 psf = = 1,088 psf Footing Shear @ Toe = 24.2 psi OK Footing Shear @ Heel Ξ 1.6 psi OK 75.0 psi Allowable Sliding Calcs (Vertical Component Used) Lateral Sliding Force 1,200.0 lbs 1,102.5 lbs less 50 % Passive Force less 100% Friction Force 1,556.0 lbs = 0.0 lbs OK Added Force Reg'dfor 1.5 : 1 Stability 0.0 lbs OK

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

Lateral Load Applied to Stem

Lateral Load = 0.0 plf ...Height to Top = 0.00 ft ...Height to Bottom = 0.00 ft

Wind on Exposed Stem = 0.0 psf

Adjacent Footing Load

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

em Construction		Top Stem	2nd	
Design Height Above Ftg	ft =	Stem OK 4.00	Stem OK 0.00	
Wall Material Above "Ht"	=	Concrete	Concrete	
Thickness	in =	8.00	8.00	
Rebar Size	=	# 5	# 5	
Rebar Spacing	in =	12.00	12.00	
Rebar Placed at	=	Edge	Edge	
Design Data				
fb/FB + fa/Fa	=	0.056	0.534	
Total Force @ Section	lbs =	392.0	1,600.0	
MomentActual	ft-I =	457.3	4,333.3	
MomentAllowable	ft-I =	8,121.3	8,121.3	
ShearActual	psi =	5.3	21.5	
ShearAllowable	psi =	75.0	75.0	
Wall Weight	psf =	100.0	100.0	
Rebar Depth 'd'	in =	6.19	6.19	
Lap splice if above	in =	23.40	23.40	
Lap splice if below	in=	23.40	3.60	
Hook embed into footing	in=	23.40	3.60	
Concrete Data		000173107720	000000000000000000000000000000000000000	
fc	psi =	2,500.0	2,500.0	
Fy	psi =	60,000.0	60,000.0	



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Project Title: Engineer: Project Descr: VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID:

File = d:\ENERCALC Projects\2017-0610.ec6

Licensee: RICHMOND HOFFMAYER

ENERCALC, INC. 1983-2017, Build:10.17.6.29, Ver:10.17.6.29

Printed: 11 JUL 2017, 3:31PM

Cantilevered Retaining Wall

Footing Dimensions & Strengths

2,500 psi

Lic. #: KW-06002886

Total Footing Width

Key Distance from Toe

Footing Concrete Density

Footing Thickness

Description:

Toe Width

Heel Width

Key Width

Key Depth

Min. As %

Cover @ Top

SIDE RETAINING WALLS - FELDSPAR & QUARTZ LVN & UVN

Footing Design Results

Actual 1-Way Shear

2.00 ft
1.75
3.75
12.00 in
12.00 in
0.00 in
1.75 ft
60,000 psi

1.75 60,000 150.00 pcf 0.0018

2.00 @ Btm.= 3.00 in

		Toe	Heel
Factored Pressure	=	2,831	1,088 psf
Mu': Upward	=	5,042	737 ft-lb
Mu': Downward	=	1,020	687 ft-lb
Mu: Design	=	4,022	50 ft-lb

24.19

Allow 1-Way Shear 75.00 Toe Reinforcing #5@8.00 in = Heel Reinforcing None Spec'd Key Reinforcing = None Spec'd

Other Acceptable Sizes & Spacings

Toe: #4@ 13.25 in, #5@ 20.50 in, #6@ 29.00 in, #7@ 39.25 in, #8@ 48.25 in, #9@ 4 Heel: Not req'd, Mu < S * Fr Key: Not req'd, Mu < S * Fr

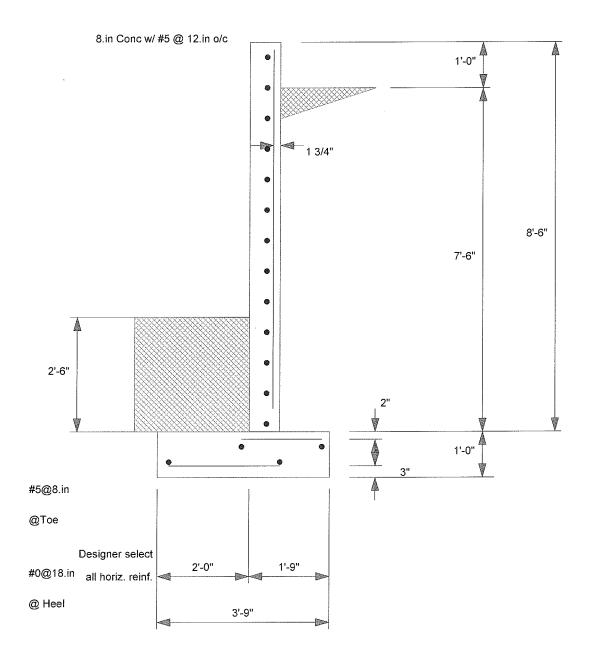
1.61 psi

75.00 psi

Summary of Overturning & Resisting Forces & Moments

		0	VERTURNIN	G				Е	RESIS	STING	70.01 N
Item		Force lbs	Distance ft	20000	oment t-lb	_		Force lbs		Distance ft	Moment ft-lb
Heel Active Pressure	=	1,445.0	2.83		4,094.2	Soil Over Heel	=	893.8		3.21	2,867.4
Surcharge over Heel	=				***************************************	Sloped Soil Over Heel	=				
Toe Active Pressure	=	-245.0	1.17		-285.8	Surcharge Over Heel	=				
Surcharge Over Toe	=					Adjacent Footing Load	$\boldsymbol{y} = \boldsymbol{y}$				
Adjacent Footing Load	=					Axial Dead Load on Stem	=	600.0		2.33	1,400.0
Added Lateral Load	=					* Axial Live Load on Stem	=	2,000.0		2.33	4,666.7
Load @ Stem Above Soil	=					Soil Over Toe	=	550.0		1.00	550.0
						Surcharge Over Toe	=				
						Stem Weight(s)	=	850.0		2.33	1,983.3
			-		-	Earth @ Stem Transitions	=				
Total	=	1,200.0	O.T.M.	=	3,808.3	Footing Weight	=	562.5		1.88	1,054.7
Resisting/Overturning	Ratio		=	2.06	ĺ	Key Weight	=			2.25	
Vertical Loads used		oil Pressure	= 5,45	6.3 lb	S	Vert. Component	=			3.75	
						Tota	al =	3,456.3	lbs	R.M. =	7,855.5

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





VILLAGE NEST

MULTI UNIT PROJECT

Project ID: 2017-0610

7-0010

Printed: 11 JUL 2017, 3:30PM

Cantilevered Retaining Wall

Lic. # : KW-06002886

Description:

BOTTOM STEM WALLS - FELDSPAR & QUARTZ LVN & UVN

File = d:\ENERCALC Projects\2017-0610.ec6
ENERCALC, INC. 1983-2017, Build:10.17.6.29, Ver:10.17.6.29
Ligensee: RICHMOND HOFFWAYER
ARTZ LVN & UVN

Criteria		
Retained Height	=	4.00 ft
Wall height above soil	=	2.00 ft
Slope Behind Wall	=	0.00:1
Height of Soil over Toe	=	30.00 in
Water height over heel	=	0.0 ft
Vertical component of act Lateral soil pressure option USED for Soil I USED for Slidin USED for Over	ons: Pressu ng Res	istance.

Surcharge Loads		
Surcharge Over Heel Used To Resist Sliding	= & Ovo	40.0 psf
Surcharge Over Toe	=	0.0 psf

Surcharge Over Toe = 0 NOT Used for Sliding & Overturning Axial Load Applied to Stem

Axial Dead Load	=	600.0 lbs
Axial Live Load	=	1,000.0 lbs
Axial Load Eccentricity	=	0.0 in

Design Summary

Wall Stability Ratios	=	0.00 OV
Overturning		2.88 OK 6.11 OK
Sliding	=	6.11 OK
Total Bearing Load	=	3,003 lbs
resultant ecc.	=	2.52 in
Soil Pressure @ Toe	=	2,449 psf OK
Soil Pressure @ Heel	=	554 psf OK
Allowable Soil Pressure Less	= Then /	2,500 psf
	Than A	A 1 (A 1(A)(A 1(A 1
ACI Factored @ Toe	=	3,265 psf
ACI Factored @ Heel	=	738 psf
Footing Shear @ Toe	=	0.0 psi OK
Footing Shear @ Heel	=	2.2 psi OK
Allowable	=	75.0 psi
Sliding Calcs (Vertical C	ompon	ent Used)
Lateral Sliding Force	=	327.7 lbs
less 50 % Passive Force	= .	1,102.5 lbs
less 100% Friction Force	= .	900.Q lbs
Added Force Reg'd	=	0.0 lbs OK
for 1.5 : 1 Stability	=	0.0 lbs OK

Load Factors -	
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.600
Seismic, E	1.000

Soil Data			
Allow Soil Bearing	=	2,500.0 p	sf
Equivalent Fluid Pressure Me	thod	d	
Heel Active Pressure	=	40.0 p	sf/ft
Toe Active Pressure	=	40.0 p	sf/ft
Passive Pressure	=	360.0 p	sf/ft
Soil Density, Heel	=	110.00 p	cf
Soil Density, Toe	=	110.00 p	cf
Friction Coeff btwn Ftg & Soil	=	0.450	
Soil height to ignore for passive pressure	=	0.00 in	

Lateral Load Applie	m	
Lateral Load	=	0.0 plf
Height to Top	=	0.00 ft
Height to Bottom	=	0.00 ft

Wind on	Exposed	Stem	=	0.0 psf

Calculations per ACI 318-14, ACI 530-11, IBC 2015, CBC 2016, ASCE 7-10

Adjacent Footing Load		
Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	i = 1	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type		Line Load
Base Above/Below Soil at Back of Wall	=	0.0 ft
Poisson's Ratio	=	0.300

Stem Construction		Top Stem	
Design Height Above Ftg Wall Material Above "Ht"	ft = =	Stem OK 0.00 Concrete	
Thickness	in =	8.00	
Rebar Size	=	# 5	
Rebar Spacing	in =	12.00	
Rebar Placed at Design Data	=	Edge	
fb/FB + fa/Fa	=	0.086	
Total Force @ Section	lbs =	405.1	
MomentActual	ft-l =	702.2	
MomentAllowable	ft-I =	8,121.3	
ShearActual	psi =	5.5	
ShearAllowable	psi =	75.0	
Wall Weight	psf =	100.0	
Rebar Depth 'd'	in =	6.19	
Lap splice if above	in =	23.40	
Lap splice if below	in =	6.00	
Hook embed into footing	in =	6.00	
Concrete Data			
fc	psi =	2,500.0	
Fy	psi =		



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

Printed: 11 JUL 2017, 3:30PM

Cantilevered Retaining Wall

Lic. #: KW-06002886

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BOTTOM STEM WALLS - FELDSPAR & QUARTZ LVN & UVN Description:

Footing	Dimensions	&	Strengths
---------	------------	---	-----------

Toe Width	=	0.67 ft	
Heel Width	=	1.33	
Total Footing Width	=	2.00	
Footing Thickness		12.00 in	
Key Width	=	12.00 in	
Key Depth	=	0.00 in	
Key Distance from Toe	=	1.75 ft	
fc = 2,500 psi Footing Concrete Density	Fy_=	60,000 psi 150.00 pcf	
Min. As %	=	0.0018	
Cover @ Top 2.00	@ Bt	tm.= 3.00 in	

Footing Design Results

		Toe	Heel
Factored Pressure	=	3,265	738 psf
Mu' : Upward	=	669	224 ft-lb
Mu' : Downward	=	114	170 ft-lb
Mu: Design	=	555	54 ft-lb
Actual 1-Way Shear	=	0.00	2.24 psi
Allow 1-Way Shear	=	75.00	75.00 psi
Toe Reinforcing	=	#5@8.00 in	
Heel Reinforcing	=	None Spec'd	
Key Reinforcing	=	None Spec'd	

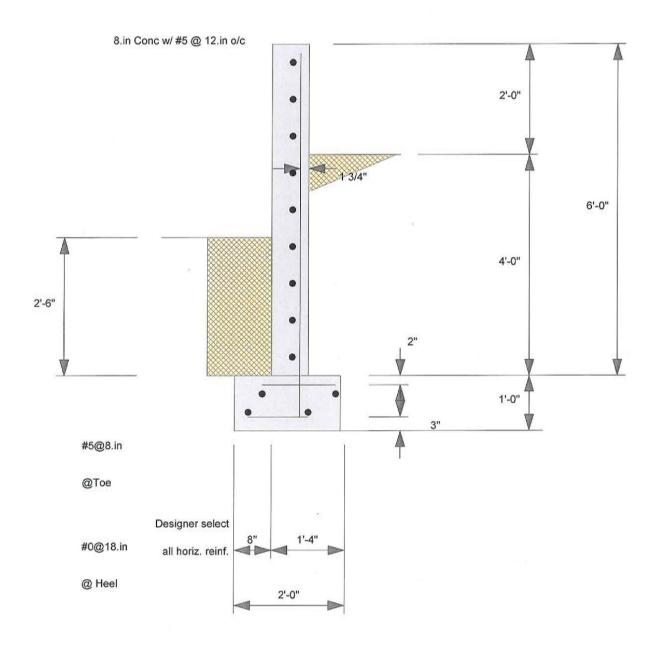
Other Acceptable Sizes & Spacings

Toe: Not req'd, Mu < S * Fr Heel: Not req'd, Mu < S * Fr Key: Not req'd, Mu < S * Fr

Summary of Overturning & Resisting Forces & Moments

		0	VERTURN	ING						RESI	STING	
Item		Force lbs	Distanc ft		Mo	ment Ib	_		Force lbs		Distance ft	Moment ft-lb
Heel Active Pressure	=	500.0	1.67	7		833.3	Soil Over Heel	=	291.9		1.67	486.9
Surcharge over Heel	=	72.7	2.50)		181.8	Sloped Soil Over Heel	=				
Toe Active Pressure	=	-245.0	1.17	7		-285.8	Surcharge Over Heel	=	26.5		1.67	44.3
Surcharge Over Toe	=						Adjacent Footing Load	i=0				
Adjacent Footing Load	=						Axial Dead Load on Stem	=	600.0		1.00	602.0
Added Lateral Load	=						* Axial Live Load on Stem	=	1,000.0		1.00	1,003.3
Load @ Stem Above Soil	=						Soil Over Toe	=	184.3		0.34	61.7
							Surcharge Over Toe	=				
							Stem Weight(s)	=	600.0		1.00	602.0
	_		-	-			Earth @ Stem Transitions	=				
Total	=	327.7	O.T.M.	=		729.3	Footing Weight	=	300.0		1.00	300.0
Resisting/Overturning	Ratio		=		2.88		Key Weight	=			2.25	
Vertical Loads used			= 3,	002	2.7 lbs		Vert. Component	=			2.00	
							Tota	1 =	2 002 7	lhs	RM =	2 096 9

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





VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

Printed: 11 JUL 2017, 3:30PM

General Footing

Lic. #: KW-06002886

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Licensee: RICHMOND HOFFMAYER

MAX INTERIOR PAD FOOTING: 4" P.C. Description:

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	=	2.50 ksi			
fy: Rebar Yield	=	6	0.0 ksi		
Éc : Concrete Elastic Modulus	=	3,12	2.0 ksi		
Concrete Density	=		5.0 pcf		
φ Values Flexure	=		.90		
Shear	=	0.8	350		
Analysis Settings	***				
Min Steel % Bending Reinf.		=			
Min Allow % Temp Reinf.		=	0.00180		
Min. Overturning Safety Factor		=	1.50:1		
Min. Sliding Safety Factor		=	1.50:1		
Add Ftg Wt for Soil Pressure		:	No		
Use ftg wt for stability, moments &	shears	:	No		
Add Pedestal Wt for Soil Pressure)	:	No		
Use Pedestal wt for stability, mom	& shear	:	No		
Discounting					

=	2.50 ksf
=	No
=	180.0 pcf
=	0.450
	= = = =

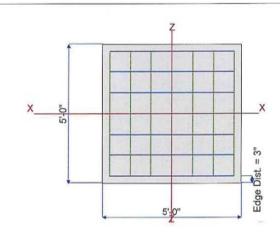
Increases based on footing Depth Footing base depth below soil surface 2.0 ft Allow press. increase per foot of depth when footing base is below ksf ft

Allowable pressure increase per foot of depth		
when max. length or width is greater than	=	ksf
when max, length of width is greater than	=	ft

Dimensions

Width parallel to X-X Axis	=	5.0 ft
Length parallel to Z-Z Axis	=	5.0 ft
Footing Thickness	=	18.0 in





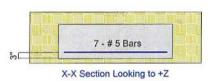
Increases based on footing plan dimension

Reinforcing

Bars parallel to X-X Axis Number of Bars	= 1		7.0
Reinforcing Bar Size	=	#	5
Bars parallel to Z-Z Axis Number of Bars	=		7.0
Reinforcing Bar Size	=	#	5



Direction Requiring Closer Separation n/a # Bars required within zone n/a # Bars required on each side of zone n/a





Applied Loads

	D	Lr	L	S	w	E	Н
=	3.807	4.015		49.381			k
=							KSI
Ξ							k-ft
5 -							K-IL
=							K k
	= =				\$76-70701 (ABPA-707)	\$7657500 (AMERICAN AMERICAN A	



VILLAGE NEST JJH **MULTI UNIT PROJECT**

Project ID: 2017-0610

Printed: 11 JUL 2017, 3:30PM

General Footing

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Lic. #: KW-06002886

Description: MAX INTERIOR PAD FOOTING: 4" P.C.

	Min. Ratio	Item	Applied	Capacity	Governing Load Combination
PASS	0.8732	Soil Bearing	2.183 ksf	2.50 ksf	+D+S about Z-Z axis
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	0.3692	Z Flexure (+X)	10.447 k-ft/ft	28.298 k-ft/ft	+1.20D+1.60S
PASS	0.3692	Z Flexure (-X)	10.447 k-ft/ft	28.298 k-ft/ft	+1.20D+1.60S
PASS	0.3692	X Flexure (+Z)	10.447 k-ft/ft	28.298 k-ft/ft	+1.20D+1.60S
PASS	0.3692	X Flexure (-Z)	10.447 k-ft/ft	28.298 k-ft/ft	+1.20D+1.60S
PASS	0.2731	1-way Shear (+X)	23.216 psi	85.0 psi	+1.20D+1.60S
PASS	0.2731	1-way Shear (-X)	23.216 psi	85.0 psi	+1.20D+1.60S
PASS	0.2731	1-way Shear (+Z)	23.216 psi	85.0 psi	+1.20D+1.60S
PASS	0.2731	1-way Shear (-Z)	23.216 psi	85.0 psi	+1.20D+1.60S
PASS	0.5074	2-way Punching	86.261 psi	170.0 psi	+1.20D+1.60S

Rotation Axis &		Xecc	Zecc	Actual Soil Bearing Stress @ Location				Actual / Allow
Load Combination	Gross Allowable	(ir	n)	Bottom, -Z	Top, +Z	Left, -X	Right, +X	Ratio
X-X, D Only	2.50	n/a	0.0	0.2073	0.2073	n/a	n/a	0.083
X-X, +D+Lr	2.50	n/a	0.0	0.3679	0.3679	n/a	n/a	0.147
X-X, +D+S	2.50	n/a	0.0	2.183	2.183	n/a	n/a	0.873
X-X, +D+0.750Lr	2.50	n/a	0.0	0.3277	0.3277	n/a	n/a	0.131
X-X, +D+0.750S	2.50	n/a	0.0	1.689	1.689	n/a	n/a	0.676
X-X, +0.60D	2.50	n/a	0.0	0.1244	0.1244	n/a	n/a	0.050
Z-Z, D Only	2.50	0.0	n/a	n/a	n/a	0.2073	0.2073	0.083
Z-Z. +D+Lr	2.50	0.0	n/a	n/a	n/a	0.3679	0.3679	0.147
Z-Z. +D+S	2.50	0.0	n/a	n/a	n/a	2.183	2.183	0.873
Z-Z. +D+0.750Lr	2.50	0.0	n/a	n/a	n/a	0.3277	0.3277	0.131
Z-Z. +D+0.750S	2.50	0.0	n/a	n/a	n/a	1.689	1.689	0.676
Z-Z, +0.60D	2.50	0.0	n/a	n/a	n/a	0.1244	0.1244	0.050
Footing Flexure								

Footing Flexure					100 - 2			
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	0.6662	+Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1.40D	0.6662	-Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1.20D+0.50Lr	0.8220	+Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1.20D+0.50Lr	0.8220	-Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X. +1,20D+0.50S	3.657	+Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1,20D+0.50S	3.657	-Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X. +1,20D+1.60Lr	1.374	+Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1.20D+1.60Lr	1.374	-Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1,20D+1.60S	10.447	+Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X. +1.20D+1.60S	10.447	-Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X. +1.20D+0.20S	1.806	+Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1.20D+0.20S	1.806	-Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +0.90D	0.4283	+Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +0.90D	0.4283	-Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1.40D	0.6662	-X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1.40D	0.6662	+X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z. +1.20D+0.50Lr	0.8220	-X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1.20D+0.50Lr	0.8220	+X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1.20D+0.50S	3.657	-X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1.20D+0.50S	3.657	+X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1.20D+1.60Lr	1.374	-X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1,20D+1,60Lr	1.374	+X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z. +1.20D+1.60S	10.447	-X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1.20D+1.60S	10.447	+X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

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General Footing

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Lic. # : KW-06002886 Description:

MAX INTERIOR PAD FOOTING: 4" P.C.

Fo	otin	a F	lexu	re
	Oth	200	CAG	

Footing Flexure									
Flexure Axis & Load Combination	Mu k-ft	Side	Tensio Surfac		Gvrn. As in^2	Actual A	As P	hi*Mn k-ft	Status
Z-Z, +1.20D+0.20S Z-Z, +1.20D+0.20S Z-Z, +0.90D Z-Z, +0.90D One Way Shear	1.806 1.806 0.4283 0.4283	-X +X -X +X	Bottom Bottom Bottom Bottom	0.3888 0.3888	Min Temp Min Temp	% 0.4 % 0.4	1340 1340 1340 1340	28.298 28.298 28.298 28.298	OK OK OK
Load Combination	Vu @ -X	Vu @ ·	+X \	√u@-Z Vu	@ +Z	Vu:Max	Phi Vn	Vu / Phi*Vn	Status
+1.40D +1.20D+0.50Lr +1.20D+0.50S +1.20D+1.60Lr +1.20D+1.60S +1.20D+0.20S +0.90D Two-Way "Punching" Shear	1.48 ps 1.83 ps 8.13 ps 3.05 ps 23.22 ps 4.01 ps 0.95 ps	i i i i	1.48 psi 1.83 psi 8.13 psi 3.05 psi 23.22 psi 4.01 psi 0.95 psi	1.48 psi 1.83 psi 8.13 psi 3.05 psi 23.22 psi 4.01 psi 0.95 psi	1.48 psi 1.83 psi 8.13 psi 3.05 psi 23.22 psi 4.01 psi 0.95 psi	1.48 psi 1.83 psi 8.13 psi 3.05 psi 23.22 psi 4.01 psi 0.95 psi	85.00 ps 85.00 ps 85.00 ps 85.00 ps 85.00 ps 85.00 ps	si 0.02 si 0.10 si 0.04 si 0.27 si 0.05 si 0.01 All units	AND DESCRIPTION OF THE PARTY OF
Load Combination		Vu		Phi*Vn		Vu / Phi*Vn			Status
+1.40D +1.20D+0.50Lr +1.20D+0.50S +1.20D+1.60Lr +1.20D+1.60S +1.20D+0.20S +0.90D		6.79 30.20 11.35 86.26 14.9	5 psi 6 psi	170.00 170.00 170.00 170.00 170.00 170.00 170.00 170.00	osi osi osi osi	0.03236 0.03992 0.1776 0.06674 0.5074 0.0877 0.0208			OK OK OK OK OK OK



VILLAGE NEST JJH **MULTI UNIT PROJECT**

Project ID: 2017-0610

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General Footing

ENERCALC, INC. 1983-2017, Build:10.17.6.29, Ver:10.17.6.29

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INTERIOR PAD FOOTING: FELDSPAR LVN 4" P.C. UNDER B17 Description:

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	=	= 2.50 ksi		
fy: Rebar Yield	=	6	0.0 ksi	
Éc : Concrete Elastic Modulus	=	3,12	22.0 ksi	
Concrete Density	=	14	15.0 pcf	
φ Values Flexure	=		0.90	
Shear	=	0.	850	
Analysis Settings				
Min Steel % Bending Reinf.		=		
Min Allow % Temp Reinf.		=	0.00180	
Min. Overturning Safety Factor		=	1.50	
Min. Sliding Safety Factor		=	1.50	
Add Ftg Wt for Soil Pressure		1	No	
Use ftg wt for stability, moments & shears		:	No	
Add Pedestal Wt for Soil Pressure			No	
Use Pedestal wt for stability, mom & shear	•		No	
DI CONTROL CON				

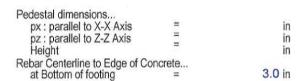
Soil Design Values		
Allowable Soil Bearing	=	2.50 ksf
Increase Bearing By Footing Weight	=	No
Soil Passive Resistance (for Sliding)	=	180.0 pcf
Soil/Concrete Friction Coeff.	=	0.450

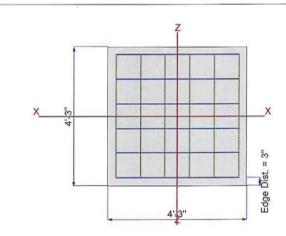
Increases based on footing Depth 2.0 ft Footing base depth below soil surface Allow press. increase per foot of depth ksf when footing base is below ft

Increases based on footing plan dimension Allowable pressure increase per foot of depth		
when max. length or width is greater than	=	ksf
when max, length of width is greater than	=	ft

Dimensions

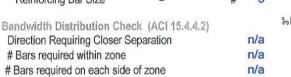
Width parallel to X-X Axis	=	4.250 ft
Length parallel to Z-Z Axis	=	4.250 ft
Footing Thickness	=	18.0 in

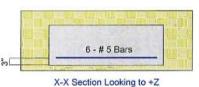




Reinforcing

Bars parallel to X-X Axis Number of Bars	=		6.0
Reinforcing Bar Size	=	#	5
Bars parallel to Z-Z Axis Number of Bars	=		6.0
Reinforcing Bar Size	=	#	5







Applied Loads

		D	Lr	L	S	W	E	Н
P : Column Load OB : Overburden	= .	2.843	2.906	0.280	36.394			k ksf
M-xx M-zz	=							k-ft k-ft
V-x	=							k
V-z	=							k



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

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Printed: 11 JUL 2017, 3:27PM

General Footing

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Lic. #: KW-06002886 Description: INTER

INTERIOR PAD FOOTING: FELDSPAR LVN 4" P.C. UNDER B17

	Min. Ratio	Item	Applied	Capacity	Governing Load Combination
PASS	0.8908	Soil Bearing	2.227 ksf	2.50 ksf	+D+S about Z-Z axis
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	0.2707	Z Flexure (+X)	7.723 k-ft/ft	28.527 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.2707	Z Flexure (-X)	7.723 k-ft/ft	28.527 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.2707	X Flexure (+Z)	7.723 k-ft/ft	28.527 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.2707	X Flexure (-Z)	7.723 k-ft/ft	28.527 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.190	1-way Shear (+X)	16.152 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.190	1-way Shear (-X)	16.152 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.190	1-way Shear (+Z)	16.152 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.190	1-way Shear (-Z)	16.152 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.3675	2-way Punching	62.468 psi	170.0 psi	+1.20D+0.50L+1.60S

Soil	Regring	

Rotation Axis &		Xecc	Zecc	Actual	Soil Bearing S	tress @ Locat	ion	Actual / Allov
Load Combination	Gross Allowable	WWWES	(in)	Bottom, -Z	Top, +Z	Left, -X	Right, +X	Ratio
X-X, D Only	2.50	n/a	0.0	0.2124	0.2124	n/a	n/a	0.085
X-X, +D+L	2.50	n/a	0.0	0.2279	0.2279	n/a	n/a	0.091
X-X, +D+Lr	2.50	n/a	0.0	0.3733	0.3733	n/a	n/a	0.149
X-X. +D+S	2.50	n/a	0.0	2.227	2.227	n/a	n/a	0.891
X-X, +D+0.750Lr+0.750L	2.50	n/a	0.0	0.3447	0.3447	n/a	n/a	0.138
X-X, +D+0.750L+0.750S	2.50	n/a	0.0	1.735	1.735	n/a	n/a	0.694
X-X, +0.60D	2.50	n/a	0.0	0.1274	0.1274	n/a	n/a	0.051
Z-Z, D Only	2.50	0.0	n/a	n/a	n/a	0.2124	0.2124	0.085
Z-Z. +D+L	2.50	0.0	n/a	n/a	n/a	0.2279	0.2279	0.091
Z-Z, +D+Lr	2.50	0.0	n/a	n/a	n/a	0.3733	0.3733	0.149
Z-Z. +D+S	2.50	0.0	n/a	n/a	n/a	2.227	2.227	0.891
Z-Z, +D+0.750Lr+0.750L	2.50	0.0	n/a	n/a	n/a	0.3447	0.3447	0.138
Z-Z, +D+0.750L+0.750S	2.50	0.0	n/a	n/a	n/a	1.735	1.735	0.694
Z-Z, +0.60D	2.50	0.0	n/a	n/a	n/a	0.1274	0.1274	0.051
Footing Flexure								

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	0.4975	+Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.40D	0.4975	-Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+0.50Lr+1.60L	0.6641	+Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+0.50Lr+1.60L	0.6641	-Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+1.60L+0.50S	2.757	+Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+1.60L+0.50S	2.757	-Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+1.60Lr+0.50L	1.025	+Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+1.60Lr+0.50L	1.025	-Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+1.60Lr	1.008	+Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+1.60Lr	1.008	-Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+0.50L+1.60S	7.723	+Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+0.50L+1.60S	7.723	-Z	Bottom	0,3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+1.60S	7.705	+Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+1.60S	7.705	-Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+0.50Lr+0.50L	0.6256	+Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+0.50Lr+0.50L	0.6256	-Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+0.50L+0.50S	2.719	+Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+0.50L+0.50S	2.719	-Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1,20D+0.50L+0.20S	1.354	+Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +1.20D+0.50L+0.20S	1.354	-Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X, +0.90D	0.3198	+Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK
X-X. +0.90D	0.3198	-Z	Bottom	0.3888	Min Temp %	0.4376	28.527	OK



VILLAGE NEST JJH **MULTI UNIT PROJECT**

Project ID: 2017-0610

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General Footing

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INTERIOR PAD FOOTING: FELDSPAR LVN 4" P.C. UNDER B17 Description:

Flexure Axis & Load Combination	Mu k-ft	Side	Tension Surface	As Req'd in^2	Gvrn. As in^2	Actual As in^2	Phi*I k-fi		Status
Z-Z, +1,40D	0.4975	-X	Bottom	0.3888	Min Temp %		76 28	.527	OK
Z-Z, +1,40D	0.4975	+X	Bottom	0.3888	Min Temp %	0.43	76 28	.527	OK
Z-Z, +1.20D+0.50Lr+1.60L	0.6641	-X	Bottom	0.3888 0.3888	Min Temp %	0.43	76 28	.527 .527	OK
Z-Z. +1.20D+0.50Lr+1.60L	0.6641	+X	Bottom	0.3888	Min Temp %	0.43	76 28	.527	OK
Z-Z. +1.20D+1.60L+0.50S	2.757	-X	Bottom	0.3888	Min Temp %	0.43	76 28	.527	OK
Z-Z. +1.20D+1.60L+0.50S	2.757 1.025	+X	Bottom	0.3888	Min Temp %	0.43	76 28	.527	OK
Z-Z, +1.20D+1.60Lr+0.50L	1.025	-X	Bottom	0.3888	Min Temp %	0.43	76 28	.527	OK
Z-Z, +1.20D+1.60Lr+0.50L	1.025	·××·××××××××××××××××××××××××××××××××××	Bottom	0.3888 0.3888 0.3888 0.3888	Min Temp %	0.43	76 28	.527	OK
Z-Z. +1.20D+1.60Lr	1.008	-X	Bottom	0.3888	Min Temp %	0.43	76 28	.527	OK
Z-Z. +1.20D+1.60Lr	1.008	+X	Bottom	0.3888	Min Temp %	0.43	76 28	.527	OK
Z-Z. +1.20D+0.50L+1.60S	7.723	-X	Bottom	0.3888 0.3888	Min Temp %	0.43	76 Z6	.527 .527	OK OK
Z-Z, +1.20D+0.50L+1.60S	7.723	+X	Bottom	0.3888	Min Temp % Min Temp %	0.43	76 20	527	OK
Z-Z. +1.20D+1.60S Z-Z, +1.20D+1.60S	7.705 7.705	.0	Bottom	0.3888 0.3888	Min Temp %	0.43 0.43	76 20	.527 .527	OK
Z-Z, +1.20D+0.50Lr+0.50L	0.6256	+0	Bottom Bottom	0.3000	Min Temp %	0.43	76 28	.527	OK
Z-Z, +1.20D+0.50Lr+0.50L Z-Z, +1.20D+0.50Lr+0.50L	0.6256	-0	Bottom	0.3000	Min Temp %		76 28	.527	OK
Z-Z, +1.20D+0.50L+0.50S	2.719	-X	Bottom	0.3888 0.3888 0.3888	Min Temp %	0.43	76 28	.527	OK
Z-Z, +1.20D+0.50L+0.50S	2.719	+X	Bottom	0.3888	Min Temp %	0.43	76 28	.527	OK
Z-Z. +1.20D+0.50L+0.20S	1.354	-X	Bottom	0.3888	Min Temp %	0.43	76 28	.527	OK
Z-Z. +1.20D+0.50L+0.20S	1.354	+X	Bottom	0.3888	Min Temp %	0.43	76 28	.527	OK
Z-Z. +0.90D	0.3198	-X	Bottom	0.3888	Min Temp %		76 28	.527	OK
Z-Z. +0.90D	0.3198	-X +X	Bottom	0.3888	Min Temp %		76 28	.527	OK
One Way Shear		(///5/5)			111111 10T010T1 11		107/1 0757	88.754.	107757
Load Combination	Vu @ -X	Vu @ -				u:Max Pl	hi Vn Vu	/ Phi*Vn	Status
+1.40D	1.04 ps		1.04 psi	1.04 psi	1.04 psi	1.04 psi	85.00 psi	0.01	0.00
+1.20D+0.50Lr+1.60L	1.39 ps	l	1.39 psi	1.39 psi	1.39 psi	1.39 psi	85.00 psi	0.02	0.0
+1.20D+1.60L+0.50S	5.77 ps	i	5.77 psi	5.77 psi	5.77 psi	5.77 psi	85.00 psi	0.07	0.0
+1.20D+1.60Lr+0.50L	2.14 ps		2.14 psi	2.14 psi	2.14 psi	2.14 psi	85.00 psi	0.03	0.00
+1.20D+1.60Lr	2.11 ps	i	2.11 psi	2.11 psi	2.11 psi	2.11 psi	85.00 psi	0.02	0.0
+1.20D+0.50L+1.60S	16.15 ps		16.15 psi	16.15 psi	16.15 psi	16.15 psi	85.00 psi	0.19	0.00
+1.20D+1.60S	16.12 ps		16.12 psi	16.12 psi	16.12 psi	16.12 psi	85.00 psi	0.19	0.00
+1.20D+0.50Lr+0.50L	1.31 ps		1.31 psi	1.31 psi	1.31 psi	1.31 psi	85.00 psi	0.02	0.00
+1.20D+0.50L+0.50S	5.69 psi		5.69 psi	5.69 psi	5.69 psi	5.69 psi	85.00 psi	0.07	0.0
+1.20D+0.50L+0.20S	2.83 psi		2.83 psi	2.83 psi	2.83 psi	2.83 psi	85.00 psi	0.03	0.0
+0.90D	0.67 psi		0.67 psi	0.67 psi	0.67 psi	0.67 psi	85.00 psi	0.01	0.00
Two-Way "Punching" Shear	9.9.		AT 1.75 (17.76)	1717. 771		E STATE STATE	A STATE OF S	All units	k
Load Combination		Vu		Phi*Vn		Vu / Phi*Vn			Status
+1.40D		4.02	iza 2	170.00 ps	si	0.02367			OK
+1.20D+0.50Lr+1.60L		5,37	7 psi	170.00 ps	si	0.0316			OK
+1.20D+1.60L+0.50S		22.30) psi	170.00 ps		0.1312			OK
+1.20D+1.60Lr+0.50L		8.29	esi isa g	170.00 ps		0.04878			OK
+1.20D+1.60Lr		8.15	jaa j	170.00 ps	SI.	0.04795			OK
+1.20D+1.00L1		62.47	psi	170.00 ps	SI .	0.3675			OK
+1.20D+0.50L+1.60S		00.00							
+1.20D+0.50L+1.60S +1.20D+1.60S		62.33	3 psi	170.00 ps	Sİ.	0.3666			OK
+1.20D+0.50L+1.60S +1.20D+1.60S +1.20D+0.50Lr+0.50L		62.33 5.06	3 psi 3 psi	170.00 ps	si	0.02977			OK
+1.20D+0.50L+1.60S +1.20D+1.60S		62.33	B psi B psi P psi	170.00 ps 170.00 ps 170.00 ps 170.00 ps	si si	0.3666 0.02977 0.1294 0.06442			OK OK OK



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

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General Footing

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Licensee: RICHMOND HOFFMAYER

Lic. #: KW-06002886 Description: INTER

INTERIOR PAD FOOTING: QUARTZ LVN 4" P.C. UNDER B16 - NOT AT RIDGE

Code References

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

Load Combinations Used: ASCE 7-10

General Information

Material Pro	perties		11/2	sammerou v	Soil D
f'c : Concret	e 28 day strength	=	2	2.50 ksi	Allow
fy: Rebar Y		=	6	0.0 ksi	Incre
	te Elastic Modulus	=	3,12	22.0 ksi	Soil I
Concrete De	ensity	=	14	15.0 pcf	Soil/0
φ Values	Flexure	=	C	0.90	
15	Shear	=	0.	850	Increas
Analysis Se	ttings				Footi
Min Steel %	Bending Reinf.		=		Allow
	Temp Reinf.		=	0.00180	W
Min. Overtu	rning Safety Factor		=	1.50 : 1	
	Safety Factor		=	1.50:1	Increas
	for Soil Pressure		:	No	Allow
Use ftg wt fo	or stability, moments & shears		:	No	
Add Pedest	al Wt for Soil Pressure		:	No	when
Use Pedest	al wt for stability, mom & shear		:	No	
Dimension	•				

Soil Design Values		
Allowable Soil Bearing	=:	2.50 ksf
Increase Bearing By Footing Weight	=	No
Soil Passive Resistance (for Sliding)	=	180.0 pcf
Soil/Concrete Friction Coeff.	=	0.450

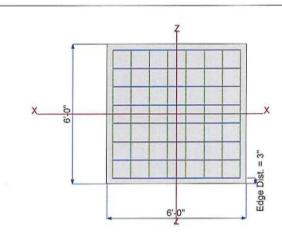
roreases based on footing Depth Footing base depth below soil surface = 2.0 ft Allow press. increase per foot of depth = ksf when footing base is below = ft

creases based on footing plan dimension Allowable pressure increase per foot of depth	i	
when max. length or width is greater than	=	ksf
when max, length or width is greater than	=	ft

Dimensions

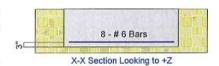
Width parallel to X-X Axis	=	6.0 ft
Length parallel to Z-Z Axis	=	6.0 ft
Footing Thickness	=	24.0 in

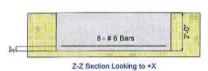




Reinforcing

Bars parallel to X-X Axis	-		12 121
Number of Bars	_	200	8.0
Reinforcing Bar Size	=	#	6
Bars parallel to Z-Z Axis			
Number of Bars	=		8.0
Reinforcing Bar Size	=	#	6





Bandwidth Distribution Check (ACI 15.4.4.2)

Direction Requiring Closer Separation

Bars required within zone

Bars required on each side of zone

n/a

Applied Loads

		D	Lr	L	S	W	Е	Н
P : Column Load OB : Overburden	= =	6.880	1.120	7.625	60.0			k ksf
M-xx M-zz	=							k-ft k-ft
V-x	=							k
V-z	=							k



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

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General Footing

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Description:

INTERIOR PAD FOOTING: QUARTZ LVN 4" P.C. UNDER B16 - NOT AT RIDGE

	Min. Ratio	Item	Applied	Capacity	Governing Load Combination
PASS	0.7432	Soil Bearing	1.858 ksf	2.50 ksf	+D+S about Z-Z axis
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	0.2519	Z Flexure (+X)	13.509 k-ft/ft	53.618 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.2519	Z Flexure (-X)	13.509 k-ft/ft	53.618 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.2519	X Flexure (+Z)	13.509 k-ft/ft	53.618 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.2519	X Flexure (-Z)	13.509 k-ft/ft	53.618 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.1822	1-way Shear (+X)	15.486 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.1822	1-way Shear (-X)	15.486 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.1822	1-way Shear (+Z)	15.486 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.1822	1-way Shear (-Z)	15.486 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.3279	2-way Punching	55.750 psi	170.0 psi	+1.20D+0.50L+1.60S

Rotation Axis &		Xecc	Zecc	Actua	I Soil Bearing S	tress @ Locat	ion	Actual / Allow
Load Combination	Gross Allowable	1,1283	(in)	Bottom, -Z	Top, +Z	Left, -X	Right, +X	Ratio
X-X, D Only	2.50	n/a	0.0	0.1911	0.1911	n/a	n/a	0.076
X-X, +D+L	2.50	n/a	0.0	0.4029	0.4029	n/a	n/a	0.161
X-X, +D+Lr	2.50	n/a	0.0	0.2222	0.2222	n/a	n/a	0.089
X-X, +D+S	2.50	n/a	0.0	1.858	1.858	n/a	n/a	0.743
X-X. +D+0.750Lr+0.750L	2.50	n/a	0.0	0.3733	0.3733	n/a	n/a	0.149
X-X, +D+0,750L+0,750S	2.50	n/a	0.0	1.60	1.60	n/a	n/a	0.640
X-X, +0.60D	2.50	n/a	0.0	0.1147	0.1147	n/a	n/a	0.046
Z-Z, D Only	2.50	0.0	n/a	n/a	n/a	0.1911	0.1911	0.076
Z-Z. +D+L	2.50	0.0	n/a	n/a	n/a	0.4029	0.4029	0.161
Z-Z. +D+Lr	2.50	0.0	n/a	n/a	n/a	0.2222	0.2222	0.089
Z-Z. +D+S	2.50	0.0	n/a	n/a	n/a	1.858	1.858	0.743
Z-Z. +D+0.750Lr+0.750L	2.50	0.0	n/a	n/a	n/a	0.3733	0.3733	0.149
Z-Z. +D+0.750L+0.750S	2.50	0.0	n/a	n/a	n/a	1.60	1.60	0.640
Z-Z. +0.60D	2.50	0.0	n/a	n/a	n/a	0.1147	0.1147	0.046
Footing Flexure	,511.1	7.6	577770	20070				

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	1.204	+Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X. +1.40D	1.204	-Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X, +1,20D+0,50Lr+1,60L	2.627	+Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X, +1,20D+0,50Lr+1,60L	2.627	-Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X, +1,20D+1,60L+0,50S	6.307	+Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X. +1.20D+1.60L+0.50S	6.307	-Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X, +1.20D+1.60Lr+0.50L	1.733	+Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X. +1.20D+1.60Lr+0.50L	1.733	-Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X, +1,20D+1,60Lr	1.256	+Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X. +1.20D+1.60Lr	1.256	-Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X, +1,20D+0.50L+1.60S	13.509	+Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X, +1.20D+0.50L+1.60S	13.509	-Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X. +1.20D+1.60S	13.032	+Z	Bottom	0.5184	Min Temp %	0.5867	53,618	OK
X-X. +1.20D+1.60S	13.032	-Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X. +1.20D+0.50Lr+0.50L	1.579	+Z	Bottom	0.5184	Min Temp %	0.5867	53,618	OK
X-X. +1.20D+0.50Lr+0.50L	1.579	-7	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X. +1.20D+0.50L+0.50S	5.259	-Z +Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X. +1.20D+0.50L+0.50S	5.259	-Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X. +1.20D+0.50L+0.20S	3.009	+Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X, +1.20D+0.50L+0.20S	3.009	-Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X, +1.20D 10.50E 10.200 X-X, +0.90D	0.7740	+Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
X-X. +0.90D	0.7740	-Z	Bottom	0.5184	Min Temp %	0.5867	53.618	OK



VILLAGE NEST JJH **MULTI UNIT PROJECT**

Project ID:

2017-0610

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All units k

General Footing

Two-Way "Punching" Shear

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INTERIOR PAD FOOTING: QUARTZ LVN 4" P.C. UNDER B16 - NOT AT RIDGE Description:

Footing		

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
Z-Z. +1.40D	1.204	-X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z. +1.40D	1.204	+X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z, +1,20D+0,50Lr+1,60L	2.627	-X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z. +1.20D+0.50Lr+1.60L	2.627	+X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z. +1.20D+1.60L+0.50S	6.307	-X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z. +1.20D+1.60L+0.50S	6.307	+X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z. +1.20D+1.60Lr+0.50L	1.733	-X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z. +1.20D+1.60Lr+0.50L	1.733	+X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z. +1.20D+1.60Lr	1.256	-X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z, +1.20D+1.60Lr	1.256	+X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z. +1.20D+0.50L+1.60S	13.509	-X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z, +1,20D+0,50L+1,60S	13.509	+X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z. +1.20D+1.60S	13.032	-X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z, +1.20D+1.60S	13.032	+X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z. +1.20D+0.50Lr+0.50L	1.579	-X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z. +1.20D+0.50Lr+0.50L	1.579	+X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z, +1.20D+0.50L+0.50S	5.259	-X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z. +1.20D+0.50L+0.50S	5.259	+X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z, +1.20D+0.50L+0.20S	3.009	-X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z. +1.20D+0.50L+0.20S	3.009	+X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z, +0.90D	0.7740	-X	Bottom	0.5184	Min Temp %	0.5867	53.618	OK
Z-Z. +0.90D	0.7740	+X	Bottom	0.5184	Min Temp %	0.5867	53,618	OK
One Way Shear	3.1110			0.0101	THE LANGE OF	210001	59/715	2000

n Status
.02 0.00
.04 0.00
.09 0.00
.02 0.00
.02 0.00
.18 0.00
.18 0.00
.02 0.00
.07 0.00
.04 0.00
.01 0.00
).).).).

Load Combination	Vu	Phi*Vn	Vu / Phi*Vn	Status
+1.40D	4.97 psi	170.00psi	0.02923	OK
+1.20D+0.50Lr+1.60L	10.84 psi	170.00 psi	0.06377	OK
+1.20D+1.60L+0.50S	26.03 psi	170.00 psi	0.1531	OK
+1.20D+1.60Lr+0.50L	7.15 psi	170.00 psi	0.04206	OK
+1.20D+1.60Lr	5.18 psi	170.00 psi	0.03049	OK OK OK OK OK OK OK OK OK
+1.20D+0.50L+1.60S	55.75 psi	170.00 psi	0.3279	OK
+1.20D+1.60S	53.78 psi	170.00 psi	0.3164	OK
+1.20D+0.50Lr+0.50L	6.52 ps	170.00 psi	0.03832	OK
+1.20D+0.50L+0.50S	21.70 ps	170.00 psi	0.1277	OK
+1.20D+0.50L+0.20S	12.42 ps	170,00 psi	0.07304	OK
+0.90D	3.19 psi	170.00 psi	0.01879	OK



VILLAGE NEST

JJH MULTI UNIT PROJECT Project ID: 2017-0610

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2.50 ksf No

180.0 pcf

2.0 ft

ksf ft

ksf ft

0.450

General Footing

Lic. #: KW-06002886

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Licensee: RICHMOND HOFFMAYER

Description: INTERIOR PAD FOOTING: QUARTZ LVN 4" P.C. UNDER B16 - UNDER RIDGE

Code References

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

Load Combinations Used: ASCE 7-10

General Information

IV	Material Properties		=	-	2.50 ksi	Soil Design Values Allowable Soil Bearing	
	fc : Concrete 28 day strength				2.50 (1.50 (
	fy : Rebar Yield		=		0.0 ksi	Increase Bearing By Footing Weight	
	Ec	: Concrete	e Elastic Modulus	=		22.0 ksi	Soil Passive Resistance (for Sliding)
		oncrete De		=	14	15.0 pcf	Soil/Concrete Friction Coeff.
	φ	Values	Flexure	=	0.90		
	7		Shear	=	0.	850	Increases based on footing Depth
A	nal	vsis Set	ttings				Footing base depth below soil surface
			Bending Reinf.		=		Allow press. increase per foot of depth
			Temp Reinf.		=	0.00180	when footing base is below
	Mi	n. Overturi	ning Safety Factor		=	1.50 : 1	
	Mi	n. Sliding	Safety Factor		=	1.50 ; 1	Increases based on footing plan dimension
		dd Ftg Wt for Soil Pressure se ftg wt for stability, moments & shears			1	No	Allowable pressure increase per foot of depth
	Us				1	No	when you lead the sould the secretar these
	Add Pedestal Wt for Soil Pressure					No	when max. length or width is greater than
	Us	e Pedesta	l wt for stability, mom & shear		:	No	
	CARON	the comments and					

Dimensions

Width parallel to X-X Axis	=	6.250 ft
Length parallel to Z-Z Axis	= 1	6.250 ft
Footing Thickness	=	24.0 in

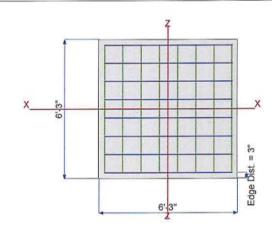


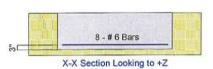
Reinforcing

Bars parallel to X-X Axis Number of Bars	=		8.0
Reinforcing Bar Size	=	#	6
Bars parallel to Z-Z Axis			
Number of Bars	=		8.0
Reinforcing Bar Size	=	#	6

Bandwidth Distribution Check (ACI 15.4.4.2)

Direction Requiring Closer Separation n/a
Bars required within zone n/a
Bars required on each side of zone n/a







Applied Loads

A CONTRACTOR OF THE PARTY OF TH		D	Lr	L	S	W	Е	Н
P : Column Load OB : Overburden	= -	9.0	1.0	9.0	80.0			k ksf
M-xx M-zz	=		4					k-ft k-ft
V-x	=							k
V-z	=							K



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

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General Footing

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Lic. #: KW-06002886

Description: INTERIOR PAD FOOTING: QUARTZ LVN 4" P.C. UNDER B16 - UNDER RIDGE

	Min. Ratio	Item	Applied	Capacity	Governing Load Combination
PASS	0.9112	Soil Bearing	2.278 ksf	2.50 ksf	+D+S about Z-Z axis
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	0.3475	Z Flexure (+X)	17.913 k-ft/ft	51.543 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.3475	Z Flexure (-X)	17.913 k-ft/ft	51.543 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.3475	X Flexure (+Z)	17.913 k-ft/ft	51.543 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.3475	X Flexure (-Z)	17.913 k-ft/ft	51.543 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.2319	1-way Shear (+X)	19.713 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.2319	1-way Shear (-X)	19.713 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.2319	1-way Shear (+Z)	19.713 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.2319	1-way Shear (-Z)	19.713 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.4439	2-way Punching	75.459 psi	170.0 psi	+1.20D+0.50L+1.60S
etailed Res	sults	S TREE OF WORKING ON THE	instantional Mass	STATE STATE	
il Bearing			WH Sec	7.767 70.761 50000 100 100	
ALL STATE OF THE STATE OF	144		Vana 7000	Actual Cail Dearing Ctro	on @ Location Aut

Soil Bearing		V	-		. O. II D			
Rotation Axis & Load Combination	Gross Allowable	Xecc (Zecc in)	Bottom, -Z	I Soil Bearing S Top, +Z	Left, -X	Right, +X	Actual / Allov Ratio
X-X, D Only	2.50	n/a	0.0	0.2304	0.2304	n/a	n/a	0.092
X-X. +D+L	2.50	n/a	0.0	0.4608	0.4608	n/a	n/a	0.184
X-X. +D+Lr	2.50	n/a	0.0	0.2560	0.2560	n/a	n/a	0.102
X-X. +D+S	2.50	n/a	0.0	2.278	2.278	n/a	n/a	0.911
X-X. +D+0.750Lr+0.750L	2.50	n/a	0.0	0.4224	0.4224	n/a	n/a	0.169
X-X, +D+0.750L+0.750S	2.50	n/a	0.0	1.939	1.939	n/a	n/a	0.776
X-X, +0.60D	2.50	n/a	0.0	0.1382	0.1382	n/a	n/a	0.055
Z-Z, D Only	2.50	0.0	n/a	n/a	n/a	0.2304	0.2304	0.092
Z-Z, +D+L	2.50	0.0	n/a	n/a	n/a	0.4608	0.4608	0.184
Z-Z. +D+Lr	2.50	0.0	n/a	n/a	n/a	0.2560	0.2560	0.102
Z-Z. +D+S	2.50	0.0	n/a	n/a	n/a	2.278	2.278	0.911
Z-Z. +D+0.750Lr+0.750L	2.50	0.0	n/a	n/a	n/a	0.4224	0.4224	0.169
Z-Z. +D+0.750L+0.750S	2.50	0.0	n/a	n/a	n/a	1.939	1.939	0.776
Z-Z. +0.60D	2.50	0.0	n/a	n/a	n/a	0.1382	0.1382	0.055
Footing Flexure		7.170	7.003%			NEW (NEW YORK)	184000000	200000

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	1.575	+Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1,40D	1.575	-Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X. +1.20D+0.50Lr+1.60L	3.213	+Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1.20D+0.50Lr+1.60L	3.213	-Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1,20D+1,60L+0,50S	8.150	+Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1,20D+1,60L+0,50S	8.150	-Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1,20D+1,60Lr+0,50L	2.113	+Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X. +1.20D+1.60Lr+0.50L	2.113	-Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1.20D+1.60Lr	1.550	+Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X. +1.20D+1.60Lr	1.550	-Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1,20D+0,50L+1,60S	17.913	+Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1,20D+0,50L+1,60S	17.913	-Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1,20D+1,60S	17.350	+Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1,20D+1,60S	17.350	-Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1.20D+0.50Lr+0.50L	1.975	+Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1,20D+0,50Lr+0,50L	1.975	-Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1,20D+0,50L+0,50S	6.913	+Z -Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1,20D+0,50L+0,50S	6.913	-Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1,20D+0,50L+0,20S	3.913	+Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +1,20D+0,50L+0,20S	3.913	-Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +0.90D	1.013	+Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK
X-X, +0.90D	1.013	-Z	Bottom	0.5184	Min Temp %	0.5632	51.543	OK



VILLAGE NEST JJH **MULTI UNIT PROJECT**

Project ID: 2017-0610

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General Footing

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Lic. #: KW-06002886 Description:

INTERIOR PAD FOOTING: QUARTZ LVN 4" P.C. UNDER B16 - UNDER RIDGE

Footing Flexure

Flexure Axis & Load Combination	Mu k-ft	Side	Tensio Surfac		'd	Gvrn. As in^2	Actua in^2		Phi* k-i		Status
Z-Z. +1.40D	1.575	-X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z, +1.40D	1.575	+X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z, +1.20D+0.50Lr+1.60L	3.213	+X -X +X -X +X -X +X -X +X -X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z, +1.20D+0.50Lr+1.60L	3.213	+X	Bottom		184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z. +1.20D+1.60L+0.50S	8.150	-X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z, +1.20D+1.60L+0.50S	8.150	+X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z, +1.20D+1.60Lr+0.50L	2.113	-X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z, +1.20D+1.60Lr+0.50L	2.113	+X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z. +1.20D+1.60Lr	1.550	-X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z, +1.20D+1.60Lr	1.550	+X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z, +1.20D+0.50L+1.60S	17.913	-X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z, +1.20D+0.50L+1.60S	17.913	+X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z, +1.20D+1.60S	17.350	-X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z, +1.20D+1.60S	17.350	+X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z, +1.20D+0.50Lr+0.50L	1.975	-X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z, +1.20D+0.50Lr+0.50L	1.975	+X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z, +1.20D+0.50L+0.50S	6.913	-X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z, +1.20D+0.50L+0.50S	6.913	+X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z. +1.20D+0.50L+0.20S	3.913	-X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z. +1.20D+0.50L+0.20S	3.913	+X	Bottom	0.5	184	Min Temp %	6 (.5632	5	1.543	OK
Z-Z. +0.90D	1.013	-X	Bottom		184	Min Temp %		.5632	5	1.543	OK
Z-Z, +0.90D	1.013	+X	Bottom	0.5	184	Min Temp %	6 0	.5632	5	1.543	OK
One Way Shear			U BOMO BEENIN	CONTRACT	1.044	NO11/200. 02/05/12/02. 33	A)(Y)(X)	10.000.000.000.00	333	A DAIRESCAL	2000-01
Load Combination	Vu @ -X	Vu@			Vu @		/u:Max	Phi Vr		u / Phi*Vn	Status
+1.40D	1.73 psi		1.73 psi	1.73 psi		1.73 psi	1.73 ps		35.00 psi	0.02	0.0
+1.20D+0.50Lr+1.60L	3.54 psi		3.54 psi	3.54 psi		3.54 psi	3.54 psi		isq 00.28	0.04	0.0
+1.20D+1.60L+0.50S	8.97 psi		8.97 psi	8.97 psi		8.97 psi	8.97 psi		35.00 psi	0.11	0.0
+1.20D+1.60Lr+0.50L	2.33 psi		2.33 psi	2.33 psi		2.33 psi	2.33 psi		35.00 psi	0.03	0.0
+1.20D+1.60Lr	1.71 psi		1.71 psi	1.71 psi		1.71 psi	1.71 psi		35.00 psi	0.02	0.0
+1.20D+0.50L+1.60S	19.71 psi		19.71 psi	19.71 psi		19.71 psi	19.71 psi	8	35.00 psi	0.23	0.0
+1.20D+1.60S	19.09 psi		19.09 psi	19.09 psi		19.09 psi	19.09 psi	8	35.00 psi	0.22	0.0
+1.20D+0.50Lr+0.50L	2.17 psi		2.17 psi	2.17 psi		2.17 psi	2.17 psi		35.00 psi	0.03	0.0
+1.20D+0.50L+0.50S	7.61 psi		7.61 psi	7.61 psi		7.61 psi	7.61 psi		35.00 psi	0.09	0.0
+1.20D+0.50L+0.20S	4.31 psi		4.31 psi	4.31 psi		4.31 psi	4.31 psi		35.00 psi	0.05	0.0
+0.90D	1.11 psi		1.11 psi	1.11 psi		1.11 psi	1.11 psi		35.00 psi	0.01	0.0
Two-Way "Punching" Shear	1.11 030		1.11.001	1.11 001		1.11 001	1.11 00		JO.00 DOI	All units	
Load Combination		Vu		Phi*V	n		Vu / Phi*Vr				Status
+1.40D		6.6	4 psi	170.	00 ps	i	0.03903				OK
+1.20D+0.50Lr+1.60L		13.5	isa 8		00 ps		0.07961				OK
+1.20D+1.60L+0.50S		34.3	3 psi	170.	00 ps	i	0.202				OK
+1.20D+1.60Lr+0.50L		8.9	0 psi		00 ps		0.05235				OK
+1.20D+1.60Lr		6.5	3 psi	170.	00 ps	i	0.03841				OK
+1.20D+0.50L+1.60S		75.4	6 psi	170.	00 ps	i	0.4439				OK
+1.20D+1.60S		73.0	9 psi	170.	00 ps	i	0.4299				OK
+1.20D+0.50Lr+0.50L		8.3	2 psi	170.	00ps	i	0.04894				OK
+1.20D+0.50L+0.50S		29.1	2 psi	170.	00 ps	i	0.1713				OK
1.20D 10.00L 10.000			- 10 mm								
+1.20D+0.50L+0.20S		16.4	8 psi 7 psi	170.	00ps 00ps	i	0.09695 0.02509				OK OK



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

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General Footing

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Description : MAX EXTER

MAX EXTERIOR PAD FOOTING: 6" HSS

Code References

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

Load Combinations Used: ASCE 7-10

General Information

Mate	erial Pro	perties			
		28 day strength	=	2	2.50 ksi
	: Rebar Yie		=	e	60.0 ksi
Éc	: Concrete	Elastic Modulus	=		22.0 ksi
Co	ncrete Der	nsity	=	14	15.0 pcf
φ	Values	Flexure	=	C	0.90
		Shear	=	0.	850
Anal	ysis Set	tings			
		Bending Reinf.		=	
Mi	n Allow %	Temp Reinf.		=	0.00180
Mi	n. Overturr	ning Safety Factor		=	1.50 :
Mi	n. Sliding S	Safety Factor		=	1.50
		or Soil Pressure		1	No
		stability, moments & shears		1	No
Ad	d Pedestal	Wt for Soil Pressure		:	No
Us	e Pedestal	wt for stability, mom & shear		¥	No
Dim	oncions	The second secon			

Soil Design Values		
Allowable Soil Bearing	=	2.50 ksf
Increase Bearing By Footing Weight	=	No
Soil Passive Resistance (for Sliding)	=	180.0 pcf
Soil/Concrete Friction Coeff.	=	0.450

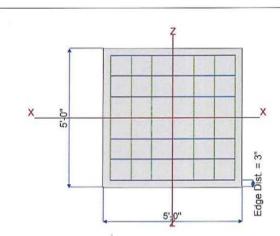
Increases based on footing Depth Footing base depth below soil surface = 2.0 ft Allow press. increase per foot of depth = ksf when footing base is below = ft

Increases based on footing plan dimension Allowable pressure increase per foot of depth when max. length or width is greater than ### ksf ### transfer increase per foot of depth ### calculations are allowed by the control of the c

Dimensions

Width parallel to X-X Axis	=	5.0 ft
Length parallel to Z-Z Axis	=	5.0 ft
Footing Thickness	=	18.0 in

Pedestal dimensions	1.	
px : parallel to X-X Axis	=	in
pz : parallel to Z-Z Axis	=	in
	=	W(2)
Height		in
Rebar Centerline to Edge of Co	ncrete	25x2x 333
at Bottom of footing	=	3.0 in

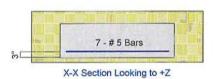


Reinforcing

Bars parallel to X-X Axis Number of Bars	=		7.0
Reinforcing Bar Size	=	#	5
Bars parallel to Z-Z Axis			
Number of Bars	=		7.0
Reinforcing Bar Size	=	#	5

Bandwidth Distribution Check (ACI 15.4.4.2)

Direction Requiring Closer Separation n/a
Bars required within zone n/a
Bars required on each side of zone n/a





Applied Loads

		D	Lr	L	S	W	E	Н
P : Column Load OB : Overburden	= =	3.807	4.015		49.381			k ksf
M-xx M-zz	=							k-ft k-ft
V-x	=							k
V-z	=							k



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

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General Footing

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Lic. #: KW-06002886

Description: MAX EXTERIOR PAD FOOTING: 6" HSS

	Min. Ratio	Item	Applied	Capacity	Governing Load Combination
PASS	0.8732	Soil Bearing	2.183 ksf	2.50 ksf	+D+S about Z-Z axis
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	0.3692	Z Flexure (+X)	10.447 k-ft/ft	28.298 k-ft/ft	+1.20D+1.60S
PASS	0.3692	Z Flexure (-X)	10.447 k-ft/ft	28.298 k-ft/ft	+1.20D+1.60S
PASS	0.3692	X Flexure (+Z)	10.447 k-ft/ft	28.298 k-ft/ft	+1.20D+1.60S
PASS	0.3692	X Flexure (-Z)	10.447 k-ft/ft	28.298 k-ft/ft	+1.20D+1.60S
PASS	0.2731	1-way Shear (+X)	23.216 psi	85.0 psi	+1.20D+1.60S
PASS	0.2731	1-way Shear (-X)	23.216 psi	85.0 psi	+1.20D+1.60S
PASS	0.2731	1-way Shear (+Z)	23.216 psi	85.0 psi	+1.20D+1.60S
PASS	0.2731	1-way Shear (-Z)	23.216 psi	85.0 psi	+1.20D+1.60S
PASS	0.5074	2-way Punching	86.261 psi	170.0 psi	+1.20D+1.60S
Detailed Res	ults				Martine Martine

Soil Bearing Rotation Axis &		Xecc	Zecc	Actua	Soil Bearing S	Stress @ Loca	tion	Actual / Allow
Load Combination	Gross Allowable	(i		Bottom, -Z	Top, +Z	Left, -X	Right, +X	Ratio
X-X, D Only	2.50	n/a	0.0	0.2073	0.2073	n/a	n/a	0.083
X-X, +D+Lr	2.50	n/a	0.0	0.3679	0.3679	n/a	n/a	0.147
X-X, +D+S	2.50	n/a	0.0	2.183	2.183	n/a	n/a	0.873
X-X, +D+0.750Lr	2.50	n/a	0.0	0.3277	0.3277	n/a	n/a	0.131
X-X, +D+0.750S	2.50	n/a	0.0	1.689	1.689	n/a	n/a	0.676
X-X, +0.60D	2.50	n/a	0.0	0.1244	0.1244	n/a	n/a	0.050
Z-Z, D Only	2.50	0.0	n/a	n/a	n/a	0.2073	0.2073	0.083
Z-Z. +D+Lr	2.50	0.0	n/a	n/a	n/a	0.3679	0.3679	0.147
Z-Z. +D+S	2.50	0.0	n/a	n/a	n/a	2.183	2.183	0.873
Z-Z. +D+0.750Lr	2.50	0.0	n/a	n/a	n/a	0.3277	0.3277	0.131
Z-Z. +D+0.750S	2.50	0.0	n/a	n/a	n/a	1.689	1.689	0.676
Z-Z, +0.60D	2.50	0.0	n/a	n/a	n/a	0.1244	0.1244	0.050
Footing Flexure								

rooting riexure								
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	0.6662	+Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1,40D	0.6662	-Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1,20D+0,50Lr	0.8220	+Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1.20D+0.50Lr	0.8220	-Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1.20D+0.50S	3.657	+Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1.20D+0.50S	3.657	-Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1,20D+1,60Lr	1.374	+Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1,20D+1,60Lr	1.374	-Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1,20D+1,60S	10.447	+Z -Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1.20D+1.60S	10.447	-Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1,20D+0,20S	1.806	+Z -Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +1.20D+0.20S	1.806	-Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +0.90D	0.4283	+Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
X-X, +0.90D	0.4283	-Z	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1,40D	0.6662	-X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1.40D	0.6662	+X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1.20D+0.50Lr	0.8220	-X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1.20D+0.50Lr	0.8220	+X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1,20D+0,50S	3.657	-X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1.20D+0.50S	3.657	+X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1.20D+1.60Lr	1.374	-X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1.20D+1.60Lr	1.374	+X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1.20D+1.60S	10.447	-X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Z-Z, +1.20D+1.60S	10.447	+X	Bottom	0.3888	Min Temp %	0.4340	28.298	OK
Company and the control of the contr								



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

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General Footing

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MAX EXTERIOR PAD FOOTING: 6" HSS Description:

Footin	g Fl	lexu	re
--------	------	------	----

Footing Flexure									
Flexure Axis & Load Combination	Mu k-ft	Side	Tensio Surface		Gvrn. A in^2	As Actual in^2	As	Phi*Mn k-ft	Status
Z-Z, +1.20D+0.20S Z-Z, +1.20D+0.20S Z-Z, +0.90D Z-Z, +0.90D One Way Shear	1.806 1.806 0.4283 0.4283	-X +X -X +X	Bottom Bottom Bottom Bottom	0.388 0.388 0.388 0.388	8 Min Temi 8 Min Temi	0 % 0 0 % 0	.4340 .4340 .4340 .4340	28.298 28.298 28.298 28.298	OK OK OK
Load Combination	Vu @ -X	Vu@	+X \	/u @ -Z Vu	ı @ +Z	Vu:Max	Phi Vn	Vu / Phi*Vn	Status
+1.40D +1.20D+0.50Lr +1.20D+0.50S +1.20D+1.60Lr +1.20D+1.60S +1.20D+0.20S +0.90D Two-Way "Punching" Shear	1.48 ps 1.83 ps 8.13 ps 3.05 ps 23.22 ps 4.01 ps 0.95 ps	i i i i	1.48 psi 1.83 psi 8.13 psi 3.05 psi 23.22 psi 4.01 psi 0.95 psi	1.48 psi 1.83 psi 8.13 psi 3.05 psi 23.22 psi 4.01 psi 0.95 psi	1.48 ps 1.83 ps 8.13 ps 3.05 ps 23.22 ps 4.01 ps 0.95 ps	i 1.83 psi i 8.13 psi i 3.05 psi i 23.22 psi i 4.01 psi i 0.95 psi	85.00 85.00 85.00 85.00 85.00 85.00	psi 0.02 psi 0.10 psi 0.04 psi 0.27 psi 0.08	2 0.00 0 0.00 4 0.00 7 0.00 5 0.00 1 0.00 its k
Load Combination		Vu		Phi*Vn		Vu / Phi*Vn			Status
+1.40D +1.20D+0.50Lr +1.20D+0.50S +1.20D+1.60Lr +1.20D+1.60S +1.20D+0.20S +0.90D		6.7 30.2 11.3 86.2 14.9	0 psi 9 psi 0 psi 5 psi 6 psi 1 psi 4 psi	170.00 170.00 170.00 170.00 170.00 170.00 170.00	psi psi psi psi psi	0.03236 0.03992 0.1776 0.06674 0.5074 0.0877 0.0208			OK OK OK OK OK OK



VILLAGE NEST JJH **MULTI UNIT PROJECT**

Project ID: 2017-0610

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Design OK

Steel Beam

Lic. #: KW-06002886

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Description:

FELDSPAR UVN LOWER FLOOR - B22

NOT APPLICABLE

CODE REFERENCES

Calculations per AISC 360-10, IBC 2015, ASCE 7-10

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method: Allowable Strength Design

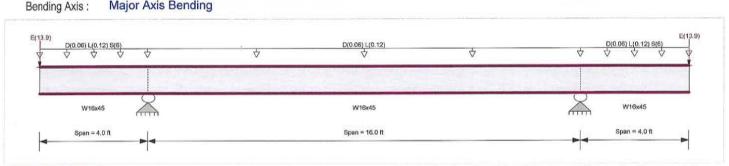
Beam is Fully Braced against lateral-torsional buckling Beam Bracing:

Major Axis Bending

Fy: Steel Yield: E: Modulus :

50.0 ksi

29,000.0 ksi



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading

Load for Span Number 1

Uniform Load: D = 0.020, L = 0.040, S = 2.0 ksf, Tributary Width = 3.0 ft, (FLOOR)

Point Load: E = 13.90 k @ 0.0 ft, (HOLD DOWN OVERSTRENGTH)

Load for Span Number 2

Uniform Load: D = 0.020, L = 0.040 ksf, Tributary Width = 3.0 ft, (FLOOR)

Load for Span Number 3

Uniform Load: D = 0.020, L = 0.040, S = 2.0 ksf, Tributary Width = 3.0 ft, (FLOOR)

Point Load: E = 13.90 k @ 4.0 ft, (HOLD DOWN OVERSTRENGTH)

DESIGN SUMMARY

Maximum Shear Stress Ratio = 0.235:1Maximum Bending Stress Ratio = 0.325:1 Section used for this span Section used for this span W16x45 W16x45 Va : Applied 26.078 k Ma: Applied 66.750 k-ft Vn/Omega: Allowable Mn / Omega: Allowable 111.090 k 205.339 k-ft Load Combination Load Combination +D+0.750L+0.750S+0.5250E +D+0.750L+0.750S+0.5250E 16.000 ft Location of maximum on span Location of maximum on span 16.000ft Span # where maximum occurs Span #2 Span # where maximum occurs Span # 2

Maximum Deflection

Max Downward Transient Deflection 0.211 in Ratio = 454>=360 -0.183 in Ratio = Max Upward Transient Deflection 1,047 >= 360 Max Downward Total Deflection 0.235 in Ratio = 409 >= 240. Max Upward Total Deflection -0.203 in Ratio = 946 >= 240.

Maximum Forces & Stresses for Load Combinations

Load Combina	ation		Max Stress	Ratios		S	ummary of M	oment Valu	ies			Summ	ary of Sh	ear Values
Segmen		Span#	М	V	Mmax +	Mmax -	Ma Max	Mnx	Mnx/Omega	Cb	Rm	Va Max	Vnx	Vnx/Omega
D Only														
Dsgn. L =	4.00 ft	1	0.004	0.008		-0.84	0.84	342.92	205.34	1.00	1.00	0.84	166.64	111.09
Dsgn. L =	16.00 ft	2	0.012	0.008	2.52	-0.84	2.52	342.92	205.34	1.00	1.00	0.84	166.64	111.09
Dsgn. L =	4.00 ft	3	0.004	0.004		-0.84	0.84	342.92	205.34	1.00	1.00	0.42	166.64	111.09
+D+L														
Dsgn. L =	4.00 ft	1	0.009	0.016		-1.80	1.80	342.92	205.34	1.00	1.00	1.80	166.64	111.09
	16.00 ft	2	0.026	0.016	5.40	-1.80	5.40	342.92	205.34	1.00	1.00	1.80	166.64	111.09
	4.00 ft	3	0.009	0.008		-1.80	1.80	342.92	205.34	1.00	1.00	0.90	166.64	111.09
+D+S	A10.707-100													
Dsgn. L =	4.00 ft	1	0.238	0.220		-48.84	48.84	342.92	205.34	1.00	1.00	24.42	166.64	111.09
	16.00 ft	2	0.238	0.220	-0.00	-48.84	48.84	342.92	205.34	1.00	1.00	24.42	166.64	111.09
	4.00 ft	3	0.238	0.220		-48.84	48.84	342.92	205.34	1.00	1.00	24.42	166.64	111.09
+D+0.750L														
Dsgn. L =	4.00 ft	1	0.008	0.014		-1.56	1.56	342.92	205.34	1.00	1.00	1.56	166.64	111.09
	16.00 ft	2	0.023	0.014	4.68	-1.56	4.68	342.92	205.34	1.00	1.00	1.56	166.64	111.09
Dsgn. L =	4.00 ft	3	0.008	0.007		-1.56	1.56	342.92	205.34	1.00	1.00	0.78	166.64	111.09
+D+0.750L+0.		-												
Dsgn. L =	4.00 ft	1	0.183	0.169		-37.56	37.56	342.92	205.34	1.00	1.00	18.78	166.64	111.09



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

Steel Beam

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Load Combination		Max Stres	ss Ratios		S	Summary of M	loment Valu	es			Summ	nary of Sh	ear Values
Segment Length	Span#	M	V	Mmax +	Mmax -	Ma Max	Mnx	Mnx/Omega	Cb	Rm	Va Max	Vnx	Vnx/Omega
Dsgn. L = 16.00 ft	2	0.183	0.169	-0.00	-37.56	37.56	342.92	205.34	1.00	1.00	18.78	166.64	111.0
Dsgn, L = 4.00 ft	3	0.183	0.169		-37.56	37.56	342.92	205.34	1.00	1.00	18.78	166.64	111.0
+D+0.70E													
Dsgn. L = 4.00 ft	1	0.194	0.091		-39.76	39.76	342.92	205.34		1.00	10.15	166.64	111.0
Dsgn. L = 16.00 ft	2	0.194	0.091	-0.00	-39.76	39.76	342.92	205.34		1.00	10.15	166.64	111.0
Dsgn. L = 4.00 ft	3	0.194	0.091		-39.76	39.76	342.92	205.34	1.00	1.00	10.15	166.64	111.0
+D-0.70E						ARC (200)	W100 E2V	125425252	2000	10/2/27	27.00	100.01	1880 3
Dsgn. L = 4.00 ft	1	0.185	0.088	38.08	122722	38.08	342.92	205.34		1.00	9.73	166.64	111.0
Dsgn. L = 16.00 ft	2	0.202	0.084	41.44	38.08	41.44	342.92	205.34		1.00	9.31	166.64	111.0
Dsgn. L = 4.00 ft	3	0.185	0.088	38.08		38.08	342.92	205.34	1.00	1.00	9.73	166.64	111.0
D+0.750L+0.750S+0.5250E	040							205.04	4.00	4.00	00.00	400.04	444.0
Dsgn. L = 4.00 ft	1	0.325	0.235		-66.75	66.75	342.92	205.34		1.00	26.08	166.64	111.0
Dsgn. L = 16.00 ft	2	0.325	0.235	-0.00	-66.75	66.75	342.92	205.34		1.00	26.08	166.64	111.0
Dsgn. L = 4.00 ft	3	0.325	0.235		-66.75	66.75	342.92	205.34	1.00	1.00	26.08	166.64	111.0
+D+0.750L+0.750S-0.5250E	490		0.400			0.07	0.40.00	005.04	4.00	4.00	44.40	400.04	444.0
Dsgn. L = 4.00 ft	1	0.041	0.103	5.67	-8.37	8.37	342.92	205.34		1.00	11.48	166.64	111.0
Dsgn, L = 16.00 ft	2	0.041	0.103	-0.00	-8.37	8.37	342.92	205.34		1.00	11.48	166.64 166.64	111.0 111.0
Dsgn. L = 4.00 ft	3	0.041	0.103	5.67	-8.37	8.37	342.92	205.34	1.00	1.00	11.48	100.04	111.0
+0.60D	4	0.000	0.005		0.50	0.50	342.92	205.34	1.00	1.00	0.50	166.64	111.0
Dsgn. L = 4.00 ft	1	0.002	0.005	1.51	-0.50	0.50 1.51	342.92	205.34		1.00	0.50	166.64	111.0
Dsgn. L = 16.00 ft Dsgn. L = 4.00 ft	2	0.007	0.005	1.51	-0.50	0.50		205.34		1.00	0.25	166.64	111.0
-0.60D+0.70E	3	0.002	0.002		-0.50	0.50	342.92	205.54	1.00	1.00	0.20	100.04	111.0
	1	0.192	0.090		-39.42	39.42	342.92	205.34	1.00	1.00	9.98	166.64	111.0
Dsgn. L = 4.00 ft Dsgn. L = 16.00 ft	2	0.192	0.090	-0.00	-39.42	39.42	342.92	205.34	(A10.00)	1.00	9.98	166.64	111.0
Dsgn. L = 4.00 ft	3	0.192	0.090	-0.00	-39.42	39.42	342.92	205.34		1.00	9.98	166.64	111.0
+0.60D-0.70E	3	0.132	0.030		-00.42	00.42	042.02	200.04	1.00	1.00	0.00	100.04	11110
Dsgn. L = 4.00 ft	1	0.187	0.088	38.42		38.42	342.92	205.34	1.00	1.00	9.73	166.64	111.09
Dsgn. L = 16.00 ft	2	0.197	0.085	40.43	38.42	40.43	342.92	205.34		1.00	9.48	166.64	111.09
Dsgn. L = 4.00 ft	3	0.187	0.088	38.42	00.12	38.42	342.92	205.34		1.00	9.73	166.64	111.09
Overall Maximum			0.000	******									
Load Combination	Donoc	Span	Max. "-" Defl	Location in	Span	Load Com	bination			Max	"+" Defl	Location	n in Span
+D+0.750L+0.750S+0.5250	Œ	1	0.2349	0.0							0.0000		0.000
		2	0.0000	0.0		+D+0.75	0L+0.750S	+0.5250E			-0.2030		8.000
+D+0.750L+0.750S+0.5250	Œ	3	0.2346	4.0	00						0.0000		8.000
Vertical Reactions					Support	notation : Far	left is #1			Values in	KIPS		
Load Combination		Support 1	Support 2	Support 3	-	port 4	IOIL IO II I						
		Oupport i	27.638	27.638	Oup	port 4							
Overall MAXimum													
Overall MINimum			0.756	0.756									
D Only			1.260	1.260									
+D+L			2.700	2.700									
+D+S			25.260	25.260									
+D+0.750L			2.340	2.340									
+D+0.750L+0.750S			20.340	20.340				O			,		
+D+0.70E			10.990	10.990			N	OT APP	LIC	ARLF	1		
+D+0.750L+0.750S+0.5250	Œ		27.638	27.638									
+0.60D			0.756	0.756									
+0.60D+0.70E			10.486	10.486									
L Only			1.440	1.440									
S Only			24.000	24.000									
Othy													



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

Printed: 11 JUL 2017, 3:46PM

Concrete Column

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Lic. #: KW-06002886

Description:

B22 SUPPORT

NOT APPLICABLE

Code References

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

Load Combinations Used: ASCE 7-10

General Information

fc: Concrete 28 day strength	=	2.50 ksi
E=	=	3,122.0 ksi
Density	=	150.0 pcf
β	=	0.850
fy - Main Rebar	=	60.0 ksi
É - Main Rebar	=	29,000.0 ksi
Allow. Reinforcing Limits		ASTM A615 Bars Used
Min. Reinf.	=	1.0 %
Max. Reinf.	$\dot{x}=\dot{x}$	8.0 %

6.0 ft Overall Column Height

Brace condition for deflection (buckling) along columns:

X-X (width) axis:

End Fixity

Unbraced Length for X-X Axis buckling = 6.0 ft, K = 1.0

Y-Y (depth) axis:

Unbraced Length for X-X Axis buckling = 6.0 ft, K = 1.0

Column Cross Section

Column Dimensions:

12.0in Square Column, Column Edge to

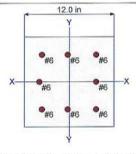
Rebar Edge Cover = 2.0in

Column Reinforcing:

4 - #6 bars @ corners,, 1 - #6 bars top &

bottom between corner bars, 1 - #6 bars left

& right between corner bars



Top & Bottom Pinned

Applied Loads

Entered loads are factored per load combinations specified by user.

Column self weight included: 900.0 lbs * Dead Load Factor

AXIAL LOADS . . .

MAX: Axial Load at 6.0 ft above base, D = 10.0, LR = 10.0, L = 5.0, S = 90.0 k

DESIGN SUMMARY

Load Combin	ation	+1.20D+0	.50L+1.60S	Maximum SERVICE Loa	d Reactions		
Location of m	ax.above base		5.960 ft	Top along Y-Y	0.0k	Bottom along Y-Y	0.0 k
Maximum Stre Ratio = (Pu^2	ess Ratio 2+Mu^2)^.5 / (PhiPn	^2+PhiMn^2)^.5	0.604:1	Top along X-X	0.0k	Bottom along X-X	0.0 k
Pu =	159.580 k	φ * Pn =	264.051 k				
Mu-x = Mu-y =	0.0 k-ft 12.766 k-ft	φ * Mn-x = φ * Mn-y =	0.0 k-ft 20.863 k-ft	Maximum SERVICE Loa Along Y-Y for load combinatio	O.O in at	770,500,00	
Mu Angle = Mu at Angle =	90.0 deg 12.766 k-ft	φMn at Angle =	21.116 k-ft	Along X-X for load combinatio	0.0in at n:	0.0ft above base	
Pnmax : Nomin Pnmin : Nomin Φ Pn, max : U		al Capacity Axial Capacity	509.72 k -211.20 k 265.054 k -137.280 k	General Section Informa ρ: % Reinforcing Reinforcing Area Concrete Area			Θ = 0.80

Governing Load Combination Results

Governing Factored	Mon	nent	Dist. from		Ax	Axial Load k			В	ending Anal	ysis k-ft		Utilization		
Load Combination	X-X	Y-Y	base	ft	Pu	φ *Pn	δ×	8x * Mux	δУ	δy * Muy	Alpha (deg)	δMu	φMn	Ratio	
+1.40D		M2,min	5.9	96	15.26	264.05			1,00	0 1.22	90.000	1.22	21.12	0.058	
+1.20D+0.50Lr+1.60L		M2,min	5.9	96	26.08	264.05			1.00	0 2.09	90.000	2.09	21.12	0.099	
+1.20D+1.60L+0.50S		M2,min	5.9	96	66.08	3 264.05			1.00	0 5.29	90.000	5.29	21.12	0.250	



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S Only

B22 SUPPORT Description:

Governing Load Combination	n Results]	NO]	C APPL	ICAB	BLE				
Governing Factored Load Combination	Moment X-X Y-Y	Dist. from base ft	k	Load * Pn	2 v	δx*Mux		nding Anal δy * Muy	ysis k-ft Alpha (deg	i) δ Mu	Util φ Mn	lization Ratio
1005 1001 0501	4000000			Company of the contract of	0 ^	Ov May					The second second	1000000000
+1.20D+1.60Lr+0.50L	M2,min		31.58	264.05			1.000		90.000	2.53		0.12
+1.20D+1.60Lr	M2,min		29.08	264.05			1.000		90.000	2.33		0.11
+1.20D+0.50L+1.60S	M2,min		159.58	264.05			1.000		90.000	12.77	21.12	0.60
+1.20D+1.60S	M2,min		157.08	264.05			1.000		90.000	12.57		0.59
+1.20D+0.50Lr+0.50L	M2,min	5.96	20.58	264.05			1.000		90.000	1.65	21.12	0.07
+1.20D+0.50L+0.50S	M2,min	5.96	60.58	264.05			1.000	4.85	90.000	4.85	21.12	0.22
+1.20D+0.50L+0.20S	M2,min	5.96	33.58	264.05			1.000	2.69	90.000	2.69	21.12	0.12
+0.90D	M2,min		9.81	264.05			1.000		90.000	0.78	21.12	0.03
Maximum Reactions	30.250.200							No	te: Only no	n-zero rea	ctions are	listed.
	X-X Axis	Reaction	k Y-	Y Axis Rea	ction	Axial Re	action	My - E	nd Moments	k-ft	Mx - End Mo	ments
Load Combination	@ Base	@ Тор			Тор	@ B	ase	@ Ba	se @T	op (Base (@ Тор
D Only							0.900					
+D+L							5.900					
+D+Lr							0.900					
+D+S							0.900					
+D+0.750Lr+0.750L							2.150					
+D+0.750L+0.750S							2.150					
+0.60D							6.540					
Lr Only							0.000					
L Only							5.000					
S Only						90	0.000					U-A-A
Maximum Moment Reactions											ctions are	listed.
Load Combination		Mome @ Base	nt About 2	X-X Axis @ Top					oment About Base	@ Top		
D Only					k-ft						k-ft	
+D+L					k-ft						k-ft	
+D+Lr					k-ft						k-ft	
+D+S					k-ft						k-ft	
+D+0.750Lr+0.750L					k-ft						k-ft	
+D+0.750L+0.750S					k-ft						k-ft k-ft	
+0.60D					k-ft k-ft						k-ft	
Lr Only L Only					k-ft						k-ft	
S Only					k-ft						k-ft	
Maximum Deflections for Loa	d Combination	S										
Load Combination		Deflection	Distan	се		Max. Y-Y De	flection	Dista	nce			
D Only	0.000		0.000			0.00			000 ft			
+D+L	0.000		0.000			0.00			000 ft			
+D+Lr	0.000		0.000			0.00			000 ft			
+D+S	0.000		0.000			0.00			000 ft			
+D+0.750Lr+0.750L	0.000		0.000			0.000			000 ft			
+D+0.750L+0.750S	0.000		0.000			0.000			000 ft			
+0.60D	0.000		0.000			0.000			000 ft			
Lr Only	0.000	W. 100	0.000			0.000			000 ft			
L Only	0.000		0.000			0.000			000 ft			
0.0-1-	0.000	0 14	0.000	- 4		0.000) in	0.0	100 ft			

0.0000

in

0.000

0.000

in

0.000

ft



VILLAGE NEST **MULTI UNIT PROJECT**

Project ID: 2017-0610

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Concrete Column

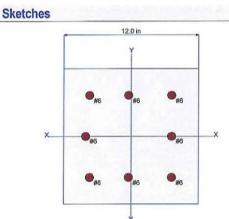
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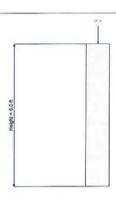
Lic. #: KW-06002886 Description:

B22 SUPPORT

NOT APPLICABLE

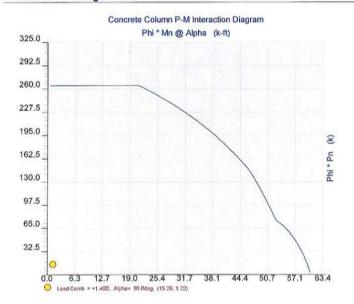


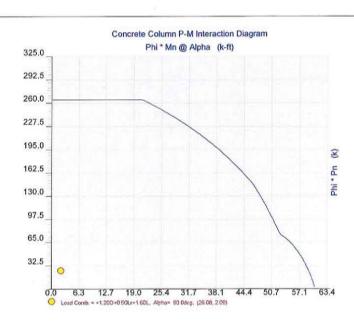




Looking along Y-Y Axis

Interaction Diagrams







VILLAGE NEST JJH MULTI UNIT PROJECT

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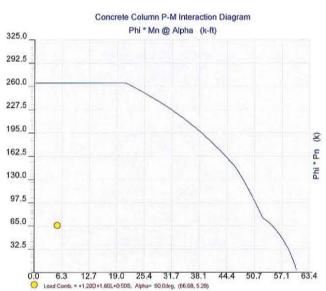
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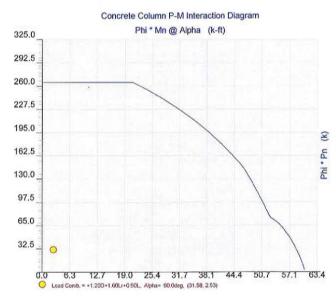
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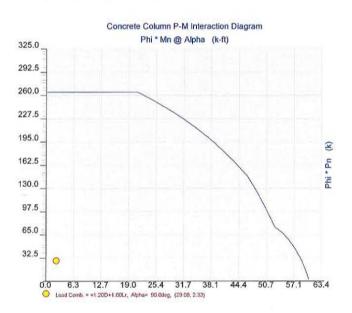
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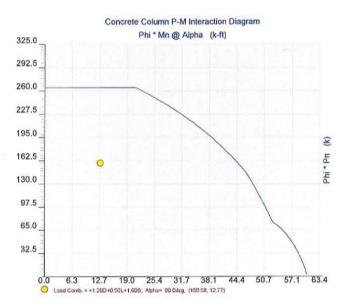
B22 SUPPORT Description:

NOT APPLICABLE











VILLAGE NEST JJH MULTI UNIT PROJECT

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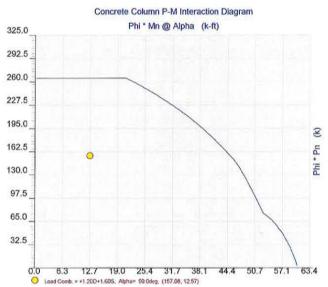
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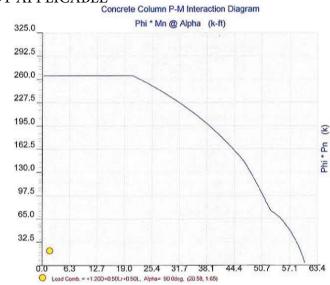
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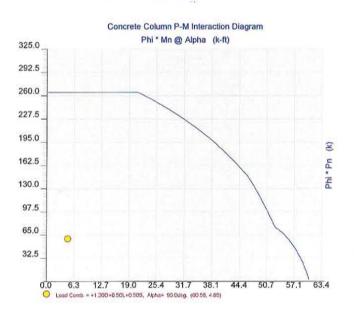
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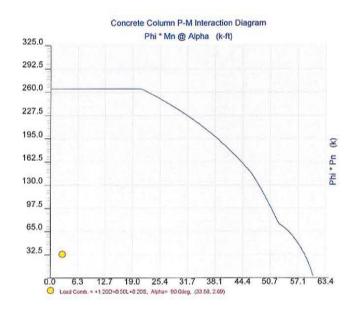
Description: B22 SUPPORT













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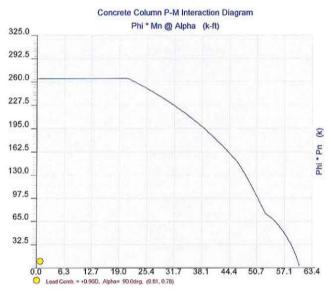
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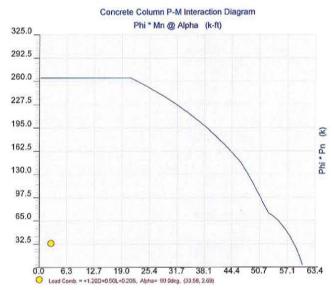
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Description:

B22 SUPPORT

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VILLAGE NEST JJH MULTI UNIT PROJECT

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General Footing

Lic. #: KW-06002886

MAX PAD: FELDSPAR UVN

NOT APPLICABLE

Code References

Description:

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

Load Combinations Used: ASCE 7-10

General Information

Mate	erial Pro	perties			
fc	: Concrete	28 day strength	=	2	2.50 ksi
	: Rebar Yie		=	6	60.0 ksi
Éc	: Concrete	Elastic Modulus	=		22.0 ksi
Co	ncrete Der	nsity	=	14	45.0 pcf
φ	Values	Flexure	=	(0.90
*		Shear	=	0.	850
Anal	ysis Set	tings			
Mi	n Steel % I	Bending Reinf.		=	
		Temp Reinf.		=	0.00180
		ning Safety Factor		=	1.50 :
		Safety Factor		=	1.50 :
		or Soil Pressure			No
		stability, moments & shears			No
		Wt for Soil Pressure		9	No
Us	e Pedesta	wt for stability, mom & shear		- 1	No
Part Service					

Soil Design Values		
Allowable Soil Bearing	=	2.50 ksf
Increase Bearing By Footing Weight	=	No
Soil Passive Resistance (for Sliding)	=	180.0 pcf
Soil/Concrete Friction Coeff.	=	0.450

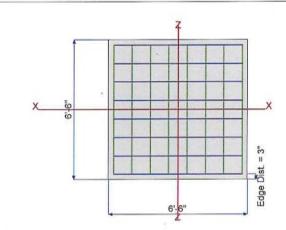
Increases based on footing Depth Footing base depth below soil surface = 2.0 ft Allow press. increase per foot of depth = 0.0 ksf when footing base is below = 0.0 ft

Increases based on footing plan dimension Allowable pressure increase per foot of depth when max. length or width is greater than = 0.0 ksf

Dimensions

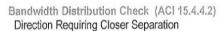
Width parallel to X-X Axis	=	6.50 ft
Length parallel to Z-Z Axis	=	6.50 ft
Footing Thickness	=	24.0 in



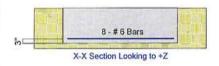


Reinforcing

Bars parallel to X-X Axis	=		8
Number of Bars Reinforcing Bar Size	=	#	6
Bars parallel to Z-Z Axis			12
Number of Bars	=		8
Reinforcing Bar Size	=	#	6



Direction Requiring Closer Separation n/a
Bars required within zone n/a
Bars required on each side of zone n/a





Applied Loads

		D	Lr	L	S	W	E	н
P : Column Load OB : Overburden	-	10.0	10.0	5.0	90.0	0.0	0.0	0.0 k 0.0 ksf
M-xx M-zz	=	0.0	0.0	0.0	0.0	0.0	0.0	0.0 k-ft 0.0 k-ft
V-x V-7	=	0.0	0.0	0.0	0.0	0.0	0.0	0.0 k 0.0 k



VILLAGE NEST JJH MULTI UNIT PROJECT

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General Footing

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Description : MAX PA MAX PAD: FELDSPAR UVN

	Min. Ratio	Item	Applied	Capacity	Governing Load Combination
PASS	0.9688	Soil Bearing	2.422 ksf	2.50 ksf	+D+S about Z-Z axis
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	0.3993	Z Flexure (+X)	19.813 k-ft/ft	49.623 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.3993	Z Flexure (-X)	19.813 k-ft/ft	49.623 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.3993	X Flexure (+Z)	19.813 k-ft/ft	49.623 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.3993	X Flexure (-Z)	19.813 k-ft/ft	49.623 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.2656	1-way Shear (+X)	22.578 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.2656	1-way Shear (-X)	22.578 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.2656	1-way Shear (+Z)	22.578 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.2656	1-way Shear (-Z)	22.578 psi	85.0 psi	+1.20D+0.50L+1.60S
PASS	0.4910	2-way Punching	83.463 psi	170.0 psi	+1.20D+0.50L+1.60S

Rotation Axis &		Xecc	Zecc	Actua	Soil Bearing S	tress @ Locat	ion	Actual / Allov
Load Combination	Gross Allowable	TOTAL STA	(in)	Bottom, -Z	Top, +Z	Left, -X	Right, +X	Ratio
X-X, D Only	2.50	n/a	0.0	0.2917	0.2917	n/a	n/a	0.117
X-X. +D+L	2.50	n/a	0.0	0.410	0.410	n/a	n/a	0.164
X-X, +D+Lr	2.50	n/a	0.0	0.5284	0.5284	n/a	n/a	0.211
X-X, +D+S	2.50	n/a	0.0	2.422	2.422	n/a	n/a	0.969
X-X, +D+0.750Lr+0.750L	2.50	n/a	0.0	0.5580	0.5580	n/a	n/a	0.223
X-X, +D+0.750L+0.750S	2.50	n/a	0.0	1.978	1.978	n/a	n/a	0.791
X-X, +0.60D	2.50	n/a	0.0	0.1750	0.1750	n/a	n/a	0.070
Z-Z, D Only	2.50	0.0	n/a	n/a	n/a	0.2917	0.2917	0.117
Z-Z. +D+L	2.50	0.0	n/a	n/a	n/a	0.410	0.410	0.164
Z-Z, +D+Lr	2.50	0.0	n/a	n/a	n/a	0.5284	0.5284	0.211
Z-Z, +D+S	2.50	0.0	n/a	n/a	n/a	2.422	2.422	0.969
Z-Z, +D+0.750Lr+0.750L	2.50	0.0	n/a	n/a	n/a	0.5580	0.5580	0.223
Z-Z, +D+0.750L+0.750S	2.50	0.0	n/a	n/a	n/a	1.978	1.978	0.791
Z-Z, +0.60D	2.50	0.0	n/a	n/a	n/a	0.1750	0.1750	0.070
Footing Flexure								

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	1.750	+Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.40D	1.750	-Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1,20D+0.50Lr+1.60L	3.125	+Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.20D+0.50Lr+1.60L	3.125	-Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.20D+1.60L+0.50S	8.125	+Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.20D+1.60L+0.50S	8.125	-Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.20D+1.60Lr+0.50L	3.813	+Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.20D+1.60Lr+0.50L	3.813	-Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.20D+1.60Lr	3.50	+Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X. +1.20D+1.60Lr	3.50	-Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.20D+0.50L+1.60S	19.813	+Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X. +1.20D+0.50L+1.60S	19.813	-Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.20D+1.60S	19.50	+Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.20D+1.60S	19.50	-Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.20D+0.50Lr+0.50L	2.438	+Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.20D+0.50Lr+0.50L	2.438	-Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.20D+0.50L+0.50S	7.438	+Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.20D+0.50L+0.50S	7.438	-Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.20D+0.50L+0.20S	4.063	+Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +1.20D+0.50L+0.20S	4.063	-Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +0.90D	1.125	+Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK
X-X, +0.90D	1.125	-Z	Bottom	0.5184	Min Temp %	0.5415	49.623	OK



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

General Footing

Lic. # : KW-06002886

Printed: 11 JUL 2017. 3:49PM File = d:\text{AENERCALC Projects}\text{2017-0610.ec6} ENERCALC, INC. 1983-2017, Build:\text{10.17.6.29, Ver:10.17.6.29}

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MAX PAD: FELDSPAR UVN Description:

NOT APPLICABLE

Status	Phi*Mn k-ft	Actual As in^2	Gvrn. As in^2	As Reg'd in^2	Tension Surface	Side	Mu k-ft	Flexure Axis & Load Combination
3 OK	49.62	0.5415	Min Temp %	0.5184	Bottom		1.750	Z-Z, +1.40D
3 OK	49.62	0.5415	Min Temp %	0.5184	Bottom	***********	1.750	Z-Z, +1.40D
3 OK	49.62	0.5415	Min Temp %	0.5184	Bottom	T\$	3.125	Z-Z, +1.20D+0.50Lr+1.60L
3 OK	49.62	0.5415	Min Temp %	0.5184	Bottom	<u>-</u> \$	3.125	Z-Z. +1.20D+0.50Lr+1.60L
3 OK	49.62	0.5415	Min Temp %	0.5184	Bottom	-X	8.125	Z-Z, +1.20D+1.60L+0.50S
3 OK	49.62	0.5415	Min Temp %	0.5184	Bottom	+X	8.125	Z-Z. +1.20D+1.60L+0.50S
3 OK	49.62	0.5415	Min Temp %	0.5184	Bottom	-X	3.813	Z-Z, +1.20D+1.60Lr+0.50L
S OK	49.62	0.5415	Min Temp %	0.5184	Bottom	+X	3.813	Z-Z, +1.20D+1.60Lr+0.50L
3 OK	49.62	0.5415	Min Temp %	0.5184	Bottom	-X	3.50	Z-Z, +1.20D+1.60Lr
OK OK	49.62	0.5415	Min Temp %	0.5184	Bottom	+X	3.50	Z-Z. +1.20D+1.60Lr
OK OK	49.62	0.5415	Min Temp %	0.5184	Bottom	-X	19.813	Z-Z, +1.20D+0.50L+1.60S
	49.623	0.5415	Min Temp %	0.5184	Bottom	+X	19.813	Z-Z. +1.20D+0.50L+1.60S
3 OK	49.623	0.5415	Min Temp %	0.5184	Bottom	-X	19.50	Z-Z, +1.20D+1.60S
3 OK	49.623	0.5415	Min Temp %	0.5184	Bottom	+X	19.50	Z-Z, +1.20D+1.60S
OK OK	49.623	0.5415	Min Temp %	0.5184	Bottom	-X	2.438	Z-Z, +1.20D+0.50Lr+0.50L
OK OK	49.623	0.5415	Min Temp %	0.5184	Bottom	+X	2.438 2.438	Z-Z, +1.20D+0.50Lr+0.50L
OK OK	49.623	0.5415	Min Temp %	0.5184	Bottom	-X	7.438	Z-Z, +1.20D+0.50L+0.50S
3 OK	49.623	0.5415	Min Temp %	0.5184	Bottom	+X	7.438	Z-Z, +1.20D+0.50L+0.50S
OK OK	49.623	0.5415	Min Temp %	0.5184	Bottom	-X	4.063	Z-Z, +1.20D+0.50L+0.20S
OK OK	49.623	0.5415	Min Temp %	0.5184	Bottom	+X	4.063	Z-Z, +1.20D+0.50L+0.20S
OK OK	49.623	0.5415	Min Temp %	0.5184	Bottom	-X	1.125	Z-Z, +0.90D
	49.623	0.5415	Min Temp %	0.5184	Bottom	+X	1.125	Z-Z. +0.90D
7 3548.6	5-207-2000			52456.51.50 				One Way Shear
hi*Vn Status	Vu / P	Max Phi Vn	+Z Vu:	@ -Z Vu @	X Vu	Vu @ +	Vu @ -X	Load Combination
0.02 0.0	35.00 psi	1.99 psi 8	1.99 psi	1.99 psi	1.99 psi		1.99 psi	+1.40D
0.04 0.0	85.00 psi	3.56 psi 8	3.56 psi	3.56 psi	3.56 psi		3.56 psi	+1.20D+0.50Lr+1.60L
0.11 0.0	35.00 psi		9.26 psi	9.26 psi	9.26 psi		9.26 psi	+1.20D+1.60L+0.50S
0.05	35.00 psi	4.35 psi 8	4.35 psi	4.35 psi	4.35 psi		4.35 psi	+1.20D+1.60Lr+0.50L
0.05 0.0	35.00 psi	3.99 psi 8	3.99 psi	3.99 psi	3.99 psi		3.99 psi	+1.20D+1.60Lr
0.27 0.0	35.00 psi	22.58 psi 8	22.58 psi	22.58 psi	22.58 psi		22.58 psi	+1.20D+0.50L+1.60S
0.26 0.0	isa 00.8		22.22 psi	22.22 psi	22.22 psi		22.22 psi	+1.20D+1.60S
0.03 0.0	85.00 psi		2.78 psi	2.78 psi	2.78 psi		2.78 psi	+1.20D+0.50Lr+0.50L
0.10 0.0	isa 00.8		8.48 psi	8.48 psi	8.48 psi			
0.05 0.0	15.00 psi 15.00 psi	4.63 psi 8					8.48 psi	+1.20D+0.50L+0.50S
			4.63 psi	4.63 psi	4.63 psi		4.63 psi	+1.20D+0.50L+0.20S
0.02 0.0	isa 00.8	1.28 psi 8	1.28 psi	1.28 psi	1.28 psi		1.28 psi	+0.90D
All units k				10,200,00				Two-Way "Punching" Shear
Status		Vu / Phi*Vn		Phi*Vn	v =w	Vu		Load Combination
OK		0.04337		170.00 ps		7.37		+1.40D
OK		0.07744		170.00 ps		13.17		+1.20D+0.50Lr+1.60L
OK		0.2013		170.00 ps		34.23		+1.20D+1.60L+0.50S
OK		0.09448		170.00ps	psi	16.06		+1.20D+1.60Lr+0.50L
OK		0.08673		170.00 ps		14.74		+1.20D+1.60Lr
OK		0.491		170.00ps		83.46		+1.20D+0.50L+1.60S
OK		0.4832		170.00ps	psi	82.15		+1.20D+1.60S
OK		0.0604			psi	10.27		
OK		0.1843						
OK OK								+1.20D+0.50L+0.20S
		0.4832 0.0604 0.1843 0.1007 0.02788		170.00ps 170.00ps 170.00ps 170.00ps 170.00ps 170.00ps	psi psi psi psi	82.15 10.27 31.33 17.11 4.74		+1.20D+0.50L+1.50S +1.20D+1.60S +1.20D+0.50L+0.50L +1.20D+0.50L+0.50S +1.20D+0.50L+0.20S +0.90D



VILLAGE NEST JJH **MULTI UNIT PROJECT**

Project ID: 2017-0610

Printed: 21 JUL 2017, 10:01AM

Concrete Beam

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Lic. #: KW-06002886

Description: FELDSPAR UVN LOWER FLOOR - B22 - CONCRETE

REPLAKE

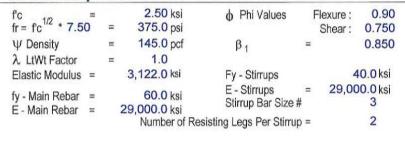
CODE REFERENCES

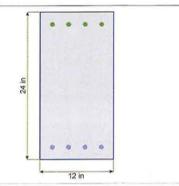
Calculations per ACI 318-14, IBC 2015, ASCE 7-10

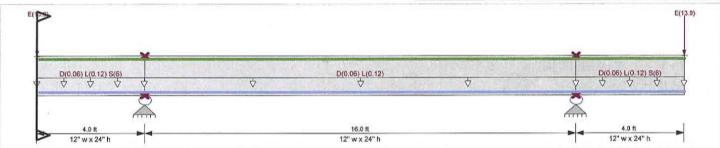
Load Combination Set: ASCE 7-10

NOT APPLICABLE

Material Properties







Cross Section & Reinforcing Details

Rectangular Section, Width = 12.0 in, Height = 24.0 in

Span #1 Reinforcing....

4-#6 at 2.0 in from Bottom, from 0.0 to 4.0 ft in this span

Span #2 Reinforcing....

4-#6 at 2.0 in from Bottom, from 0.0 to 16.0 ft in this span

Span #3 Reinforcing....

4-#6 at 2.0 in from Bottom, from 0.0 to 4.0 ft in this span

4-#6 at 2.0 in from Top, from 0.0 to 4.0 ft in this span

4-#6 at 2.0 in from Top, from 0.0 to 16.0 ft in this span

4-#6 at 2.0 in from Top, from 0.0 to 4.0 ft in this span

Service loads entered. Load Factors will be applied for calculations.

Applied Loads

Beam self weight calculated and added to loads

Load for Span Number 1

Uniform Load: D = 0.020, L = 0.040, S = 2.0 ksf, Tributary Width = 3.0 ft, (FLOOR)

Point Load: E = 13.90 k @ 0.0 ft, (HOLD DOWN OVERSTRENGTH)

Load for Span Number 2

Uniform Load: D = 0.020, L = 0.040 ksf, Tributary Width = 3.0 ft, (FLOOR)

Load for Span Number 3

Uniform Load: D = 0.020, L = 0.040, S = 2.0 ksf, Tributary Width = 3.0 ft, (FLOOR)

Point Load: E = 13.90 k @ 4.0 ft, (HOLD DOWN OVERSTRENGTH)

DESIGN SUMMARY

Maximum Bending Stress Ratio = 0.498:1 Section used for this span **Typical Section** Mu: Applied -80.640 k-ft

Mn * Phi : Allowable

Location of maximum on span Span # where maximum occurs Maximum Deflection

Max Downward Transient Deflection Max Upward Transient Deflection Max Downward Total Deflection

Max Upward Total Deflection

Design OK

0.163 in Ratio = 590>=36 -0.145 in Ratio = 1325>=36 0.184 in Ratio = 520>=18 -0.152 in Ratio = 1267>=18

Vertical Pasetions

Support notation: Far left is #1

vertical ineactions					
Load Combination	Support 1	Support 2	Support 3	Support 4	
Overall MAXimum		30.578	30.577		
Overall MINimum		1.440	1.440		
D Only		4.200	4.200		*

162.057 k-ft

0.000 ft

Span #2



VILLAGE NEST

JJH **MULTI UNIT PROJECT** Project ID: 2017-0610

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Concrete Beam

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Lic. # : KW-06002886 Description:

FELDSPAR UVN LOWER FLOOR - B22 - CONCRETE

NOT APPLICABLE

Vertical Reactions			Support n	notation : Far left is #1
Load Combination	Support 1	Support 2	Support 3	Support 4
+D+L		5.640	5.640	
+D+S		28.200	28.200	
+D+0.750L		5.280	5.280	
+D+0.750L+0.750S		23.280	23.280	
+D+0.70E		13.930	13.930	
+D+0.750L+0.750S+0.5250E		30.578	30.577	
+0.60D		2.520	2.520	
+0.60D+0.70E		12.250	12.250	
L Only		1.440	1.440	
S Only		24.000	24.000	
E Only		13.900	13.900	

Shear Stirrup Requirements

Between 0.00 to 0.00 ft, Vu < PhiVc/2, Req'd Vs = Not Reqd 9.6.3.1, use stirrups spaced at 0.000 in Between 0.03 to 2.19 ft, PhiVc/2 < Vu <= PhiVc, Req'd Vs = Min 9.6.3.3, use stirrups spaced at 11.000 in Between 2.21 to 3.97 ft, PhiVc < Vu, Req'd Vs = 18.196, use stirrups spaced at 7.000 in Between 4.00 to 19.89 ft, Vu < PhiVc/2, Req'd Vs = Not Reqd 9.6.3.1, use stirrups spaced at 0.000 in Between 20.00 to 21.79 ft, PhiVc < Vu, Req'd Vs = 0.2004, use stirrups spaced at 7.000 in Between 21.81 to 23.97 ft, PhiVc/2 < Vu <= PhiVc, Req'd Vs = Min 9.6.3.3, use stirrups spaced at 11.000 in

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+0.750L+0.750S+0.5250E	1	0.1841	0.000	+D+0.750L+0.750S+0.5250E	-0.0124	4.320
+D+0.750L+0.750S+0.5250E	2	0.0033	16.080	+D+0.750L+0.750S+0.5250E	-0.1515	8.000
+D+0.750L+0.750S+0.5250E	3	0.1841	4.000		0.0000	8.000



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID:

2017-0610

Printed: 21 JUL 2017, 9:59AM

Steel Base Plate Lic. #: KW-06002886

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Description:

P.C. BASE PLATE

BASE

PLATES

Code References

Calculations per AISC Design Guide # 1, IBC 2015, CBC 2016, ASCE 7-10

Load Combination Set: ASCE 7-10

General Information

Material Properties

Concrete Support f'c

AISC Design Method Load Resistance Factor Design

36.0 ksi 2.50 ksi

Assumed Bearing Area: Bearing Area = P / Fp

Φ c : LRFD Resistance Factor

0.60

Allowable Bearing Fp per J8

4.017 ksi

Column & Plate

Steel Plate Fy

Column Properties

Steel Section: Pipe4STD

Depth 4.5 in 4.5 in Width 0.221 in Flange Thickness

Area 1XX lyy

2.96 in^2 in^4 in^4

in

Plate Dimensions

Web Thickness

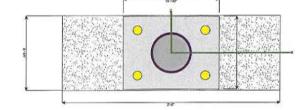
8.0 in N: Length B: Width 10.50 in 0.750 in Thickness

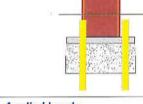
Column assumed welded to base plate.

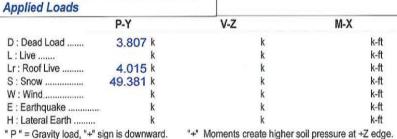


8.250 in Width along "X" Length along "Z' 24.0 in

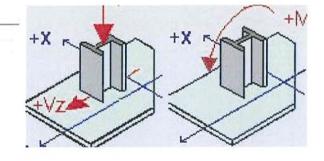








- "+" Moments create higher soil pressure at +Z edge.
 - "+" Shears push plate towards +Z edge.



GOVERNING DESIGN LOAD CASE SUMMARY

Plate Design Summary Design Method

Load Resistance Factor Design

Governing Load Combination Governing Load Case Type Design Plate Size

Axial Load Only 8" x 10 -1/2" x 0 -3/4"

+1.20D+1.60S

Pu : Axial Mu: Moment 83.578 k 0.000 k-ft Mu : Max. Moment fb: Max. Bending Stress

Fb: Allowable: Fy * Phi

Bending Stress Ratio

fu: Max. Plate Bearing Stress

Fp: Allowable: min(0.85*fc*sqrt(A2/A1), 1.7* fc)*Phi Bearing Stress Ratio

0.173 k-in 1.228 ksi

32.400 ksi

0.038

Bending Stress OK

1.706 ksi 1.722 ksi

0.991

Bearing Stress OK



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

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Steel Base Plate

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Description:

HSS BASE PLATE ON STEM

Code References

Calculations per AISC Design Guide # 1, IBC 2015, CBC 2016, ASCE 7-10

Load Combination Set: ASCE 7-10

General Information

Material Properties

AISC Design Method

Load Resistance Factor Design

36.0 ksi

Concrete Support f'c 2.50 ksi

Assumed Bearing Area : Bearing Area = P / Fp

Φ c : LRFD Resistance Factor

0.60

Allowable Bearing Fp per J8

3.814 ksi

Column & Plate

Flange Thickness

Web Thickness

Steel Plate Fv

Column Properties

Steel Section: HSS6x6x3/8

Depth

Width

6 in 6 in Area lxx lyy

7.58 in^2 in^4 in^4

0.349 in

Plate Dimensions

N: Length B: Width

8.0 in 16.0 in

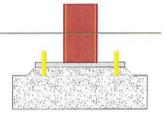
0.8750 in

Thickness Column assumed welded to base plate.

Support Dimensions

Width along "X" Length along "Z" 8.250 in 24.0 in





Applied Loads

	P-Y		V-Z	M-X
D : Dead Load	9.050	k	k	k-ft
L : Live	7.440	k	k	k-ft
Lr: Roof Live	4.028	k	k	k-ft
S : Snow	90.670	k	k	k-ft
W : Wind		k	k	k-ft
E : Earthquake		k	k	k-ft
H : Lateral Earth		k	k	k-ft
" D " - Cravity load " + " a	an ic down	uard	"+" Momente greate higher soil	proceure at ±7 adae

+" Moments create higher soil pressure at +Z edge. " P " = Gravity load, "+" sign is downward.

"+" Shears push plate towards +Z edge.

GOVERNING DESIGN LOAD CASE SUMMARY

Plate Design Summary

Design Method

Load Resistance Factor Design Governing Load Combination +1.20D+0.50L+1.60S

Governing Load Case Type Axial Load Only

Design Plate Size Pu : Axial Mu: Moment

8" x 1'-4" x 0 -7/8"

159.652 k 0.000 k-ft Mu : Max. Moment fb : Max. Bending Stress

Fb: Allowable: Fy * Phi

Bending Stress Ratio

fu : Max. Plate Bearing Stress

Fp: Allowable:

min(0.85*fc*sqrt(A2/A1), 1.7* fc)*Phi Bearing Stress Ratio

0.489 Bending Stress OK

> 1.385 ksi 1.386 ksi

3.033 k-in 15.846 ksi

32,400 ksi

1.000

Bearing Stress OK



VILLAGE NEST JJH **MULTI UNIT PROJECT**

Project ID: 2017-0610

Concrete Column

Lic. #: KW-06002886

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HSS SUPPORT - INTEGRAL w/ WALL Description:

Code References

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

Load Combinations Used: ASCE 7-10

General Information

f'c : Concrete 28 day strength	=	2.50 ksi
E=	\equiv	3,122.0 ksi
Density	=	150.0 pcf
β	=	0.850
fy - Main Rebar	=	60.0 ksi
É - Main Rebar	=	29,000.0 ksi
Allow. Reinforcing Limits	3	ASTM A615 Bars Used
Min. Reinf.	=	1.0 %
Max. Reinf.	=	8.0 %

Overall Column Height 6.0 ft **End Fixity** Top & Bottom Pinned

Brace condition for deflection (buckling) along columns:

X-X (width) axis:

Unbraced Length for X-X Axis buckling = 6.0 ft, K = 1.0

Y-Y (depth) axis:

Unbraced Length for X-X Axis buckling = 6.0 ft, K = 1.0

Column Cross Section

Column Dimensions:

8.250in high x 24.0in Wide, Column Edge to

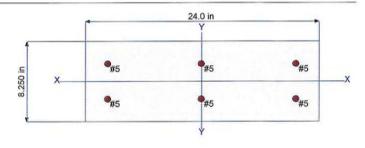
Rebar Edge Cover = 2.0in

Column Reinforcing:

4 - #5 bars @ corners,, 1.0 - #5 bars top &

+1.20D+0.50L+1.60S

bottom between corner bars



Applied Loads

Entered loads are factored per load combinations specified by user.

Column self weight included: 1,237.50 lbs * Dead Load Factor

AXIAL LOADS . . .

MAX: Axial Load at 6.0 ft above base, D = 10.0, LR = 10.0, L = 5.0, S = 90.0 k

DESIGN SUMMARY Load Combination

Location of m	ax.above base		5.960ft
Maximum Stre Ratio = (Pu^2	ss Ratio +Mu^2)^.5 / (PhiPn	^2+PhiMn^2)^.5	0.582: 1
Pu =	159.985 k	φ * Pn =	274.767 k
Mu-x =	0.0 k-ft	$\phi * Mn-x =$	O.Ok-ft
Mu-y =	0.0 k-ft	Ψ * Mn-y =	0.0 k-ft
Mu Angle =	0.0 deg		
Mu at Angle =	0.0 k-ft	φMn at Angle =	0.0 k-ft
Dn & Mn value	located at Pu Mus	vector intersection wit	h canacity curve

Pn & Mn values located at Pu-Mu vector intersection with capacity curve

Column Capacities . . .

Pnmax: Nominal Max. Compressive Axial Capacity	528.40 k
Pnmin: Nominal Min. Tension Axial Capacity	-111.60 k
Φ Pn, max : Usable Compressive Axial Capacity	274.767 k
Φ Pn, min : Usable Tension Axial Capacity	-72.540 k

Maximum SERVICE Load Reactions . .

Top along Y-Y 0.0k Bottom along Y-Y 0.0 k Top along X-X 0.0k Bottom along X-X 0.0 k

Maximum SERVICE Load Deflections . . .

Along Y-Y 0.0 in at 0.0ft above base for load combination: 0.0in at 0.0ft above base Along X-X

for load combination:

General Section Information . $_{\text{O}} = 0.650$ 0.80 ρ: % Reinforcing 0.9394 % Rebar < Min of 1.0 %

1.860 in^2 Reinforcing Area

Concrete Area

198.0 in^2

Governing Load Combination Results

Governing Factored Load Combination	Mom	ent	Dist.	from	Ax	tial Load			В	ending Anal	ysis k-ft		Ut	ilization
	X-X	Y-Y	base	ft	Pu	φ *Pn	δ×	δx*Mux	δУ	δy * Muy	Alpha (deg)	δ Mu	φ Mn	Ratio
+1.40D			5.9	96	15.73	274.77					0.000			0.05
+1.20D+0.50Lr+1.60L			5.9	96	26.49	274.77					0.000			0.090
+1.20D+1.60L+0.50S			5.9	96	66.49	274.77					0.000			0.24



VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

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Concrete Column

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Lic. # : KW-06002886

+0.60D

Lr Only

L Only

S Only

Governing Factored	Moment	Dist. from	1.000	al Load			В	ending Anal	ysis k-ft			Utilization
Load Combination	X-X Y-Y	base ft	Pu q	p * Pn	δ×	δx*Mux	δУ	δy * Muy	Alpha (de	g) δ M		
-1.20D+1.60Lr+0.50L		5.96	31.99	274.77	7				0.000			0.116
1.20D+1.60Lr		5.96	29.49	274.77					0.000			0.10
+1.20D+0.50L+1.60S		5.96	159.99	274.77	*				0.000			0.582
+1.20D+1.60S		5.96	157.49	274.77					0.000			0.57
+1.20D+0.50Lr+0.50L		5.96	20.99	274.77	7				0.000			0.07
+1.20D+0.50L+0.50S		5.96	60.99	274.77	,				0.000			0.22
+1.20D+0.50L+0.20S		5.96	33.99	274.77	,				0.000			0.12
+0.90D		5.96	10.11	274.77	,				0.000			0.037
Maximum Reactions			11-01-2						te: Only n			500 E
		Reaction		Y Axis Re		Axial Rea		200	nd Moments		Mx - End	
Load Combination	@ Base	@ Top	@	Base	@ Тор	@ Ba		@ Ba	se @	Тор	@ Base	@ Top
D Only +D+L							.238					
+D+Lr							.238					
+D+S							.238					
+D+0.750Lr+0.750L						1177.0	.488					
+D+0.750L+0.750S							.488					
+0.60D							.743					
Lr Only							.000					
L Only							.000					
S Only							.000					
Maximum Moment Reactions						18000	annowe v	No	te: Only n	on-zero re	eactions a	re listed.
T 122 123 123			ent About						oment Abou			
Load Combination		@ Base		@ To				@	Base	@ Top	1. 11	
D Only					k-ft k-ft						k-ft k-ft	
+D+L +D+Lr					k-ft						k-ft	
+D+S					k-ft						k-ft	
+D+0.750Lr+0.750L					k-ft						k-ft	
+D+0.750L+0.750S					k-ft						k-ft	
+0.60D					k-ft						k-ft	
Lr Only					k-ft						k-ft	
					k-ft						k-ft	
F 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					k-ft						k-ft	
S Only												
S Only Maximum Deflections for Loa		district house and a second second	Dietor	100		May V-V Dot	flection	n Diete	nce			
S Only Maximum Deflections for Loa Load Combination	Max. X-	X Deflection	Distar	0.000		Max. Y-Y Def		10000000	10000			
S Only Maximum Deflections for Loa Load Combination D Only	Max. X- 0.000	X Deflection 00 in	0.000) ft		0.000	in	0.	000 ft			
Maximum Deflections for Loa Load Combination D Only +D+L	Max. X- 0.000 0.000	X Deflection 00 in 00 in	0.000) ft) ft		0.000	in in	0. 0.	000 ft 000 ft			
S Only Maximum Deflections for Loa Load Combination D Only +D+L +D+Lr	Max. X- 0.000 0.000 0.000	X Deflection 00 in 00 in 00 in	0.000 0.000 0.000) ft) ft) ft		0.000 0.000 0.000	in in in	0. 0. 0.	000 ft 000 ft 000 ft		W.	
S Only Maximum Deflections for Loa Load Combination D Only +D+L +D+Lr +D+S	Max. X- 0.000 0.000 0.000 0.000	X Deflection 00 in 00 in 00 in 00 in	0.000 0.000 0.000 0.000) ft) ft) ft) ft		0.000 0.000 0.000 0.000	in in in in	0. 0. 0.	000 ft 000 ft 000 ft			
S Only Maximum Deflections for Loa Load Combination D Only +D+L +D+Lr	Max. X- 0.000 0.000 0.000	X Deflection 00 in 00 in 00 in 00 in 00 in	0.000 0.000 0.000) ft) ft) ft) ft) ft		0.000 0.000 0.000	in in in in in	0.0 0.0 0.0 0.0	000 ft 000 ft 000 ft		9	

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VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

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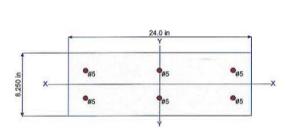
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Lic. #: KW-06002886

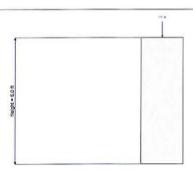
Description:

HSS SUPPORT - INTEGRAL w/ WALL

Sketches



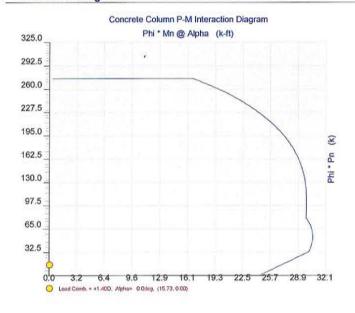


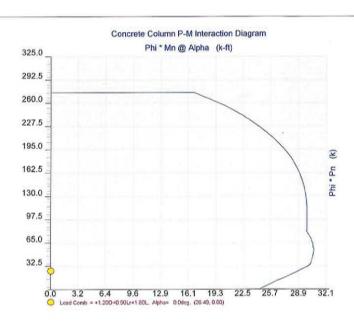


Lecking along X-X Axis

Looking along Y-Y Axis

Interaction Diagrams







VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

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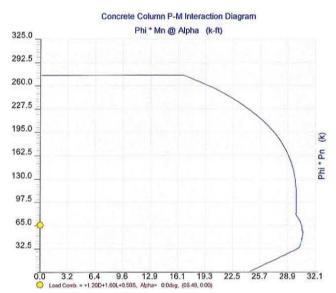
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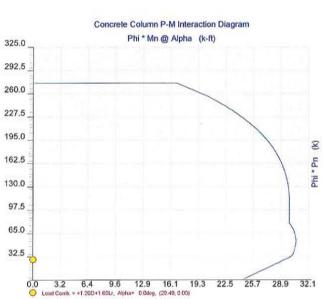
Licensee: RICHMOND HOFFMAYER

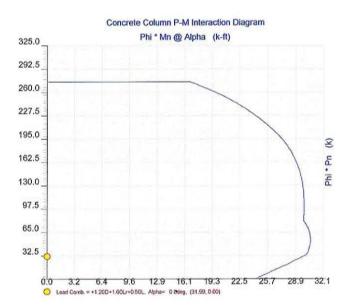
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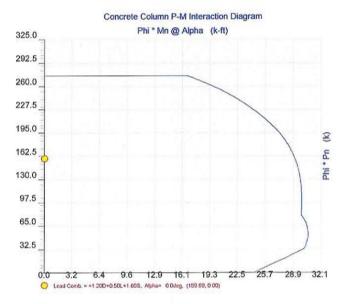
Description : HSS SUPF

HSS SUPPORT - INTEGRAL w/ WALL











VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

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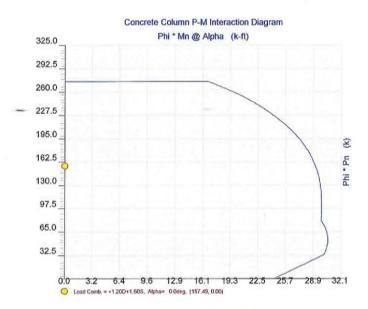
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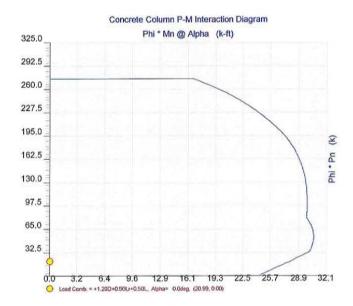
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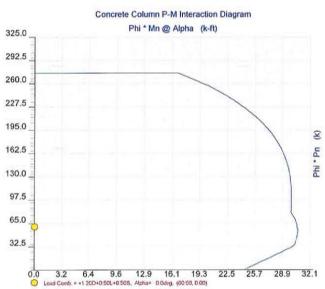
HSS SUPPORT - INTEGRAL w/ WALL

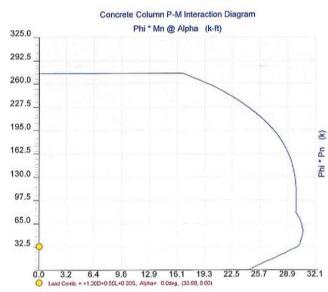
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VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

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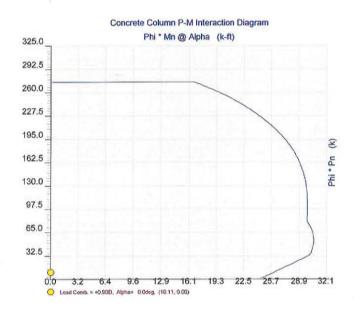
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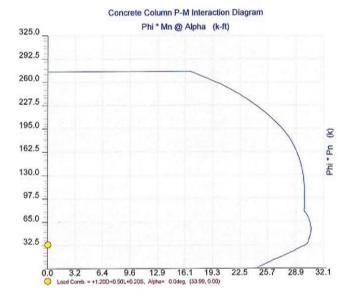
Description:

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VILLAGE NEST JJH

MULTI UNIT PROJECT

Project ID: 2017-0610

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Wood Beam

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B15 - HEADER UNDER B3 Description:

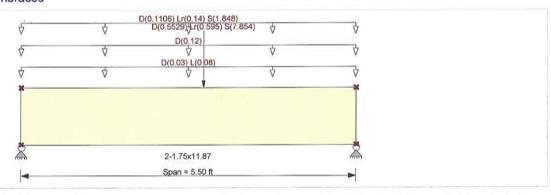
CODE REFERENCES

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

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method : Allowable Stress Design	Fb +	2,600.0 psi	E : Modulus of Elasticity		
Load Combination ASCE 7-10	Fb - Fc - Pril	2,600.0 psi 2,510.0 psi	Ebend- xx Eminbend - xx	1,900.0ksi 965.71ksi	
Wood Species : Trus Joist Wood Grade : MicroLam LVL 1.9 E	Fc - Perp Fv Ft	750.0 psi 285.0 psi 1,555.0 psi	Density	42.0pcf	
Beam Bracing : Completely Unbraced	,,,	1,000.0 psi	Delisity	42.0 pci	



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loads

 $\begin{array}{ll} \mbox{Uniform Load}: \ \mbox{D} = 0.0150, \ \mbox{L} = 0.040 \ \mbox{ksf}, \ \mbox{Tributary Width} = 2.0 \ \mbox{ft, (FLOOR)} \\ \mbox{Uniform Load}: \ \mbox{D} = 0.120 \ , \ \mbox{Tributary Width} = 1.0 \ \mbox{ft, (EXTERIOR WALL)} \\ \end{array}$

Uniform Load: D = 0.01580, Lr = 0.020, S = 0.2640 ksf, Tributary Width = 7.0 ft, (ROOF)

Point Load: D = 0.5529, Lr = 0.5950, S = 7.854 k @ 3.0 ft, (B3)

Design OK **DESIGN SUMMARY** 0.917:1 0.969 1 Maximum Shear Stress Ratio Maximum Bending Stress Ratio Section used for this span Section used for this span 2-1.75x11.87 2-1.75x11.87 fv : Actual 300.69 psi fb : Actual 2,828.12psi Fv : Allowable 327.75 psi FB: Allowable 2,917.56psi +D+S Load Combination Load Combination +D+S Location of maximum on span 4.516ft Location of maximum on span 2.991ft Span #1 Span # where maximum occurs Span # where maximum occurs Span #1 Maximum Deflection Max Downward Transient Deflection 0.092 in Ratio = 720>=360 0.000 in Ratio = Max Upward Transient Deflection 0 < 360 0.101 in Ratio = Max Downward Total Deflection 651>=240. Max Upward Total Deflection 0.000 in Ratio = 0<240.0

Vertical Reactions		Support notation : Far left is	#1 Values in KIPS	
Load Combination	Support 1	Support 2		
Overall MAXimum	9.653	10.418		
Overall MINimum	0.220	0.220		
D Only	1.001	1.052	34	
+D+L	1.221	1.272		
+D+Lr	1.657	1.761		
+D+S	9.653	10.418		
+D+0.750Lr+0.750L	1.658	1.749		
+D+0.750L+0.750S	7.655	8.241		
+0.60D	0.601	0.631		



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

Printed: 25 AUG 2017, 1:50PM

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Wood Beam File ENERCALC, INC. 198

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Description: B15 - HEADER UNDER B3

Vertical Reactions		Support notation . Far left is #1	values III KIFS	
Load Combination	Support 1	Support 2		
Lr Only	0.655	0.710		
L Only	0.220	0.220		
S Only	8.652	9.366		



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

Printed: 25 AUG 2017, 1:55PM

Design OK

Steel Beam

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Steel Dealli

Description : B17A - RIDGE SUPPORT

CORE DEFENENCES

CODE REFERENCES

Calculations per AISC 360-10, IBC 2015, ASCE 7-10

Load Combination Set: ASCE 7-10

Material Properties

Analysis Method: Allowable Strength Design

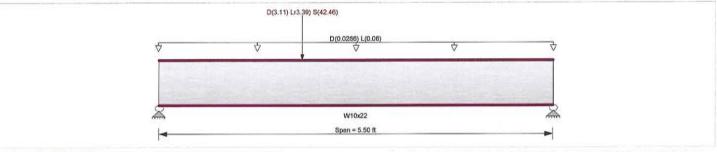
Beam Bracing: Beam is Fully Braced against lateral-torsional buckling

Bending Axis: Major Axis Bending

Fy: Steel Yield:

50.0 ksi

E: Modulus : 29,000.0 ksi



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading

Uniform Load: D = 0.01430, L = 0.040 ksf, Tributary Width = 2.0 ft, (FLOOR) Point Load: D = 3.110, Lr = 3.390, S = 42.460 k @ 2.0 ft, (RIDGE B4 ABV.)

DESIGN SUMMARY

0.595:1 Maximum Bending Stress Ratio = 0.895:1 Maximum Shear Stress Ratio = Section used for this span Section used for this span W10x22 W10x22 Va: Applied 29.138 k Ma: Applied 58.051 k-ft Mn / Omega: Allowable Vn/Omega: Allowable 48.960 k 64.870 k-ft +D+S Load Combination Load Combination +D+S Location of maximum on span 1.996ft Location of maximum on span 0.000 ft Span #1 Span # where maximum occurs Span #1 Span # where maximum occurs

Maximum Deflection

 Max Downward Transient Deflection
 0.005 in Ratio = 12,230 >= 360

 Max Upward Transient Deflection
 0.000 in Ratio = 0 < 360</td>

 Max Downward Total Deflection
 0.011 in Ratio = 6197 >= 240.

 Max Upward Total Deflection
 0.000 in Ratio = 0 < 240.0</td>

Maximum Forces & Stresses for Load Combinations

Load Combin	ation		Max Stress	Ratios		5	Summary of M	Ioment Valu	jes			Summ	ary of Sh	ear Values
	nt Length	Span #	M	V	Mmax +	Mmax -	Ma Max	Mnx	Mnx/Omega	Cb	Rm	Va Max	.Vnx	Vnx/Omega
D Only	VANCONOMINA.	2001	n remerenan	40.740.000	remetan.		9.72					0.10		
Dsgn. L =	5.50 ft	1	0.064	0.043	4.13		4.13	108.33	64.87	1.00	1.00	2.12	73.44	48.96
+D+L														
Dsgn. L =	5.50 ft	1	0.068	0.048	4.41		4.41	108.33	64.87	1.00	1.00	2.34	73.44	48.96
+D+Lr														
Dsgn. L =	5.50 ft	1	0.130	0.087	8.43		8.43	108.33	64.87	1.00	1.00	4.28	73.44	48.96
+D+S														
Dsgn. L =	5.50 ft	1	0.895	0.595	58.05		58.05	108.33	64.87	1.00	1.00	29.14	73.44	48.96
+D+0.750Lr+0	0.750L													
Dsgn. L =	5.50 ft	1	0.117	0.080	7.57		7.57	108.33	64.87	1.00	1.00	3.90	73.44	48.96
+D+0.750L+0	.750S													
Dsgn. L =	5.50 ft	1	0.690	0.461	44.78		44.78	108.33	64.87	1.00	1.00	22.55	73.44	48.96
+0.60D														
The state of the s	5.50 ft	1	0.038	0.026	2.48		2.48	108.33	64.87	1.00	1.00	1.27	73.44	48.96
Dsgn, L =	5.50 ft	1		0.026	2.48		2.48	108.33	64.87	1.00	1.00	1.27	73.44	

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max, "+" Defl	Location in Span
+D+Lr	1	0.0107	2.561		0.0000	0.000
Vertical Reactions			Support	t notation : Far left is #1	Values in KIPS	

Load Combination	Support 1	Support 2	
Overall MAXimum	29.138	16.710	
Overall MINimum	0.220	0.220	
D Only	2.118	1.270	



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

Steel Beam

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ENERCALC, INC. 1983-2017, Build:10.17.7.24, Ver:10.17.7.24

Ligensee: RICHMOND HOFFMAYER

Lic. # : KW-06002886

Description: **B17A - RIDGE SUPPORT**

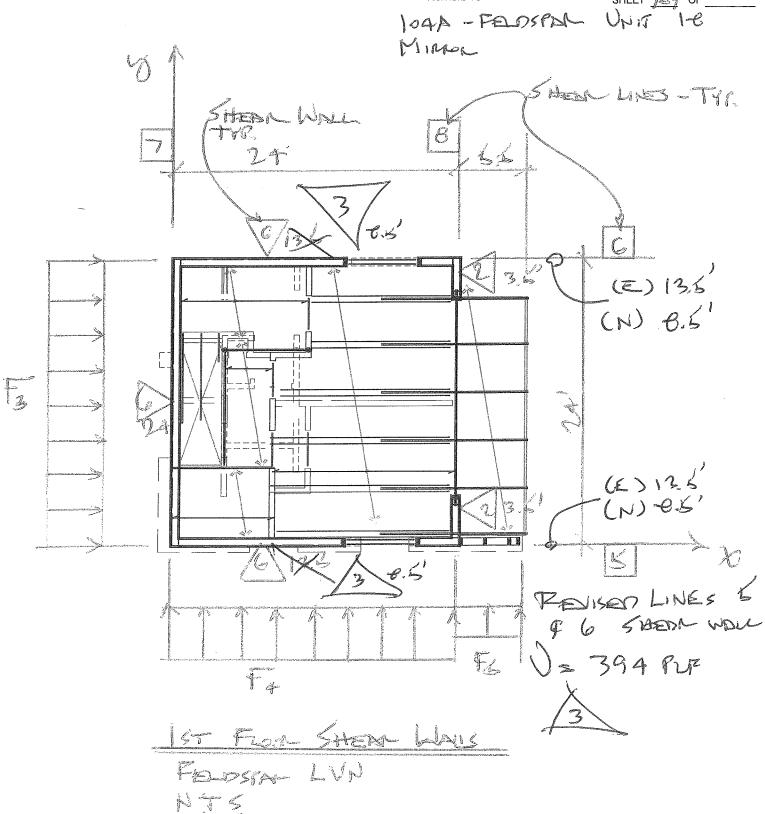
Vertical Reactions			Support notation : Far left is #1	Values in KIPS	
Load Combination	Support 1	Support 2			
+D+L	2.338	1.490			
+D+Lr	4.276	2.503			
+D+S	29.138	16.710			
+D+0.750Lr+0.750L	3.901	2.360			
+D+0.750L+0.750S	22.548	13.015			
+0.60D	1.271	0.762	4		
Lr Only	2.157	1.233			
L Only	0.220	0.220			
S Only	27.020	15.440			

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RICHMOND	\mathbb{Z}
HOFFMAYER INC.	
STRUCTURAL ENGINEERING	VV

PROJECT	FELDSPAR LOWER		JOB	2017-0610	
CLIENT	VILLAGE NEST				
ADDRESS	EDEN, UTAH				
DESIGN	HUUM				
ENGINEER	J.H.		DATE	6/16/2017	
	RICHMOND PE 49628 HO	OFFMAYER SE 3935	CHEET	/ # OF	





SEISMIC OVERTURNING DESIGN:

ASD LEVEL FORCES
USE EQUATION ASCE 7-11 12.4.2.3 #8
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Sds = 0.633

0.633

0.6 - 0.14 Sds =

USE THE LESSER OF ICC.ES. AND LARR VALUES FOR HOLD DOWNS...CAPACITY IS BASED ON 0.75 x HOLD DOWN ALLOWABLE STRESS DESIGN CAPACITY

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4425 CANOGA AVENUE WOODLAND HILLS CA 91364 PHONE (818) 347-7008 FAX (818) 883-8869 6/30/2017:2017 SEISMIC AND WIND DESIGN 2016 CBC.xism:SEISMIC OVERTURNING

1290



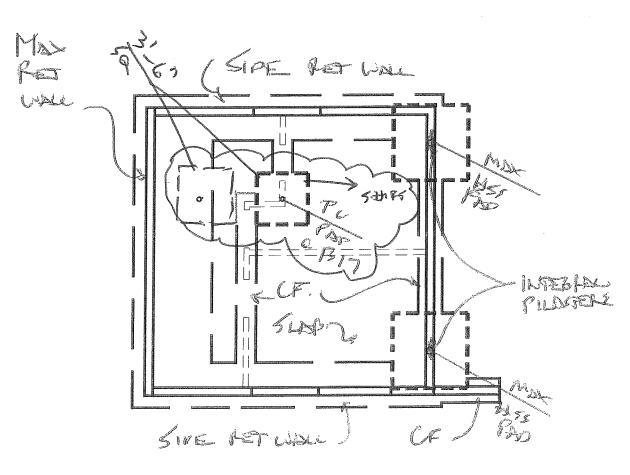
A

PROJECT	FELDSPAR LOWER	JOB	2017-0610
CLIENT	VILLAGE NEST		
ADDRESS	EDEN, UTAH		
DESIGN	HUUM		
ENGINEER	J.H.	DATE	6/16/2017
	RICHMOND PE 49628 HOFFMAYER SE 3935	SHEET	235 OF

235 A

FROM UNIT 12

MINROL



FELDSPAR LVN

FONDATION			
FELDSON	Lin	AND AND THE CONTROL OF THE PERSON OF THE PER	
NTS			



VILLAGE NEST JJH MULTI UNIT PROJECT

Project ID: 2017-0610

135 A

Printed: 25 AUG 2017, 3:06PM

General Footing

Lic. #: KW-06002886

Description: MAX PAD: FELDSPAR LVN FLIP UNIT 18

File = D:ENERCALC Projects/2017-0610.ec6 ENERCALC, INC. 1983-2017, Build:10.17.7.24, Ver:10.17.7.24 Licenses: RICHMOND HOFFWAYER

Code References

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

Load Combinations Used : ASCE 7-10

General Information

Material Properties fc: Concrete 28 day strength fy: Rebar Yield Ec: Concrete Elastic Modulus Concrete Density	= = =	3,12 14	2.50 ksi 60.0 ksi 22.0 ksi 15.0 pcf	Soil Design Values Allowable Soil Bearing Increase Bearing By Footing Weight Soil Passive Resistance (for Sliding) Soil/Concrete Friction Coeff.	= = =	2.50 ksf No 180.0 pcf 0.450
φ Values Flexure	=		0.90			
Shear Analysis Settings Min Steel % Bending Reinf. Min Allow % Temp Reinf. Min. Overturning Safety Factor	=	0.i = = =	0.00180 1.50 : 1	Increases based on footing Depth Footing base depth below soil surface Allow press. increase per foot of depth when footing base is below	= = =	2.0 ft ksf ft
Min. Sliding Safety Factor Add Ftg Wt for Soil Pressure		=	1.50 : 1 No	Increases based on footing plan dimension Allowable pressure increase per foot of depth		
Use ftg wt for stability, moments & shears			No		=	ksf
Add Pedestal Wt for Soil Pressure		1	No	when max. length or width is greater than	=	ft
Use Pedestal wt for stability, mom & shear		:	No			10,00

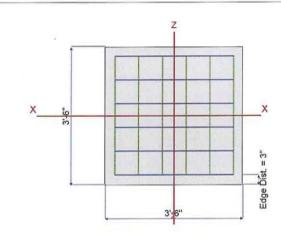
Dimensions

Width parallel to X-X Axis	=	3.50 ft
Length parallel to Z-Z Axis	=	3.50 ft
Footing Thickness	=	24.0 in

Pedestal dimensions...

px : parallel to X-X Axis = in
pz : parallel to Z-Z Axis = in
Height in

Rebar Centerline to Edge of Concrete...
at Bottom of footing = 3.0 in



Reinforcing

Bars parallel to X-X Axis Number of Bars	=		6
Reinforcing Bar Size	=	#	5
Bars parallel to Z-Z Axis			
Number of Bars	=		6
Reinforcing Bar Size	=	#	5
Bars parallel to Z-Z Axis Number of Bars	= =	#	

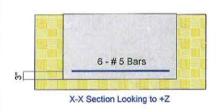
Bandwidth Distribution Check (ACI 15.4.4.2)

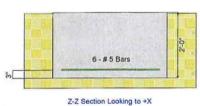
Direction Requiring Closer Separation

Bars required within zone

Bars required on each side of zone

n/a





Applied Loads

	-	D	Lr	L	S	W	E	Н
P : Column Load OB : Overburden	-	2.118	2.157	0.220	27.020			k ksf
M-xx M-zz	= =							k-ft k-ft
V-x	=							k
V-z	=							k



VILLAGE NEST MULTI UNIT PROJECT

Project ID: 2017-0610

General Footing

Printed: 25 AUG 2017, 3:05PM
File = D:\ENERCALC Projects\2017-0610.ec6
ENERCALC, INC. 1983-2017, Build:10.17.7.24, Ver:10.17.7.24

Licensee: RICHMOND HOFFMAYER

Lic. #: KW-06002886 Description:

MAX PAD: FELDSPAR LVN FLIP UNIT 18

DESIGN SU	IMMARY				Design OK
V	Min. Ratio	Item	Applied	Capacity	Governing Load Combination
PASS	0.9516	Soil Bearing	2.379 ksf	2.50 ksf	+D+S about Z-Z axis
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	0.1177	Z Flexure (+X)	5.735 k-ft/ft	48.725 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.1177	Z Flexure (-X)	5.735 k-ft/ft	48.725 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.1177	X Flexure (+Z)	5.735 k-ft/ft	48.725 k-ft/ft	+1.20D+0.50L+1.60S
PASS	0.1177	X Flexure (-Z)	5.735 k-ft/ft	48.725 k-ft/ft	+1.20D+0.50L+1.60S
PASS	n/a	1-way Shear (+X)	0.0 psi	85.0 psi	n/a
PASS	0.0	1-way Shear (-X)	0.0 psi	0.0 psi	n/a
PASS	n/a	1-way Shear (+Z)	0.0 psi	85.0 psi	n/a
PASS	n/a	1-way Shear (-Z)	0.0 psi	85.0 psi	n/a
PASS	n/a	2-way Punching	19.508 psi	85.0 psi	+1.20D+0.50L+1.60S

Cail Pearing

Detailed Results

Rotation Axis &		Xecc	Zecc	Actua	Soil Bearing S	tress @ Local	tion	Actual / Allov
Load Combination	Gross Allowable	0.1374	(in)	Bottom, -Z	Top, +Z	Left, -X	Right, +X	Ratio
X-X, D Only	2.50	n/a	0.0	0.1729	0.1729	n/a	n/a	0.069
X-X. +D+L	2.50	n/a	0.0	0.1909	0.1909	n/a	n/a	0.076
X-X. +D+Lr	2.50	n/a	0.0	0.3490	0.3490	n/a	n/a	0.140
X-X, +D+S	2.50	n/a	0.0	2.379	2.379	n/a	n/a	0.952
X-X, +D+0.750Lr+0.750L	2.50	n/a	0.0	0.3184	0.3184	n/a	n/a	0.127
X-X, +D+0.750L+0.750S	2.50	n/a	0.0	1.841	1.841	n/a	n/a	0.736
X-X, +0.60D	2.50	n/a	0.0	0.1037	0.1037	n/a	n/a	0.041
Z-Z. D Only	2.50	0.0	n/a	n/a	n/a	0.1729	0.1729	0.069
Z-Z. +D+L	2.50	0.0	n/a	n/a	n/a	0.1909	0.1909	0.076
Z-Z. +D+Lr	2.50	0.0	n/a	n/a	n/a	0.3490	0.3490	0.140
Z-Z. +D+S	2.50	0.0	n/a	n/a	n/a	2.379	2.379	0.952
Z-Z. +D+0.750Lr+0.750L	2.50	0.0	n/a	n/a	n/a	0.3184	0.3184	0.127
Z-Z. +D+0.750L+0.750S	2.50	0.0	n/a	n/a	n/a	1.841	1.841	0.736
Z-Z. +0.60D Footing Flexure	2.50	0.0	n/a	n/a	n/a	0.1037	0.1037	0.041

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	0.3707	+Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1.40D	0.3707	-Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1,20D+0,50Lr+1,60L	0.4965	+Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1.20D+0.50Lr+1.60L	0.4965	-Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1,20D+1,60L+0,50S	2.050	+Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1,20D+1,60L+0,50S	2.050	-Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1,20D+1,60Lr+0,50L	0.7629	+Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1,20D+1,60Lr+0,50L	0.7629	-Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1.20D+1.60Lr	0.7491	+Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1,20D+1,60Lr	0.7491	-Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1,20D+0,50L+1,60S	5.735	+Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1,20D+0.50L+1.60S	5.735	-Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1,20D+1,60S	5.722	+Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1,20D+1,60S	5.722	-Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X. +1.20D+0.50Lr+0.50L	0.4663	+Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X. +1.20D+0.50Lr+0.50L	0.4663	-Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1,20D+0,50L+0,50S	2.020	+Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1.20D+0.50L+0.50S	2.020	-Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X. +1.20D+0.50L+0.20S	1.007	+Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X, +1,20D+0.50L+0.20S	1.007	-Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X. +0.90D	0.2383	+Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK
X-X. +0.90D	0.2383	-Z	Bottom	0.5184	Min Temp %	0.5314	48.725	OK



VILLAGE NEST JJH **MULTI UNIT PROJECT**

Project ID: 2017-0610

Printed: 25 AUG 2017, 3:06PM

General Footing

File = D:\ENERCALC Projects\2017-0610.ec6 ENERCALC, INC. 1983-2017, Build:10.17.7.24, Ver:10.17.7.24

Licensee: RICHMOND HOFFMAYER

Lic. #: KW-06002886

MAX PAD: FELDSPAR LVN FLIP UNIT 18

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-	ากา	11110	-	- 1	n e

Description:

Flexure Axis & Load Combination	M u k-ft	Side	Tensio Surfac		As Req'd in^2	Gvrn. As in^2	Actual in^2		Phi*I		Status
Z-Z. +1.40D	0.3707	-X	Bottom	0	0.5184	Min Temp %	6 0	.5314	48	3.725	OK
Z-Z, +1.40D	0.3707 0.3707	-X +X	Bottom		0.5184	Min Temp %	6 0	.5314	48	3.725	OK
Z-Z. +1.20D+0.50Lr+1.60L	0.4965	-X	Bottom		0.5184	Min Temp %	6 0	.5314	48	3.725	OK
Z-Z, +1.20D+0.50Lr+1.60L	0.4965	*X *	Bottom		0.5184	Min Temp %	6 0	.5314	48	3.725	OK
Z-Z, +1.20D+1.60L+0.50S	2.050	-X	Bottom		0.5184	Min Temp %	6 0	.5314	48	3.725	OK
Z-Z, +1.20D+1.60L+0.50S	2.050	+X	Bottom		0.5184	Min Temp %	6 0	.5314	48	3.725	OK
Z-Z, +1.20D+1.60Lr+0.50L	0.7629	-X	Bottom		0.5184	Min Temp %	6 0	.5314	48	3.725	OK
Z-Z, +1.20D+1.60Lr+0.50L	0.7629	+X	Bottom		0.5184	Min Temp %	6 0	.5314	48	3.725	OK
Z-Z. +1.20D+1.60Lr	0.7491	-X	Bottom		- 0.5184	Min Temp %	6 0	.5314	48	3.725	OK
Z-Z, +1.20D+1.60Lr	0.7491	+X	Bottom		0.5184	Min Temp %	6 0	.5314	48	3.725	OK
Z-Z, +1.20D+0.50L+1.60S	5.735	-X	Bottom		0.5184	Min Temp %	6 0	.5314	48	3.725	OK
Z-Z, +1.20D+0.50L+1.60S	5.735	+X	Bottom		0.5184	Min Temp %	6 0	.5314	48	3.725	OK
Z-Z. +1.20D+1.60S	5.722	-X	Bottom		0.5184	Min Temp %	6 0	.5314	48	3.725	OK
Z-Z. +1.20D+1.60S	5.722	+X	Bottom		0.5184	Min Temp %	6 0	.5314	48	3.725	OK
Z-Z. +1.20D+0.50Lr+0.50L	0.4663	-X	Bottom		0.5184	Min Temp %	, 0	.5314	48	3.725	OK
Z-Z. +1.20D+0.50Lr+0.50L	0.4663	+X	Bottom		0.5184	Min Temp %	, 0	.5314	40	3.725 3.725	OK OK
Z-Z. +1.20D+0.50L+0.50S	2.020	-8	Bottom		0.5184	Min Temp % Min Temp %	, 0	.5314 .5314	40	3.725 3.725	OK
Z-Z, +1.20D+0.50L+0.50S	2.020 1.007	+X	Bottom		0.5184 0.5184	Min Temp %	, 0	.5314	40	3.725	OK
Z-Z. +1.20D+0.50L+0.20S	1.007	>	Bottom		0.5184	Min Temp % Min Temp %	0	.5314	40	3.725 3.725	OK
Z-Z, +1.20D+0.50L+0.20S	0.2383	-X	Bottom		0.5184		, ,	.5314	40	3.725	OK
Z-Z. +0.90D Z-Z. +0.90D	0.2383	+X	Bottom Bottom		0.5184	Min Temp % Min Temp %	6 0	.5314	48	3.725	OK
One Way Shear	0.2303	+^	Bottom		0.5164	Will Tellip /	0 0	.0014	40	5.725	OK
Load Combination	Vu @ -X	Vu @	+X '	Vu @ ⋅	Z Vu @	0 +Z V	/u:Max	Phi \	/n Vu	ı / Phi*Vn	Status
+1.40D	0.00 psi		isq 00.0		0.00 psi	0.00 psi	0.00 psi		85.00 psi	0.00	0.0
+1.20D+0.50Lr+1.60L	0.00 psi		izq 00.0		0.00 psi	0.00 psi	isq 00.0		85.00 psi	0.00	0.0
+1.20D+1.60L+0.50S	0.00 psi		0.00 psi		0.00 psi	0.00 psi	izg 00.0		85.00 psi	0.00	0.0
+1.20D+1.60Lr+0.50L	0.00 psi		0.00 psi		0.00 psi	0.00 psi	izg 00.0		85.00 psi	0.00	0.0
+1.20D+1.60Lr	0.00 psi		0.00 psi		0.00 psi	0.00 psi	0.00 psi		85.00 psi	0.00	0.0
+1.20D+0.50L+1.60S	0.00 psi		izq 00.0		0.00 psi	0.00 psi	iaq 00.0		85.00 psi	0.00	0.0
+1.20D+1.60S	0.00 psi		isq 00.0		0.00 psi	0.00 psi	0.00 psi		85.00 psi	0.00	0.0
+1.20D+0.50Lr+0.50L	0.00 psi		isq 00.0		0.00 psi	0.00 psi	0.00 psi		85.00 psi	0.00	0.0
+1.20D+0.50L+0.50S	isa 00.0		isq 00.0		0.00 psi	0.00 psi	0.00 psi		85.00 psi	0.00	0.0
+1.20D+0.50L+0.20S	0.00 psi		0.00 psi		0.00 psi	0.00 psi	0.00 psi		85.00 psi	0.00	0.0
+0.90D	isa 00.0		0.00 psi		0.00 psi	0.00 psi	0.00 psi		85.00 psi	0.00	0.0
Two-Way "Punching" Shear	0.00		0.00 psi		0.00 pg	0.00 001	0.00 001		00.00 201	All units	
Load Combination		Vu			Phi*Vn		Vu / Phi*Vn				Status
+1.40D		1.20	6 psi		170.00 ps	si	0.007416				OK
+1.20D+0.50Lr+1.60L		1.69	9 psi		170.00 ps	si	0.009934				OK
+1.20D+1.60L+0.50S		6.9	7 psi		170.00 ps	i	0.04103				OK
+1.20D+1.60Lr+0.50L		2.60	o psi		170.00 ps	3i	0.01526				OK
+1.20D+1.60Lr		2.5	isa 5		170.00 ps		0.01499				OK
+1.20D+0.50L+1.60S		19.5	1 psi		170.00 ps	si	0.1148				OK
+1.20D+1.60S		19.4	3 psi		170.00 ps	Si	0.1145				OK
		1.59	iza 6		170.00 ps	i	0.009329				OK
		110	0 0001								
+1.20D+0.50Lr+0.50L +1.20D+0.50L+0.50S		6.8	7 psi		170.00 ps	si	0.04042				OK
		6.8 3.4	7 psi 3 psi 1 psi		170.00 ps 170.00 ps 170.00 ps	si si	0.04042 0.02015 0.004767				OK OK

RICHMON



PROJECT CLIENT **ADDRESS** DESIGN ENGINEER

JOB VILLAGE NEST 2017-0610 VILLAGE NEST EDEN, UTAH HUUM J.H. DATE 8/18/2017

SHEETA

RICHMOND PE 44628 HOFFMAYER SE 5455

THERMAL	BUENK	DEVICE	AT	BAI CONY	
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TRY ASMATHERY

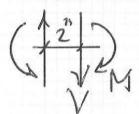
FRILTHERMAL BREAK

W= 1394 PLF (SNOW/LIVE/DEDD) BOUTS

FRA 2" THK

HSS BKAX 7/A

BEAM #9 IN CALLS PG # 33



V= 1344 × 5 = 4720 LL M= 1344 × 5 = 16000 QLL

FRR E = 1450 ksi Fc = 46 ksi

Fv = 16 Ksi

 $T = \frac{16800 \times 12}{(11 \times 1)} = \frac{9163}{4}$ $\int = \frac{672}{4} = \frac{160012}{160012}$

RICHMOND HOFFMAYER INC. STRUCTURAL ENGINEERING



PROJECT CLIENT ADDRESS DESIGN ENGINEER

411	DAIL	-DI
J.H.	DATE	8/18/2017
HUUM		
EDEN, UTAH		
VILLAGE NEST		
VILLAGE NEST	JOB	2017-0610

SPICE I VE OF
COMBINED TENSION & SHEEK Rn= FixAb W/1=2.0
Fire=1,3Fme- On Fret Sv
= $1.3(90) - \frac{2(90)}{48} (1.40 k/0.307 N^2)$ = $96.47 ki$ > Fix -> USE Fix = $90 k$
= 96.47 ksi > Fint -> USE Fix = 90 kss
Rn = 90 (0.307)/ = 13,8 k. AVAILABLE TENSION/bolk
COMPANE:
LOAD CAPACITY
T=9.2k $V=1.7k$ $13.6k$ $7.36k$
USE # (4) S/e'p A326 BOIT! PER CONNECTION
TRY 10/2" US> T = 9163 × 1/6 = 9699 15 T = 9.66 < 13,06 /
- RY 9213" \$ = = 9.66 < 13,02/
b=9" - d=13-14=11,76" 3 A=6d=106.7512
0 = 17-14-11



PROJECT CLIENT **ADDRESS** DESIGN

ENGINEER

VILLAGE NEST VILLAGE NEST

2017-0610

EDEN, UTAH

HUUM

J.H. RICHMOND PE 49628 HOFFMAYER SE 3935 SHEET

8/18/2017

JOB

g=210.307/06.75 = 0,005% ph = 0,1161 k = Ign+29n-In

= 0.37965=1-1/2=0.0735

MAGE 16-800 X12 = 201600 14-12

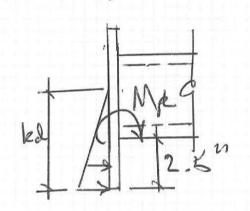
Ju = 2 MAR/62/2 = 2(201600)
9(11,752)0,3316

FC = 45000 P3) CASALITY F.S. = 45.9 [

* FRR OK

LA = 0.3794 (11,75)=4A6" SERGE 979/4-46 (4.46-2.5) = 430 54

MR=430×(25/2)9 +(9794.46) 2.5/2(2/3/2.5)9 223-63 12-12



1.036 IN3 ->

4425 CANOGA AVENUE WOODLAND HILLS CA 91364 PHONE (818) 347-7008 FAX (818) 883-8869 Info@RichmondHoffmayer.com

RICHMOND HOFFMAYER INC. STRUCTURAL ENGINEERING



JOB PROJECT VILLAGE NEST 2017-0610 VILLAGE NEST CLIENT **ADDRESS** EDEN, UTAH DESIGN HUUM **ENGINEER** J.H. DATE 8/18/2017 RICHMOND PE 44628 SHEET A4 OF

Mp=(9599×2)×1,25" = 2399=10-14
50=00 = 23998/0.4(3600) = 1.111 IN3 -> th≥0.00
USE 9"×13"× 7° THK A36 R. ATTHERMOL BRESK W/ (4) 8" AME BOLTI & FRA

RICHMOND HOFFMAYER INC.



 PROJECT
 VILLAGE NEST
 JOB
 2017-0610

 CLIENT
 VILLAGE NEST
 ADDRESS
 EDEN, UTAH

 DESIGN
 HUUM
 DATE
 8/18/2017

 ENGINEER
 J.H.
 RICHARDO PE 44628
 MOFFMAYER SE 3495
 SHEET
 OF

	75
LIFT BALLOW 4" PER ARCH.	
THERMAN HATTER OFFICE CANTRELES CANT	E P3/6 Wasst App Gossess App
6USSETS IN COMPRESSION GENTION = 1600-00 16 = 100-00 16	Trum 03/8
PER AISC UNSTITIENED ELEMENT 1/4 = 4/3/6 = 10.67 2 = 0.64 / Kc 2900/36 4 = 0.67 × 0.76 1/4 + 1/4 + 1/4 1/0/3/6 USE KC = 0.76 2 = 16.636 > 64 OK. DESIGN R	AL NON-COMPACT

RICHMOND HOFFMAYER INC. STRUCTURAL ENGINEERING



PROJECT CLIENT ADDRESS DESIGN ENGINEER VILLAGE NEST

EDEN, UTAH HUUM

J.H.

J.H. Richmond Pe 44628 HOFFMAYER SE 3435 DATE 8/18/2017

JOB

SHEET OF

2017-0610

0.64 O.76(29E3)= 15,035 -> 0 = 1.0 : Pr = For Ag r= / I/6 = / (4 ×3/6) = 0.0176 Ke/ = 1 x 0/ = 0,100 N Ke/ = 73,9 4,71/29E3 = 133,60 > :. For = Q[0,650 QFy] JF8 Fe = T 29 = 3 (Ke/) = 52.4 Fur = 10.020 x 36/24] 36 = 16.27 kgs Pn = 16.27 × 1.5 = 24.4 /c a = 1.67 -> Pn/ = 2A.4/1.67 = 14.6 LA EXITS Pr/2= 14.6k > 100ek P -> 3/e" P FURD = 19080/6" = 1,26 K/N 3516" FILLETS OK

4425 CANOGA AVENUE WOODLAND HILLS CA 91364 PHONE (818) 347-7008 FAX (818) 883-8869 Info@RichmondHoffmayer.com