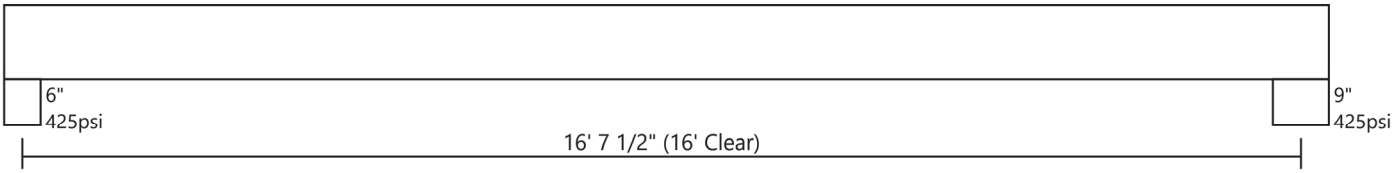
Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Floor8 - LVL Ceiling Beam @ Sitting Area/Back Porch**
Usage: **BEAM**
Max Deflection: **LL = L/360 TL = L/240**



LOADS

Project Design Loads : Floor: Live=40.0 psf, Dead=10.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
1	Uniform (plf)		100.0		57.1		115%	0	0'	16' 7 1/2"	Back Porch Rafter Load
2	Partial (plf)		150.0		85.7		115%	0	0'	10'	Main Rafter Load
3	Concentrated (lbs)		500.0		400.0		100%	0	8'		Ceiling Beam Per Plan
	Uniform (plf)		10.96					0	0'	16' 7 1/2"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

SUPPORTS (lbs)

	1	2	
Max Reaction	2602	1880	
Max 100%	208	192	
Max 115%	1074	732	
Min Reaction	1321	955	
Min 100%	208	192	
Min 115%	1074	732	
DL Reaction	1321	955	
Min Bearing	1.61"	1.50"	[Based on bearing stress below]
Brg Stress (psi)	425	425	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio	
V(lbs)	1427	1	0' 3"	31	9080	115%	0.16	
M(ft-lbs)	9481	1	8'	61	24470	115%	0.39	
LtRn(lbs)	2395	0	0'	31	8925		0.27	See Note 4
RtRn(lbs)	1687	0	16' 7 1/2"	31	13388		0.13	See Note 4
LLDefl(")	0.40	1	8' 3"	61	0.78		L/497	
TLDefl(")	0.91	1	8' 3"	61	1.00		L/218	

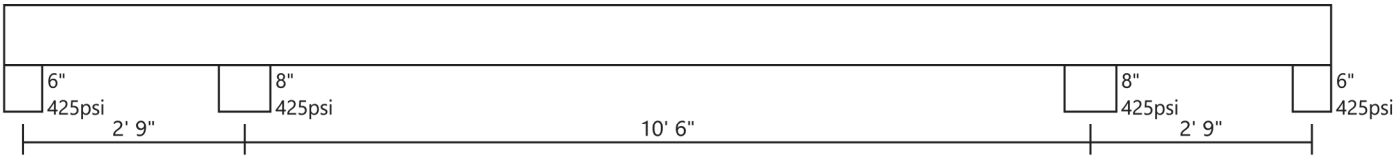
USE: **onCENTER LVL 2.0E 1 3/4" x 11 7/8" 2 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 2 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row 2" from bottom).

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge with continuous lateral support.
3. Analysis valid for dry-use only (less than 16% moisture content).
4. This reaction is based on the combination of loads & duration factors that produces the highest stress ratio and may be less than maximum reaction. Therefore, when reaction values are required, use Max Reaction from 'Supports' section above.
5. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
6. When required by the building code, a registered design professional or building official should verify the input loads and product application.
7. This member has been sized for residential use. A concentrated load check, per the building code, must be performed for commercial uses.
8. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
9. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
10. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Floor10 - LVL Beam @ Great Room / Dining Room Area**
Usage: **BEAM** Repetitive Incr: **Yes**
Max Deflection: **LL = L/360 TL = L/240**



LOADS

Project Design Loads : Floor: Live=40.0 psf, Dead=10.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
	Area (psf)		50.0		40.0		100%	0	0'	16'	16" o.c. Base Uniform Load (Spcg Sen)
1	Uniform (plf)		420.0		280.0		115%	0	0'	16'	Lower Rafters @ Great Room
2	Concentrated (lbs)		1200.0		685.7		115%	0	8' 3"		6x16 Timber Beam PT Load
	Uniform (plf)		12.81					0	0'	16'	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

LOAD PATTERNS (* = span loaded)

	1	2	3
1	*	*	*
2	*		*
3		*	
4	*	*	
5		*	*

SUPPORTS (lbs)

	1	2	3	4	
Max Reaction	-117	6463	6574	-132	
Max 100%	71	511	511	71	
Max 115%	371	3273	3336	371	
Min Reaction	-1774	2125	2149	-1810	
Min 100%	-152	147	147	-152	
Min 115%	-1064	770	770	-1085	
DL Reaction	-558	2679	2726	-573	
Uplift	1774	0	0	1810	
Min Bearing	1.50"	3.00"	3.00"	1.50"	[Based on bearing stress below]
Brg Stress (psi)	425	425	425	425	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio	
V(lbs)	2014	2	10' 2"	435	10612	115%	0.19	
M(ft-lbs)	9335	2	5' 6"	433	23809	115%	0.39	
LtRn(lbs)	-187	0	0'	32	13388		0.01	See Note 5
RtRn(lbs)	-203	0	16'	32	13388		0.02	See Note 5
IntRn(lbs)	6063	0	13' 3"	35	17850		0.34	See Note 5
LLDefl(")	-0.25	1	0'	433	0.26		2L/265	
TLDefl(")	-0.38	1	0'	433	0.39		2L/174	
LLDefl(")	0.30	2	5' 3"	433	0.49		L/415	
TLDefl(")	0.49	2	5' 3"	433	0.74		L/257	
LLDefl(")	-0.25	3	2' 9"	433	0.26		2L/263	
TLDefl(")	-0.38	3	2' 9"	433	0.39		2L/172	

USE: **onCENTER LVL 2.0E 1 3/4" x 9 1/4" 3 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 2 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row 2" from bottom). Specified attachment is from each face. Offset fasteners on back face halfway between fasteners on front face.

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge laterally supported @16" o.c.
3. Allowable negative moment is calculated based on bottom edge laterally supported @16" o.c.
4. Analysis valid for dry-use only (less than 16% moisture content).
5. This reaction is based on the combination of loads & duration factors that produces the highest stress ratio and may be less than maximum reaction. Therefore, when reaction values are required, use Max Reaction from 'Supports' section above.

Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Floor10 - LVL Beam @ Great Room / Dining Room Area**

6. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
7. When required by the building code, a registered design professional or building official should verify the input loads and product application.
8. This member has been sized for residential use. A concentrated load check, per the building code, must be performed for commercial uses.
9. Design assumes a 4% increase in bending stress for repetitive member use.
10. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
11. Provide approved uplift resistance at supports with negative reactions. This member also evaluated with those bearings neglected if the uplift is higher than 1500 lbs.
12. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
13. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

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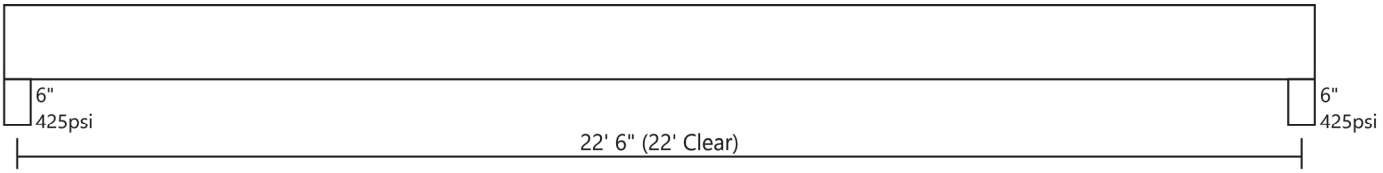
Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Floor9 - LVL Ceiling Beam @ Great Room Area**
Usage: **BEAM** Repetitive Incr: **Yes**
Max Deflection: **LL = L/360 TL = 1.00"**



LOADS

Project Design Loads : Floor: Live=40.0 psf, Dead=10.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
1	Concentrated (lbs)		2100.0		1200.0		115%	0	6' 6"		Header PT Load From Above
2	Concentrated (lbs)		2100.0		1200.0		115%	0	15' 6"		Header PT Load From Above
3	Trapezoidal (plf)		0.0	40.0	0.0	0.0	90%	0	0'	11' 3"	Gable End Wall
4	Trapezoidal (plf)		40.0	0.0	0.0	0.0	90%	0	11' 3"	22' 6"	Gable End Wall
	Uniform (plf)		22.17					0	0'	22' 6"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

SUPPORTS (lbs)

	1	2	
Max Reaction	2818	2724	
Max 115%	1227	1173	
Min Reaction	1591	1551	
Min 115%	1227	1173	
DL Reaction	1591	1551	
Min Bearing	1.50"	1.50"	[Based on bearing stress below]
Brg Stress (psi)	425	425	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio
V(lbs)	1957	1	0' 3"	31	18354	115%	0.11
M(ft-lbs)	18546	1	11' 3"	31	59871	115%	0.31
LtRn(lbs)	2818	0	0'	31	13388		0.21
RtRn(lbs)	2724	0	22' 6"	31	13388		0.20
LLDefl(")	0.43	1	11' 3"	31	1.06		L/621
TLDefl(")	0.98	1	11' 3"	31	1.00		L/276

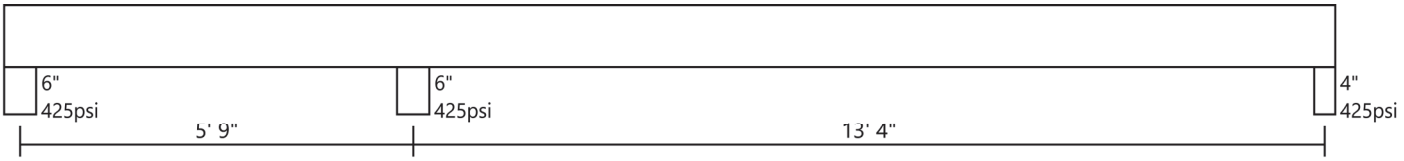
USE: **onCENTER LVL 2.0E 1 3/4" x 16" 3 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 3 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row mid-depth, one row 2" from bottom). Specified attachment is from each face. Offset fasteners on back face halfway between fasteners on front face.

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge laterally unsupported between bearing locations.
3. Analysis valid for dry-use only (less than 16% moisture content).
4. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
5. When required by the building code, a registered design professional or building official should verify the input loads and product application.
6. This member has been sized for residential use. A concentrated load check, per the building code, must be performed for commercial uses.
7. Design assumes a 4% increase in bending stress for repetitive member use.
8. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
9. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
10. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Floor12 - LVL Ceiling Beam Kitchen Area**
Usage: **BEAM**
Max Deflection: **LL = L/360 TL = L/240**



LOADS

Project Design Loads : Floor: Live=20.0 psf, Dead=10.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
1	Concentrated (lbs)		2000.0		1600.0		100%	0	2'		Ceiling Beam PT Load Per Plan
2	Uniform (plf)		80.0		0.0		90%	0	0'	19' 1"	Gable End Wall
3	Uniform (plf)		40.0		22.9		115%	0	0'	19' 1"	Gable End Wall Roof
4	Uniform (plf)		50.0		33.3		100%	0	0'	19' 1"	Ceiling Joist Load Right Side Of Beam
5	Uniform (plf)		240.0		160.0		100%	0	0'	19' 1"	Ceiling Joist Load Left Side Of Beam
6	Uniform (plf)		100.0		57.1		115%	0	0'	19' 1"	Low Rafter Load
	Uniform (plf)		10.4					0	0'	19' 1"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

LOAD PATTERNS (* = span loaded)

	1	2
1	*	*
2	*	
3		*

SUPPORTS (lbs)

	1	2	3	
Max Reaction	1924	9369	3386	
Max 100%	1484	3313	1064	
Max 115%	213	1097	440	
Min Reaction	-510	4959	1825	
Min 100%	-522	1278	-50	
Min 115%	-216	255	-7	
DL Reaction	228	4959	1882	
Uplift	510	0	0	
Min Bearing	1.50"	5.56"	2.02"	[Based on bearing stress below]
Brg Stress (psi)	425	425	425	

11-7/8" LVL Beam Can Be Installed In-Lieu Of 11-1/4" If Supplier Does Not Stock Size As Called Out On Plan. Typ. Uno.

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio	
V(lbs)	2589	2	0' 3"	21	7482	100%	0.35	
M(ft-lbs)	9633	2	0'	21	19061	100%	0.51	
LtRn(lbs)	1711	0	0'	22	8925		0.19	See Note 5
RtRn(lbs)	3010	0	19' 1"	63	5950		0.51	See Note 5
IntRn(lbs)	8272	0	5' 9"	21	8925		0.93	See Note 5
LLDefl(")	0.03	1	2' 10 1/2"	22	0.27		L/2395	
TLDefl(")	-0.05	1	2' 10 1/2"	63	0.41		L/-1322	
LLDefl(")	0.20	2	6' 8 1/2"	63	0.63		L/785	
TLDefl(")	0.53	2	6' 8 1/2"	63	0.94		L/304	

USE: **onCENTER LVL 2.0E 1 3/4" x 11 1/4" 2 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 2 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row 2" from bottom).

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge with continuous lateral support.
3. Allowable negative moment is calculated based on bottom edge laterally supported @16" o.c.
4. Analysis valid for dry-use only (less than 16% moisture content).
5. This reaction is based on the combination of loads & duration factors that produces the highest stress ratio and may be less than maximum reaction. Therefore, when reaction values are required, use Max Reaction from 'Supports' section above.
6. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
7. When required by the building code, a registered design professional or building official should verify the input loads and product application.

Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Floor12 - LVL Ceiling Beam Kitchen Area**

8. This member has been sized for residential use. A concentrated load check, per the building code, must be performed for commercial uses.
9. Provide approved uplift resistance at supports with negative reactions.
10. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
11. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
12. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

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JC
910-386-4300
9/21/2020 10:39 AM
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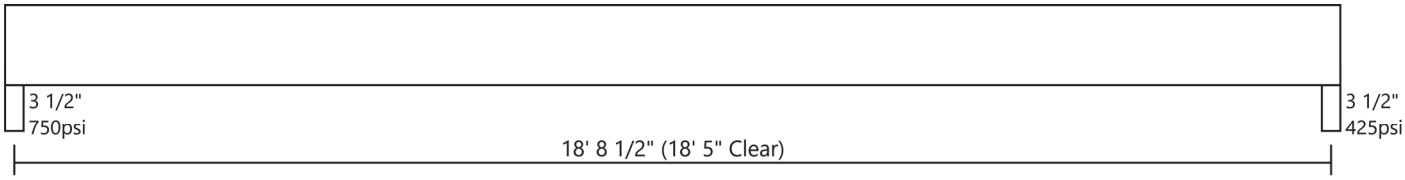
Version: 18.0.2.0

Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Roof2 - LVL Beam Ceiling @ Large Dormer Garage Area**
Usage: **BEAM (Roof)**
Max Deflection: **LL = L/240 TL = L/180** Slope: **0/12**



LOADS

Project Design Loads : Roof: Live=20.0 psf, Dead=15.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
1	Uniform (plf)		80.0		45.7		115%	0	0'	18' 8 1/2"	Ceiling Load
2	Uniform (plf)		210.0		120.0		115%	0	0'	18' 8 1/2"	Rafter Load
	Uniform (plf)		12.94					0	0'	18' 8 1/2"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

SUPPORTS (lbs)

	1	2	
Max Reaction	2834	2834	
Max 115%	1550	1550	
Min Reaction	1284	1284	
Min 115%	1550	1550	
DL Reaction	1284	1284	
Min Bearing	1.50"	1.91"	[Based on bearing stress below]
Brg Stress (psi)	750	425	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio
V(lbs)	2436	1	0' 1 3/4"	31	10707	115%	0.23
M(ft-lbs)	13254	1	9' 4 1/4"	31	32936	115%	0.40
LtRn(lbs)	2834	0	0'	31	9188		0.31
RtRn(lbs)	2834	0	18' 8 1/2"	31	5206		0.54
LLDefl(")	0.29	1	9' 4 1/4"	31	0.94		L/787
TLDefl(")	0.52	1	9' 4 1/4"	31	1.25		L/430

USE: **onCENTER LVL 2.0E 1 3/4" x 14" 2 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 3 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row mid-depth, one row 2" from bottom).

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge laterally supported @16" o.c.
3. Analysis valid for dry-use only (less than 16% moisture content).
4. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
5. Roof Usage: Install with minimum 1/4:12 slope for adequate drainage.
6. When required by the building code, a registered design professional or building official should verify the input loads and product application.
7. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
8. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
9. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

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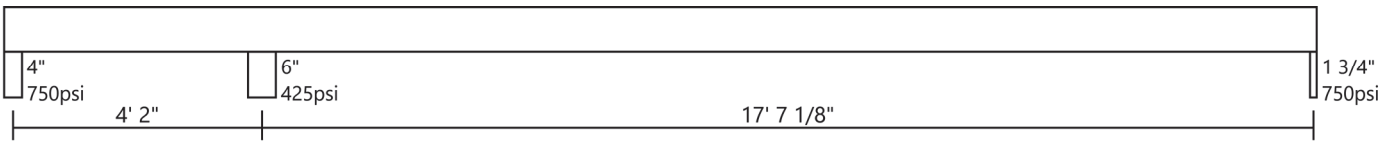
JC
910-386-4300

9/21/2020 11:08 AM
Version: 18.0.2.0

Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Roof4 - LVL 2-ply Rafter @ Large Dormer Garage Area**
Usage: **BEAM (Roof)**
Max Deflection: **LL = L/240 TL = L/180**
Slope: **12/12**



LOADS

Project Design Loads : Roof: Live=20.0 psf, Dead=15.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
1	Concentrated (lbs)	FP	1550.0		885.7		115%	0	9' 1 1/2"		LVL Large Dormer PT Load
2	Partial (plf)		70.0		40.0		115%	0	0'	10'	Dormer Gable End Wall
	Uniform (plf)		8.54					0	0'	21' 9 1/8"	Self Weight

FP= Front Ply (side or top); if blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

LOAD PATTERNS (* = span loaded)

	1	2
1	*	*

SUPPORTS (lbs)

	1	2	3	
Max Reaction	-474	3313	336	
Max 115%	-538	1683	141	
Min Reaction	-1013	1631	195	
Min 115%	-538	1683	141	
DL Reaction	-474	1631	195	
Uplift	1013	0	0	
Min Bearing	1.50"	3.00"	1.50"	[Based on bearing stress below]
Brg Stress (psi)	750	425	750	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio
V(lbs)	1280	2	0' 3"	31	7075	115%	0.18
M(ft-lbs)	5040	2	0'	31	14668	115%	0.34
LtRn(lbs)	-474	0	0'	10	10500		0.05
RtRn(lbs)	336	0	21' 9 1/8"	31	4594		0.07
IntRn(lbs)	3313	0	4' 2"	31	8925		0.37
LLDefl(")	-0.02	1	2' 0 1/2"	31	0.29		L/-3560
TLDefl(")	-0.04	1	2' 0 1/2"	31	0.39		L/-1853
LLDefl(")	0.28	2	8' 10 5/8"	31	1.24		L/1055
TLDefl(")	0.56	2	8' 10 5/8"	31	1.50		L/530

USE: **onCENTER LVL 2.0E 1 3/4" x 9 1/4" 2 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 2 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row 2" from bottom).

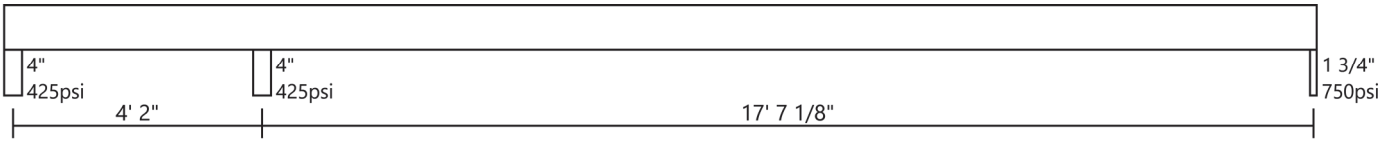
NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge with continuous lateral support.
3. Allowable negative moment is calculated based on bottom edge laterally unsupported between bearing locations.
4. Analysis valid for dry-use only (less than 16% moisture content).
5. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).

Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Roof4 - LVL 2-ply Rafter @ Large Dormer Garage Area**

6. When required by the building code, a registered design professional or building official should verify the input loads and product application.
7. Provide approved uplift resistance at supports with negative reactions.
8. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
9. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
10. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Roof1 - LVL 2-ply Rafter @ Small Dormer Garage Area**
Usage: **BEAM (Roof)**
Max Deflection: **LL = L/240 TL = L/180** Slope: **12/12**



LOADS

Project Design Loads : Roof: Live=20.0 psf, Dead=15.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
	Area (psf)		35.0		20.0		115%	0	0'	21' 9 1/8"	16" o.c. Base Uniform Load (Spcg Sen)
1	Partial (plf)		105.0		60.0		115%	0	0'	9' 1 1/2"	Dormer Rafters
2	Partial (plf)		80.0		0.0		90%	0	0'	9' 1 1/2"	Dormer Wall
3	Concentrated (lbs)		525.0		300.0		115%	0	9' 1 1/2"		Dormer Header
	Uniform (plf)		8.54					0	0'	21' 9 1/8"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

LOAD PATTERNS (* = span loaded)

	1	2
1	*	*

SUPPORTS (lbs)

	1	2	3	
Max Reaction	-317	4169	604	
Max 115%	-312	1495	244	
Min Reaction	-629	2674	360	
Min 115%	-312	1495	244	
DL Reaction	-317	2674	360	
Uplift	629	0	0	
Min Bearing	1.50"	3.00"	1.50"	[Based on bearing stress below]
Brg Stress (psi)	425	425	750	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio
V(lbs)	1405	2	0' 2"	31	7075	115%	0.20
M(ft-lbs)	5258	2	0'	31	14664	115%	0.36
LtRn(lbs)	-317	0	0'	10	5950		0.05
RtRn(lbs)	604	0	21' 9 1/8"	31	4594		0.13
IntRn(lbs)	4169	0	4' 2"	31	5950		0.70
LLDefl(")	-0.01	1	2' 1"	31	0.29		L/-5006
TLDefl(")	-0.03	1	2' 1"	31	0.39		L/-2093
LLDefl(")	0.25	2	8' 10 1/8"	31	1.24		L/1218
TLDefl(")	0.60	2	8' 10 1/8"	31	1.50		L/498

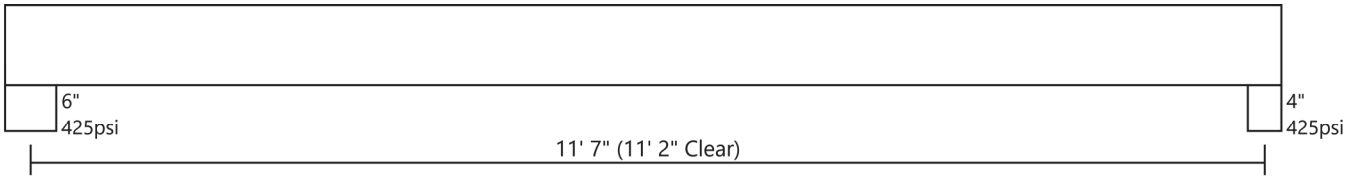
USE: **onCENTER LVL 2.0E 1 3/4" x 9 1/4" 2 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 2 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row 2" from bottom).

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge with continuous lateral support.
3. Allowable negative moment is calculated based on bottom edge laterally unsupported between bearing locations.
4. Analysis valid for dry-use only (less than 16% moisture content).
5. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
6. When required by the building code, a registered design professional or building official should verify the input loads and product application.
7. Provide approved uplift resistance at supports with negative reactions.
8. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
9. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
10. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Floor2 - LVL Under Gable End Wall @ Bump-Out Area**
Usage: **BEAM**
Max Deflection: **LL = L/360 TL = L/240**



LOADS

Project Design Loads : Floor: Live=40.0 psf, Dead=10.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
1	Concentrated (lbs)		2600.0		2080.0		100%	0	0' 4"		Garage Ceiling Beam
2	Uniform (plf)		200.0		160.0		100%	0	0'	11' 7"	Bonus Room Floor Load
3	Uniform (plf)		80.0		0.0		90%	0	0'	11' 7"	Gable End Wall Load
4	Concentrated (lbs)		1200.0		685.7		115%	0	8'		Ridge Beam Above
	Uniform (plf)		8.54					0	0'	11' 7"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

SUPPORTS (lbs)

	1	2	
Max Reaction	4876	2883	
Max 100%	2947	987	
Max 115%	212	474	
Min Reaction	1717	1423	
Min 100%	2947	987	
Min 115%	212	474	
DL Reaction	1717	1423	
Min Bearing	3.14"	1.69"	[Based on bearing stress below]
Brg Stress (psi)	425	425	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio	
V(lbs)	1850	1	0' 3"	21	6152	100%	0.30	
M(ft-lbs)	7090	1	5' 10"	21	13320	100%	0.53	
LtRn(lbs)	4664	0	0'	21	8925		0.52	See Note 4
RtRn(lbs)	2518	0	11' 7"	61	5950		0.42	See Note 4
LLDefl(")	0.34	1	5' 10"	61	0.55		L/404	
TLDefl(")	0.78	1	5' 10"	61	0.82		L/179	

USE: **onCENTER LVL 2.0E 1 3/4" x 9 1/4" 2 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 2 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row 2" from bottom).

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge with continuous lateral support.
3. Analysis valid for dry-use only (less than 16% moisture content).
4. This reaction is based on the combination of loads & duration factors that produces the highest stress ratio and may be less than maximum reaction. Therefore, when reaction values are required, use Max Reaction from 'Supports' section above.
5. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
6. When required by the building code, a registered design professional or building official should verify the input loads and product application.
7. This member has been sized for residential use. A concentrated load check, per the building code, must be performed for commercial uses.
8. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
9. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
10. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

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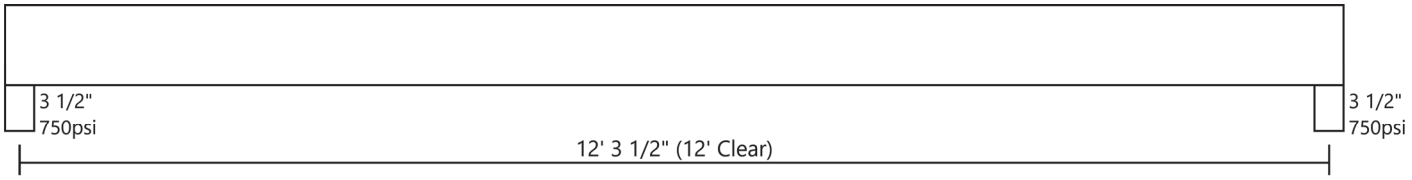
Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Floor5 - LVL Under Kneewall In Garage Area Back side Near Stair Area**
Usage: **BEAM**
Max Deflection: **LL = L/360 TL = L/240**



LOADS

Project Design Loads : Floor: Live=40.0 psf, Dead=10.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
	Area (psf)		50.0		40.0		100%	0	0'	12' 3 1/2"	16" o.c. Base Uniform Load (Spcg Sen)
1	Uniform (plf)		200.0		114.3		115%	0	0'	12' 3 1/2"	Rafter Support Load
	Uniform (plf)		8.54					0	0'	12' 3 1/2"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

SUPPORTS (lbs)

	1	2	
Max Reaction	1965	1965	
Max 100%	328	328	
Max 115%	702	702	
Min Reaction	935	935	
Min 100%	328	328	
Min 115%	702	702	
DL Reaction	935	935	
Min Bearing	1.50"	1.50"	[Based on bearing stress below]
Brg Stress (psi)	750	750	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio	
V(lbs)	1027	1	0' 1 3/4"	61	7075	115%	0.15	
M(ft-lbs)	5247	1	6' 1 3/4"	61	15318	115%	0.34	
LtRn(lbs)	1708	0	0'	61	9188		0.19	See Note 4
RtRn(lbs)	1708	0	12' 3 1/2"	61	9188		0.19	See Note 4
LLDefl(")	0.28	1	6' 1 3/4"	61	0.58		L/527	
TLDefl(")	0.62	1	6' 1 3/4"	61	0.87		L/239	

USE: **onCENTER LVL 2.0E 1 3/4" x 9 1/4" 2 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 2 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row 2" from bottom).

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge with continuous lateral support.
3. Analysis valid for dry-use only (less than 16% moisture content).
4. This reaction is based on the combination of loads & duration factors that produces the highest stress ratio and may be less than maximum reaction. Therefore, when reaction values are required, use Max Reaction from 'Supports' section above.
5. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
6. When required by the building code, a registered design professional or building official should verify the input loads and product application.
7. This member has been sized for residential use. A concentrated load check, per the building code, must be performed for commercial uses.
8. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
9. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
10. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

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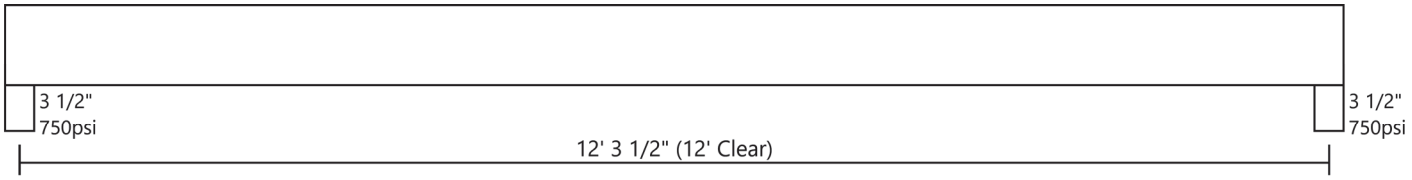
Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Floor3 - LVL Under Kneewall In Garage Area Back side**
Usage: **BEAM** Repetitive Incr: **Yes**
Max Deflection: **LL = L/360 TL = L/240**



LOADS

Project Design Loads : Floor: Live=40.0 psf, Dead=10.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
	Area (psf)		50.0		40.0		100%	0	0'	12' 3 1/2"	16" o.c. Base Uniform Load (Spcg Sen)
1	Uniform (plf)		200.0		114.3		115%	0	0'	12' 3 1/2"	Rafter Support Load
2	Concentrated (lbs)		1200.0		960.0		100%	0	9'		Rafter Pt Load From Above
	Uniform (plf)		12.81					0	0'	12' 3 1/2"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

SUPPORTS (lbs)

	1	2	
Max Reaction	2324	2881	
Max 100%	585	1031	
Max 115%	702	702	
Min Reaction	1036	1148	
Min 100%	585	1031	
Min 115%	702	702	
DL Reaction	1036	1148	
Min Bearing	1.50"	1.50"	[Based on bearing stress below]
Brg Stress (psi)	750	750	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio	
V(lbs)	1403	1	12' 1 3/4"	21	9228	100%	0.15	
M(ft-lbs)	6213	1	7' 7 3/4"	21	20781	100%	0.30	
LtRn(lbs)	2002	0	0'	61	13781		0.15	See Note 4
RtRn(lbs)	2448	0	12' 3 1/2"	61	13781		0.18	See Note 4
LLDefl(")	0.29	1	6' 1 3/4"	61	0.58		L/513	
TLDefl(")	0.56	1	6' 1 3/4"	61	0.87		L/265	

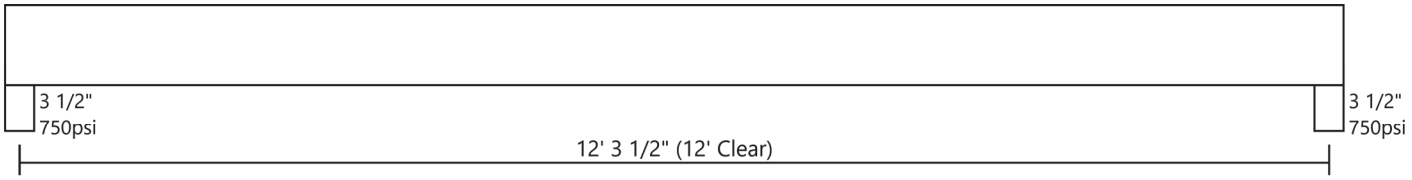
USE: **onCENTER LVL 2.0E 1 3/4" x 9 1/4" 3 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 2 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row 2" from bottom). Specified attachment is from each face. Offset fasteners on back face halfway between fasteners on front face.

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge with continuous lateral support.
3. Analysis valid for dry-use only (less than 16% moisture content).
4. This reaction is based on the combination of loads & duration factors that produces the highest stress ratio and may be less than maximum reaction. Therefore, when reaction values are required, use Max Reaction from 'Supports' section above.
5. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
6. When required by the building code, a registered design professional or building official should verify the input loads and product application.
7. This member has been sized for residential use. A concentrated load check, per the building code, must be performed for commercial uses.
8. Design assumes a 4% increase in bending stress for repetitive member use.
9. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
10. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
11. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Floor4 - LVL Under Kneewall In Garage Area Front side**
Usage: **BEAM** Repetitive Incr: **Yes**
Max Deflection: **LL = L/360 TL = L/240**



LOADS

Project Design Loads : Floor: Live=40.0 psf, Dead=10.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
	Area (psf)		50.0		40.0		100%	0	0'	12' 3 1/2"	16" o.c. Base Uniform Load (Spcg Sen)
1	Uniform (plf)		200.0		114.3		115%	0	0'	12' 3 1/2"	Rafter Support Load
2	Concentrated (lbs)		1200.0		960.0		100%	0	4'		Rafter PT Load From Above
3	Concentrated (lbs)		1200.0		960.0		100%	0	8'		Rafter PT Load From Above
	Uniform (plf)		12.81					0	0'	12' 3 1/2"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

SUPPORTS (lbs)

	1	2	
Max Reaction	3231	3174	
Max 100%	1311	1265	
Max 115%	702	702	
Min Reaction	1218	1206	
Min 100%	1311	1265	
Min 115%	702	702	
DL Reaction	1218	1206	
Min Bearing	1.50"	1.50"	[Based on bearing stress below]
Brg Stress (psi)	750	750	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio	
V(lbs)	1651	1	0' 1 3/4"	21	9228	100%	0.18	
M(ft-lbs)	8969	1	6' 1 3/4"	21	20781	100%	0.43	
LtRn(lbs)	2728	0	0'	61	13781		0.20	See Note 4
RtRn(lbs)	2682	0	12' 3 1/2"	61	13781		0.19	See Note 4
LLDefl(")	0.42	1	6' 1 3/4"	61	0.58		L/347	
TLDefl(")	0.74	1	6' 1 3/4"	61	0.87		L/200	

USE: **onCENTER LVL 2.0E 1 3/4" x 9 1/4" 3 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 2 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row 2" from bottom). Specified attachment is from each face. Offset fasteners on back face halfway between fasteners on front face.

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge with continuous lateral support.
3. Analysis valid for dry-use only (less than 16% moisture content).
4. This reaction is based on the combination of loads & duration factors that produces the highest stress ratio and may be less than maximum reaction. Therefore, when reaction values are required, use Max Reaction from 'Supports' section above.
5. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
6. When required by the building code, a registered design professional or building official should verify the input loads and product application.
7. This member has been sized for residential use. A concentrated load check, per the building code, must be performed for commercial uses.
8. Design assumes a 4% increase in bending stress for repetitive member use.
9. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
10. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
11. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

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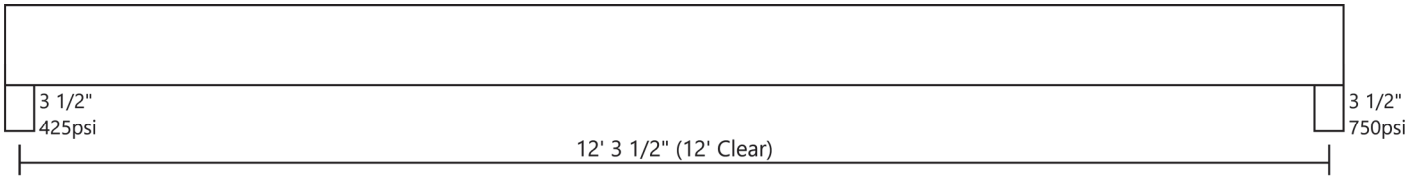
Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Floor7 - LVL Stair Stringer In Garage Area**
Usage: **BEAM**
Max Deflection: **LL = L/360 TL = L/240**



LOADS

Project Design Loads : Floor: Live=40.0 psf, Dead=10.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
	Area (psf)		50.0		40.0		100%	0	0'	12' 3 1/2"	16" o.c. Base Uniform Load (Spcg Sen)
1	Uniform (plf)		80.0		0.0		90%	0	0'	12' 3 1/2"	Wall Above
2	Concentrated (lbs)		500.0		400.0		100%	0	2'		Stair Header PT Load
3	Concentrated (lbs)		1540.0		1232.0		100%	0	8' 8"		Header PT Load In Bath Area Of Garage
	Uniform (plf)		8.54					0	0'	12' 3 1/2"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

SUPPORTS (lbs)

	1	2	
Max Reaction	2086	2380	
Max 100%	1026	1262	
Min Reaction	1060	1119	
Min 100%	1026	1262	
DL Reaction	1060	1119	
Min Bearing	1.50"	1.50"	[Based on bearing stress below]
Brg Stress (psi)	425	750	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio
V(lbs)	1555	1	12' 1 3/4"	21	6152	100%	0.25
M(ft-lbs)	7356	1	7' 7 3/4"	21	13320	100%	0.55
LtRn(lbs)	2086	0	0'	21	5206		0.40
RtRn(lbs)	2380	0	12' 3 1/2"	21	9188		0.26
LLDefl(")	0.45	1	6' 1 3/4"	21	0.58		L/326
TLDefl(")	0.86	1	6' 1 3/4"	21	0.87		L/172

USE: **onCENTER LVL 2.0E 1 3/4" x 9 1/4" 2 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 2 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row 2" from bottom).

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge with continuous lateral support.
3. Analysis valid for dry-use only (less than 16% moisture content).
4. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
5. When required by the building code, a registered design professional or building official should verify the input loads and product application.
6. This member has been sized for residential use. A concentrated load check, per the building code, must be performed for commercial uses.
7. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
8. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
9. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

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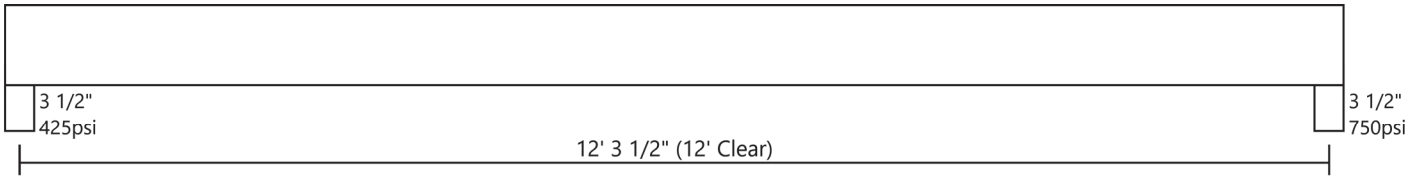
Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Floor6 - LVL Under Door Header PT Load In Bath Area Of Garage**
Usage: **BEAM**
Max Deflection: **LL = L/360 TL = L/240**



LOADS

Project Design Loads : Floor: Live=40.0 psf, Dead=10.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
	Area (psf)		50.0		40.0		100%	0	0'	12' 3 1/2"	16" o.c. Base Uniform Load (Spcg Sen)
1	Concentrated (lbs)		1950.0		1560.0		100%	0	8' 8"		Header PT Load From Above
	Uniform (plf)		8.54					0	0'	12' 3 1/2"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

SUPPORTS (lbs)

	1	2	
Max Reaction	1093	1893	
Max 100%	788	1428	
Min Reaction	305	465	
Min 100%	788	1428	
DL Reaction	305	465	
Min Bearing	1.50"	1.50"	[Based on bearing stress below]
Brg Stress (psi)	425	750	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio
V(lbs)	1284	1	12' 1 3/4"	21	6152	100%	0.21
M(ft-lbs)	6308	1	8' 8"	21	13320	100%	0.47
LtRn(lbs)	1093	0	0'	21	5206		0.21
RtRn(lbs)	1893	0	12' 3 1/2"	21	9188		0.21
LLDefl(")	0.47	1	6' 1 3/4"	21	0.58		L/312
TLDefl(")	0.63	1	6' 1 3/4"	21	0.87		L/234

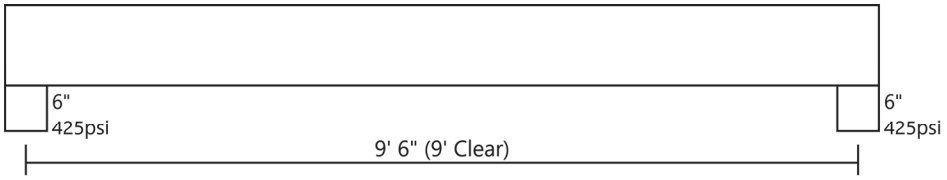
USE: **onCENTER LVL 2.0E 1 3/4" x 9 1/4" 2 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 2 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row 2" from bottom).

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge with continuous lateral support.
3. Analysis valid for dry-use only (less than 16% moisture content).
4. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
5. When required by the building code, a registered design professional or building official should verify the input loads and product application.
6. This member has been sized for residential use. A concentrated load check, per the building code, must be performed for commercial uses.
7. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
8. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
9. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Floor1 - Garage Door Header**
Usage: **BEAM**
Max Deflection: **LL = L/480 TL = L/240**



LOADS

Project Design Loads : Floor: Live=40.0 psf, Dead=10.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
1	Uniform (plf)		40.0		32.0		100%	0	0'	9' 6"	Floor Load
2	Uniform (plf)		490.0		280.0		115%	0	0'	9' 6"	Rafter Loads
	Uniform (plf)		10.4					0	0'	9' 6"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

SUPPORTS (lbs)

	1	2	
Max Reaction	3016	3016	
Max 100%	152	152	
Max 115%	1330	1330	
Min Reaction	1534	1534	
Min 100%	152	152	
Min 115%	1330	1330	
DL Reaction	1534	1534	
Min Bearing	1.93"	1.93"	[Based on bearing stress below]
Brg Stress (psi)	425	425	

11-7/8" LVL Headers Can Be Installed In-Lieu Of 11-1/4" LVL If Supplier Does Not Stock Size As Called Out On Plan. Typ. Uno.

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio	
V(lbs)	1519	1	0' 3"	31	8604	115%	0.18	
M(ft-lbs)	6803	1	4' 9"	31	20873	115%	0.33	
LtRn(lbs)	2864	0	0'	31	8925		0.32	See Note 4
RtRn(lbs)	2864	0	9' 6"	31	8925		0.32	See Note 4
LLDefl(")	0.12	1	4' 9"	31	0.34		L/923	
TLDefl(")	0.27	1	4' 9"	31	0.67		L/428	

USE: **onCENTER LVL 2.0E 1 3/4" x 11 1/4" 2 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 2 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row 2" from bottom).

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge laterally unsupported between bearing locations.
3. Analysis valid for dry-use only (less than 16% moisture content).
4. This reaction is based on the combination of loads & duration factors that produces the highest stress ratio and may be less than maximum reaction. Therefore, when reaction values are required, use Max Reaction from 'Supports' section above.
5. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
6. When required by the building code, a registered design professional or building official should verify the input loads and product application.
7. This member has been sized for residential use. A concentrated load check, per the building code, must be performed for commercial uses.
8. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
9. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
10. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

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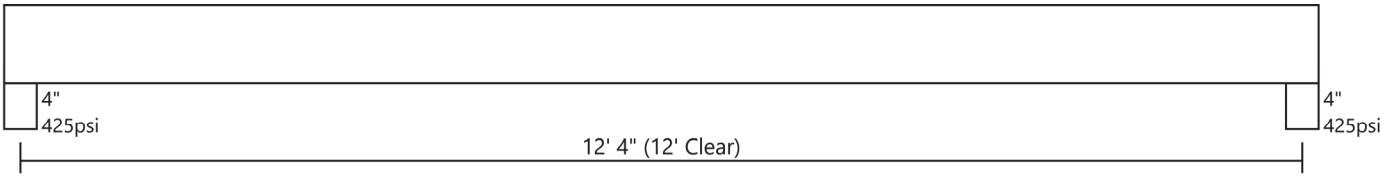
Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Floor11 - LVL Header @ Dining Room Slider**
Usage: **BEAM**
Max Deflection: **LL = L/360 TL = L/240**



LOADS

Project Design Loads : Floor: Live=40.0 psf, Dead=10.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
	Area (psf)		50.0		40.0		100%	0	0'	12' 4"	16" o.c. Base Uniform Load (Spcg Sen)
1	Concentrated (lbs)		1200.0		685.7		115%	0	6'		6x16 Timber Beam PT Load
2	Uniform (plf)		40.0		22.9		115%	0	0'	12' 4"	Gable End Wall Roof
3	Uniform (plf)		80.0		0.0		90%	0	0'	12' 4"	Gable End Wall
	Uniform (plf)		8.54					0	0'	12' 4"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

SUPPORTS (lbs)

	1	2	
Max Reaction	2124	2091	
Max 100%	329	329	
Max 115%	493	475	
Min Reaction	1302	1288	
Min 100%	329	329	
Min 115%	493	475	
DL Reaction	1302	1288	
Min Bearing	1.50"	1.50"	[Based on bearing stress below]
Brg Stress (psi)	425	425	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio	
V(lbs)	1207	1	0' 2"	61	7075	115%	0.17	
M(ft-lbs)	7452	1	6'	61	15184	115%	0.49	
LtRn(lbs)	1918	0	0'	61	5950		0.32	See Note 4
RtRn(lbs)	1891	0	12' 4"	61	5950		0.32	See Note 4
LLDefl(")	0.28	1	6' 2"	61	0.58		L/530	
TLDefl(")	0.81	1	6' 2"	61	0.87		L/183	

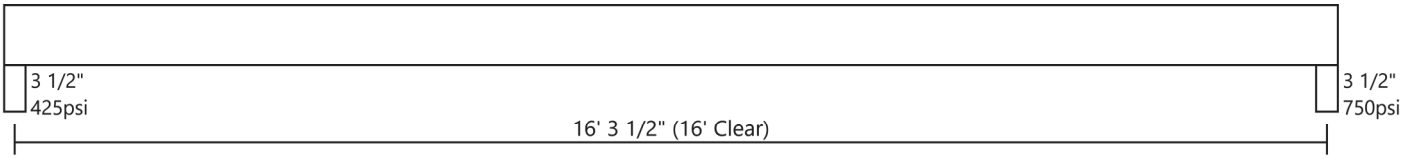
USE: **onCENTER LVL 2.0E 1 3/4" x 9 1/4" 2 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 2 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row 2" from bottom).

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge laterally supported @16" o.c.
3. Analysis valid for dry-use only (less than 16% moisture content).
4. This reaction is based on the combination of loads & duration factors that produces the highest stress ratio and may be less than maximum reaction. Therefore, when reaction values are required, use Max Reaction from 'Supports' section above.
5. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
6. When required by the building code, a registered design professional or building official should verify the input loads and product application.
7. This member has been sized for residential use. A concentrated load check, per the building code, must be performed for commercial uses.
8. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
9. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
10. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Roof1-MB - LVL Rafter Beam @ Master Bedroom Area, Typ.**
Usage: **BEAM (Roof)**
Max Deflection: **LL = L/240 TL = L/180** Slope: **12/12**



LOADS

Project Design Loads : Roof: Live=20.0 psf, Dead=15.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
	Area (psf)		35.0		20.0		115%	0	0'	16' 3 1/2"	16" o.c. Base Uniform Load (Spcg Sen)
1	Trapezoidal (plf)		200.0	0.0	114.3	0.0	115%	0	0'	16' 3 1/2"	Rafter Loads
	Uniform (plf)		8.54					0	0'	16' 3 1/2"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

SUPPORTS (lbs)

	1	2	
Max Reaction	1825	1185	
Max 115%	838	528	
Min Reaction	987	658	
Min 115%	838	528	
DL Reaction	987	658	
Min Bearing	1.50"	1.50"	[Based on bearing stress below]
Brg Stress (psi)	425	750	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio
V(lbs)	1223	1	0' 1 3/4"	31	7075	115%	0.17
M(ft-lbs)	6195	1	7' 1 3/4"	31	15318	115%	0.40
LtRn(lbs)	1825	0	0'	31	5206		0.35
RtRn(lbs)	1185	0	16' 3 1/2"	31	9188		0.13
LLDefl(")	0.58	1	8' 1 3/4"	31	1.15		L/480
TLDefl(")	1.27	1	8' 1 3/4"	31	1.50		L/218

USE: **onCENTER LVL 2.0E 1 3/4" x 9 1/4" 2 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 2 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row 2" from bottom).

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge with continuous lateral support.
3. Analysis valid for dry-use only (less than 16% moisture content).
4. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
5. When required by the building code, a registered design professional or building official should verify the input loads and product application.
6. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
7. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
8. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

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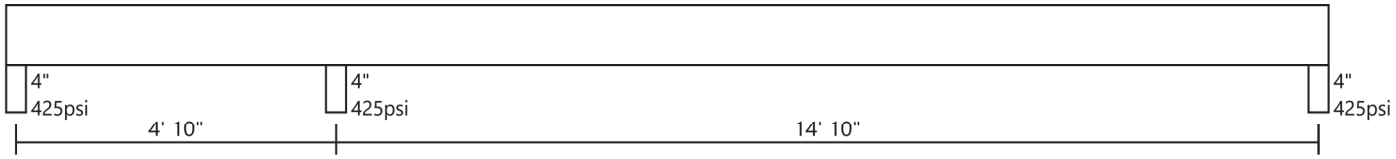
Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Roof5 - LVL Ridge Beam @ Garage Stair Area**
Usage: **BEAM (Roof)**
Max Deflection: **LL = L/240 TL = L/180** Slope: **12/12**



LOADS

Project Design Loads : Roof: Live=20.0 psf, Dead=15.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
1	Uniform (plf)		120.0		68.6		115%	0	0'	19' 8"	Rafter Support Load
	Uniform (plf)		10.4					0	0'	19' 8"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

LOAD PATTERNS (* = span loaded)

	1	2
1	*	*

SUPPORTS (lbs)

	1	2	3	
Max Reaction	-177	2452	931	
Max 115%	-139	1078	410	
Min Reaction	-316	1374	522	
Min 115%	-139	1078	410	
DL Reaction	-177	1374	522	
Uplift	316	0	0	
Min Bearing	1.50"	3.00"	1.50"	[Based on bearing stress below]
Brg Stress (psi)	425	425	425	

11-7/8" LVL Can Be Installed In-Lieu Of 11-1/4" LVL If Supplier Does Not Stock Size As Called Out On Plan. Typ. Uno.

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio
V(lbs)	850	2	0' 2"	31	8604	115%	0.10
M(ft-lbs)	3348	2	0'	31	21879	115%	0.15
LtRn(lbs)	-177	0	0'	10	5950		0.03
RtRn(lbs)	931	0	19' 8"	31	5950		0.16
IntRn(lbs)	2452	0	4' 10"	31	5950		0.41
LLDefl(")	-0.01	1	2' 5"	31	0.34		L/-11860
TLDefl(")	-0.02	1	2' 5"	31	0.46		L/-5215
LLDefl(")	0.10	2	7' 5"	31	1.05		L/2631
TLDefl(")	0.22	2	7' 5"	31	1.40		L/1157

USE: **onCENTER LVL 2.0E 1 3/4" x 11 1/4" 2 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 2 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row 2" from bottom).

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge with continuous lateral support.
3. Allowable negative moment is calculated based on bottom edge laterally supported @16" o.c.
4. Analysis valid for dry-use only (less than 16% moisture content).
5. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
6. When required by the building code, a registered design professional or building official should verify the input loads and product application.
7. Provide approved uplift resistance at supports with negative reactions.
8. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
9. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
10. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

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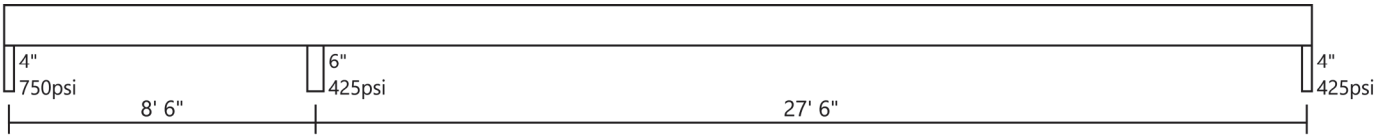
9/21/2020 11:01 AM
Version: 18.0.2.0

Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Roof3 - LVL Ridge Beam @ Garage Area**
Usage: **BEAM (Roof)**
Max Deflection: **LL = L/240 TL = 1.50"**
Slope: **0/12**



LOADS

Project Design Loads : Roof: Live=20.0 psf, Dead=15.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
1	Concentrated (lbs)		604.0		345.1		115%	0	4'		DBL Rafter PT Load
2	Concentrated (lbs)		604.0		345.1		115%	0	8' 6"		DBL Rafter PT Load
3	Concentrated (lbs)		604.0		345.1		115%	0	15' 6"		DBL Rafter PT Load
4	Concentrated (lbs)		604.0		345.1		115%	0	20'		DBL Rafter PT Load
5	Concentrated (lbs)		604.0		345.1		115%	0	27'		DBL LVL Rafter PT Load
6	Concentrated (lbs)		604.0		345.1		115%	0	31' 6"		DBL Rafter PT Load
7	Uniform (plf)		100.0		100.0		115%	0	0'	36'	Rafter Load
	Uniform (plf)		12.94					0	0'	36'	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

LOAD PATTERNS (* = full snow load, ½ = half snow load)

	1	2
1	*	½
2	½	*
3	*	*

SUPPORTS (lbs)

	1	2	3	
Max Reaction	-306	6487	2294	
Max 115%	-106	4751	1705	
Min Reaction	-1369	1736	589	
Min 115%	-1064	2868	843	
DL Reaction	-306	1736	589	
Uplift	1369	0	0	
Min Bearing	1.50"	4.36"	1.54"	[Based on bearing stress below]
Brg Stress (psi)	750	425	425	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio
V(lbs)	3069	2	0' 3"	33	10707	115%	0.29
M(ft-lbs)	16025	1	8' 6"	33	32936	115%	0.49
LtRn(lbs)	-306	0	0'	10	10500		0.03
RtRn(lbs)	2294	0	36'	32	5950		0.39
IntRn(lbs)	6487	0	8' 6"	33	8925		0.73
LLDefl(")	-0.05	1	4' 2 1/2"	32	0.43		L/-2015
TLDefl(")	-0.07	1	4' 2 1/2"	32	0.57		L/-1528
LLDefl(")	0.69	2	13' 9 1/2"	32	1.38		L/478
TLDefl(")	0.94	2	13' 9 1/2"	32	1.50		L/351

USE: **onCENTER LVL 2.0E 1 3/4" x 14" 2 Plies**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

Connect plies together with 3 rows of 0.131" x 3 1/2" nails @ 12" o.c. (one row 2" from top, one row mid-depth, one row 2" from bottom).

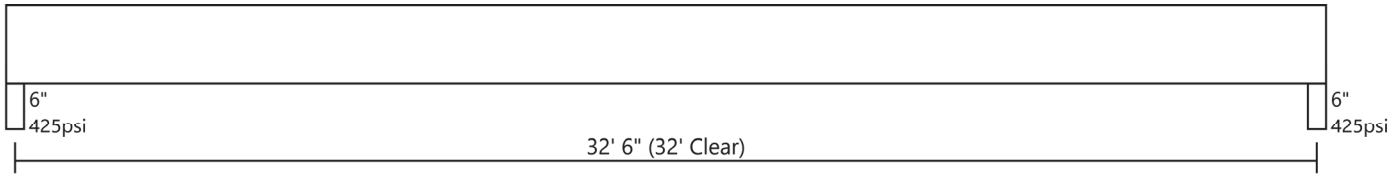
NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge with continuous lateral support.
3. Allowable negative moment is calculated based on bottom edge laterally supported @16" o.c.
4. Analysis valid for dry-use only (less than 16% moisture content).
5. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
6. Roof Usage: Install with minimum 1/4:12 slope for adequate drainage.
7. When required by the building code, a registered design professional or building official should verify the input loads and product application.
8. Provide approved uplift resistance at supports with negative reactions.
9. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.

Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Roof3 - LVL Ridge Beam @ Garage Area**

10. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
11. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).

Project: **Hugh Surles Builders - Woodward Residence (LVL Beams)**
MemberID: **Beam - Roof6 - LVL Ridge Beam @ Great Room Area**
Usage: **BEAM (Roof)**
Max Deflection: **LL = L/240 TL = 1.50"** Slope: **12/12**



LOADS

Project Design Loads : Roof: Live=20.0 psf, Dead=15.0 psf

#	Shape	Applied To:	Live+Dead Ld(T) @Start	@End	Live Ld(L) @Start	@End	LDF	Span#	Location* Starts	Ends	Additional Info
1	Uniform (plf)		100.0		100.0		115%	0	0'	32' 6"	
	Uniform (plf)		22.16					0	0'	32' 6"	Self Weight

If "Applied To" is blank, all plies are assumed to be loaded equally.
*Dimensions measured from left end when span# is 0, otherwise, from left end of the specified span.

SUPPORTS (lbs)

	1	2	
Max Reaction	2134	2134	
Max 115%	1625	1625	
Min Reaction	509	509	
Min 115%	1625	1625	
DL Reaction	509	509	
Min Bearing	1.50"	1.50"	[Based on bearing stress below]
Brg Stress (psi)	425	425	

DESIGN

	Actual	Span	Location	Group	Allow	LDF	Ratio
V(lbs)	1300	1	0' 3"	31	18354	115%	0.07
M(ft-lbs)	17341	1	16' 3"	31	86899	115%	0.20
LtRn(lbs)	2134	0	0'	31	8925		0.24
RtRn(lbs)	2134	0	32' 6"	31	8925		0.24
LLDefl(")	0.62	1	16' 3"	31	2.30		L/886
TLDefl(")	0.82	1	16' 3"	31	1.50		L/675

USE: **onCENTER LVL 2.0E 1 3/4" x 16" 1 Ply**
onCENTER® LVL by BlueLinx **Grade, Depth, Plies selected by user**

NOTES

1. Designed in accordance with National Design Specifications for Wood Construction and applicable approvals or research reports.
2. Provide full depth lateral support at all bearing locations. Allowable positive moment is calculated based on top edge with continuous lateral support.
3. Analysis valid for dry-use only (less than 16% moisture content).
4. Bearing length (Min Bearing) based on allowable stress of support material (Bearing Stress); support material capacity shall be verified (by others).
5. When required by the building code, a registered design professional or building official should verify the input loads and product application.
6. Company, product or brand names referenced are trademarks or registered trademarks of their respective owners.
7. Load Combinations: 10= D, 20= D + 100%, 30= D + 115%, 40= D + 125%, 50= D + 160%, 60= D + 0.75(100%+115%), 70= D + 0.75(100%+125%), 80= D + 0.75(100%+115%+160%), 90= D + 0.75(100%+125%+160%), 100= 0.6D + 160%, 110= D + Commercial (100%), 120= D + 0.75(100%+160%)
8. Group = Load Combination Number + Load Pattern number. (For simple span, Load pattern = 1 for LL, 0 for DL).