MEMO

Date: May 9, 2022

To: **City of Lee's Summit**

From: Dan Webster, AIA

Copy: File – 17-022-04

Attachments:

Subject: Whispering Woods Lot 35 1701 27th St LSMO - City Inspection Items

Attached are the calculations for the ridge beam in the Master Bedroom. The second LVL can be installed below the existing ridge beam and strapped together with 2 X 4's or metal strap.

Attached are the calculations for the beam in the Kitchen ceiling supporting the Dining room ridge beam and second floor roof.

The over notched floor joists may be repaired with a Notch Repair Kit #210NR from www.joistrepair.com or you may install an additional 2 X 10 next to the over notched joist.

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www.websterarchitects.com

BeamChek v2021 licensed to: Webster Architects Reg # 815-17

Project 17-022-04 — Master Bedroom

Ridge Beam — Prepared by: DJW — Date: 5/09/22

Selection **(2) 1-3/4x 11-1/4 1.9E TJ Microllam LVL** — Lu = 0.0 Ft

Conditions NDS 2018

Min Bearing Area R1= 2.7 in² R2= 2.7 in² (1.5) DL Defl= 0.25 in

Data

Beam Span	16.0 ft	Reaction 1 LL	1280 #	Reaction 2 LL	1280 #
Beam Wt per ft	10.12 #	Reaction 1 TL	2001 #	Reaction 2 TL	2001 #
Bm Wt Included	162 #	Maximum V	2001 #		
Max Moment	8004 '#	Max V (Reduced)	1766 #		
TL Max Defl	L / 240	TL Actual Defl	L / 349		
LL Max Defl	L / 360	LL Actual Defl	L / 643		

Attributes

	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl
Actual	73.83	39.38	0.55	0.30
Critical	36.62	9.30	0.80	0.53
Status	OK	OK	OK	OK
Ratio	50%	24%	69%	56%

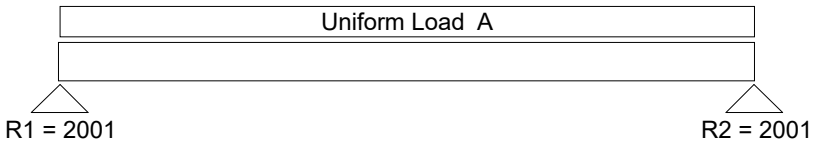
Values / *Adjustments*

	Fb (psi)	Fv (psi)	E (psi x mil)	Fc⊥ (psi)
Reference Values	2600	285	1.9	750
Adjusted Values	2623	285	1.9	750
CF Size Factor	1.009			
Cd Duration	1.00	1.00		
Cr Repetitive	1.00			
Ch Shear Stress		N/A		
Cm Wet Use	1.00	1.00	1.00	1.00

Cl Stability 1.0000 Rb = 0.00 Le = 0.00 Ft

Loads Uniform LL: 160 Uniform TL: 240 = A

STATE OF MISSOURI
DANIEL J.
WEBSTER
NUMBER
A-5400
REGISTERED ARCHITECT
5-9-22



SPAN = 16 FT

Uniform and partial uniform loads are lbs per lineal ft.

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Project 17-022-04 — Kitchen Ceiling

Beam Supporting Ridge — Prepared by: DJW — Date: 5/09/22

Selection **(2) 1-3/4x 9-1/2 1.9E TJ Microllam LVL** — Lu = 0.0 Ft

Conditions NDS 2018

Min Bearing Area R1= 2.5 in² R2= 2.5 in² (1.5) DL Defl= 0.45 in

Data

Beam Span	13.0 ft	Reaction 1 LL	780 #	Reaction 2 LL	780 #
Beam Wt per ft	8.54 #	Reaction 1 TL	1856 #	Reaction 2 TL	1856 #
Bm Wt Included	111 #	Maximum V	1856 #		
Max Moment	8078 '#	Max V (Reduced)	1706 #		
TL Max Defl	L / 240	TL Actual Defl	L / 255		
LL Max Defl	L / 360	LL Actual Defl	L / 963		

Attributes

	Section (in³)	Shear (in²)	TL Defl (in)	LL Defl
Actual	52.65	33.25	0.61	0.16
Critical	36.12	8.98	0.65	0.43
Status	OK	OK	OK	OK
Ratio	69%	27%	94%	37%

Values / **Adjustments**

	Fb (psi)	Fv (psi)	E (psi x mil)	Fc⊥ (psi)
Reference Values	2600	285	1.9	750
Adjusted Values	2684	285	1.9	750
CF Size Factor	1.032			
Cd Duration	1.00	1.00		
Cr Repetitive	1.00			
Ch Shear Stress		N/A		
Cm Wet Use	1.00	1.00	1.00	1.00

Cl Stability 1.0000 Rb = 0.00 Le = 0.00 Ft

Loads Uniform LL: 120 Uniform TL: 180 = A

Point TL	Distance
B = 1260	6.5

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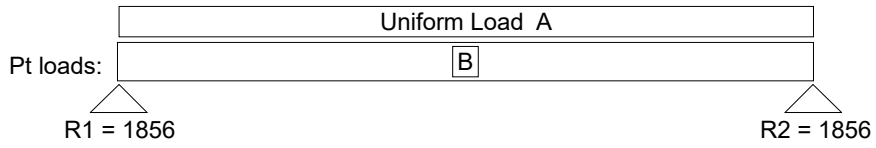

SPAN = 13 FT

Uniform and partial uniform loads are lbs per lineal ft.