Structural Calculations

For

Jett Residence

Valley County, Idaho

Prepared by

PERFORMANCE
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2017-04907
September 18, 2017

PROFESSIONAL ENGINEER
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15386
09/18/17
STATE OF IDAHO
KALEB JONES

Design Criteria

Project Name: Jett Residence
Job Number: 2017-04907
Location: Valley County, Idaho

Governing Code: *2012 IBC*

Snow Criteria

Roof Snow Load (P_f)	120 psf
Ground Snow Load (P_g)	120 psf
Snow Exposure (C_e)	1.0
Thermal Factor (C_t)	1.0
Snow Importance (I_s)	1.0

Wind Criteria

Wind Speed (V_3)	115 mph
Wind Exposure	C
Wind Importance (I_w)	1.0
Building Category	II

Seismic Criteria

Site Class	D	Risk Category	II
S_s	0.48	Seismic Importance (I_E)	1.0
S_1	0.15	Seismic Design Category (SDC)	D
S_{DS}	0.45	Seismic Response Coefficient, R	6.5
S_{D1}	0.22	Design Base Shear	.08Wp

Live Loads

Typical	40 psf
Corridor	n/a
Storage	n/a

Soil Bearing

Typical	1500 psf

Roof Dead Loads:

Deck	*1.5*
Insulation	*2.0*
Roofing	*3.0*
Joist	*2.5*
Ceiling	*3.0*
Misc	*4.5*
TOTAL	**17 psf**

Floor Dead Loads:

Deck	2.3
Joist	2.0
Ceiling	0.0
Flooring	1.0
Misc	5.0
TOTAL	**10 psf**

Exterior Wall Dead Loads:

Studs	*2.0*
Siding	*2.5*
Insulation	*0.5*
Gyp. Board	*2.5*
Sheating	*1.5*
Misc	*3.0*
TOTAL	**12 psf**

Project # : *2017-04907*
Project: *Jett Residence*

Seismic Loading Analysis

S_s =	*0.4770*	C_T =	*0.020*	
S_1 =	*0.1460*	h_n =	*29.00*	ft
F_a =	*1.4*			
F_v =	*2.2*			
R =	*6.5*			
I_E =	*1.0*			

$S_{MS} = F_aS_s$ =	0.6769	
$S_{M1} = F_vS_1$ =	0.3238	
		Seismic Design Category
$S_{DS} = 2/3\ S_{MS}$ =	0.4512	*C*
$S_{D1} = 2/3\ S_{M1}$ =	0.2159	*D*
$C_s = 1.2{*}S_{DS}/(R/I_E)$ =	0.0833	**Controls**
$T_a = C_Th_n^{3/4}$ =	0.2499	
$C_s < S_{D1}/[(R/I_E)T]$ =	0.1329	
$C_s > 0.044S_{DS}I_E$ =	0.0199	
$C_s > 0.5S_1/(R/I_E)$ =	0.0112	

$V = C_sW$ = **0.0833** W

0.7*V = **0.0583** W

Seismic Component Loading

w_p =	*1*	psf	weight of element
V_{px} =	*0*	plf	Portion of seismic shear load at the level of the diaphragm, required to be transferred to the components of the vertical seismic-force-resisting system beacause of the offsets or changes in the stiffness of the vertical components above of below the diaphragm.
w_w =	*1*	psf	weight of wall
L_b =	*99*	ft	length of the building

NOTE: Use 1 for unit weight to achieve an answer per element unit weight

Connections

$F_p = 0.133\ S_{DS}\ w_p$ =	**0.06**	psf		
or				
$F_p = 0.05\ w_p$ =	**0.05**	psf		

Diaphragm

$F_p = 0.2\ I_E\ S_{DS}\ w_p + V_{px}$ =	**0.09**	psf		

Bearing Walls & Shear Walls

Out of Plane Forces

$F_p = 0.40\ I_E\ S_{DS}\ w_w$ =	**0.18**	psf	**Controls**	*12.11.1*
$F_p = 0.10\ w_w$ =	**0.10**	psf		*12.11.1*

Anchorage

F_p =	**0.2**	psf		*12.11.2a*
$F_p = 400\ I_E\ S_{DS}$ =	**180**	plf		*12.11.2b*
F_p =	**280**	plf	(multiply by 0.7 for service loads)	*12.11.2c*
$F_p = 0.40\ I_E\ S_{DS}\ w_w\ k_a$ =	**0.4**	psf		*12.11-1*
$F_p = 0.2\ I_E\ k_a\ w_w$ =	**0.3980**	psf	**Controls**	
$k_a = 1.0 + L_b / 100$ =	**1.9900**			*12.11-2*

Note: *12.11.2.2.2* The strength design forces for steel elements of the structural wall anchorage system, with exception of anchor bolts and reinforcing steel, shall be increased by 1.4 times the forces otherwise noted above.

WIND LOADING ANALYSIS - Main Wind-Force Resisting System

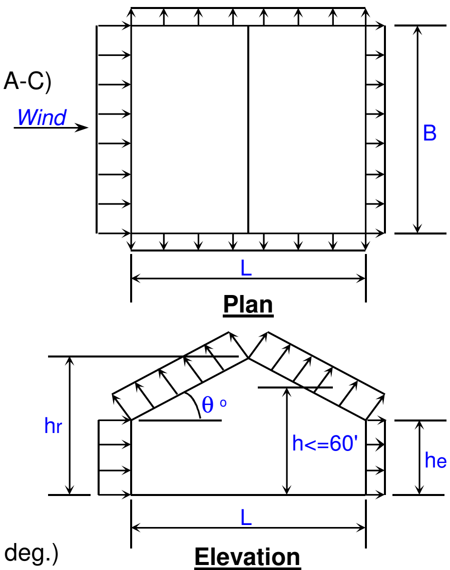
Per ASCE 7-10 Code for Enclosed or Partially Enclosed Buildings

Using Method 2: Analytical Procedure (Section 27 & 28) for Low-Rise Buildings

Job Name:	Jett Residence	Location:	Valley County, Idaho		
Job Number:	2017-04907	Originator:	kkj	Checker:	kkj

Input Data:

Wind Speed, V =	115	mph (Wind Map, Figure 26.5-1A-C)
Bldg. Classification =	II	(Table 1.5-1 Risk Category)
Exposure Category =	C	(Sect. 26.7)
Ridge Height, hr =	29.00	ft. (hr >= he)
Eave Height, he =	18.33	ft. (he <= hr)
Building Width =	32.00	ft. (Normal to Building Ridge)
Building Length =	99.00	ft. (Parallel to Building Ridge)
Roof Type =	Gable	(Gable or Monoslope)
Topo. Factor, Kzt =	1.00	(Sect. 26.8 & Figure 26.8-1)
Direct. Factor, Kd =	0.85	(Table 26.6)
Enclosed? (Y/N)	Y	(Sect. 26.2 & Table 26.11-1)
Hurricane Region?	N	



Resulting Parameters and Coefficients:

Roof Angle, θ =	33.69	deg.
Mean Roof Ht., h =	23.67	ft. (h = (hr+he)/2, for angle >10 deg.)

Check Criteria for a Low-Rise Building:

1. Is h <= 60' ? Yes, O.K. 2. Is h <= Lesser of L or B? Yes, O.K.

External Pressure Coeff's., GCpf (Fig. 28.4-1):
(For values, see following wind load tabulations.)
Positive & Negative Internal Pressure Coefficients, GCpi (Table 26.11-1):

+GCpi Coef. =	0.18	(positive internal pressure)
-GCpi Coef. =	-0.18	(negative internal pressure)

If h < 15 then: Kh = 2.01*(15/zg)^(2/α) (Table 28.3-1)
If h >= 15 then: Kh = 2.01*(z/zg)^(2/α) (Table 28.3-1)

α =	9.50	(Table 26.9-1)
zg =	900	(Table 26.9-1)
Kh =	0.93	(Kh = Kz evaluated at z = h)

Velocity Pressure: qz = 0.00256*Kz*Kzt*Kd*V^2 (Sect. 28.3.2, Eq. 28.3-1)

qh = 26.89 psf qh = 0.00256*Kh*Kzt*Kd*V^2 (qz evaluated at z = h)

Design Net External Wind Pressures (Sect. 28.4.1):
p = qh*[(GCpf) - (+/-GCpi)] (psf, Eq. 28.4-1)

Wall and Roof End Zone Widths 'a' and '2*a' (Fig. 28.4-1):

a =	3.20	ft.
2*a =	6.40	ft.

MWFRS Wind Load for Load Case A				MWFRS Wind Load for Load Case B			
Surface	GCpf	p = Net Pressures (psf)		Surface	*GCpf	p = Net Pressures (psf)	
		(w/ +GCpi)	(w/ -GCpi)			(w/ +GCpi)	(w/ -GCpi)
Zone 1	0.56	10.22	19.90	Zone 1	0.40	5.92	15.60
Zone 2	0.21	0.81	10.49	Zone 2	-0.69	-23.39	-13.71
Zone 3	-0.43	-16.40	-6.72	Zone 3	-0.37	-14.79	-5.11
Zone 4	-0.37	-14.79	-5.11	Zone 4	-0.29	-12.64	-2.96
Zone 5	---	---	---	Zone 5	-0.45	-16.94	-7.26
Zone 6	---	---	---	Zone 6	-0.45	-16.94	-7.26
Zone 1E	0.69	13.71	23.39	Zone 1E	0.61	11.56	21.24
Zone 2E	0.27	2.42	12.10	Zone 2E	-1.07	-33.61	-23.93
Zone 3E	-0.53	-19.09	-9.41	Zone 3E	-0.53	-19.09	-9.41
Zone 4E	-0.48	-17.75	-8.07	Zone 4E	-0.43	-16.40	-6.72
Zone 5E	---	---	---	Zone 5E	0.61	11.56	21.24
Zone 6E	---	---	---	Zone 6E	-0.43	-16.40	-6.72

*Note: Use roof angle θ = 0 degrees for Longitudinal Direction.

For Case A when GCpf is neg. in Zones 2/2E: Zones 2/2E dist. = N.A. ft.

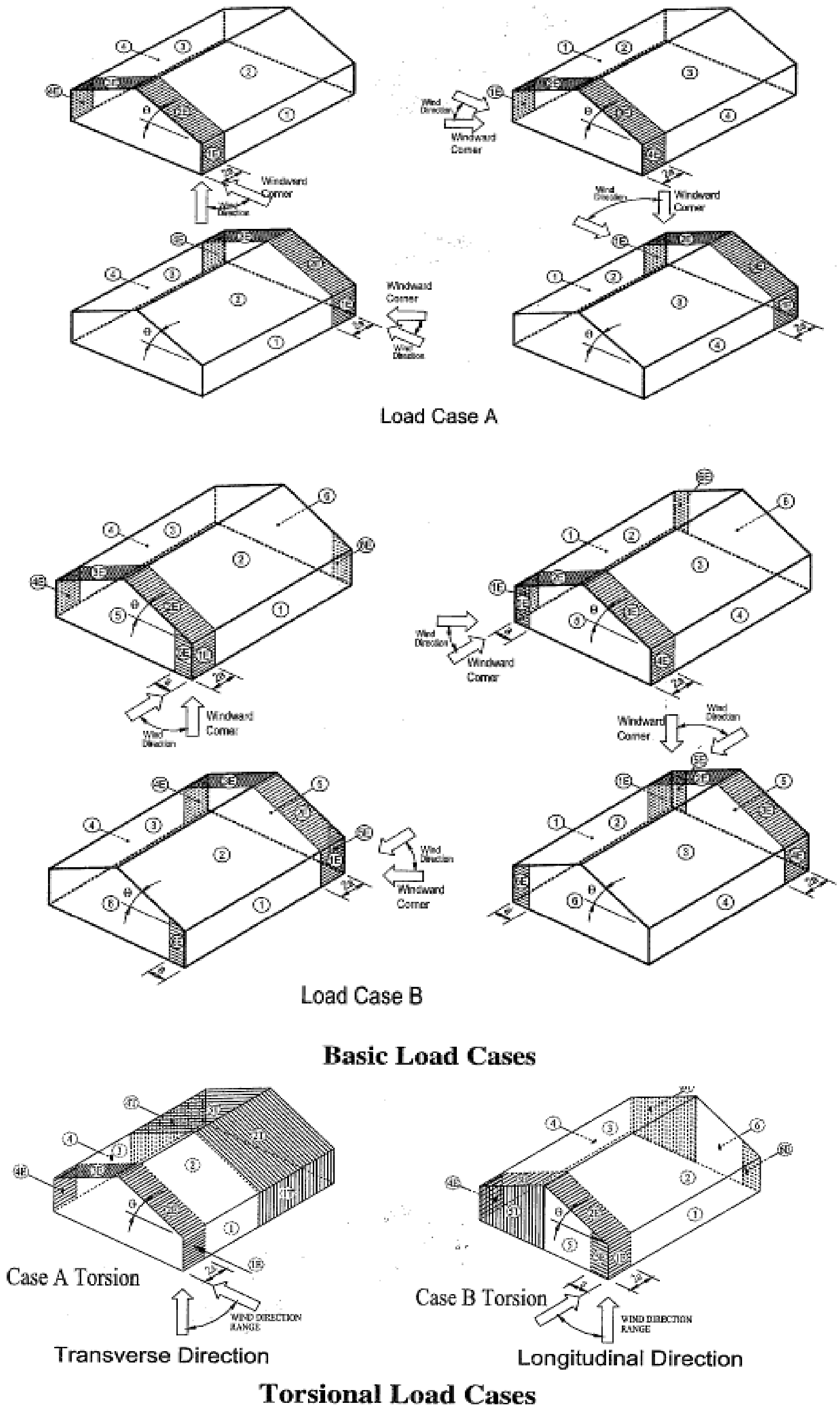
For Case B when GCpf is neg. in Zones 2/2E: Zones 2/2E dist. = 45.83 ft.

Remainder of roof Zones 2/2E extending to ridge line shall use roof Zones 3/3E pressure coefficients.

MWFRS Wind Load for Load Case A, Torsional Case				MWFRS Wind Load for Case B, Torsional Case			
Surface	GCpf	p = Net Pressure (psf)		Surface	GCpf	p = Net Pressure (psf)	
		(w/ +GCpi)	(w/ -GCpi)			(w/ +GCpi)	(w/ -GCpi)
Zone 1T	---	2.55	4.97	Zone 1T	---	1.48	3.90
Zone 2T	---	0.20	2.62	Zone 2T	---	-5.85	-3.43
Zone 3T	---	-4.10	-1.68	Zone 3T	---	-3.70	-1.28
Zone 4T	---	-3.70	-1.28	Zone 4T	---	-3.16	-0.74
Zone 5T	---	---	---	Zone 5T	---	-4.24	-1.82
Zone 6T	---	---	---	Zone 6T	---	-4.24	-1.82

Notes:
1. For Load Case A (Transverse), Load Case B (Longitudinal), and Torsional Cases:
   - Zone 1 is windward wall for interior zone.
   - Zone 2 is windward roof for interior zone.
   - Zone 3 is leeward roof for interior zone.
   - Zone 4 is leeward wall for interior zone.
   - Zones 5 and 6 are sidewalls.
   - Zone 1T is windward wall for torsional case
   - Zone 3T is leeward roof for torsional case
   - Zones 5T and 6T are sidewalls for torsional case.
   - Zone 1E is windward wall for end zone.
   - Zone 2E is windward roof for end zone.
   - Zone 3E is leeward roof for end zone.
   - Zone 4E is leeward wall for end zone.
   - Zone 5E & 6E is sidewalls for end zone.
   - Zone 2T is windward roof for torsional case.
   - Zone 4T is leeward wall for torsional case.
2. (+) and (-) signs signify wind pressures acting toward & away from respective surfaces.
3. Building must be designed for all wind directions using the 8 load cases shown below. The load cases are applied to each building corner in turn as the reference corner.
4. Wind loads for torsional cases are 25% of respective transverse or longitudinal zone load values. Torsional loading shall apply to all 8 basic load cases applied at each reference corner.
   Exception: One-story buildings with "h" <= 30', buildings <= 2 stories framed with light frame construction, and buildings <=2 stories designed with flexible diaphragms need not be designed for torsional load cases.
5. Per Code Section 28.4.4, the minimum wind load for MWFRS shall not be less than 16 psf.

Low-Rise Buildings h <= 60'

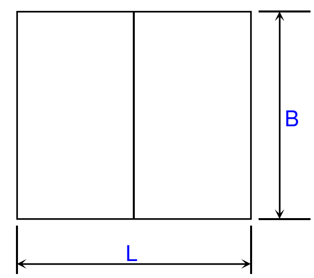


WIND LOADING ANALYSIS - Wall Components and Cladding
Per ASCE 7-10 Code for Buildings of Any Height
Using Part 1 & 3: Analytical Procedure (Section 30.4 & 30.6)

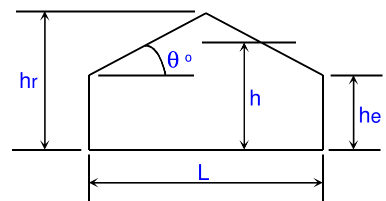
Job Name:	Jett Residence	Location:	Valley County, Idaho		
Job Number:	2017-04907	Originator:	kkj	Checker:	kkj

Input Data:

Wind Speed, V =	115	mph (Wind Map, Figure 26.5-1A-C)
Bldg. Classification =	II	(Table 1.5-1 Risk Category)
Exposure Category =	C	(Sect. 26.7)
Ridge Height, hr =	29.00	ft. (hr >= he)
Eave Height, he =	18.33	ft. (he <= hr)
Building Width =	32.00	ft. (Normal to Building Ridge)
Building Length =	99.00	ft. (Parallel to Building Ridge)
Roof Type =	Gable	(Gable or Monoslope)
Topo. Factor, Kzt =	1.00	(Sect. 26.8 & Figure 26.8-1)
Direct. Factor, Kd =	0.85	(Table 26.6)
Enclosed? (Y/N)	Y	(Sect. 28.6-1 & Figure 26.11-1)
Hurricane Region?	N	
Component Name =	Wall	(Girt, Siding, Wall, or Fastener)
Effective Area, Ae =	21.33	ft.^2 (Area Tributary to C&C)



Plan



Elevation

Resulting Parameters and Coefficients:

Roof Angle, θ =	33.69	deg.
Mean Roof Ht., h =	23.67	ft. (h = (hr+he)/2, for roof angle >10 deg.)

Wall External Pressure Coefficients, GCp:

GCp Zone 4 Pos. =	0.94	(Fig. 30.4-1)
GCp Zone 5 Pos. =	0.94	(Fig. 30.4-1)
GCp Zone 4 Neg. =	-1.04	(Fig. 30.4-1)
GCp Zone 5 Neg. =	-1.28	(Fig. 30.4-1)

Positive & Negative Internal Pressure Coefficients, GCpi (Figure 26.11-1):

+GCpi Coef. =	0.18	(positive internal pressure)
-GCpi Coef. =	-0.18	(negative internal pressure)

If z <= 15 then: Kz = 2.01*(15/zg)^(2/α) , If z > 15 then: Kz = 2.01*(z/zg)^(2/α) (Table 30.3-1)

α =	9.50	(Table 26.9-1)
zg =	900	(Table 26.9-1)
Kh =	0.93	(Kh = Kz evaluated at z = h)

Velocity Pressure: qz = 0.00256*Kz*Kzt*Kd*V^2 (Sect. 30.3.2, Eq. 30.3-1)

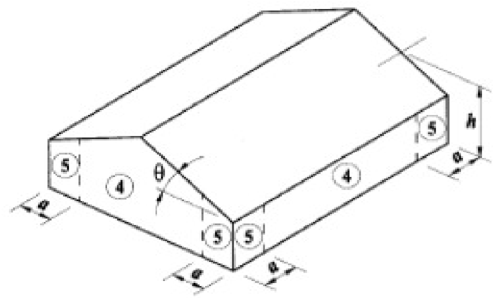
qh = 26.89 psf   qh = 0.00256*Kh*Kzt*Kd*V^2 (qz evaluated at z = h)

Design Net External Wind Pressures (Sect. 30.4 & 30.6):
For h <= 60 ft.: p = qh*((GCp) - (+/-GCpi)) (psf)
For h > 60 ft.: p = q*(GCp) - qi*(+/-GCpi) (psf)
where: q = qz for windward walls, q = qh for leeward walls and side walls
qi = qh for all walls (conservatively assumed per Sect. 30.6)

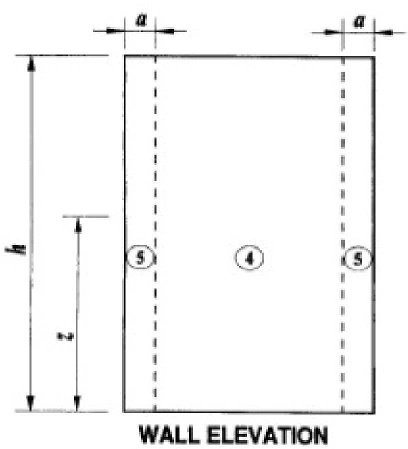
Wind Load Tabulation for Wall Components & Cladding							
Component	z	Kh	qh	p = Net Design Pressures (psf)			
	(ft.)		(psf)	Zone 4 (+)	Zone 4 (-)	Zone 5 (+)	Zone 5 (-)
Wall	0	0.93	26.89	30.17	-32.86	30.17	-39.36
	15.00	0.93	26.89	30.17	-32.86	30.17	-39.36
	20.00	0.93	26.89	30.17	-32.86	30.17	-39.36
	25.00	0.93	26.89	30.17	-32.86	30.17	-39.36
For z = hr:	29.00	0.93	26.89	30.17	-32.86	30.17	-39.36
For z = he:	18.33	0.93	26.89	30.17	-32.86	30.17	-39.36
For z = h:	23.67	0.93	26.89	30.17	-32.86	30.17	-39.36

Notes: 1. (+) and (-) signs signify wind pressures acting toward & away from respective surfaces.
2. Width of Zone 5 (end zones), 'a' = 3.20 ft.
3. Per Code Section 30.2.2, the minimum wind load for C&C shall not be less than 16 psf.
4. References : a. ASCE 7-10, "Minimum Design Loads for Buildings and Other Structures".
b. "Guide to the Use of the Wind Load Provisions of ASCE 7-02"
by: Kishor C. Mehta and James M. Delahay (2004).

Wall Components and Cladding:



Wall Zones for Buildings with h <= 60 ft.



Wall Zones for Buildings with h > 60 ft.

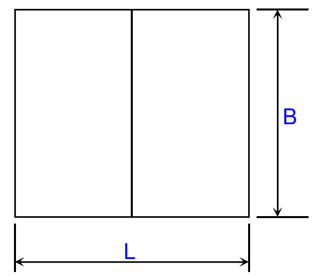
WIND LOADING ANALYSIS - Roof Components and Cladding

Per ASCE 7-10 Code for Bldgs. of Any Height with Gable Roof θ <= 45° or Monoslope Roof θ <= 3°
Using Part 1 & 3: Analytical Procedure (Section 30.4 & 30.6)

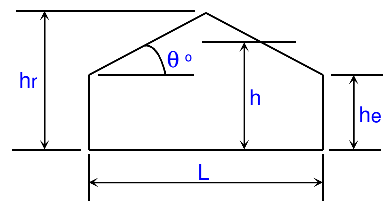
Job Name:	Jett Residence	Location:	Valley County, Idaho		
Job Number:	2017-04907	Originator:	kkj	Checker:	kkj

Input Data:

Wind Speed, V =	115	mph (Wind Map, Figure 26.5-1A-C)
Bldg. Classification =	II	(Table 1-1 Occupancy Category)
Exposure Category =	C	(Sect. 26.7)
Ridge Height, hr =	29.00	ft. (hr >= he)
Eave Height, he =	18.33	ft. (he <= hr)
Building Width =	32.00	ft. (Normal to Building Ridge)
Building Length =	99.00	ft. (Parallel to Building Ridge)
Roof Type =	Gable	(Gable or Monoslope)
Topo. Factor, Kzt =	1.00	(Sect. 26.8 & Figure 26.8-1)
Direct. Factor, Kd =	0.85	(Table 26.6)
Enclosed? (Y/N)	Y	(Sect. 28.6-1 & Figure 26.11-1)
Hurricane Region?	N	
Component Name =	Joist	(Purlin, Joist, Decking, or Fastener)
Effective Area, Ae =	48	ft.^2 (Area Tributary to C&C)
Overhangs? (Y/N)	y	(if used, overhangs on all sides)



Plan



Elevation

Resulting Parameters and Coefficients:

Roof Angle, θ =	33.69	deg.
Mean Roof Ht., h =	23.67	ft. (h = (hr+he)/2, for roof angle >10 deg.)

Roof External Pressure Coefficients, GCp:

GCp Zone 1-3 Pos. =	0.83	(Fig. 30.4-2A, 30.4-2B, and 30.4-2C)
GCp Zone 1 Neg. =	-0.86	(Fig. 30.4-2A, 30.4-2B, and 30.4-2C)
GCp Zone 2 Neg. =	-1.86	(Fig. 30.4-2A, 30.4-2B, and 30.4-2C)
GCp Zone 3 Neg. =	-1.86	(Fig. 30.4-2A, 30.4-2B, and 30.4-2C)

Positive & Negative Internal Pressure Coefficients, GCpi (Figure 26.11-1):

+GCpi Coef. =	0.18	(positive internal pressure)
-GCpi Coef. =	-0.18	(negative internal pressure)

If z <= 15 then: Kz = 2.01*(15/zg)^(2/α) , If z > 15 then: Kz = 2.01*(z/zg)^(2/α) (Table 30.3-1)

α =	9.50	(Table 26.9-1)
zg =	900	(Table 26.9-1)
Kh =	0.93	(Kh = Kz evaluated at z = h)

Velocity Pressure: qz = 0.00256*Kz*Kzt*Kd*V^2 (Sect. 30.3.2, Eq. 30.3-1)

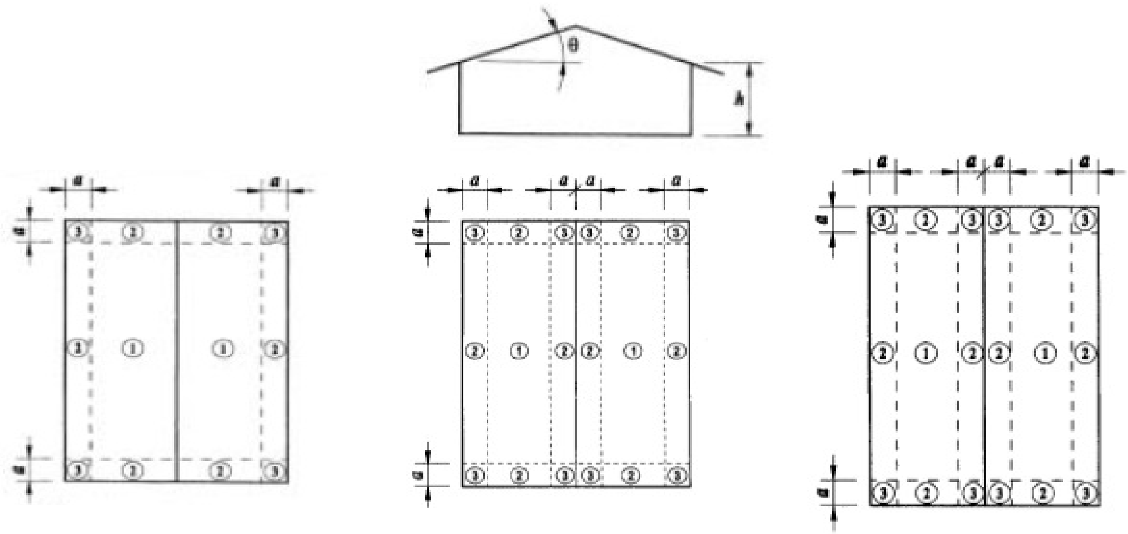
qh = 26.89 psf   qh = 0.00256*Kh*Kzt*Kd*V^2 (qz evaluated at z = h)

Design Net External Wind Pressures (Sect. 30.4 & 30.6):
For h <= 60 ft.: p = qh*((GCp) - (+/-GCpi)) (psf)
For h > 60 ft.: p = q*(GCp) - qi*(+/-GCpi) (psf)
where: q = qh for roof
qi = qh for roof (conservatively assumed per Sect. 30.6)

Wind Load Tabulation for Roof Components & Cladding							
Component	z (ft.)	Kh	qh (psf)	p = Net Design Pressures (psf)			
				Zone 1,2,3 (+)	Zone 1 (-)	Zone 2 (-)	Zone 3 (-)
Joist	0	0.93	26.89	27.21	-28.07	-54.96	-54.96
	15.00	0.93	26.89	27.21	-28.07	-54.96	-54.96
	20.00	0.93	26.89	27.21	-28.07	-54.96	-54.96
	25.00	0.93	26.89	27.21	-28.07	-54.96	-54.96
For z = hr:	29.00	0.93	26.89	27.21	-28.07	-54.96	-54.96
For z = he:	18.33	0.93	26.89	27.21	-28.07	-54.96	-54.96
For z = h:	23.67	0.93	26.89	27.21	-28.07	-54.96	-54.96

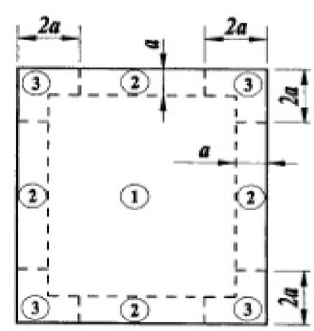
Notes: 1. (+) and (-) signs signify wind pressures acting toward & away from respective surfaces.
2. Width of Zone 2 (edge), 'a' = 3.20 ft.
3. Width of Zone 3 (corner), 'a' = 3.20 ft.
4. For monoslope roofs with θ <= 3 degrees, use Fig. 30.4-2A for 'GCp' values with 'qh'.
5. For buildings with h > 60' and θ > 10 degrees, use Fig. 30.6-1 for 'GCpi' values with 'qh'.
6. For all buildings with overhangs, use Fig. 30.4-2B for 'GCp' values per Sect. 30.10.
7. If a parapet >= 3' in height is provided around perimeter of roof with θ <= 10 degrees, Zone 3 shall be treated as Zone 2.
8. Per Code Section 30.2.2, the minimum wind load for C&C shall not be less than 16 psf.
9. References : a. ASCE 7-02, "Minimum Design Loads for Buildings and Other Structures".
b. "Guide to the Use of the Wind Load Provisions of ASCE 7-02" by: Kishor C. Mehta and James M. Delahay (2004).

Roof Components and Cladding:



θ <= 7 deg. 7 deg. < θ <= 27 deg. 27 deg. < θ <= 45 deg.

Roof Zones for Buildings with h <= 60 ft.
(for Gable Roofs <= 45° and Monoslope Roofs <= 3°)

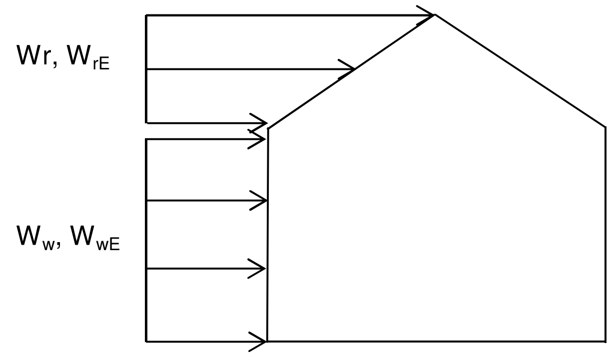


Roof Zones for Buildings with h > 60 ft.
(for Gable Roofs <= 10° and Monoslope Roofs <= 3°)

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Wind Shear Force Calculations

FACTORED LOADS CASE A		
$0.6{*}W_r$	$= (Z_2 + Z_3) * 0.6 =$	**9.5 psf**
$0.6{*}W_{rE}$	$= (Z_{2E} + Z_{3E}) * 0.6 =$	**11.9 psf**
$0.6{*}W_w$	$= (Z_1 + Z_4) * 0.6 =$	**13.8 psf**
$0.6{*}W_{wE}$	$= (Z_{1E} + Z_{4E}) * 0.6 =$	**17.4 psf**



FACTORED LOADS CASE B		
$0.6{*}W_r$	$= (Z_2 + Z_3) * 0.6 =$	**4.8 psf**
$0.6{*}W_{rE}$	$= (Z_{2E} + Z_{3E}) * 0.6 =$	**8.0 psf**
$0.6{*}W_w$	$= (Z_1 + Z_4) * 0.6 =$	**10.3 psf**
$0.6{*}W_{wE}$	$= (Z_{1E} + Z_{4E}) * 0.6 =$	**15.5 psf**

Wall Line	Wind Force (psf)	Wall ht (ft)	Upper Wall trib. (ft)	Tributary dist. (ft)	+	Wind Force (psf)	wall ht (ft)	truss trib (ft)	Tributary dist (ft)	+	Shear, Upper (#)	=	**Wind Force (kips)**
X1-2	16.85	8		10	+	11.53		5	10	+		=	**1.25**
X2-2	15.47	8		18.5	+	10.61		5	18.5	+		=	**2.13**
X3-2	15.92	8		14.5	+	10.91		5	14.5	+		=	**1.71**
X4-2	15.56	8		17.5	+	10.67		5	17.5	+		=	**2.02**
X5-2	16.46	8		11.5	+	11.27		5	11.5	+		=	**1.41**
Y1-2	15.92	8		14.5	+	10.91		5	14.5	+		=	**1.71**
Y2-2	15.92	8		14.5	+	10.91		5	14.5	+		=	**1.71**
Y3-2	15.99	8		14	+	10.96		5	14	+		=	**1.66**
Y4-2	15.99	8		14	+	10.96		5	14	+		=	**1.66**
X1-1	16.85	9	5	10	+					+	1.25	=	**2.85**
X2-1	14.68	9	5	36	+					+	3.84	=	**8.86**
X3-1	15.00	9	5	26	+					+	3.43	=	**7.13**
Y1-1	16.11	9		13.25	+	11.04		9.125	13.25	+		=	**2.30**
Y2-1	14.66	9	5	37	+					+	1.71	=	**6.87**
Y3-1	15.11	9	5	23.75	+					+	1.71	=	**5.12**
Y4-1	15.85	9	5	15	+					+	1.66	=	**3.92**
Y5-1	15.15	9	5	23	+					+	1.66	=	**4.97**
Y6-1	17.60	13		8	+	12.03		2.625	8	+		=	**1.17**

Location:	*McCall, Idaho*
Project # :	*2017-04904*
Project:	*Mooney Addition*
Engineer:	*kkj*

Chord & Collector Calculations

	Maximum Distributed Load (plf)	Length Diaphragm (ft)	Depth Diaphragm (ft)	Moment (ft-#)	Maximum Tension Force (#)
Chord Force	144.6	47.5	20	40772.7	2038.6

	Diaphragm Force on Wall With Opening (plf)	Distance of Opening (ft)	Maximum Tension Force (#)
Collector Force	160.1	20.0	3201.5

Governing Top Plate Force (#)	3201.5	**Number of 10d Nails Ea. Side of Splice**	17

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

PERFORMANCE ENGINEERS

Seismic Shear Force Calculations

From 'ASCE7-10 Seismic Loading Analysis':

Wall Line	Roof (psf)	Trib Width (ft)	Length (ft)	+	Floor (psf)	Trib Area W (ft)	Area L (ft)	+	Wall (psf)	Wall Height (ft)	Perp Wall Trib length (ft)	$*C_s$	+	Shear upper (kips)	=	Base Shear Force (kips)	**Seismic Shear Force at Wall (kips)**	**Lateral Control**
X1-2	41	10	37.5	+				+	12	8	72	.06Wp	+		=	0.93	**0.61**	**Wind**
X2-2	41	18.5	37.5	+				+	12	8	72	.06Wp	+		=	1.47	**0.96**	**Wind**
X3-2	41	14.5	37.5	+				+	12	8	72	.06Wp	+		=	1.22	**0.79**	**Wind**
X4-2	41	17.5	37.5	+				+	12	8	72	.06Wp	+		=	1.41	**0.92**	**Wind**
X5-2	41	11.5	37.5	+				+	12	8	72	.06Wp	+		=	1.02	**0.67**	**Wind**
Y1-2	41	14.5	36	+				+	12	8	37.5	.06Wp	+		=	1.04	**0.68**	**Wind**
Y2-2	41	14.5	36	+				+	12	8	37.5	.06Wp	+		=	1.04	**0.68**	**Wind**
Y3-2	41	14	36	+				+	12	8	37.5	.06Wp	+		=	1.01	**0.66**	**Wind**
Y4-2	41	14	36	+				+	12	8	37.5	.06Wp	+		=	1.01	**0.66**	**Wind**
X1-1		10		+	15	10	99	+	12	13	43.083	.06Wp	+	0.93	=	0.90	**1.51**	**Wind**
X2-1		36		+	15	36	99	+	12	13	43.083	.06Wp	+	2.69	=	2.51	**4.32**	**Wind**
X3-1		26		+	15	26	99	+	12	13	43.083	.06Wp	+	2.43	=	1.89	**3.66**	**Wind**
Y1-1	41	13.25	72	+				+	12	13	43.083	.06Wp	+		=	1.91	**1.25**	**Wind**
Y2-1		37		+	15	37	72	+	12	13	43.083	.06Wp	+	1.04	=	1.94	**2.31**	**Wind**
Y3-1		23.75		+	15	23.75	72	+	12	13	43.083	.06Wp	+	1.04	=	1.35	**1.92**	**Wind**
Y4-1		15		+	15	15	72	+	12	13	43.083	.06Wp	+	1.01	=	0.95	**1.63**	**Wind**
Y5-1		23		+	15	23	72	+	12	13	43.083	.06Wp	+	1.01	=	1.31	**1.87**	**Wind**
Y6-1	41	8	46	+				+	12	13	43.083	.06Wp	+		=	0.91	**0.59**	**Wind**

Total Weight for Vertical Distribution		11.34 kips
Floor	Percent of Total Weight Distribution	Distribution Multiplication Factor
Second Floor	69.6%	1.30
First Floor	30.4%	0.65

Shear Wall (X1-2)

PERFORMANCE ENGINEERS

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*28.459*	ft	Overall length of wall
L =	*28.459*	ft	Total length of shear wall
L_w =	*18.46*	ft	Total length of full height segments
H =	*8.00*	ft	height of shear wall
H' =	*4.00*	ft	maximum opening height
V_1 =	*1250.55*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*64*	plf	Self weight
$w_{DL\ above}$ =	*170*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	n	y/n	Wall Connected to Concrete
	Y	y/n	Wall Connected to Truss Heel
	N	y/n	Wall Connected to Gable Truss / Rim

Shearwall segments
3.375
12.709
2.375

Calculate Unit Base Shear

$\%_{fh} = L_w/L$ =	0.649		percent of full height segments	
$\%_{oh}$ = H'/H =	0.500		percent of maximum opening height	
SCAF =	*0.85*		shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)	
$v_{base} = V_1/L_w$ =	68		plf	unit base shear
$v_{req} = v_{base}$/SCAF =	**80**		plf	effective unit base shear

OTM =	**11,762**	lb ft	overturning moment of total length of wall
RM =	**94,758**	lb ft	resisting moment of total l

T = **Not Req'd** lbs

Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	217
Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336

Provide Blocking: No Blocking Needed

Shear Wall (X2-2)

PERFORMANCE ENGINEERS

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*28.459*	ft	Overall length of wall
L =	*28.459*	ft	Total length of shear wall
L_w =	*22.42*	ft	Total length of full height segments
H =	*8.00*	ft	height of shear wall
H' =	*8.00*	ft	maximum opening height
V_1 =	*2126.40*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*64*	plf	Self weight
$w_{DL\ above}$ =	*170*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	N	y/n	Wall Connected to Concrete
	y	y/n	Wall Connected to Truss Heel
	n	y/n	Wall Connected to Gable Truss / Rim

Shearwall segments
3.875
13.5
5.042

Calculate Unit Base Shear

$\%_{fh}$ = L_w/L =	0.788	percent of full height segments	
$\%_{oh}$ = H'/H =	1.000	percent of maximum opening height	
SCAF =	*0.70*	shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)	
v_{base} = V_1/L_w =	95	plf	unit base shear
v_{req} = v_{base}/SCAF :	**135**	plf	effective unit base shear

OTM =	**24,234**	lb ft	overturning moment of total length of wall
RM =	**94,758**	lb ft	resisting moment of total le

T = **Not Req'd** lbs

Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	217
Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336

Use 1/2" Gyp Board, BOTH Sides, shear blocked, with 5d Cooler Nails @ 4" O.C., Va = 300 plf (@ INTERIOR)

Provide Blocking:	No Blocking Needed

Shear Wall (X3-2)

PERFORMANCE ENGINEERS

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*28.000*	ft	Overall length of wall	
L =	*28.000*	ft	Total length of shear wall	Shearwall segments
L_w =	*13.00*	ft	Total length of full height segments	6.500
H =	*8.00*	ft	height of shear wall	6.500
H' =	*8.00*	ft	maximum opening height	
V_1 =	*1714.23*	lbs	**Total Wind force at top of wall**	
$w_{DL\ self}$ =	*64*	plf	Self weight	
$w_{DL\ above}$ =	*102.000*	plf	Applied dead load	
	7/16	in	Prefered OSB thickness	
	N	y/n	Wall Connected to Concrete	
	N	y/n	Wall Connected to Truss Heel	
	Y	y/n	Wall Connected to Gable Truss / Rim	

Calculate Unit Base Shear

$\%_{fh} = L_w/L$ =	0.464		percent of full height segments	
$\%_{oh}$ = H'/H =	1.000		percent of maximum opening height	
SCAF =	*0.48*		shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)	
$v_{base} = V_1/L_w$ =	132	plf		unit base shear
$v_{req} = v_{base}$/SCAF =	**273**	plf		effective unit base shear

OTM =	**28,407**	lb ft	overturning moment of total length of wall
RM =	**65,072**	lb ft	resisting moment of total le

T = **Not Req'd** lbs

Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336
Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 4" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	322

Nail Gable Truss to Top Plate With: 10d's @ 12 in O.C.

Shear Wall (X4-2)

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*28.00*	ft	Overall length of wall
L =	*28*	ft	Total length of shear wall
L_w =	*13.00*	ft	Total length of full height segments
H =	*8.00*	ft	height of shear wall
H' =	*8.00*	ft	maximum opening height
V_1 =	*2023.36*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*64*	plf	Self weight
$w_{DL\ above}$ =	*102*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	N	y/n	Wall Connected to Concrete
	N	y/n	Wall Connected to Truss Heel
	Y	y/n	Wall Connected to Gable Truss / Rim Board

Shearwall segments
6.5
6.5

Calculate Unit Base Shear

$\%_{fh}$ = L_w/L =	0.464	percent of full height segments		
$\%_{oh}$ = H'/H =	1.000	percent of maximum opening height		
SCAF =	*0.48*	shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)		
v_{base} = V_1/L_w =	156	plf	unit base shear	
v_{req} = v_{base}/SCAF =	**322**	plf	effective unit base shear	

OTM =	**33,530**	lb ft	overturning moment of total length of wall
RM =	**65,072**	lb ft	resisting moment of total le
T =	**Not Req'd**	lbs	

Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336
Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 3" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	434

Nail Gable Truss to Top Plate With:	10d's @ 12 in O.C.

Shear Wall (X5-2)

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*14*	ft	Overall length of wall
L =	*14*	ft	Total length of shear wall
L_w =	*10.00*	ft	Total length of full height segments
H =	*8.00*	ft	height of shear wall
H' =	*4.00*	ft	maximum opening height
V_1 =	*1405.11*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*64*	plf	Self weight
$w_{DL\ above}$ =	*68*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	N	y/n	Wall Connected to Concrete
	n	y/n	Wall Connected to Truss Heel
	y	y/n	Wall Connected to Gable Truss / Rim

Shearwall segments
4.583
5.417

Calculate Unit Base Shear

$\%_{fh}$ = L_w/L =	0.714	percent of full height segments		
$\%_{oh}$ = H'/H =	0.500	percent of maximum opening height		
SCAF =	*0.88*	shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)		
v_{base} = V_1/L_w =	141	plf	unit base shear	
v_{req} = v_{base}/SCAF =	**161**	plf	effective unit base shear	

OTM =	**12,847**	lb ft	overturning moment of total length of wall
RM =	**12,936**	lb ft	resisting moment of total l
T =	**509**	lbs	**Intersecting wall sufficient for uplift**

Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	217
Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336

Nail Gable Truss to Top Plate With: 10d's @ 12 in O.C.

Shear Wall (Y1-2)

PERFORMANCE ENGINEERS

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*20*	ft	Overall length of wall
L =	*16.083*	ft	Total length of shear wall
L_w =	*16.08*	ft	Total length of full height segments
H =	*8.00*	ft	height of shear wall
H' =	*0.00*	ft	maximum opening height
V_1 =	*1714.23*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*64*	plf	Self weight
$w_{DL\ above}$ =	*68*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	N	y/n	Wall Connected to Concrete
	N	y/n	Wall Connected to Truss Heel
	y	y/n	Wall Connected to Gable Truss / Rim

Shearwall segments
16.083

Calculate Unit Base Shear

$\%_{fh}$ = L_w/L =	1.000	percent of full height segments	
$\%_{oh}$ = H'/H =	0.000	percent of maximum opening height	
SCAF =	*1.00*	shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)	
v_{base} = V_1/L_w =	107	plf	unit base shear
v_{req} = v_{base}/SCAF =	**107**	plf	effective unit base shear

OTM =	**13,714**	lb ft	overturning moment of total length of wall
RM =	**17,072**	lb ft	resisting moment of total le
T =	**216**	lbs	**Intersecting wall sufficient for uplift**

Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	217
Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336

Use 1/2" Gyp Board, BOTH Sides, shear blocked, with 5d Cooler Nails @ 4" O.C., Va = 300 plf (@ INTERIOR)

Nail Gable Truss to Top Plate With: 10d's @ 12 in O.C.

Shear Wall (Y2-2)

PERFORMANCE ENGINEERS

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*20*	ft	Overall length of wall
L =	*9.333*	ft	Total length of shear wall
L_w =	*9.33*	ft	Total length of full height segments
H =	*8.00*	ft	height of shear wall
H' =	*0.00*	ft	maximum opening height
V_1 =	*1011.40*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*64*	plf	Self weight
$w_{DL\ above}$ =	*68*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	Y	y/n	Wall Connected to Concrete
	n	y/n	Wall Connected to Truss Heel
	y	y/n	Wall Connected to Gable Truss

Shearwall segments
9.333

Calculate Unit Base Shear

$\%_{fh}$ = L_w/L =	1.000	percent of full height segments		
$\%_{oh}$ = H'/H =	0.000	percent of maximum opening height		
SCAF =	*1.00*	shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)		
v_{base} = V_1/L_w =	108	plf	unit base shear	
v_{req} = v_{base}/SCAF =	**108**	plf	effective unit base shear	

OTM =	**8,091**	lb ft	overturning moment of total length of wall
RM =	**5,749**	lb ft	resisting moment of total l

T = **497** lbs **Intersecting wall sufficient for uplift**

Shear Transfer to Concrete: 1 1/2 Anchor Bolts= 72 o.c.

Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	217
Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336

Nail Gable Truss to Top Plate With: 10d's @ 12 in O.C.

Shear Wall (Y3-2)

PERFORMANCE ENGINEERS

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*11.917*	ft	Overall length of wall
L =	*11.917*	ft	Total length of shear wall
L_w =	*8.42*	ft	Total length of full height segments
H =	*8.00*	ft	height of shear wall
H' =	*5.00*	ft	maximum opening height
V_1 =	*981.00*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*64*	plf	Self weight
$w_{DL\ above}$ =	*68*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	n	y/n	Wall Connected to Concrete
	N	y/n	Wall Connected to Truss Heel
	Y	y/n	Wall Connected to Gable Truss

Shearwall segments
4.20867
4.20867

Calculate Unit Base Shear

$\%_{fh} = L_w/L$ =	0.706	percent of full height segments	
$\%_{oh} = H'/H$ =	0.625	percent of maximum opening height	
SCAF =	*0.80*	shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)	
$v_{base} = V_1/L_w$ =	117	plf	unit base shear
$v_{req} = v_{base}$/SCAF =	**146**	plf	effective unit base shear

OTM =	**9,865**	lb ft	overturning moment of total length of wall
RM =	**9,373**	lb ft	resisting moment of total le
T =	**504**	lbs	**Intersecting wall sufficient for uplift**

Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	217
Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336

Nail Gable Truss to Top Plate With: 10d's @ 12 in O.C.

PERFORMANCE ENGINEERS

Shear Wall (Y4-2)

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*11.917*	ft	Overall length of wall
L =	*11.917*	ft	Total length of shear wall
L_w =	*11.92*	ft	Total length of full height segments
H =	*8.00*	ft	height of shear wall
H' =	*0.00*	ft	maximum opening height
V_1 =	*1662.71*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*64*	plf	Self weight
$w_{DL\ above}$ =	*68*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	n	y/n	Wall Connected to Concrete
	n	y/n	Wall Connected to Truss Heel
	y	y/n	Wall Connected to Gable Truss

Shearwall segments
11.917

Calculate Unit Base Shear

$\%_{fh} = L_w/L$ =	1.000		percent of full height segments	
$\%_{oh}$ = H'/H =	0.000		percent of maximum opening height	
SCAF =	*1.00*		shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)	
$v_{base} = V_1/L_w$ =	140	plf		unit base shear
$v_{req} = v_{base}$/SCAF =	**140**	plf		effective unit base shear

OTM =	**13,302**	lb ft	overturning moment of total length of wall
RM =	**9,373**	lb ft	resisting moment of total l
T =	**644**	lbs	**Intersecting wall sufficient for uplift**

Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	217
Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336

Nail Gable Truss to Top Plate With: 10d's @ 12 in O.C.

PERFORMANCE ENGINEERS

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Shear Wall (X1-1)

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*74*	ft	Overall length of wall
L =	*74*	ft	Total length of shear wall
L_w =	*33.42*	ft	Total length of full height segments
H =	*9.00*	ft	height of shear wall
H' =	*9.00*	ft	maximum opening height
V_1 =	*2851.29*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*72*	plf	Self weight
$w_{DL\ above}$ =	*170*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	Y	y/n	Wall Connected to Concrete
	Y	y/n	Wall Connected to Truss Heel
	Y	y/n	Wall Connected to Gable Truss / Rim

Shearwall segments
16
3.167
3.75
7.667
2.833

Calculate Unit Base Shear

$\%_{fh}$ = L_w/L =	0.452		percent of full height segments
$\%_{oh}$ = H'/H =	1.000		percent of maximum opening height
SCAF =	*0.48*		shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)
v_{base} = V_1/L_w =	85	plf	unit base shear
v_{req} = v_{base}/SCAF =	**179**	plf	effective unit base shear

OTM =	**53,808**	lb ft	overturning moment of total length of wall
RM =	**662,596**	lb ft	resisting moment of total le

T = **Not Req'd** lbs

Shear Transfer to Concrete: 3 1/2 Anchor Bolts= 72 o.c.

Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	217
Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336

Provide Blocking: No Blocking Needed
Nail Gable Truss to Top Plate With: 10d's @ 12 in O.C.

Shear Wall (X2-1)

PERFORMANCE ENGINEERS

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*83*	ft	Overall length of wall
L =	*83*	ft	Total length of shear wall
L_w =	*43.04*	ft	Total length of full height segments
H =	*9.00*	ft	height of shear wall
H' =	*9.00*	ft	maximum opening height
V_1 =	*8861.83*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*72*	plf	Self weight
$w_{DL\ above}$ =	*170*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	Y	y/n	Wall Connected to Concrete
	y	y/n	Wall Connected to Truss Heel
	Y	y/n	Wall Connected to Gable Truss

Shearwall segments
3.417
6.125
2.667
9
9.5
6.5
2.917
2.917

Calculate Unit Base Shear

$\%_{fh}$ =	L_w/L =	0.519	percent of full height segments	
$\%_{oh}$ =	H'/H =	1.000	percent of maximum opening height	
SCAF =		*0.51*	shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)	
v_{base} =	V_1/L_w =	206	plf	unit base shear
v_{req} =	v_{base}/SCAF =	**404**	plf	effective unit base shear

OTM =	**156,548**	lb ft	overturning moment of total length of wall
RM =	**833,569**	lb ft	resisting moment of total le

T = **Not Req'd** lbs

Shear Transfer to Concrete: 9 1/2 Anchor Bolts= 72 o.c.

Provide	7/16	OSB with	8d Nails	at 4" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	490
Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 3" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	434

Provide Blocking:	No Blocking Needed
Nail Gable Truss to Top Plate With:	10d's @ 12 in O.C.

PERFORMANCE ENGINEERS

Shear Wall (X3-1)

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*30*	ft	Overall length of wall
L =	*30*	ft	Total length of shear wall
L_w =	*22.50*	ft	Total length of full height segments
H =	*10.00*	ft	height of shear wall
H' =	*2.50*	ft	maximum opening height
V_1 =	*7134.11*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*80*	plf	Self weight
$w_{DL\ above}$ =	*68*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	Y	y/n	Wall Connected to Concrete
	N	y/n	Wall Connected to Truss Heel
	Y	y/n	Wall Connected to Gable Truss

Shearwall segments
8.25
4
4
6.25

Calculate Unit Base Shear

$\%_{fh} = L_w/L$ =	0.750	percent of full height segments	
$\%_{oh}$ = H'/H =	0.250	percent of maximum opening height	
SCAF =	*1.00*	shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)	
$v_{base} = V_1/L_w$ =	317	plf	unit base shear
$v_{req} = v_{base}$/SCAF =	**317**	plf	effective unit base shear

OTM =	**71,341**	lb ft	overturning moment of total length of wall
RM =	**66,600**	lb ft	resisting moment of total le
T =	**1395**	lbs	**Simpson LSTHD8 Strap Tie (Ta = 2090#)**

Shear Transfer to Concrete: 7 1/2 Anchor Bolts= 48 o.c.

Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336
Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 4" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	322

Nail Gable Truss to Top Plate With: 10d's @ 6 in O.C.

Shear Wall (Y1-1)

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PERFORMANCE ENGINEERS

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*20*	ft	Overall length of wall
L =	*20*	ft	Total length of shear wall
L_w =	*18.00*	ft	Total length of full height segments
H =	*10.00*	ft	height of shear wall
H' =	*2.50*	ft	maximum opening height
V_1 =	*2295.60*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*80*	plf	Self weight
$w_{DL\ above}$ =	*68*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	Y	y/n	Wall Connected to Concrete
	N	y/n	Wall Connected to Truss Heel
	Y	y/n	Wall Connected to Gable Truss

Shearwall segments
10.083
7.917

Calculate Unit Base Shear

$\%_{fh}$ = L_w/L =	0.900		percent of full height segments
$\%_{oh}$ = H'/H =	0.250		percent of maximum opening height
SCAF =	*1.00*		shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)
v_{base} = V_1/L_w =	128	plf	unit base shear
v_{req} = v_{base}/SCAF =	**128**	plf	effective unit base shear

OTM =	**22,956**	lb ft	overturning moment of total length of wall
RM =	**29,600**	lb ft	resisting moment of total le
T =	**289**	lbs	**Intersecting wall sufficient for uplift**

Shear Transfer to Concrete: 3 1/2 Anchor Bolts= 72 o.c.

Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	217
Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336

Nail Gable Truss to Top Plate With: 10d's @ 12 in O.C.

Shear Wall (Y2-1)

PERFORMANCE ENGINEERS

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*22*	ft	Overall length of wall
L =	*22*	ft	Total length of shear wall
L_w =	*19.33*	ft	Total length of full height segments
H =	*9.00*	ft	height of shear wall
H' =	*7.00*	ft	maximum opening height
V_1 =	*6866.99*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*72*	plf	Self weight
$w_{DL\ above}$ =	*170*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	Y	y/n	Wall Connected to Concrete
	Y	y/n	Wall Connected to Truss Heel
	N	y/n	Wall Connected to Gable Truss

Shearwall segments
16.333
3

Calculate Unit Base Shear

$\%_{fh}$ = L_w/L =	0.879		percent of full height segments	
$\%_{oh}$ = H'/H =	0.778		percent of maximum opening height	
SCAF =	*0.86*		shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)	
v_{base} = V_1/L_w =	355		plf	unit base shear
v_{req} = v_{base}/SCAF =	**413**		plf	effective unit base shear

OTM =	**71,793**	lb ft	overturning moment of total length of wall
RM =	**58,564**	lb ft	resisting moment of total le
T =	**1896**	lbs	**Intersecting wall sufficient for uplift**

Shear Transfer to Concrete: 7 1/2 Anchor Bolts= 36 o.c.

Provide	7/16	OSB with	8d Nails	at 4" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	490
Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 3" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	434

Provide Blocking:	Every Bay	with	(6) 10d Nails	Per Blocking

PERFORMANCE ENGINEERS

Shear Wall (Y3-1)

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*20*	ft	Overall length of wall
L =	*9.667*	ft	Total length of shear wall
L_w =	*9.67*	ft	Total length of full height segments
H =	*9.00*	ft	height of shear wall
H' =	*0.00*	ft	maximum opening height
V_1 =	*3023.08*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*72*	plf	Self weight
$w_{DL\ above}$ =	*108*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	Y	y/n	Wall Connected to Concrete
	N	y/n	Wall Connected to Truss Heel
	Y	y/n	Wall Connected to Gable Truss

Shearwall segments
9.667

Calculate Unit Base Shear

$\%_{fh} = L_w/L =$	1.000		percent of full height segments
$\%_{oh} = H'/H =$	0.000		percent of maximum opening height
SCAF =	*1.00*		shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)
$v_{base} = V_1/L_w =$	313	plf	unit base shear
$v_{req} = v_{base}$/SCAF =	**313**	plf	effective unit base shear

OTM =	**27,208**	lb ft	overturning moment of total length of wall
RM =	**8,411**	lb ft	resisting moment of total le
T =	**2292**	lbs	**Simpson STHD10 Strap Tie (Ta = 2750#)**

Shear Transfer to Concrete: 3 1/2 Anchor Bolts= 36 o.c.

Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336
Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 4" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	322

Nail Gable Truss to Top Plate With: 10d's @ 6 in O.C.

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Shear Wall (Y4-1)

PERFORMANCE ENGINEERS

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*32*	ft	Overall length of wall
L =	*32*	ft	Total length of shear wall
L_w =	*16.25*	ft	Total length of full height segments
H =	*10.00*	ft	height of shear wall
H' =	*9.00*	ft	maximum opening height
V_1 =	*2313.53*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*80*	plf	Self weight
$w_{DL\ above}$ =	*238*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	Y	y/n	Wall Connected to Concrete
	Y	y/n	Wall Connected to Truss Heel
	N	y/n	Wall Connected to Gable Truss

Shearwall segments
8.917
3.917
3.417

Calculate Unit Base Shear

$\%_{fh}$ = L_w/L =	0.508	percent of full height segments	
$\%_{oh}$ = H'/H =	0.900	percent of maximum opening height	
SCAF =	*0.54*	shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)	
v_{base} = V_1/L_w =	142	plf	unit base shear
v_{req} = v_{base}/SCAF =	**261**	plf	effective unit base shear

OTM =	**42,492**	lb ft	overturning moment of total length of wall
RM =	**162,816**	lb ft	resisting moment of total le

T = **Not Req'd** lbs

Shear Transfer to Concrete: 3 1/2 Anchor Bolts= 72 o.c.

Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336
Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 4" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	322

Provide Blocking: No Blocking Needed

Shear Wall (Y5-1)

PERFORMANCE ENGINEERS

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*52*	ft	Overall length of wall
L =	*52*	ft	Total length of shear wall
L_w =	*48.83*	ft	Total length of full height segments
H =	*10.00*	ft	height of shear wall
H' =	*7.00*	ft	maximum opening height
V_1 =	*4973.68*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*80*	plf	Self weight
$w_{DL\ above}$ =	*255*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	Y	y/n	Wall Connected to Concrete
	Y	y/n	Wall Connected to Truss Heel
	N	y/n	Wall Connected to Gable Truss

Shearwall segments
8
40.833

Calculate Unit Base Shear

$\%_{fh}$ = L_w/L =	0.939		percent of full height segments	
$\%_{oh}$ = H'/H =	0.700		percent of maximum opening height	
SCAF =	*0.94*		shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)	
v_{base} = V_1/L_w =	102	plf		unit base shear
v_{req} = v_{base}/SCAF =	**109**	plf		effective unit base shear

OTM =	**53,069**	lb ft	overturning moment of total length of wall
RM =	**452,920**	lb ft	resisting moment of total le

T = **Not Req'd** lbs

Shear Transfer to Concrete: 5 1/2 Anchor Bolts= 72 o.c.

Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	217
Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336

Provide Blocking: No Blocking Needed

Shear Wall (Y6-1)

PERFORMANCE ENGINEERS

Location: *Valley County, Idaho*
Project # : *2017-04907*
Project: *Jett Residence*
Engineer: *kkj*

Program: ***Shear Wall***

Description:

Perforated Shear Wall Calculation Sheet:
This spreadsheet is made in conformance to the IBC Chapters 2305-2308 and AFPA's "SDPWS: Lateral Force Resisting Systems".

Inputs are in *ITALICS and outlined in red* and outputs are in **BOLDFACE**. All outputs are outlined.

L_o =	*46*	ft	Overall length of wall
L =	*46*	ft	Total length of shear wall
L_w =	*31.00*	ft	Total length of full height segments
H =	*13.00*	ft	height of shear wall
H' =	*2.00*	ft	maximum opening height
V_1 =	*1167.88*	lbs	**Total Wind force at top of wall**
$w_{DL\ self}$ =	*104*	plf	Self weight
$w_{DL\ above}$ =	*136*	plf	Applied dead load
	7/16	in	Prefered OSB thickness
	Y	y/n	Wall Connected to Concrete
	Y	y/n	Wall Connected to Truss Heel
	N	y/n	Wall Connected to Gable Truss

Shearwall segments
7.5
8
8
7.5

Calculate Unit Base Shear

$\%_{fh}$ = L_w/L =	0.674	percent of full height segments	
$\%_{oh}$ = H'/H =	0.154	percent of maximum opening height	
SCAF =	*1.00*	shear capacity adjustment factors (NDS SDPWS Table 4.3.3.4)	
v_{base} = V_1/L_w =	38	plf	unit base shear
v_{req} = v_{base}/SCAF =	**38**	plf	effective unit base shear

OTM =	**15,182**	lb ft	overturning moment of total length of wall
RM =	**253,920**	lb ft	resisting moment of total l

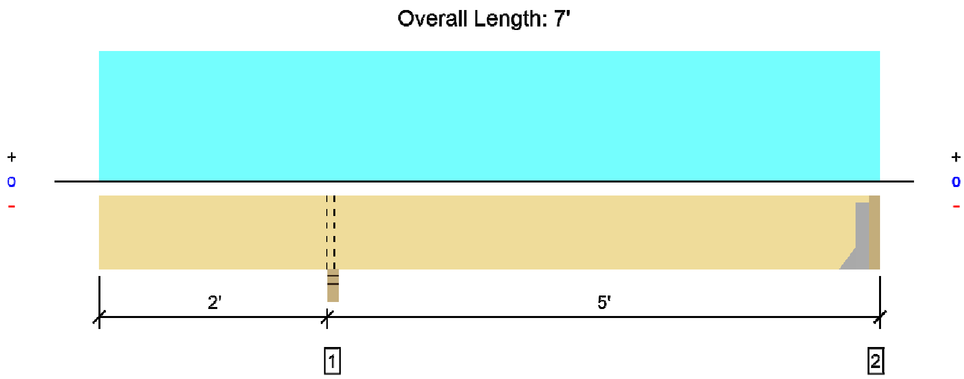
T = **Not Req'd** lbs

Shear Transfer to Concrete: 2 1/2 Anchor Bolts= 72 o.c.

Provide	7/16	OSB with	1 1/2 16 Gage Staples	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	217
Provide	7/16	OSB with	8d Nails	at 6" o.c. all at panel edges and 12" o.c. in intermediate studs.	Va =	336

Provide Blocking: No Blocking Needed

1 piece(s) 2 x 6 Douglas Fir-Larch No. 2 @ 24" OC



All locations are measured from the outside face of left support (or left cantilever end).All dimensions are horizontal.;Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1350 @ 2' 1 1/2"	2813 (3.00")	Passed (48%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	608 @ 2' 8 1/2"	1139	Passed (53%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	-619 @ 2' 1 1/2"	975	Passed (63%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.056 @ 4' 6 1/8"	0.154	Passed (L/999)	--	1.0 D + 1.0 S (Alt Spans)
Total Load Defl. (in)	0.071 @ 0	0.213	Passed (2L/714)	--	1.0 D + 1.0 S (Alt Spans)

System : Roof
Member Type : Joist
Building Use : Residential
Building Code : IBC 2015
Design Methodology : ASD
Member Pitch: 0/12

- Deflection criteria: LL (L/360) and TL (L/240).
- Overhang deflection criteria: LL (2L/360) and TL (2L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 6' 9" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 6' 9" o/c unless detailed otherwise.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Total	
1 - Stud wall - DF	3.00"	3.00"	1.50"	167	1182	1349	Blocking
2 - Hanger on 5 1/2" DF beam	3.00"	Hanger[1]	1.50"	71	556	627	See note [1]

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- [1] See Connector grid below for additional information and/or requirements.

Connector: Simpson Strong-Tie Connectors

Support	Model	Seat Length	Top Nails	Face Nails	Member Nails	Accessories
2 - Face Mount Hanger	LU26	1.50"	N/A	6-10d common	4-10d x 1-1/2	

Loads	Location (Side)	Spacing	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 7'	24"	17.0	120.0	Snow - 120

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The product application, input design loads, dimensions and support information have been provided by Forte Software Operator

SUSTAINABLE FORESTRY INITIATIVE

Forte Software Operator	Job Notes
KALEB JONES INTEFRAME ENGINEERING (208) 475-0040 KJONES@INTEFRAME.COM	

9/18/2017 5:34:29 PM
Forte v5.3, Design Engine: V7.0.0.5
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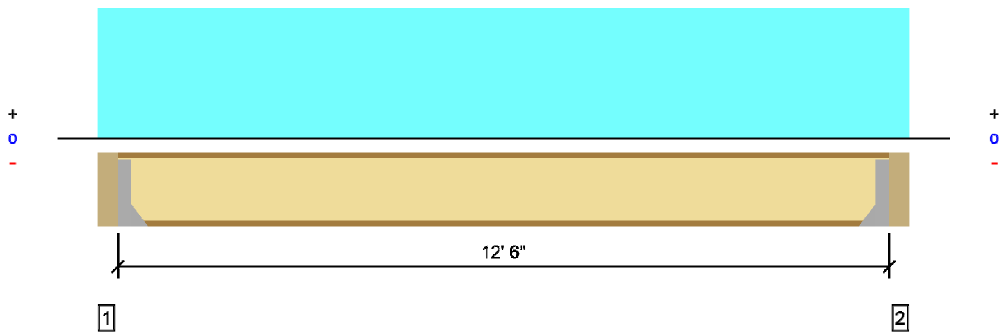
PASSED

1 piece(s) 11 7/8" TJI® 110 @ 24" OC

Overall Length: 13' 5"



All locations are measured from the outside face of left support (or left cantilever end).All dimensions are horizontal.;Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	625 @ 5 1/2"	910 (1.75")	Passed (69%)	1.00	1.0 D + 1.0 L (All Spans)
Shear (lbs)	625 @ 5 1/2"	1560	Passed (40%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	1953 @ 6' 8 1/2"	3160	Passed (62%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.147 @ 6' 8 1/2"	0.313	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.184 @ 6' 8 1/2"	0.625	Passed (L/817)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	54	Any	Passed	--	--

System : Floor
Member Type : Joist
Building Use : Residential
Building Code : IBC 2015
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 4' o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 12' 6" o/c unless detailed otherwise.
- A structural analysis of the deck has not been performed.
- Deflection analysis is based on composite action with a single layer of 7/8", 1" Panel (32" Span Rating) that is glued and nailed down.
- Additional considerations for the TJ-Pro™ Rating include: 1/2" Gypsum ceiling.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Hanger on 11 7/8" DF beam	5.50"	Hanger[1]	1.75" / 1.75" [2]	134	537	671	See note [1]
2 - Hanger on 11 7/8" DF beam	5.50"	Hanger[1]	1.75" / 1.75" [2]	134	537	671	See note [1]

- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- [1] See Connector grid below for additional information and/or requirements.
- [2] Required Bearing Length / Required Bearing Length with Web Stiffeners

Connector: Simpson Strong-Tie Connectors

Support	Model	Seat Length	Top Nails	Face Nails	Member Nails	Accessories
1 - Face Mount Hanger	IUS1.81/11.88	2.00"	N/A	10-10d x 1-1/2	N/A	
2 - Face Mount Hanger	IUS1.81/11.88	2.00"	N/A	10-10d x 1-1/2	N/A	

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 13' 5"	24"	10.0	40.0	Residential - Living Areas

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The product application, input design loads, dimensions and support information have been provided by Forte Software Operator

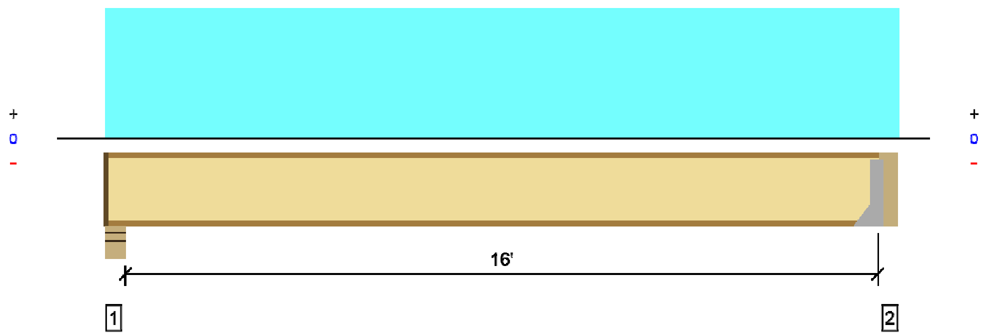
SUSTAINABLE FORESTRY INITIATIVE

Forte Software Operator	Job Notes
KALEB JONES INTEFRAME ENGINEERING (208) 475-0040 KJONES@INTEFRAME.COM	

PASSED

1 piece(s) 11 7/8" TJI® 360 @ 16" OC

Overall Length: 16' 10 3/4"



All locations are measured from the outside face of left support (or left cantilever end).All dimensions are horizontal.;Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	536 @ 16' 5 1/2"	1080 (1.75")	Passed (50%)	1.00	1.0 D + 1.0 L (All Spans)
Shear (lbs)	536 @ 16' 5 1/2"	1705	Passed (31%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	2156 @ 8' 5"	6180	Passed (35%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.187 @ 8' 5"	0.402	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.234 @ 8' 5"	0.804	Passed (L/826)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	56	Any	Passed	--	--

System : Floor
Member Type : Joist
Building Use : Residential
Building Code : IBC 2015
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 6' 6" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 16' 4" o/c unless detailed otherwise.
- A structural analysis of the deck has not been performed.
- Deflection analysis is based on composite action with a single layer of 7/8", 1" Panel (32" Span Rating) that is glued and nailed down.
- Additional considerations for the TJ-Pro™ Rating include: 1/2" Gypsum ceiling.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - DF	5.50"	4.25"	1.75"	112	449	561	1 1/4" Rim Board
2 - Hanger on 11 7/8" DF beam	5.25"	Hanger[1]	1.75" / 1.75" [2]	113	452	565	See note [1]

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- [1] See Connector grid below for additional information and/or requirements.
- [2] Required Bearing Length / Required Bearing Length with Web Stiffeners

Connector: Simpson Strong-Tie Connectors

Support	Model	Seat Length	Top Nails	Face Nails	Member Nails	Accessories
2 - Face Mount Hanger	IUS2.37/11.88	2.00"	N/A	10-10d x 1-1/2	N/A	

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 16' 10 3/4"	16"	10.0	40.0	Residential - Living Areas

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The product application, input design loads, dimensions and support information have been provided by Forte Software Operator

Forte Software Operator	Job Notes
KALEB JONES INTEFRAME ENGINEERING (208) 475-0040 KJONES@INTEFRAME.COM	

9/18/2017 5:34:29 PM
Forte v5.3, Design Engine: V7.0.0.5
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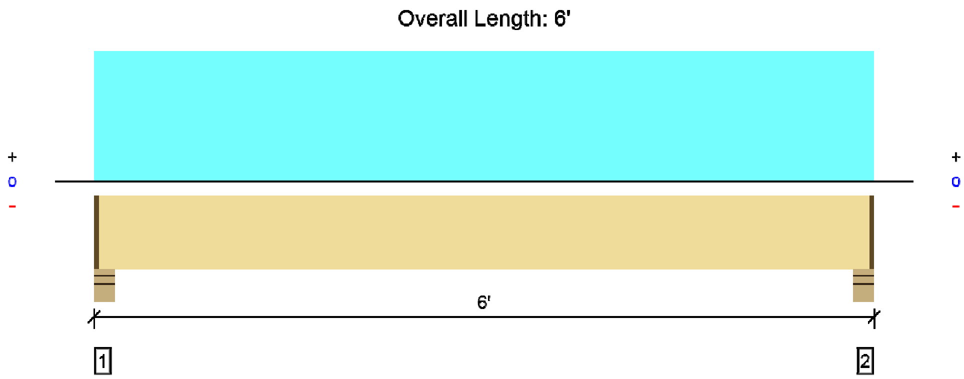
PASSED

1 piece(s) 1 3/4" x 11 7/8" 2.0E Microllam® LVL



All locations are measured from the outside face of left support (or left cantilever end).All dimensions are horizontal.;Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1465 @ 4"	4648 (4.25")	Passed (32%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	785 @ 1' 5 3/8"	3948	Passed (20%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	1799 @ 3'	8924	Passed (20%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.023 @ 3'	0.133	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.029 @ 3'	0.267	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2015
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 5' 10" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 5' 10" o/c unless detailed otherwise.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - DF	5.50"	4.25"	1.50"	318	1200	1518	1 1/4" Rim Board
2 - Stud wall - DF	5.50"	4.25"	1.50"	318	1200	1518	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	1 1/4" to 5' 10 3/4"	N/A	6.1		
1 - Uniform (PSF)	0 to 6' (Front)	10'	10.0	40.0	Residential - Living Areas

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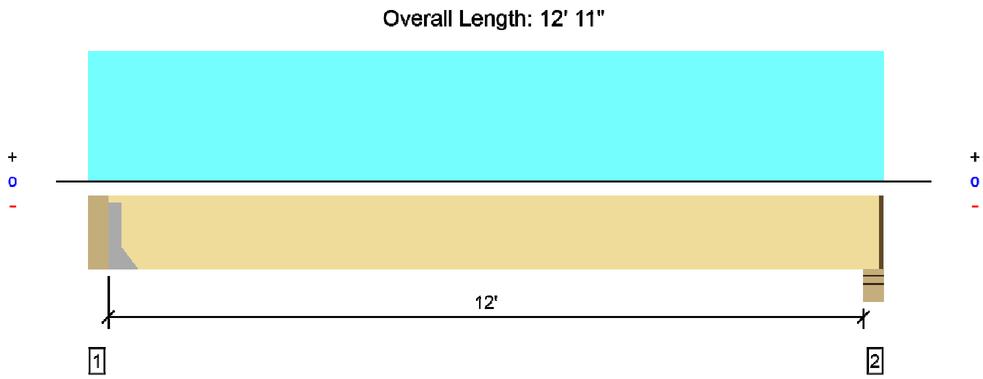
The product application, input design loads, dimensions and support information have been provided by Forte Software Operator

Forte Software Operator	Job Notes
KALEB JONES INTEFRAME ENGINEERING (208) 475-0040 KJONES@INTEFRAME.COM	

PASSED

3 piece(s) 1 3/4" x 11 7/8" 2.0E Microllam® LVL



All locations are measured from the outside face of left support (or left cantilever end).All dimensions are horizontal.;Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	2535 @ 5 1/2"	5906 (1.50")	Passed (43%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	2121 @ 1' 5 3/8"	11845	Passed (18%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	7685 @ 6' 6 1/4"	26772	Passed (29%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.117 @ 6' 6 1/4"	0.303	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.153 @ 6' 6 1/4"	0.606	Passed (L/951)	--	1.0 D + 1.0 L (All Spans)

System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2015
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 12' 4" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 12' 4" o/c unless detailed otherwise.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Hanger on 11 7/8" DF beam	5.50"	Hanger[1]	1.50"	632	2087	2719	See note [1]
2 - Stud wall - DF	5.50"	4.25"	1.50"	626	2047	2673	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- [1] See Connector grid below for additional information and/or requirements.

Connector: Simpson Strong-Tie Connectors

Support	Model	Seat Length	Top Nails	Face Nails	Member Nails	Accessories
1 - Face Mount Hanger	HUCQ610-SDS2.5	3.00"	N/A	12-SDS self-drilling wood screw 0.242 dia. x 2 1/2"	6-SDS self-drilling wood screw 0.242 dia. x 2 1/2"	

Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	5 1/2" to 12' 9 3/4"	N/A	18.2		
1 - Uniform (PSF)	0 to 12' 11" (Front)	8'	10.0	40.0	Residential - Living Areas

Weyerhaeuser Notes

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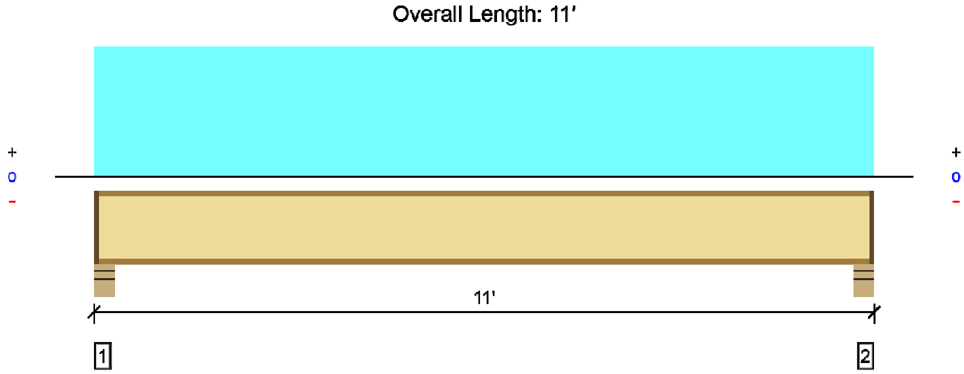
Forte Software Operator	Job Notes
KALEB JONES INTEFRAME ENGINEERING (208) 475-0040 KJONES@INTEFRAME.COM	

FORTE® MEMBER REPORT *Main Level, Floor: Joist*

PASSED

1 piece(s) 9 1/2" TJI® 110 @ 24" OC



All locations are measured from the outside face of left support (or left cantilever end).All dimensions are horizontal.;Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	540 @ 4 1/2"	1375 (3.50")	Passed (39%)	1.00	1.0 D + 1.0 L (All Spans)
Shear (lbs)	504 @ 5 1/2"	1220	Passed (41%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	1313 @ 5' 6"	2500	Passed (53%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.113 @ 5' 6"	0.256	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.141 @ 5' 6"	0.512	Passed (L/873)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	58	Any	Passed	--	--

System : Floor
Member Type : Joist
Building Use : Residential
Building Code : IBC 2015
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 4' 4" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 10' 10" o/c unless detailed otherwise.
- A structural analysis of the deck has not been performed.
- Deflection analysis is based on composite action with a single layer of 7/8", 1" Panel (32" Span Rating) that is glued and nailed down.
- Additional considerations for the TJ-Pro™ Rating include: 1/2" Gypsum ceiling.

Supports	Bearing			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - DF	5.50"	4.25"	1.75"	110	440	550	1 1/4" Rim Board
2 - Stud wall - DF	5.50"	4.25"	1.75"	110	440	550	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 11'	24"	10.0	40.0	Residential - Living Areas

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The product application, input design loads, dimensions and support information have been provided by Forte Software Operator

SUSTAINABLE FORESTRY INITIATIVE

Forte Software Operator	Job Notes
KALEB JONES INTEFRAME ENGINEERING (208) 475-0040 KJONES@INTEFRAME.COM	

9/18/2017 5:34:29 PM
Forte v5.3, Design Engine: V7.0.0.5
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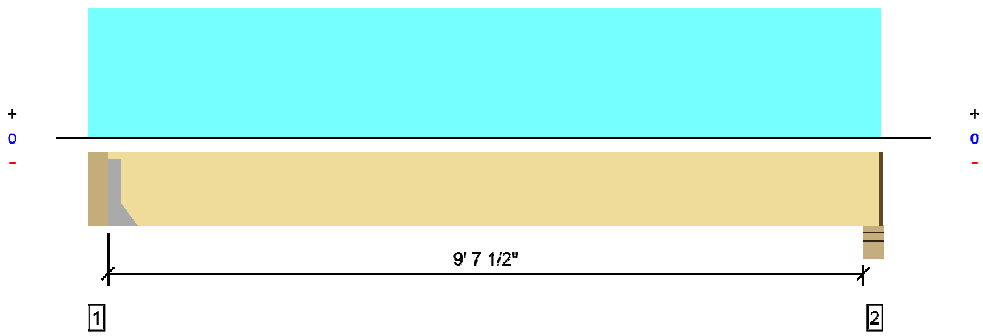
FORTE MEMBER REPORT *Main Level, Deck: Joist* **PASSED**

1 piece(s) 2 x 10 Douglas Fir-Larch No. 2 @ 16" OC

Overall Length: 10' 6 1/2"



All locations are measured from the outside face of left support (or left cantilever end).All dimensions are horizontal.;Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	841 @ 5 1/2"	1406 (1.50")	Passed (60%)	--	1.0 D + 0.75 L + 0.75 S (All Spans)
Shear (lbs)	708 @ 1' 2 3/4"	1915	Passed (37%)	1.15	1.0 D + 0.75 L + 0.75 S (All Spans)
Moment (Ft-lbs)	2042 @ 5' 3 3/4"	2334	Passed (88%)	1.15	1.0 D + 0.75 L + 0.75 S (All Spans)
Live Load Defl. (in)	0.202 @ 5' 3 3/4"	0.243	Passed (L/577)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.219 @ 5' 3 3/4"	0.485	Passed (L/532)	--	1.0 D + 1.0 S (All Spans)
TJ-Pro™ Rating	N/A	N/A	--	--	--

System : Floor
Member Type : Joist
Building Use : Residential
Building Code : IBC 2015
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 4' 10" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 10' o/c unless detailed otherwise.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.
- No composite action between deck and joist was considered in analysis.

Supports	Bearing			Loads to Supports (lbs)				Accessories
	Total	Available	Required	Dead	Floor Live	Snow	Total	
1 - Hanger on 9 1/4" DF beam	5.50"	Hanger[1]	1.50"	71	283	850	1204	See note [1]
2 - Stud wall - DF	5.50"	4.25"	1.50"	70	279	837	1186	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- [1] See Connector grid below for additional information and/or requirements.

Connector: Simpson Strong-Tie Connectors

Support	Model	Seat Length	Top Nails	Face Nails	Member Nails	Accessories
1 - Face Mount Hanger	LU28	1.50"	N/A	8-10d common	6-10d x 1-1/2	

Loads	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 10' 6 1/2"	16"	10.0	40.0	120.0	Residential - Living Areas

Weyerhaeuser Notes

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The product application, input design loads, dimensions and support information have been provided by Forte Software Operator

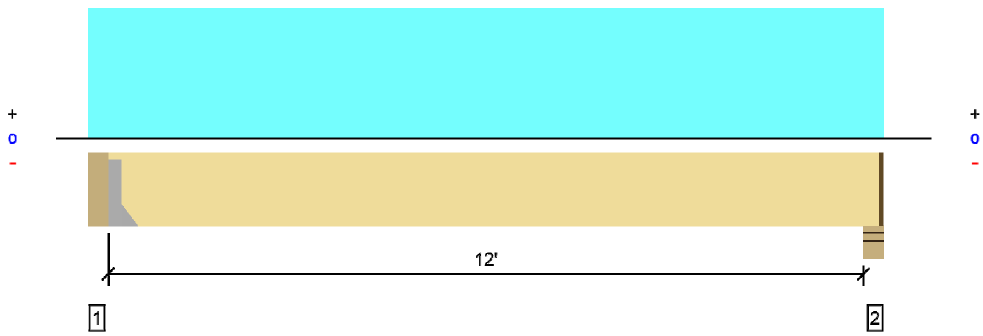
SUSTAINABLE FORESTRY INITIATIVE

Forte Software Operator	Job Notes
KALEB JONES INTEFRAME ENGINEERING (208) 475-0040 KJONES@INTEFRAME.COM	

PASSED

1 piece(s) 5 1/8" x 12" 24F-V8 DF Glulam

Overall Length: 12' 11"



All locations are measured from the outside face of left support (or left cantilever end).All dimensions are horizontal.;Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	4031 @ 5 1/2"	4997 (1.50")	Passed (81%)	--	1.0 D + 0.75 L + 0.75 S (All Spans)
Shear (lbs)	3366 @ 1' 5 1/2"	12495	Passed (27%)	1.15	1.0 D + 0.75 L + 0.75 S (All Spans)
Pos Moment (Ft-lbs)	12220 @ 6' 3/4"	28290	Passed (43%)	1.15	1.0 D + 0.75 L + 0.75 S (All Spans)
Live Load Defl. (in)	0.220 @ 6' 6 1/4"	0.303	Passed (L/662)	--	1.0 D + 0.75 L + 0.75 S (All Spans)
Total Load Defl. (in)	0.243 @ 6' 6 1/4"	0.606	Passed (L/598)	--	1.0 D + 0.75 L + 0.75 S (All Spans)

System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2015
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 12' 4" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 12' 4" o/c unless detailed otherwise.
- Critical positive moment adjusted by a volume factor of 1.00 that was calculated using length L = 12' 1 1/2".
- The effects of positive or negative camber have not been accounted for when calculating deflection.
- Applicable calculations are based on NDS.

Supports	Bearing			Loads to Supports (lbs)				Accessories
	Total	Available	Required	Dead	Floor Live	Snow	Total	
1 - Hanger on 12" DF beam	5.50"	Hanger[1]	1.50"	417	1304	3913	5634	See note [1]
2 - Stud wall - DF	5.50"	4.25"	1.50"	414	1279	3838	5531	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- [1] See Connector grid below for additional information and/or requirements.

Connector: Simpson Strong-Tie Connectors

Support	Model	Seat Length	Top Nails	Face Nails	Member Nails	Accessories
1 - Face Mount Hanger	HGUS5.25/10	4.00"	N/A	46-16d common	16-16d double shear	

Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	5 1/2" to 12' 9 3/4"	N/A	14.9			
1 - Uniform (PSF)	0 to 12' 11" (Front)	5'	10.0	40.0	120.0	Residential - Living Areas

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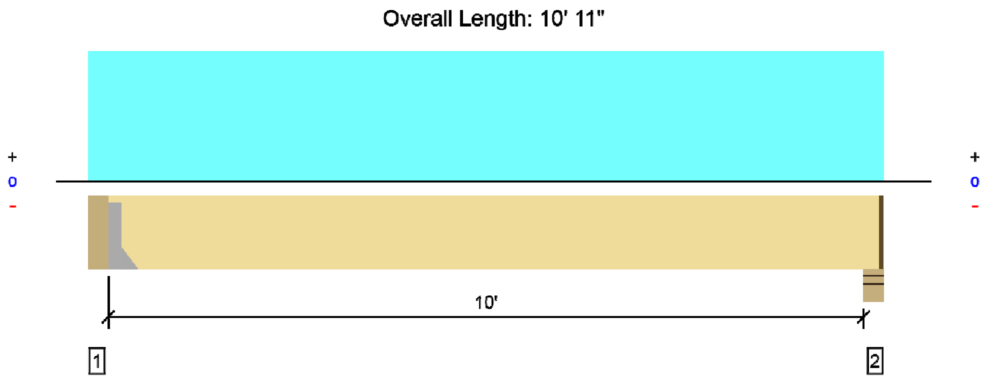
Forte Software Operator	Job Notes
KALEB JONES INTEFRAME ENGINEERING (208) 475-0040 KJONES@INTEFRAME.COM	

1 piece(s) 3 1/8" x 12" 24F-V4 DF Glulam



All locations are measured from the outside face of left support (or left cantilever end).All dimensions are horizontal.;Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	4653 @ 5 1/2"	4653 (2.29")	Passed (100%)	--	1.0 D + 0.75 L + 0.75 S (All Spans)
Shear (lbs)	3734 @ 1' 5 1/2"	7619	Passed (49%)	1.15	1.0 D + 0.75 L + 0.75 S (All Spans)
Pos Moment (Ft-lbs)	11778 @ 5' 3/4"	17250	Passed (68%)	1.15	1.0 D + 0.75 L + 0.75 S (All Spans)
Live Load Defl. (in)	0.245 @ 5' 6 1/4"	0.253	Passed (L/495)	--	1.0 D + 0.75 L + 0.75 S (All Spans)
Total Load Defl. (in)	0.268 @ 5' 6 1/4"	0.506	Passed (L/453)	--	1.0 D + 0.75 L + 0.75 S (All Spans)

System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2015
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 10' 4" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 10' 4" o/c unless detailed otherwise.
- Critical positive moment adjusted by a volume factor of 1.00 that was calculated using length L = 10' 1 1/2".
- The effects of positive or negative camber have not been accounted for when calculating deflection.
- The specified glulam is assumed to have its strong laminations at the bottom of the beam. Install with proper side up as indicated by the manufacturer.
- Applicable calculations are based on NDS.

Supports	Bearing			Loads to Supports (lbs)				Accessories
	Total	Available	Required	Dead	Floor Live	Snow	Total	
1 - Hanger on 12" DF beam	5.50"	Hanger[1]	2.29"	433	1546	4638	6617	See note [1]
2 - Stud wall - DF	5.50"	4.25"	2.49"	426	1511	4533	6470	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- [1] See Connector grid below for additional information and/or requirements.

Connector: Simpson Strong-Tie Connectors

Support	Model	Seat Length	Top Nails	Face Nails	Member Nails	Accessories
1 - Face Mount Hanger	Connector not found	N/A	N/A	N/A	N/A	

Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	5 1/2" to 10' 9 3/4"	N/A	9.1			
1 - Uniform (PSF)	0 to 10' 11" (Front)	7'	10.0	40.0	120.0	Residential - Living Areas

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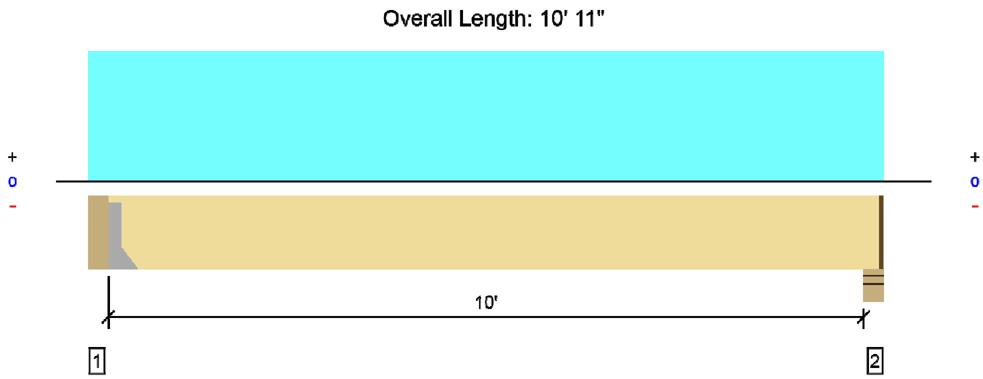
SUSTAINABLE FORESTRY INITIATIVE

Forte Software Operator	Job Notes
KALEB JONES INTEFRAME ENGINEERING (208) 475-0040 KJONES@INTEFRAME.COM	

PASSED

1 piece(s) 4 x 12 Douglas Fir-Larch No. 2



All locations are measured from the outside face of left support (or left cantilever end).All dimensions are horizontal.;Drawing is Conceptual

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	2683 @ 5 1/2"	3281 (1.50")	Passed (82%)	--	1.0 D + 0.75 L + 0.75 S (All Spans)
Shear (lbs)	2186 @ 1' 4 3/4"	5434	Passed (40%)	1.15	1.0 D + 0.75 L + 0.75 S (All Spans)
Moment (Ft-lbs)	6791 @ 5' 6 1/4"	7004	Passed (97%)	1.15	1.0 D + 0.75 L + 0.75 S (All Spans)
Live Load Defl. (in)	0.171 @ 5' 6 1/4"	0.253	Passed (L/711)	--	1.0 D + 0.75 L + 0.75 S (All Spans)
Total Load Defl. (in)	0.189 @ 5' 6 1/4"	0.506	Passed (L/644)	--	1.0 D + 0.75 L + 0.75 S (All Spans)

System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2015
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 10' 4" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 10' 4" o/c unless detailed otherwise.
- Applicable calculations are based on NDS.

Supports	Bearing			Loads to Supports (lbs)				Accessories
	Total	Available	Required	Dead	Floor Live	Snow	Total	
1 - Hanger on 11 1/4" DF beam	5.50"	Hanger[1]	1.50"	271	883	2650	3804	See note [1]
2 - Stud wall - DF	5.50"	4.25"	1.50"	269	863	2590	3722	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- [1] See Connector grid below for additional information and/or requirements.

Connector: Simpson Strong-Tie Connectors

Support	Model	Seat Length	Top Nails	Face Nails	Member Nails	Accessories
1 - Face Mount Hanger	HUCQ410-SDS2.5	3.00"	N/A	12-SDS self-drilling wood screw 0.242 dia. x 1 3/4"	6-SDS self-drilling wood screw 0.242 dia. x 1 3/4"	

Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	5 1/2" to 10' 9 3/4"	N/A	10.0			
1 - Uniform (PSF)	0 to 10' 11" (Front)	4'	10.0	40.0	120.0	Residential - Living Areas

Weyerhaeuser Notes

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Forte Software Operator	Job Notes
KALEB JONES INTEFRAME ENGINEERING (208) 475-0040 KJONES@INTEFRAME.COM	

PERFORMANCE ENGINEERS

Wood Header Allowable Loads (kip/ft)

Project Name:	Jett Residence
Job Number:	2017-04907
Location:	Valley County, Idaho
Governing Code:	*2012 IBC*
Load Duration Factor:	*1.00*
LVL Grade	*1.9E*
Top Chord Bracing	*2'-0" O.C.*
Max TL Deflection	*L/240, 0.75in*
Repetitive Stress Increase	*No*

	Header Span								
Header Type	***2'***	***4'***	***6'***	***8'***	***10'***	***12'***	***14'***	***16'***	***18'***
(2) 2x4 DF Stud	1.00	0.25	0.10	NA	NA	NA	NA	NA	NA
(3) 2x4 DF Stud	1.60	0.40	0.16	NA	NA	NA	NA	NA	NA
(2) 2x6 DF #2	2.90	0.72	0.31	0.17	0.10	NA	NA	NA	NA
(3) 2x6 DF #2	4.40	1.10	0.48	0.26	0.16	0.11	NA	NA	NA
(2) 2x8 DF #2	4.70	1.10	0.51	0.28	0.17	0.12	0.08	NA	NA
(3) 2x8 DF #2	7.60	1.90	0.84	0.46	0.29	0.20	0.14	0.10	NA
(2) 2x10 DF #2	7.00	1.70	0.77	0.42	0.27	0.18	0.13	0.09	NA
(3) 2x10 DF #2	11.50	2.80	1.20	0.71	0.45	0.31	0.22	0.17	0.13
(2) 2x12 DF #2	9.40	2.30	1.00	0.58	0.36	0.25	0.18	0.13	0.10
(3) 2x12 DF #2	15.60	3.90	1.70	0.96	0.61	0.42	0.30	0.23	0.18
(2) 1-3/4x7-1/4 LVL	12.00	3.30	1.40	0.82	0.45	0.26	0.16	0.10	NA
(3) 1-3/4x7-1/4 LVL	18.00	4.90	2.20	1.20	0.69	0.39	0.24	0.15	NA
(2) 1-3/4x9-1/2 LVL	21.50	4.90	2.30	1.30	0.80	0.55	0.34	0.21	0.13
(3) 1-3/4x9-1/2 LVL	32.30	7.40	3.50	2.00	1.20	0.83	0.52	0.32	0.19
(2) 1-3/4x11-7/8 LVL	35.40	7.70	3.90	2.20	1.40	0.97	0.71	0.46	0.28
(3) 1-3/4x11-7/8 LVL	53.30	11.50	5.80	3.30	2.10	1.40	1.00	0.69	0.42
(2) 1-3/4x14 LVL	49.10	10.90	5.00	3.00	1.90	1.30	0.98	0.75	0.47
(3) 1-3/4x14 LVL	74.00	16.40	7.50	4.60	2.90	2.00	1.40	1.10	0.70

8' Stud Wall

Project #: *2017-04907*	Engineer: *kkj*
Location : *Valley County, Idaho*	Date: *9/18/2017*
Project: *Jett Residence*	

Program: ***Stud Wall - Combined Bending and Compression***

Description:

This spreadsheet is used for designing a stud wall according to the NDS.
Inputs are in *ITALICS* and outputs are in **BOLDFACE**.

Species	*DF-L*			
Grade	*Stud*			
t =	*2*	in	nominal width	1.5 in
d =	*6*	in	nominal depth	5.5 in
L =	*8*	ft	span	
s =	*16*	in	stud spacing	
w_{wind} =	*18*	psf	Lateral pressure	w = 23.9 plf
P =	*3105*	lbs	axial load	
e =	*0*	in	eccentricity	
K_{cE} =	*0.3*			
c =	*0.8*		buckling and crushing interaction factor for columns	

	F_b	F_v	F_c	$F_{c\text{-perp}}$	E
	700	190	850	625	1,400,000 psi
C_d =	*1.60*	*1.60*	*1.60*		
C_F =	*1.30*		*1.10*		
C_r =	*1.15*				
C_p =			0.66		
C_H =		*1.00*			
C_b =				*1.07*	

Allowable Stress:

F'_b =	$F_b\ C_d\ C_F\ C_r$ =	**1,674**	psi
F'_v =	$F'_v\ C_d\ C_H$ =	**304**	psi
F^*_c =	$F_c\ C_d\ C_F$ =	1,496	psi
F_{cE} =	$(K_{cE}\ E')/(l_e/d)2$ =	1,379	psi
F'_c =	$F_c\ C_d\ C_F\ C_p$ =	**990**	psi
$F'_{c\ perp}$ =	$F_{c\ perp}$ Cb =	**668**	psi
E' =	E =	**1,400,000**	psi

Bending:

$M =\ w\ L^2/8 + P\ e/12$ = 191 lb ft

f_b = M/S = **303** psi **< F'b OK**

S = 7.56 in^3

Shear:

V = w L/2 = 72 lbs

f_v = 1.5 V/A = **13.04** psi **< F'v OK**

A = 8.25 in^2

Compression:

f_c = P/A = **376.4** psi **< F'c OK**

$f_{c\ perp}$ = P/A = **376.4** psi **< F'c OK**

Combined:

$(f_c/F_c)^2 + \{f_b/[F_b(1-(f_c/F_{cE})]\}$ = 0.39 **< 1.0 OK**

Deflection:

$\Delta = 22.5\ w\ L^4/E'\ I$ = **0.08** in = **SPAN / 1269**

I = 20.80 in^4

9' Stud Wall

PERFORMANCE ENGINEERS

Project #:	*2017-04907*	Engineer:	*kkj*
Location :	*Valley County, Idaho*	Date:	*9/18/2017*
Project:	*Jett Residence*		

Program: ***Stud Wall - Combined Bending and Compression***

Description: 9' Stud Wall

This spreadsheet is used for designing a stud wall according to the NDS.
Inputs are in *ITALICS* and outputs are in **BOLDFACE**.

Species *DF-L*
Grade *Stud*

t =	*2*	in	nominal width		1.5 in
d =	*6*	in	nominal depth		5.5 in
L =	*9*	ft	span		
s =	*16*	in	stud spacing		
w_{wind} =	*18*	psf	Lateral pressure	w =	23.9 plf
P =	*3767*	lbs	axial load		
e =	*0*	in	eccentricity		
K_{cE} =	*0.3*				
c =	*0.8*		buckling and crushing interaction factor for columns		

	F_b	F_v	F_c	$F_{c\text{-}perp}$	E	
	700	190	850	625	1,400,000	psi
C_d =	*1.60*	*1.60*	*1.60*			
C_F =	*1.30*		*1.10*			
C_r =	*1.15*					
C_p =			0.57			
C_H =		*1.00*				
C_b =				*1.07*		

Allowable Stress:

F'_b =	$F_b\ C_d\ C_F\ C_r$ =	**1,674**	psi
F'_v =	$F'_v\ C_d\ C_H$ =	**304**	psi
F^*_c =	$F_c\ C_d\ C_F$ =	1,496	psi
F_{cE} =	$(K_{cE}\ E')/(l_e/d)2$ =	1,089	psi
F'_c =	$F_c\ C_d\ C_F\ C_p$ =	**858**	psi
$F'_{c\ perp}$ =	$F_{c\ perp}$ Cb =	**668**	psi
E' =	E =	**1,400,000**	psi

Bending:

M =	$w\ L^2/8 + P\ e/12$ =	242	lb ft	
f_b =	M/S =	**384**	psi	**< F'b OK**
	S =	7.56	in^3	

Shear:

V =	w L/2 =	81	lbs	
f_v =	1.5 V/A =	**14.67**	psi	**< F'v OK**
	A =	8.25	in^2	

Compression:

f_c =	P/A =	**456.6**	psi	**< F'c OK**
$f_{c\ perp}$ =	P/A =	**456.6**	psi	**< F'c OK**

Combined:

$(f_c/F_c)^2 + \{f_b/[F_b(1-(f_c/F_{cE})]\}$ = 0.68 **< 1.0 OK**

Deflection:

$\Delta = 22.5\ w\ L^4/E'\ I$ =	**0.12**	in	=	**SPAN**
I =	20.80	in^4		**891**

10' Stud Wall

Project #: *2017-04907*	Engineer: *kkj*
Location : *Valley County, Idaho*	Date: *9/18/2017*
Project: *Jett Residence*	

Program: ***Stud Wall - Combined Bending and Compression***

Description: 10' Stud Wall

This spreadsheet is used for designing a stud wall according to the NDS.
Inputs are in *ITALICS* and outputs are in **BOLDFACE**.

Species *DF-L*
Grade *No. 2*

t =	*2*	in	nominal width	1.5 in
d =	*6*	in	nominal depth	5.5 in
L =	*10*	ft	span	
s =	*16*	in	stud spacing	
w_{wind} =	*18*	psf	Lateral pressure	w = 23.9 plf
P =	*4668*	lbs	axial load	
e =	*0*	in	eccentricity	
K_{cE} =	*0.3*			
c =	*0.8*		buckling and crushing interaction factor for columns	

	F_b	F_v	F_c	$F_{c\text{-perp}}$	E
	900	190	1350	625	1,600,000 psi
C_d =	*1.60*	*1.60*	*1.60*		
C_F =	*1.30*		*1.10*		
C_r =	*1.15*				
C_p =			0.38		
C_H =		*1.00*			
C_b =				*1.07*	

Allowable Stress:

F'_b =	$F_b\ C_d\ C_F\ C_r$ =	**2,153** psi
F'_v =	$F'_v\ C_d\ C_H$ =	**304** psi
F^*_c =	$F_c\ C_d\ C_F$ =	2,376 psi
F_{cE} =	$(K_{cE}\ E')/(l_e/d)2$ =	1,008 psi
F'_c =	$F_c\ C_d\ C_F\ C_p$ =	**899** psi
$F'_{c\ perp}$ =	$F_{c\ perp}$ Cb =	**668** psi
E' =	E =	**1,600,000** psi

Bending:

$M = w L^2/8 + P e/12$ = 299 lb ft

f_b = M/S = **474** psi **≤ F'b OK**

S = 7.56 in^3

Shear:

V = $w L/2$ = 90 lbs

f_v = $1.5\ V/A$ = **16.30** psi **≤ F'v OK**

A = 8.25 in^2

Compression:

f_c = P/A = **565.8** psi **≤ F'c OK**

$f_{c\ perp}$ = P/A = **565.8** psi **≤ F'c OK**

Combined:

$(f_c/F_c)^2 + \{f_b/[F_b(1-(f_c/F_{cE})]\}$ = 0.90 **≤ 1.0 OK**

Deflection:

$\Delta = 22.5\ w\ L^4/E'\ I$ = **0.16** in = **SPAN**

I = 20.80 in^4 **743**

13' Stud Wall

PERFORMANCE ENGINEERS

Project #:	*2017-04907*	Engineer:	*kkj*
Location :	*Valley County, Idaho*	Date:	*9/18/2017*
Project:	*Jett Residence*		

Program: ***Stud Wall - Combined Bending and Compression***

Description: 13' Stud Wall

This spreadsheet is used for designing a stud wall according to the NDS.
Inputs are in *ITALICS* and outputs are in **BOLDFACE**.

Species	*DF-L*			
Grade	*No. 2*			
t =	*2*	in	nominal width	1.5 in
d =	*6*	in	nominal depth	5.5 in
L =	*13*	ft	span	
s =	*16*	in	stud spacing	
w_{wind} =	*18*	psf	Lateral pressure	w = 23.9 plf
P =	*1827*	lbs	axial load	
e =	*0*	in	eccentricity	
K_{cE} =	*0.3*			
c =	*0.8*		buckling and crushing interaction factor for columns	

	F_b	F_v	F_c	$F_{c\text{-perp}}$	E
	900	190	1350	625	1,600,000 psi
C_d =	*1.60*	*1.60*	*1.60*		
C_F =	*1.30*		*1.10*		
C_r =	*1.15*				
C_p =			0.24		
C_H =		*1.00*			
C_b =				*1.07*	

Allowable Stress:

F'_b =	$F_b\ C_d\ C_F\ C_r$ =	**2,153**	psi
F'_v =	$F'_v\ C_d\ C_H$ =	**304**	psi
F^*_c =	$F_c\ C_d\ C_F$ =	2,376	psi
F_{cE} =	$(K_{cE}\ E')/(l_e/d)2$ =	597	psi
F'_c =	$F_c\ C_d\ C_F\ C_p$ =	**562**	psi
$F'_{c\ perp}$ =	$F_{c\ perp}$ Cb =	**668**	psi
E' =	E =	**1,600,000**	psi

Bending:

M =	$w\ L^2/8 + P\ e/12$ =	505	lb ft	
f_b =	M/S =	**801**	psi	**< F'b OK**
	S =	7.56	in^3	

Shear:

V =	w L/2 =	117	lbs	
f_v =	1.5 V/A =	**21.18**	psi	**< F'v OK**
	A =	8.25	in^2	

Compression:

f_c =	P/A =	**221.4**	psi	**< F'c OK**
$f_{c\ perp}$ =	P/A =	**221.4**	psi	**< F'c OK**

Combined:

$(f_c/F_c)^2 + \{f_b/[F_b(1-(f_c/F_{cE})]\}$ = 0.75 **< 1.0 OK**

Deflection:

$\Delta = 22.5\ w\ L^4/E'\ I$ =	**0.46**	in	=	**SPAN**
I =	20.80	in^4		**338**

14' Stud Wall

PERFORMANCE ENGINEERS

Project #: *2017-04907* Engineer: *kkj*
Location : *Valley County, Idaho* Date: *9/18/2017*
Project: *Jett Residence*

Program: ***Stud Wall - Combined Bending and Compression***

Description:
This spreadsheet is used for designing a stud wall according to the NDS.
Inputs are in *ITALICS* and outputs are in **BOLDFACE**.

Species	*DF-L*			
Grade	*No. 2*			
t =	*2*	in	nominal width	1.5 in
d =	*6*	in	nominal depth	5.5 in
L =	*14*	ft	span	
s =	*12*	in	stud spacing	
w_{wind} =	*18*	psf	Lateral pressure	w = 17.9 plf
P =	*1644*	lbs	axial load	
e =	*0*	in	eccentricity	
K_{cE} =	*0.3*			
c =	*0.8*		buckling and crushing interaction factor for columns	

	F_b	F_v	F_c	$F_{c\text{-perp}}$	E
	900	190	1350	625	1,600,000 psi
C_d =	*1.60*	*1.60*	*1.60*		
C_F =	*1.30*		*1.10*		
C_r =	*1.15*				
C_p =			0.21		
C_H =		*1.00*			
C_b =				*1.07*	

Allowable Stress:

F'_b =	$F_b\,C_d\,C_F\,C_r$ =	**2,153**	psi
F'_v =	$F'_v\,C_d\,C_H$ =	**304**	psi
F^*_c =	$F_c\,C_d\,C_F$ =	2,376	psi
F_{cE} =	$(K_{cE}\,E')/(l_e/d)2$ =	514	psi
F'_c =	$F_c\,C_d\,C_F\,C_p$ =	**489**	psi
$F'_{c\ perp}$ =	$F_{c\ perp}\,Cb$ =	**668**	psi
E' =	E =	**1,600,000**	psi

Bending:

$M = w L^2/8 + P\,e/12$ = 439 lb ft

f_b = M/S = **697** psi **< F'b OK**

S = 7.56 in^3

Shear:

$V = w L/2$ = 125 lbs

$f_v = 1.5\,V/A$ = **22.81** psi **< F'v OK**

A = 8.25 in^2

Compression:

f_c = P/A = **199.3** psi **< F'c OK**

$f_{c\ perp}$ = P/A = **199.3** psi **< F'c OK**

Combined:

$(f_c/F_c)^2 + \{f_b/[F_b(1-(f_c/F_{cE})]\}$ = 0.69 **< 1.0 OK**

Deflection:

$\Delta = 22.5\,w L^4/E'\,I$ = **0.47** in = **SPAN 361**

I = 20.80 in^4

Wood King Stud Allowable Loads (PLF)

Project Name: Jett Residence
Job Number: 2017-04907
Location: Valley County, Idaho

Governing Code: *2012 IBC*
Load Duration Factor: *1.6*
Max Vert. Load: *50 lbs*
Max Deflection: *L/180*

	Height										
King Stud	***8'***	***9'***	***10'***	***12'***	***14'***	***16'***	***18'***	***20'***	***22'***	***24'***	***Cost Factor***
(1) 2x4 Stud	12.8	12.8	12.8	12.8	NA	NA	NA	NA	NA	NA	
(2) 2x4 Stud	25.6	25.6	25.6	25.6	NA	NA	NA	NA	NA	NA	
(3) 2x4 Stud	38.4	38.4	38.4	38.4	NA	NA	NA	NA	NA	NA	
(1) 2x6 DF #2	152.0	120.0	97.0	67.0	35.8	24.1	16.9	NA	NA	NA	
(2) 2x6 DF #2	304.0	240.0	194.0	134.0	71.6	48.2	33.8	NA	NA	NA	
(3) 2x6 DF #2	456.0	360.0	291.0	201.0	107.4	72.3	50.7	NA	NA	NA	
(1) 2x8 DF #2	130.0	130.0	130.0	130.0	81.7	55.0	38.7	28.2	21.2	16.3	
(2) 2x8 DF #2	260.0	260.0	260.0	260.0	163.4	110.0	77.4	56.4	42.4	32.6	
(3) 2x8 DF #2	390.0	390.0	390.0	390.0	245.1	165.0	116.1	84.6	63.6	48.9	
(1) 2x6 LSL	67.8	67.8	67.8	67.8	42.7	28.5	20.0	14.7	NA	NA	
(2) 2x6 LSL	135.6	135.6	135.6	135.6	85.4	57.0	40.0	29.4	NA	NA	
(3) 2x6 LSL	203.4	203.4	203.4	203.4	128.1	85.5	60.0	44.1	NA	NA	
(1) 2x8 LSL	155.0	155.0	155.0	155.0	98.3	65.5	46.0	33.5	25.2	19.5	
(2) 2x8 LSL	310.0	310.0	310.0	310.0	196.6	131.0	92.0	67.0	50.4	39.0	
(3) 2x8 LSL	465.0	465.0	465.0	465.0	294.9	196.5	138.0	100.5	75.6	58.5	

Wood Trimmer Allowable Loads (kips)

Project Name: Jett Residence
Job Number: 2017-04907
Location: Valley County, Idaho

Governing Code: *2012 IBC*
Load Duration Factor: *1.0*
Eccentricity *0"*
Weak Axis Braced *Y*

	Height								
Trimmer Type	***8'***	***10'***	***12'***	***14'***	***16'***	***18'***	***20'***	***Max Allow Compression Wood Header***	***Cost Factor***
(1) 2x4 Stud	2.4	1.7	1.2	NA	NA	NA	NA	3.2	
(2) 2x4 Stud	4.9	3.4	2.4	NA	NA	NA	NA	6.5	
(3) 2x4 Stud	7.1	5.0	3.6	NA	NA	NA	NA	9.8	
(1) 2x6 DF #2	5.1	5.1	5.0	3.8	3.0	NA	NA	5.1	
(2) 2x6 DF #2	10.3	10.3	10.1	7.7	6.0	NA	NA	10.3	
(3) 2x6 DF #2	15.4	15.4	15.1	11.6	9.1	NA	NA	15.4	
(1) 2x8 DF #2	6.7	6.7	6.7	6.7	6.4	5.3	4.4	6.7	
(2) 2x8 DF #2	13.5	13.5	13.5	13.5	12.9	10.6	8.8	13.5	
(3) 2x8 DF #2	20.3	20.3	20.3	20.3	19.4	15.9	13.2	20.3	

Unbraced Wood Column Allowable Loads (kips)

Project Name: Jett Residence
Job Number: 2017-04907
Location: Valley County, Idaho

Governing Code: *2012 IBC*
Load Duration Factor: *1.0*
Eccentricity *0"*

	Unbraced Height									
Column Type	***8'***	***10'***	***12'***	***14'***	***16'***	***18'***	***20'***	***Allowable Compression Perp.***	***Simpson CC Capacity***	***Cost Factor***
(2) 2x4 DF #2	4.50	3.00	2.10	SR	SR	SR	SR	6.50	NA	
(3) 2x4 DF #2	8.80	5.90	4.20	3.20	SR	SR	SR	9.80	NA	
4x4 DF #2	7.00	4.60	3.30	2.40	SR	SR	SR	7.60	15.30	
(2) 2x6 DF #2	7.20	4.70	3.30	SR	SR	SR	SR	10.30	NA	
(3) 2x6 DF #2	20.40	14.70	10.70	8.00	6.20	4.90	SR	15.40	NA	
6x6 DF #2	18.00	15.70	13.00	10.50	8.50	6.90	5.70	18.90	30.20	
6x8 DF #2	24.50	21.40	17.80	14.30	11.60	9.40	7.80	25.70	30.20	
6x10 DF #2	31.40	27.10	22.50	18.20	14.70	12.00	9.90	32.60	30.20	
8x8 DF #2	36.60	34.60	31.90	28.50	24.90	21.30	18.20	35.20	37.80	
8x10 DF #2	46.30	43.90	40.40	36.20	31.50	27.00	23.10	44.50	37.80	
8x12 DF #2	56.20	53.10	49.00	43.80	38.10	32.70	28.00	53.40	37.80	
10x10 DF #2	60.50	58.80	56.50	53.40	49.60	45.20	40.50	56.40	NA	

SR = Slenderness Ratio Failure

Project # : 2017-04907
Project: Jett Residence

Point Load Footing Design

	Square Concrete Footing Pads for Soil Bearing = 1500 psf			
size (")	max magnitude (kip)	number of #4 Rebar	Thickness (")	min column size (")
18	3.00	2	10	3.5
24	5.50	2	10	3.5
30	8.75	2	10	3.5
36	12.50	3	10	3.5
42	16.75	4	10	3.5
48	22.00	4	10	3.5
54	27.75	5	10	3.5
60	33.75	6	12	3.5
66	40.75	7	12	5.5
72	44.50	8	12	5.5

Bars to be 3 1/2" from bottom of pad. Evenly space in both directions.

F1 Footing Design

Project # : *2017-04907*
Project: *Jett Residence*

Individual Footing Design

Program: ***Footing Design***

Description:
Inputs are in *ITALICS* and outputs are in **BOLDFACE**.

Soil Bearing Pressure: *1500psf*

Roof

Dead Load:	*(17psf) (4.0ft)*	=	**68plf**
Live/Snow Load:	*(120psf) (4.0ft)*	=	**480plf**

Upper Floor

Dead Load:	*(10psf) (4.0ft)*	=	**40plf**
Live Load:	*(40psf) (4.0ft)*	=	**160plf**

Main Floor

Dead Load:	*(10psf) (4.0ft)*	=	**40plf**
Live Load:	*(40psf) (4.0ft)*	=	**160plf**

Misc

Wall Load:	*(12psf) (17.0ft)*	=	**204plf**
Conc Ftg:	*(150pcf) (3.3ft2)*	=	**488plf**
Misc Load:		=	**plf**
			1640plf

Min Footing Width: $\frac{1640\text{plf}}{1500\text{psf}}$ = **14 in**

Use Footing Width = **16 in**

F1 Footing Design (2)

Project # : *2017-04907*
Project: *Jett Residence*

Individual Footing Design

Program: ***Footing Design***

Description:
Inputs are in *ITALICS* and outputs are in **BOLDFACE**.

Soil Bearing Pressure: *1500psf*

Roof

Dead Load:	*(17psf) (10.0ft)*	=	**170plf**
Live/Snow Load:	*(120psf) (10.0ft)*	=	**1200plf**

Upper Floor

Dead Load:	*(10psf) (.0ft)*	=	**plf**
Live Load:	*(40psf) (.0ft)*	=	**plf**

Main Floor

Dead Load:	*(10psf) (4.0ft)*	=	**40plf**
Live Load:	*(40psf) (4.0ft)*	=	**160plf**

Misc

Wall Load:	*(12psf) (13.0ft)*	=	**156plf**
Conc Ftg:	*(150pcf) (2.4ft2)*	=	**367plf**
Misc Load:		=	**plf**
			2093plf

Min Footing Width: $\dfrac{2093\text{plf}}{1500\text{psf}}$ = **17 in**

Use Footing Width = **16 in**

F2 Footing Design

Project # : *2017-04907*
Project: *Jett Residence*

Individual Footing Design

Program: ***Footing Design***

Description:

Inputs are in *ITALICS* and outputs are in **BOLDFACE**.

Soil Bearing Pressure: *1500psf*

Roof

Dead Load:	*(17psf) (12.0ft)*	=	**204plf**
Live/Snow Load:	*(120psf) (12.0ft)*	=	**1440plf**

Upper Floor

Dead Load:	*(10psf) (4.0ft)*	=	**40plf**
Live Load:	*(40psf) (4.0ft)*	=	**160plf**

Main Floor

Dead Load:	*(10psf) (5.5ft)*	=	**55plf**
Live Load:	*(40psf) (5.5ft)*	=	**220plf**

Misc

Wall Load:	*(12psf) (17.0ft)*	=	**204plf**
Conc Ftg:	*(150pcf) (3.8ft2)*	=	**575plf**
Misc Load:		=	**plf**
			2898plf

Min Footing Width: $\frac{2898\text{plf}}{1500\text{psf}}$ = **24 in**

Use Footing Width = **24 in**

F2.5 Footing Design

Project # : *2017-04907*
Project: *Jett Residence*

Individual Footing Design

Program: ***Footing Design***

Description:
Inputs are in *ITALICS* and outputs are in **BOLDFACE**.

Soil Bearing Pressure: *1500psf*

Roof

Dead Load:	*(17psf) (17.0ft)*	=	**289plf**
Live/Snow Load:	*(120psf) (17.0ft)*	=	**2040plf**

Upper Floor

Dead Load:	*(10psf) (7.0ft)*	=	**70plf**
Live Load:	*(40psf) (7.0ft)*	=	**280plf**

Main Floor

Dead Load:	*(10psf) (4.0ft)*	=	**40plf**
Live Load:	*(40psf) (4.0ft)*	=	**160plf**

Misc

Wall Load:	*(12psf) (17.0ft)*	=	**204plf**
Conc Ftg:	*(150pcf) (3.4ft2)*	=	**512plf**
Misc Load:		=	**plf**
			3595plf

Min Footing Width: $\dfrac{3595\text{plf}}{1500\text{psf}}$ = **29 in**

Use Footing Width = **30 in**

F3 Footing Design

Project # : *2017-04907*
Project: *Jett Residence*

Individual Footing Design

Program: ***Footing Design***

Description:
Inputs are in *ITALICS* and outputs are in **BOLDFACE**.

Soil Bearing Pressure: *1500psf*

Roof

Dead Load:	*(17psf) (23.0ft)*	=	**391plf**
Live/Snow Load:	*(120psf) (23.0ft)*	=	**2760plf**

Upper Floor

Dead Load:	*(10psf) (7.0ft)*	=	**70plf**
Live Load:	*(40psf) (7.0ft)*	=	**280plf**

Main Floor

Dead Load:	*(10psf) (4.0ft)*	=	**40plf**
Live Load:	*(40psf) (4.0ft)*	=	**160plf**

Misc

Wall Load:	*(12psf) (10.0ft)*	=	**120plf**
Conc Ftg:	*(150pcf) (3.8ft2)*	=	**575plf**
Misc Load:		=	**plf**
			4396plf

Min Footing Width: $\frac{4396\text{plf}}{1500\text{psf}}$ = **36 in**

Use Footing Width = **36 in**

Project # : *2017-04907*
Project: *Jett Residence*

Individual Footing Design

Program: ***Footing Design***

Description:
Inputs are in *ITALICS* and outputs are in **BOLDFACE**.

Soil Bearing Pressure: *1500psf*

Roof

Dead Load:	*(17psf) (17.0ft)*	=	**289plf**
Live/Snow Load:	*(120psf) (17.0ft)*	=	**2040plf**

Upper Floor

Dead Load:	*(10psf) (8.0ft)*	=	**80plf**
Live Load:	*(40psf) (8.0ft)*	=	**320plf**

Main Floor

Dead Load:	*(10psf) (5.0ft)*	=	**50plf**
Live Load:	*(40psf) (5.0ft)*	=	**200plf**

Misc

Wall Load:	*(12psf) (17.0ft)*	=	**204plf**
Conc Ftg:	*(150pcf) (3.8ft2)*	=	**575plf**
Misc Load:		=	**plf**
			3758plf

Min Footing Width: $\dfrac{3758\text{plf}}{1500\text{psf}}$ = **31 in**

Use Footing Width = **36 in**