

STRUCTURAL CALCULATIONS

**Loeser Van Kessel
Residence**
7426 SE 71st
Mercer Island, WA 98040

Hughes Studio
3439 NW 64th Street
Seattle, WA

5/19/2021

Permit Calculations

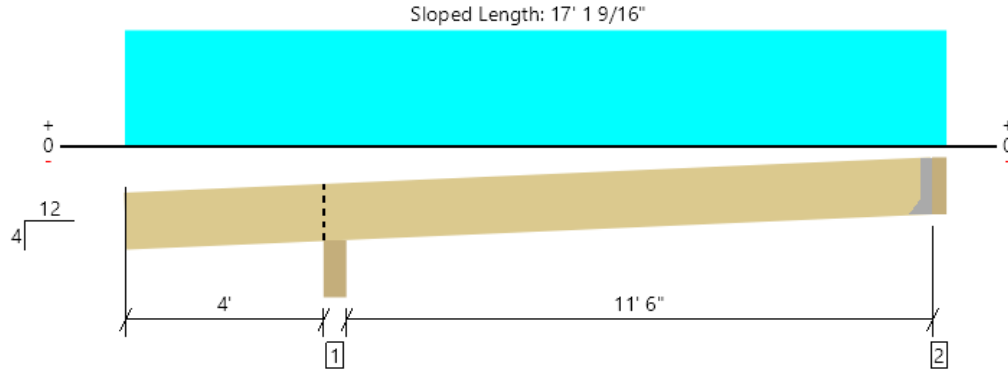


Garage Roof			
Member Name	Results	Current Solution	Comments
Roof: Joist	Passed	1 piece(s) 2 x 8 HF No.2 @ 24" OC	
Ridge Beam	Passed	1 piece(s) 7" x 14" 2.0E Parallam® PSL	
Flush beam	Passed	1 piece(s) 7" x 16" 2.0E Parallam® PSL	
Drop Beam	Passed	1 piece(s) 4 x 6 HF No.2	
Garage door header (east)	Passed	2 piece(s) 2 x 8 HF No.2	
Garage door header (west, at ridge)	Passed	1 piece(s) 6 x 12 DF No.1	
Storage header	Passed	2 piece(s) 2 x 8 HF No.2	

ForteWEB Software Operator	Job Notes
Jane Johnson Bykonen Carter Quinn (206) 264-7784 jjaj@bcq-se.com	



Garage Roof, Roof: Joist
1 piece(s) 2 x 8 HF No.2 @ 24" OC



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

Member Length : 17' 1/4"

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	436 @ 15' 11 1/2"	911 (1.50")	Passed (48%)	--	1.0 D + 1.0 S (Alt Spans)
Shear (lbs)	475 @ 5' 3/8"	1251	Passed (38%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	1162 @ 10' 7 1/2"	1477	Passed (79%)	1.15	1.0 D + 1.0 S (Alt Spans)
Live Load Defl. (in)	0.323 @ 10' 2 13/16"	0.618	Passed (L/460)	--	1.0 D + 1.0 S (Alt Spans)
Total Load Defl. (in)	0.489 @ 10' 3 9/16"	0.824	Passed (L/303)	--	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 : 4/12

- Deflection criteria: LL (L/240) and TL (L/180).
- Overhang deflection criteria: LL (2L/240) and TL (2L/180).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Total	
1 - Beveled Plate - HF	5.50"	5.50"	1.50"	343	543	886	Blocking
2 - Hanger on 7 1/4" HF beam	3.50"	Hanger ¹	1.50"	170	289	459	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.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	6' o/c	
Bottom Edge (Lu)	11' 4" o/c	

- Maximum allowable bracing intervals based on applied load.

Connector: Simpson Strong-Tie							
Support	Model	Seat Length	Top Fasteners	Face Fasteners	Member Fasteners	Accessories	
2 - Face Mount Hanger	LRU26Z	1.94"	N/A	4-10dx1.5	5-10d		

- Refer to manufacturer notes and instructions for proper installation and use of all connectors.

Vertical Load	Location (Side)	Spacing	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 16' 3"	24"	15.0	25.0	Default Load

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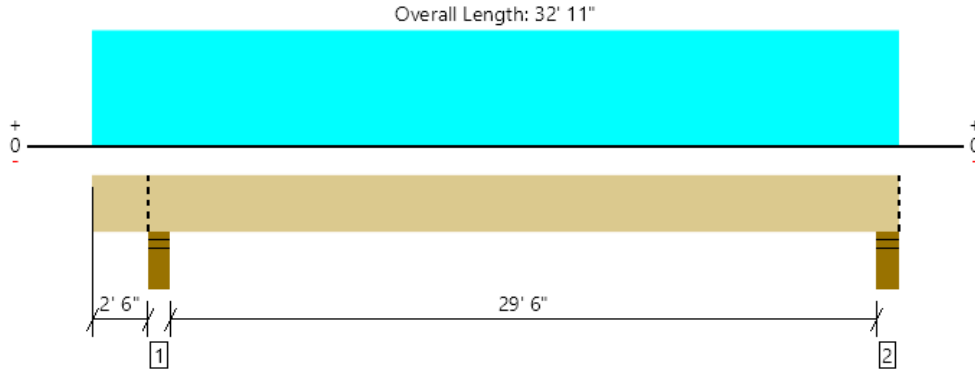
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The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Jane Johnson Bykonen Carter Quinn (206) 264-7784 jaj@bcq-se.com	



Garage Roof, Ridge Beam
1 piece(s) 7" x 14" 2.OE Parallam® PSL



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	4635 @ 2' 8 3/4"	24063 (5.50")	Passed (19%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	3560 @ 4' 1 1/2"	21789	Passed (16%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	28692 @ 17' 8 15/16"	62472	Passed (46%)	1.15	1.0 D + 1.0 S (Alt Spans)
Live Load Defl. (in)	0.813 @ 17' 8 1/8"	1.493	Passed (L/440)	--	1.0 D + 1.0 S (Alt Spans)
Total Load Defl. (in)	1.468 @ 17' 8 1/4"	1.990	Passed (L/244)	--	1.0 D + 1.0 S (Alt Spans)

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

- Deflection criteria: LL (L/240) and TL (L/180).
- Overhang deflection criteria: LL (2L/240) and TL (2L/180). Upward deflection on left cantilever exceeds overhang deflection criteria.
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Upward deflection on left cantilever exceeds 0.4".
- Member should be side-loaded from both sides of the member or braced to prevent rotation.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Total	
1 - Stud wall - DF	5.50"	5.50"	1.50"	2079	2556	4635	Blocking
2 - Stud wall - DF	5.50"	5.50"	1.50"	1770	2185	3955	Blocking

• Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	32' 11" o/c	
Bottom Edge (Lu)	32' 11" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 32' 11"	N/A	30.7	--	
1 - Uniform (PSF)	0 to 32' 11" (Front)	5' 9"	15.0	25.0	Roof

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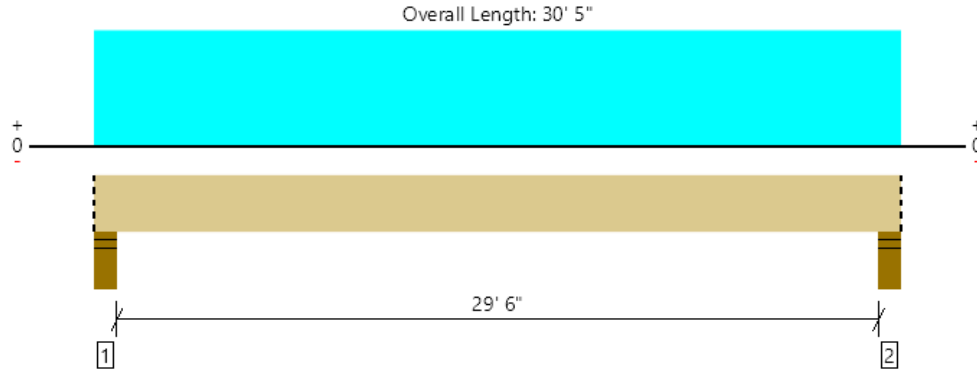
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Garage Roof, Flush beam
1 piece(s) 7" x 16" 2.0E Parallam® PSL



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	7833 @ 4"	24063 (5.50")	Passed (33%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	6910 @ 1' 9 1/2"	24901	Passed (28%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	56983 @ 15' 2 1/2"	80396	Passed (71%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	1.141 @ 15' 2 1/2"	1.487	Passed (L/313)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	1.958 @ 15' 2 1/2"	1.983	Passed (L/182)	--	1.0 D + 1.0 S (All Spans)

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

- Deflection criteria: LL (L/240) and TL (L/180).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Member should be side-loaded from both sides of the member or braced to prevent rotation.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Total	
1 - Stud wall - DF	5.50"	5.50"	1.79"	3271	4563	7834	Blocking
2 - Stud wall - DF	5.50"	5.50"	1.79"	3271	4563	7834	Blocking

• Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	30' 5" o/c	
Bottom Edge (Lu)	30' 5" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 30' 5"	N/A	35.1	--	
1 - Uniform (PSF)	0 to 30' 5" (Front)	12'	15.0	25.0	Roof

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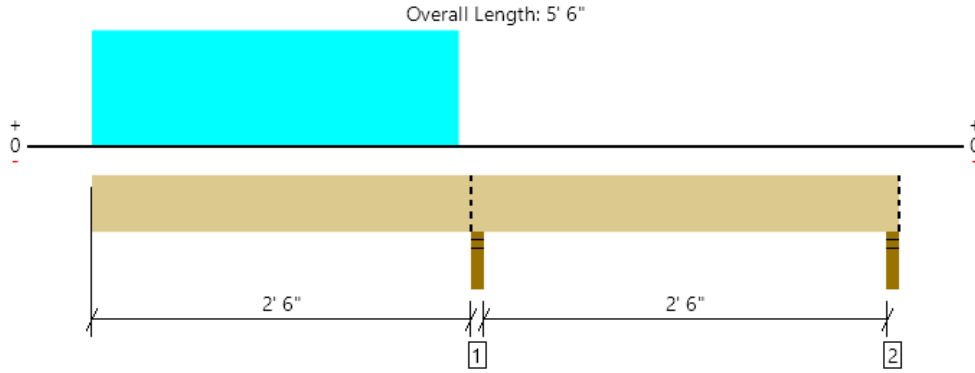
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Garage Roof, Drop Beam
1 piece(s) 4 x 6 HF No.2



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	912 @ 2' 7 1/2"	4253 (3.00")	Passed (21%)	--	1.0 D + 1.0 Lr (All Spans)
Shear (lbs)	492 @ 2' 1/2"	2406	Passed (20%)	1.25	1.0 D + 1.0 Lr (All Spans)
Moment (Ft-lbs)	-829 @ 2' 7 1/2"	2031	Passed (41%)	1.25	1.0 D + 1.0 Lr (All Spans)
Live Load Defl. (in)	0.053 @ 0	0.262	Passed (2L/999+)	--	1.0 D + 1.0 Lr (All Spans)
Total Load Defl. (in)	0.094 @ 0	0.350	Passed (2L/674)	--	1.0 D + 1.0 Lr (All Spans)

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

- Deflection criteria: LL (L/240) and TL (L/180).
- Overhang deflection criteria: LL (2L/240) and TL (2L/180).
- Left cantilever length exceeds 1/3 member length or 1/2 back span length. Additional bracing should be considered.
- Allowed moment does not reflect the adjustment for the beam stability factor.
- -294 lbs uplift at support located at 5' 4 1/2". Strapping or other restraint may be required.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Roof Live	Total	
1 - Stud wall - HF	3.00"	3.00"	1.50"	405	506	911	Blocking
2 - Stud wall - HF	3.00"	3.00"	1.50"	-125	-169	-294	Blocking

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	5' 6" o/c	
Bottom Edge (Lu)	5' 6" o/c	

- Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Roof Live (non-snow: 1.25)	Comments
0 - Self Weight (PLF)	0 to 5' 6"	N/A	4.9	--	
1 - Uniform (PSF)	0 to 2' 6" (Front)	6' 9"	15.0	20.0	Default Load

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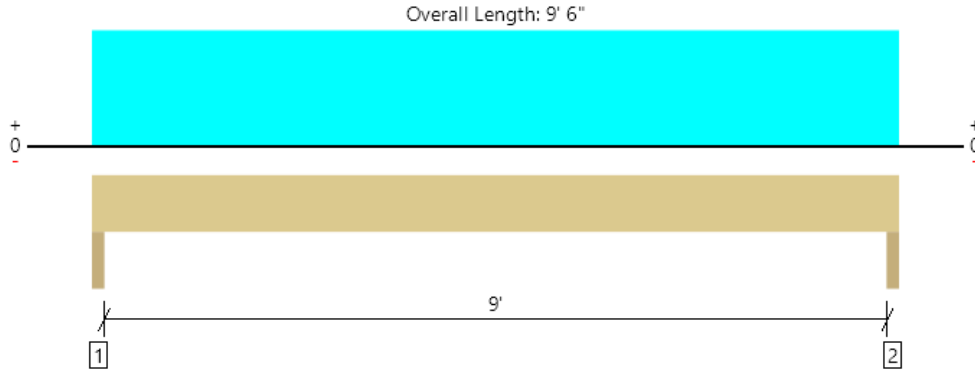
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Garage Roof, Garage door header (east)
2 piece(s) 2 x 8 HF No.2



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	406 @ 1 1/2"	3645 (3.00")	Passed (11%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	333 @ 10 1/4"	2501	Passed (13%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	915 @ 4' 9"	2569	Passed (36%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.067 @ 4' 9"	0.308	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.114 @ 4' 9"	0.313	Passed (L/976)	--	1.0 D + 1.0 S (All Spans)

System : Wall
Member Type : Header
Building Use : Residential
Building Code : IBC 2015
Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/5/16").
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Total	
1 - Trimmer - DF	3.00"	3.00"	1.50"	169	237	406	None
2 - Trimmer - DF	3.00"	3.00"	1.50"	169	237	406	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	9' 6" o/c	
Bottom Edge (Lu)	9' 6" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 9' 6"	N/A	5.5	--	
1 - Uniform (PSF)	0 to 9' 6"	2'	15.0	25.0	Snow

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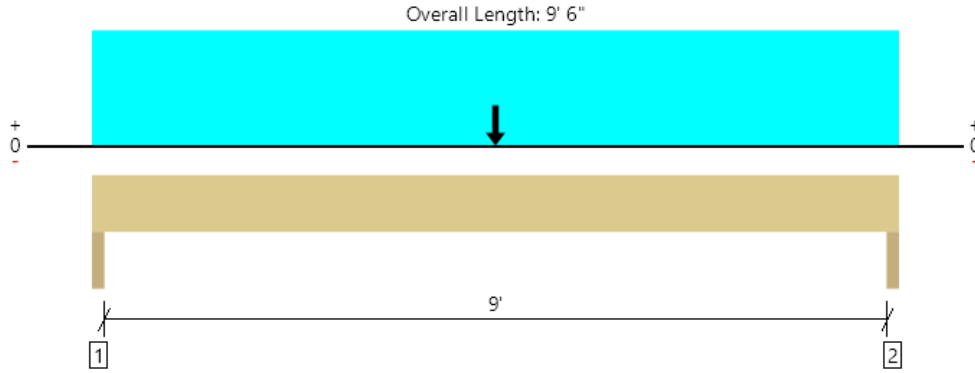
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Garage Roof, Garage door header (west, at ridge)
1 piece(s) 6 x 12 DF No.1



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	2774 @ 1' 1/2"	10313 (3.00")	Passed (27%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	2658 @ 1' 2 1/2"	8244	Passed (32%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	11745 @ 4' 9"	15684	Passed (75%)	1.15	1.0 D + 1.0 S (All Spans)
Vert Live Load Defl. (in)	0.073 @ 4' 9"	0.308	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Vert Total Load Defl. (in)	0.133 @ 4' 9"	0.463	Passed (L/837)	--	1.0 D + 1.0 S (All Spans)
Lat Member Reaction (lbs)	333 @ 9' 4 1/2"	N/A	Passed (N/A)	1.60	1.0 D + 0.6 W
Lat Shear (lbs)	291 @ 8 1/2"	11469	Passed (3%)	1.60	1.0 D + 0.6 W
Lat Moment (Ft-lbs)	771 @ mid-span	7723	Passed (10%)	1.60	1.0 D + 0.6 W
Lat Deflection (in)	0.033 @ mid-span	0.925	Passed (L/999+)	--	1.0 D + 0.6 W
Bi-Axial Bending	0.55	1.00	Passed (55%)	1.60	1.0 D + 0.45 W + 0.75 L + 0.75 S

System : Wall
Member Type : Header
Building Use : Residential
Building Code : IBC 2015
Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Lateral deflection criteria: Wind (L/120)
- Lumber grading provisions must be extended over the length of the member per NDS 4.2.5.5.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Total	
1 - Trimmer - DF	3.00"	3.00"	1.50"	1258	1516	2774	None
2 - Trimmer - DF	3.00"	3.00"	1.50"	1258	1516	2774	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	9' 6" o/c	
Bottom Edge (Lu)	9' 6" o/c	

•Maximum allowable bracing intervals based on applied load.

Lateral Connections						
Supports	Plate Size	Plate Material	Connector	Type/Model	Quantity	Nailing
Left	2X	Douglas Fir-Larch	Nails	8d x 2.5" Box (Toe)	4	
Right	2X	Douglas Fir-Larch	Nails	8d x 2.5" Box (Toe)	4	

Vertical Loads	Location	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 9' 6"	N/A	16.0	--	
1 - Uniform (PSF)	0 to 9' 6"	2'	15.0	25.0	Snow
2 - Point (lb)	4' 9"	N/A	2079	2556	Linked from: Ridge Beam, Support 1

Lateral Load	Location	Tributary Width	Wind (1.60)	Comments
1 - Uniform (PSF)	Full Length	4' 9"	25.3	

• IBC Table 1604.3, footnote f: Deflection checks are performed using 42% of this lateral wind load.

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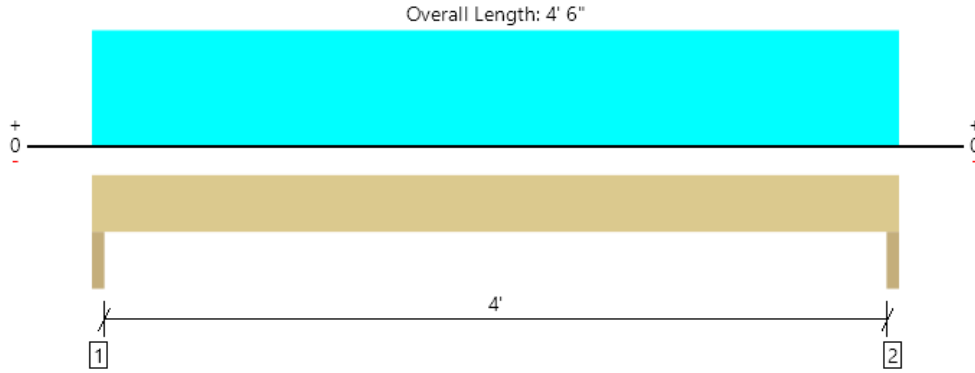
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File Name: Loeser VanKessel

Garage Roof, Storage header
2 piece(s) 2 x 8 HF No.2



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	552 @ 1 1/2"	3645 (3.00")	Passed (15%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	343 @ 10 1/4"	2501	Passed (14%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	554 @ 2' 3"	2569	Passed (22%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.009 @ 2' 3"	0.142	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.015 @ 2' 3"	0.213	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)

System : Wall
Member Type : Header
Building Use : Residential
Building Code : IBC 2015
Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Total	
1 - Trimmer - DF	3.00"	3.00"	1.50"	215	338	553	None
2 - Trimmer - DF	3.00"	3.00"	1.50"	215	338	553	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	4' 6" o/c	
Bottom Edge (Lu)	4' 6" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 4' 6"	N/A	5.5	--	
1 - Uniform (PSF)	0 to 4' 6"	6'	15.0	25.0	Snow

Weyerhaeuser Notes

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

ForteWEB Software Operator	Job Notes
Jane Johnson Bykonen Carter Quinn (206) 264-7784 jaj@bcq-se.com	





Loeser VanKessel

7426 SE 71st St, Mercer Island, WA 98040, USA

Latitude, Longitude: 47.5417553, -122.2399213



Date	2/3/2021, 11:26:39 AM
Design Code Reference Document	ASCE7-10
Risk Category	II
Site Class	D - Stiff Soil

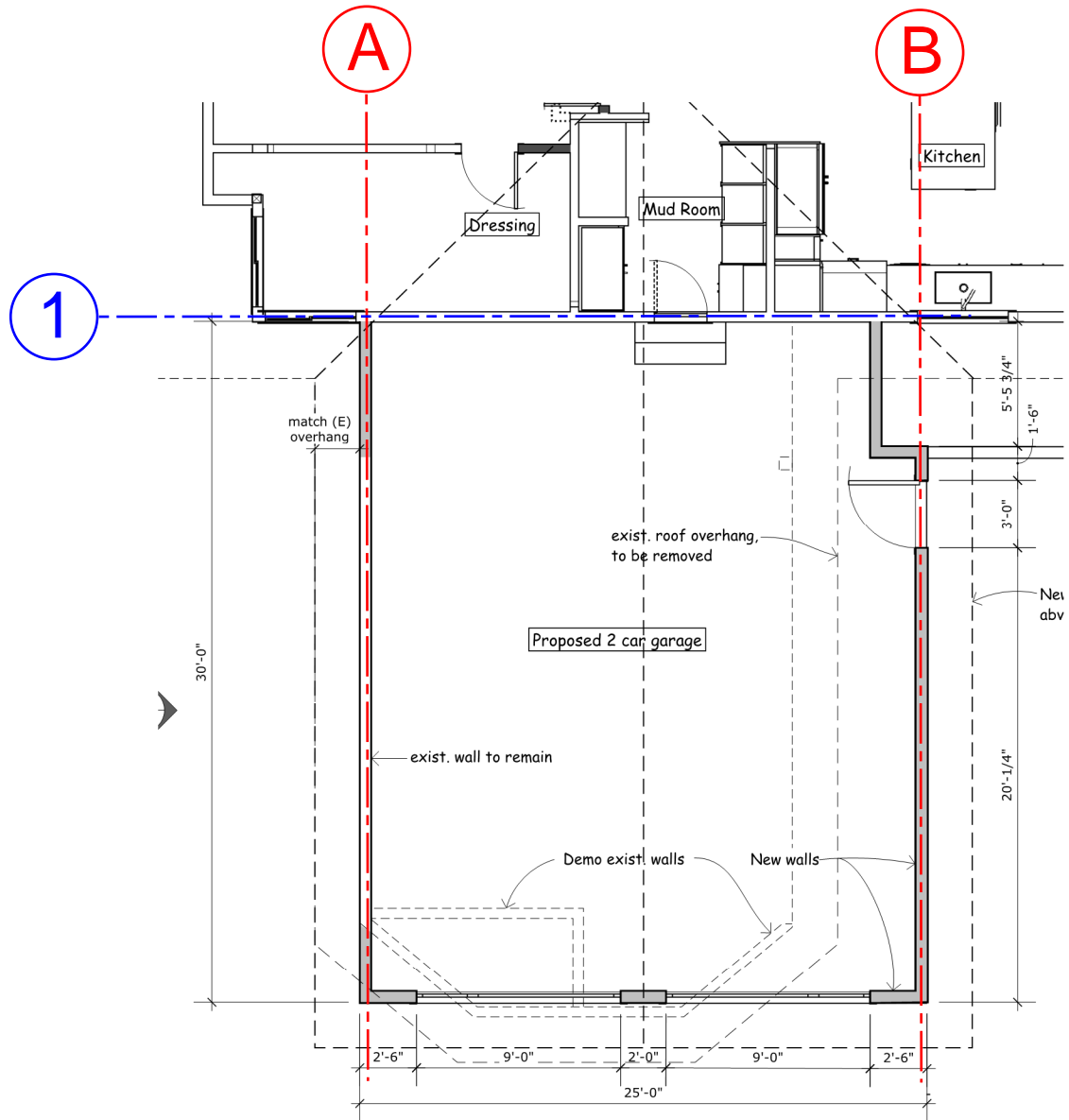
Type	Value	Description
S _S	1.468	MCE _R ground motion. (for 0.2 second period)
S ₁	0.562	MCE _R ground motion. (for 1.0s period)
S _{MS}	1.468	Site-modified spectral acceleration value
S _{M1}	0.843	Site-modified spectral acceleration value
S _{DS}	0.979	Numeric seismic design value at 0.2 second SA
S _{D1}	0.562	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	D	Seismic design category
F _a	1	Site amplification factor at 0.2 second
F _v	1.5	Site amplification factor at 1.0 second
PGA	0.612	MCE _G peak ground acceleration
F _{PGA}	1	Site amplification factor at PGA
PGA _M	0.612	Site modified peak ground acceleration
T _L	6	Long-period transition period in seconds
SsRT	1.468	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	1.554	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	3.614	Factored deterministic acceleration value. (0.2 second)
S1RT	0.562	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.608	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	1.308	Factored deterministic acceleration value. (1.0 second)
PGAd	1.369	Factored deterministic acceleration value. (Peak Ground Acceleration)
C _{RS}	0.945	Mapped value of the risk coefficient at short periods
C _{R1}	0.925	Mapped value of the risk coefficient at a period of 1 s

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Lateral Key



Open Front Diaphragm aspect ratio = $30/25' = 1.2$
<1.5 --> ok.

MASSING ROOF	Uniform Loads (PSF)		Area (SF)	w (k)
	Misc	15	928	13.9

SEISMIC DESIGN PARAMETERS

Site Class =	D	$S_s = 1.468$
Risk Cat. =	II	$S_1 = 0.562$
$S_{DS} =$	0.979	$f_s = 1.00$
R =	6.50	$f_v = 1.50$
Cs =	0.151	k = 1.0

ASCE 7-10 Equivalent Lateral Force Procedure, 12.8

Level	Area (SF)	Unit DL (PSF)	w (k)	h^k (ft)	$(w)(h^k)$	C_{vx}	F_x (k)	ASD
ROOF	928	15.0	13.9	9.1	126	100%	2.1	0.7E (k)
Σ			13.9	2.1	126	100%		
Base Shear								2.1

WIND DESIGN PARAMETERS

V (mph) =	110	G =	0.85	L/B =	0.83	L/B =	1.20
Exposure Cat. =	C	Gcpi =	0.18	Cp =	Windward Wall 0.80	Cp =	Windward Wall 0.80
K_{zt} =	1.00	K_x =	0.85		Leeward Wall -0.05		Leeward Wall -0.46
K_d =	0.85	q_z =	22.4		Side Wall -0.70		Side Wall -0.70
Roof Slope (in/ft) =	5				Roof -0.90		Roof -0.90

ASCE 7-10 MWFRS Directional Procedure, 27.4-1

ROOF	h (ft)	Direction	Wall Area	K_h	q_h	Wall (PSF)	Roof (k)	F_x (k)	06W (k)
HORIZONTAL PROJECTION	9.1	PARALLEL TO WL-A	113	0.85	22.4	16.2	0.0	1.8	1.1
		PARALLEL TO WL-1	136	0.85	22.4	24.0	0.0	3.3	2.0
Base Shear - Parallel to Grid A								1.8	
Base Shear - Parallel to Grid 1								3.3	

LEVEL	0.6W	0.7E
ROOF	1.1	1.5

SW Height
ROOF 8.4

0.6-0.14Sds=	0.46
--------------	------

WALL LINE A

ROOF		WIND TRIB = 50%		ΣL = 29.50		Rotation due to Open Front:						
		0.6W (k) = 0.55				0.6W (k) = 1.2						
		SEISMIC TRIB = 50%										
		0.7E (k) = 0.73				0.7E (k) = 0.9						
		<i>Wall weight</i>										
Segment Count	HT (ft)	LENGTH (ft)	h/L	2/(h/L) ¹	0.6W (plf)	0.7E (plf)	SW	SW Cap (plf)	Tension (k)	0.6-0.14Sds	[0.6-0.14Sds]D (k)	Net T (k)
1	8.4	29.5	0.29	1.00	13	25	SW 1	240	0.2	0.46	1.2	0.0
Rotation case:												
Segment Count	HT (ft)	LENGTH (ft)	h/L	2/(h/L) ¹	0.6W (plf)	0.7E (plf)	SW	SW Cap (plf)	Tension (k)	0.6-0.14Sds	[0.6-0.14Sds]D (k)	Net T (k)
1	8.4	29.5	0.29	1.00	28	30	SW 1	240	0.3	0.46	1.2	0.0

WALL LINE A

ROOF		WIND TRIB = 50%		ΣL = 19.50		Rotation due to Open Front:						
		0.6W (k) = 0.55				0.6W (k) = 1.2						
		SEISMIC TRIB = 50%										
		0.7E (k) = 0.73				0.7E (k) = 0.9						
		<i>Wall weight</i>										
Segment Count	HT (ft)	LENGTH (ft)	h/L	2/(h/L) ¹	0.6W (plf)	0.7E (plf)	SW	SW Cap (plf)	Tension (k)	0.6-0.14Sds	[0.6-0.14Sds]D (k)	Net T (k)
1	8.4	19.5	0.43	1.00	20	38	SW 1	240	0.3	0.46	0.8	0.0
Rotation case:												
Segment Count	HT (ft)	LENGTH (ft)	h/L	2/(h/L) ¹	0.6W (plf)	0.7E (plf)	SW	SW Cap (plf)	Tension (k)	0.6-0.14Sds	[0.6-0.14Sds]D (k)	Net T (k)
1	8.4	29.5	0.29	1.00	43	45	SW 1	240	0.4	0.46	1.2	0.0

LEVEL	0.6W	0.7E
ROOF	2.0	1.5

SW Height
ROOF 8.4

0.6-0.14Sds=	0.46
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WALL LINE 1

ROOF		WIND TRIB = 100%	ΣL = 12.00	EXISTING RES LOADS:	WIND TRIB = 15%							
		0.6W (k) = 1.95			0.6W (k) = 0.3							
		SEISMIC TRIB = 100%			SEISMIC TRIB = 15%							
		0.7E (k) = 1.47			0.7E (k) = 1.3	<i>Wall weight</i>						
Segment Count	HT (ft)	LENGTH (ft)	h/L	2/(h/L)¹	0.6W (plf)	0.7E (plf)	SW	SW Cap (plf)	Tension (k)	0.6-0.14Sds	[0.6-0.14Sds]D (k)	Net T (k)
1	8.4	12.0	0.70	1.00	131	229	SW 1	240	1.9	0.46	0.5	1.7

Mark	Sheathing	Block'g	Panel Nailing ¹	Attachment to top plate ³	Bottom Plate Attachment			Capacity (plf) (Seismic)
					Rim Joist Req'd	Nailing to wood below	A. Bolts to ⁵ concrete below	
SW 1	15/32" APA Sheathing	Yes	8d @ 6"oc	CLIP @ 24"oc	2x	16d @ 6"oc	5/8" @ 48"oc	240

¹ Nails shall be 8d box. Nailing applies to all panel edges (block all unsupported panel edges), top & bottom plates and blocking. Nail to intermediate framing members w/ 8d @ 12"oc. (Note: where stud spacing is 24"oc, nail to intermediate framing members with 8d@6"oc.)

² Not used.

³ Clip shall be either A35, LTP4.

⁴ Nails shall be 16d box (0.135Øx3½") or 10d common (0.148Øx3½")

Screws shall be Simpson SDS25412 (1/4"Øx4½"min).

⁵ Provide 3"x3"x0.229" plate washer at all anchor bolts. Anchor bolts shall be positioned such that plate edge of plate washer is with 1/2" of the edge of the bottom plate. (Plate washers may be diagonally slotted with a width of up to 13/16" and a length not to exceed 1¾")