November 8th, 2023

Walker Custom Homes
Attn: Pete Pine

RE: Inspection Letter – SVF094 Spec Lot 94 3108 SW Summit View Tr., Lee's Summit, Missouri

Vista Structural Engineering, LLC was asked to address the following rough-in inspection item for the project located at the above referenced address. Please see the following response with attached partial plan mark up, calculations, and site photos for reference.

1) **Inspection comment:** Address valley rafter bearing in pantry (Re. site photo 1 on pg. 12).

   Vista Structural's response: *GC to fasten valley rafter to double top plate and header with (2) Simpson LS90 clips (one on each side) (Re. partial plan on pg. 3 and calculations attached on pg. 7).*

2) **Inspection comment:** Address over notched hip lvl above dining area and master bedroom (Re. site photo 4 & 5 on pg. 13).

   Vista Structural's response:
   a. *Notched hip LVL rafter at master bedroom – available depth after notch is 5 1/4" at inside face of (2) 2x12 ceiling beam bearing. Design shear stresses are lower than allowable shear stresses per NDS 2018 (Re. calculations attached on pg. 8).* ***VSE recommends approval of the current framing, without repair.***
   b. *Notched hip LVL rafter at dining room – available depth after notch is 4 ½" at inside face of (2) 2x12 ceiling beam bearing. Design shear stresses are lower than allowable shear stresses per NDS 2018 (Re. calculations attached on pg. 9). Vaulted (2) 2x12 ceiling beam now accounts for hip rafter bearing point load; ceiling beam and foundation are sufficient (Re. calculations attached on pg. 10).* ***VSE recommends approval of the current framing, without repair.***

3) **Inspection comment:** Address ceiling joist landing on non-load bearing laundry wall.

   Vista Structural's response: *GC to sister new 2x6 ceiling joist (w/ (3) rows of 10d @ 12" o.c.) to span 4" off the double LVL flush beam, through laundry room, and to bear on garage bearing wall. Existing single joist hanger is sufficient (Re. partial plan attached on pg. 4).*

4) **Inspection comment:** Address over notched rafters landing on vaulted members above master bath (Re. site photo 2 & 3 on pg. 12).

   Vista Structural's response: *Available depth after notch at rafters above master bath is 3 ½" bearing on the (2) 2x12. Rafter reaction is ~300# - by inspection, the notch and reduced area of the rafter does not affect the allowable shear stress significantly for the reaction. By inspection (2) 2x12 vault members are sufficient to take rafter loading.* ***GC to provide squash block at notch rafter not bearing on (2) 2x12. Otherwise, VSE recommends approval of the current framing, without repair.***

5) **Inspection comment:** Address all joists in basement rec room with holes drilled closer than 2" to one another and/or closer than 2" to the edge of joists. (Re. site photo 6-8, & 10 on pgs. 14 & 15).

   Vista Structural's response:

   a. *The joist penetrations that are ~2" apart occur near the joist bearing end (shear controlled). By inspection, the penetration and reduced area of the double joist member does not affect the allowable shear stress significantly.* ***VSE recommends approval of the current framing, without repair.***
   b. *Where joist penetration occurs close to bottom of joist (1 ½"), GC to install Simpson MSTI26 strap to the underside of double joist and centered on penetration. Fasten strap to double joist w/ (26) 0.148 x 1 ½" nails. (Re. calculations on pg. 11).*

6) **Inspection comment:** (4) stud pack occur Bedroom #4 and stair wall. Does not seem to be any beams or point loading at this location, is stud pack required? (Re. site photo 9 on pg. 14).

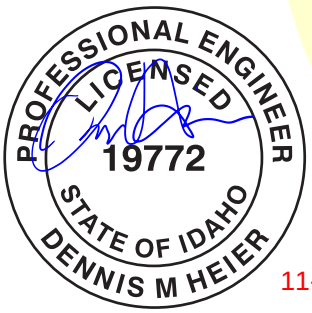
   Vista Structural's response: *No point loads occur at stud pack location. (4) stud pack may be omitted (Re. partial plan on pg. 6).*

Our firm appreciates the opportunity to serve you. If you have any questions or if you need anything further, please feel free to contact us.

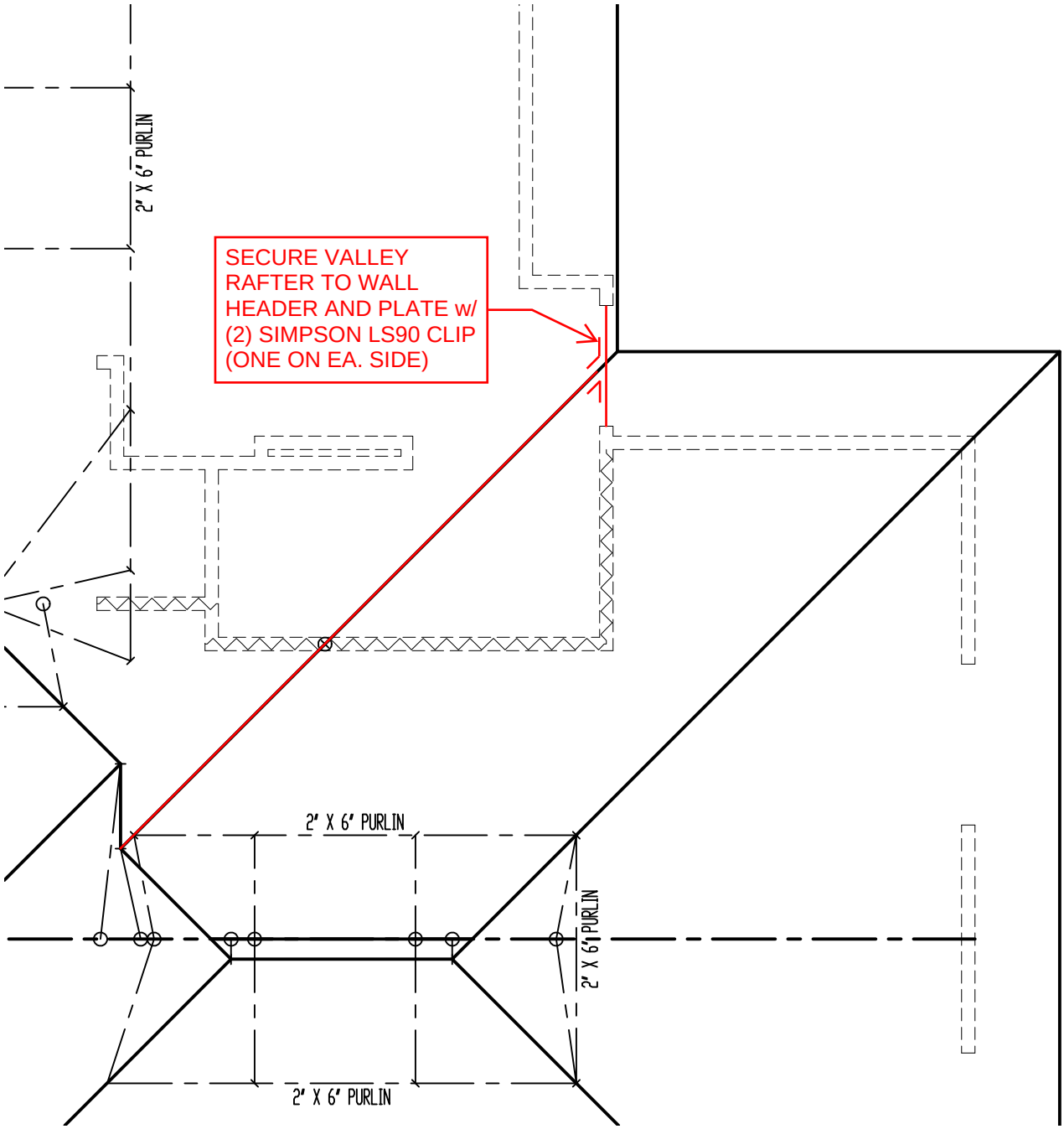
Sincerely,

Vista Structural Engineering, LLC

Dennis Heier, P.E.



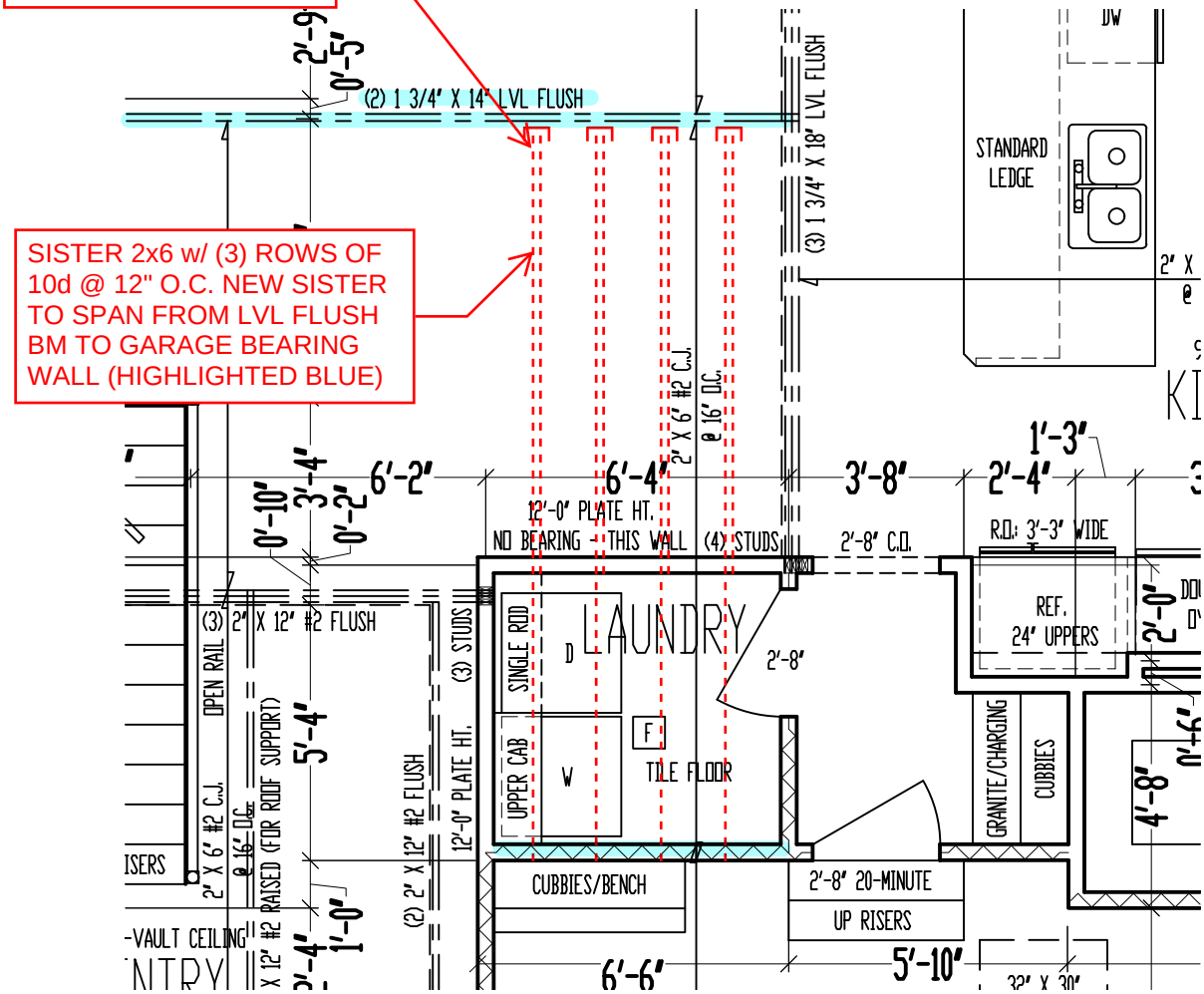
11-9-23



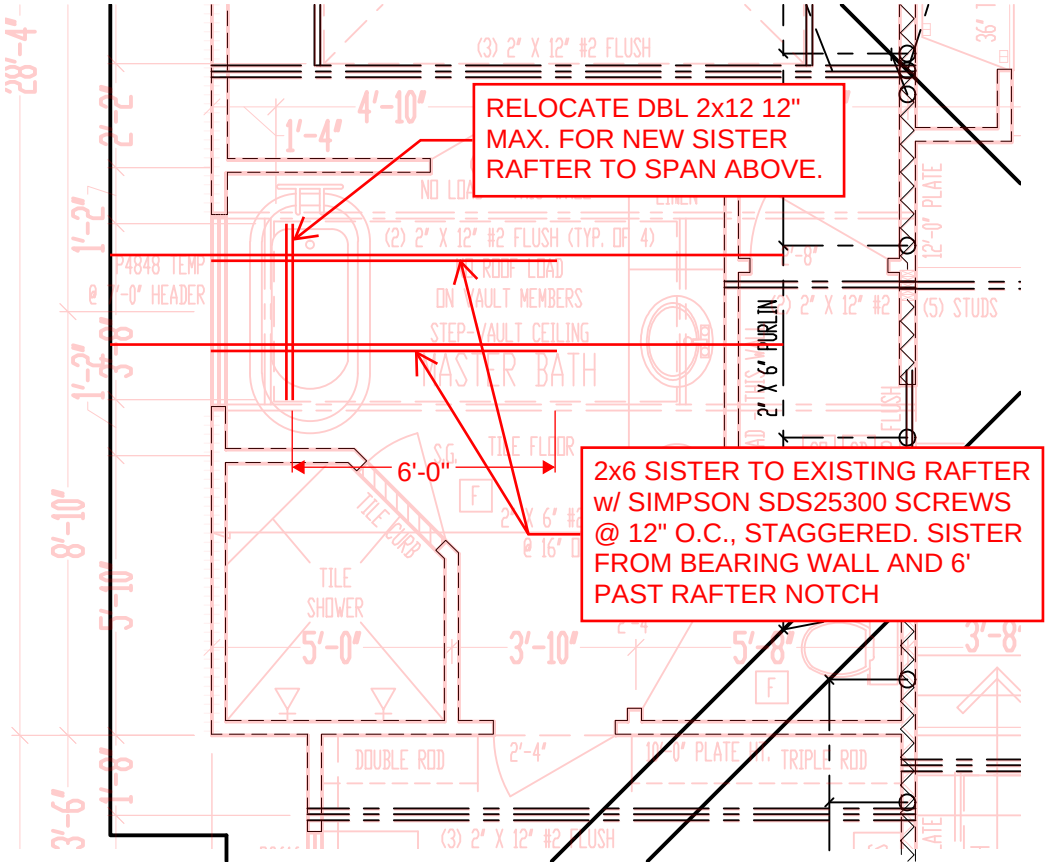
ROOF PARTIAL PLAN - VALLEY RAFTER @ PANTRY

START SISTER 4" AWAY FROM HANGERED END

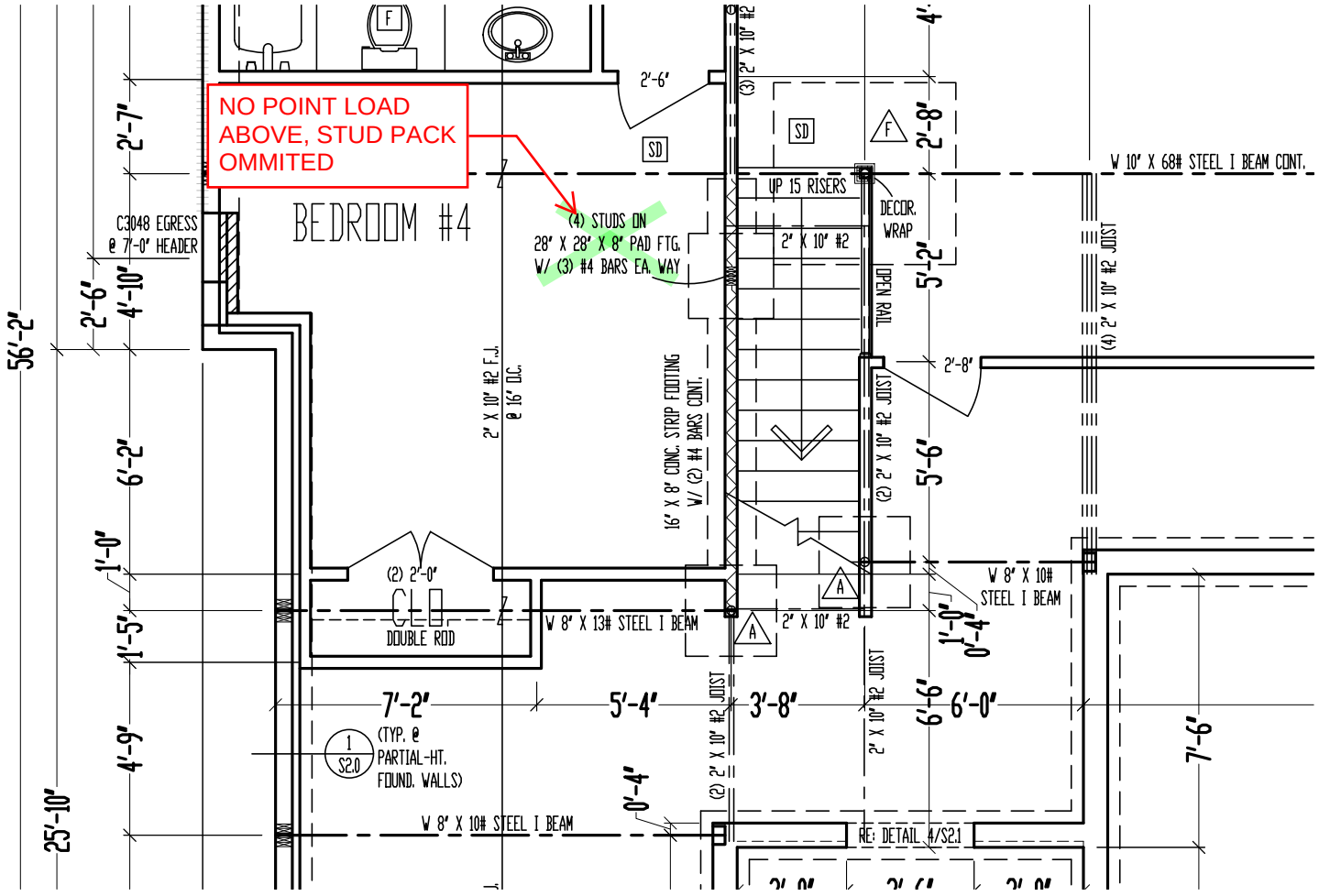
SISTER 2x6 w/ (3) ROWS OF 10d @ 12" O.C. NEW SISTER TO SPAN FROM LVL FLUSH BM TO GARAGE BEARING WALL (HIGHLIGHTED BLUE)



MAIN FLOOR PARTIAL PLAN - CEILING JOIST AT LAUNDRY ROOM



ROOF PARTIAL PLAN - RAFTERS @ MASTER BATH



MAIN FLOOR PARTIAL PLAN - STUD PACK AT BEDROOM #4 AND STAIRS

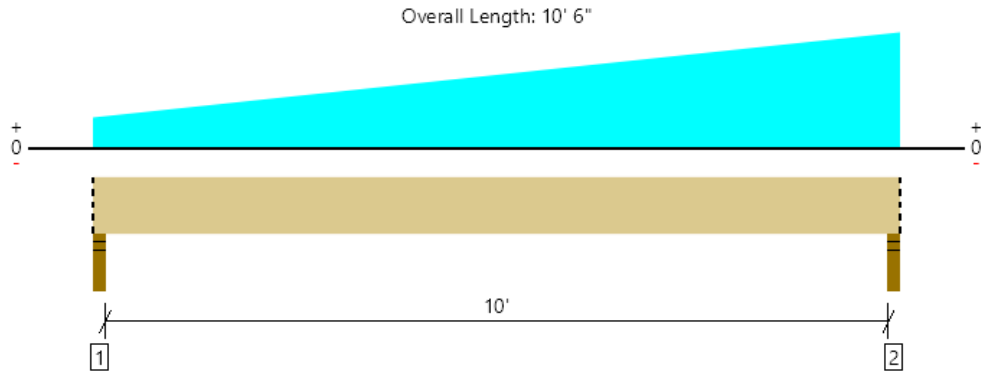
FORTEWEB

MEMBER REPORT

PASSED

ROOF, VALLEY @ PANTRY

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



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1543 @ 10' 4 1/2"	3281 (3.00")	Passed (47%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	1085 @ 9' 3 1/8"	4541	Passed (24%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	3259 @ 5' 8 9/16"	10263	Passed (32%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.087 @ 5' 4 3/8"	0.512	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.143 @ 5' 4 5/16"	0.683	Passed (L/859)	--	1.0 D + 1.0 S (All Spans)

System : Roof
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2018
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.

USE SIMPSON LS90 CLIP, ONE EA. SIDE, TYP.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Stud wall - DF	3.00"	3.00"	1.50"	410	631	1041	Blocking
2 - Stud wall - DF	3.00"	3.00"	1.50"	598	944	1543	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)	10' 6" o/c	
Bottom Edge (Lu)	10' 6" 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 10' 6"	N/A	6.1	--	
1 - Tapered (PSF)	0 to 10' 6" (Top)	2' 6" to 6'	15.0	25.0	ROOF
2 - Tapered (PSF)	0 to 10' 6" (Top)	0 to 3' 6"	15.0	25.0	ROOF

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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
Dennis Nguyen Vista Structural Engineering LLC (503) 515-1124 dn@vistastructural.com	

Weyerhaeuser

11/8/2023 10:02:01 PM UTC
ForteWEB v3.6, Engine: V8.3.1.5, Data: V8.1.4.1
File Name: SV094

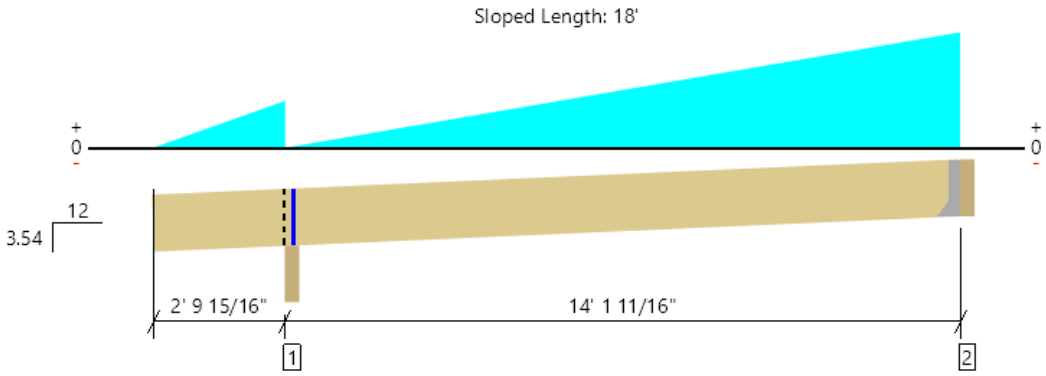
FORTEWEB

MEMBER REPORT

PASSED

ROOF, HIP @ MASTER BED

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



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

Member Length : 17' 11 13/16"

System : Roof
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 3.54/12

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1380 @ 16' 11 5/8"	1969 (1.50")	Passed (70%)	--	1.0 D + 1.0 S (Alt Spans)
Shear (lbs)	1110 @ 16' 1/4"	4541	Passed (24%)	1.15	1.0 D + 1.0 S (Alt Spans)
Moment (Ft-lbs)	3728 @ 11' 3/4"	10263	Passed (36%)	1.15	1.0 D + 1.0 S (Alt Spans)
Live Load Defl. (in)	0.182 @ 10' 3"	0.730	Passed (L/964)	--	1.0 D + 1.0 S (Alt Spans)
Total Load Defl. (in)	0.305 @ 10' 3"	0.973	Passed (L/574)	--	1.0 D + 1.0 S (Alt Spans)

- 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.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Beveled Plate - SPF	3.50"	3.50"	1.50"	398	529	927	Blocking
2 - Hanger on 11 7/8" SPF beam	3.50"	Hanger[1]	1.50"	555	825	1380	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)	12' 7" o/c	
Bottom Edge (Lu)	17' 8" 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 16' 11 5/8"	N/A	6.1	--	
1 - Tapered (PLF)	0 to 2' 9 15/16"	N/A	0.0 to 44.1	0.0 to 70.7	Generated from Ro
2 - Tapered (PLF)	2' 9 15/16" to 16' 11 5/8"	N/A	0.0 to 105.8	0.0 to 176.8	Generated from Roof Geometry

OK BY INSPECTION

Location Analysis	Shear (lbs)			Moment (Ft-lbs)			Deflection (in)		Comments
	Actual	Allowed	LDF	Actual	Allowed	LDF	Live Load	Total	
1 - 3'	743	4541	1.15	-208	10263	1.15	0.000	0.000	

A reduced = 1.75*5.25 = 9.19 IN^2

fv = 3/2*743/9.19 = 122 PSI

F'v = 285*1.15 = 328 > fv, OK

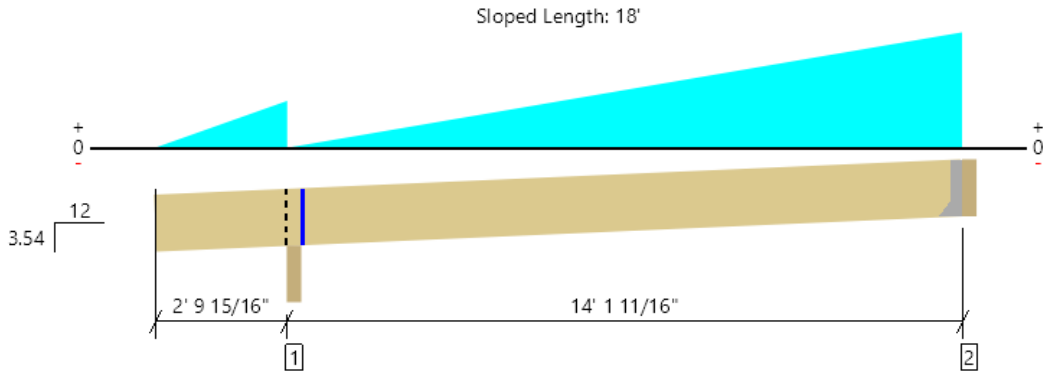
ForteWEB Software Operator	Job Notes
Dennis Nguyen Vista Structural Engineering LLC (503) 515-1124 dn@vistastructural.com	

FORTEWEB

MEMBER REPORT

PASSED

ROOF, HIP @ DINING
1 piece(s) 1 3/4" x 11 7/8" 2.0E Microllam® LVL



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

Member Length : 17' 11 13/16"

System : Roof
Member Type : Flush Beam
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Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 3.54/12

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1380 @ 16' 11 5/8"	1969 (1.50")	Passed (70%)	--	1.0 D + 1.0 S (Alt Spans)
Shear (lbs)	1110 @ 16' 1/4"	4541	Passed (24%)	1.15	1.0 D + 1.0 S (Alt Spans)
Moment (Ft-lbs)	3728 @ 11' 3/4"	10263	Passed (36%)	1.15	1.0 D + 1.0 S (Alt Spans)
Live Load Defl. (in)	0.182 @ 10' 3 1/16"	0.730	Passed (L/964)	--	1.0 D + 1.0 S (Alt Spans)
Total Load Defl. (in)	0.305 @ 10' 3 1/16"	0.973	Passed (L/574)	--	1.0 D + 1.0 S (Alt Spans)

- 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.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Beveled Plate - SPF	3.50"	3.50"	1.50"	398	529	927	Blocking
2 - Hanger on 11 7/8" SPF beam	3.50"	Hanger[1]	1.50"	555	825	1380	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)	12' 7" o/c	
Bottom Edge (Lu)	17' 8" 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	U14X SLD16	2.00"	N/A	14-10d	6-10dx1.5	

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

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 16' 11 5/8"	N/A	6.1	--	
1 - Tapered (PLF)	0 to 2' 9 15/16"	N/A	0.0 to 44.1	0.0 to 70.7	Ge... Ro...
2 - Tapered (PLF)	2' 9 15/16" to 16' 11 5/8"	N/A	0.0 to 105.8	0.0 to 176.8	Generated from Roof Geometry

OK BY INSPECTION

Location Analysis	Shear (lbs)			Moment (Ft-lbs)			Deflection (in)		Comments
	Actual	Allowed	LDF	Actual	Allowed	LDF	Live Load	Total	
1 - 3' 2"	740	4541	1.15	-105	10263	1.15	0.007	0.012	

A reduced = 1.75*4.5 = 7.875 IN^2

fv = 3/2*740/7.875 = 141 PSI

F'v = 285*1.15 = 328 > fv, OK

ForteWEB Software Operator	Job Notes
Dennis Nguyen Vista Structural Engineering LLC (503) 515-1124 dn@vistastructural.com	

Weyerhaeuser

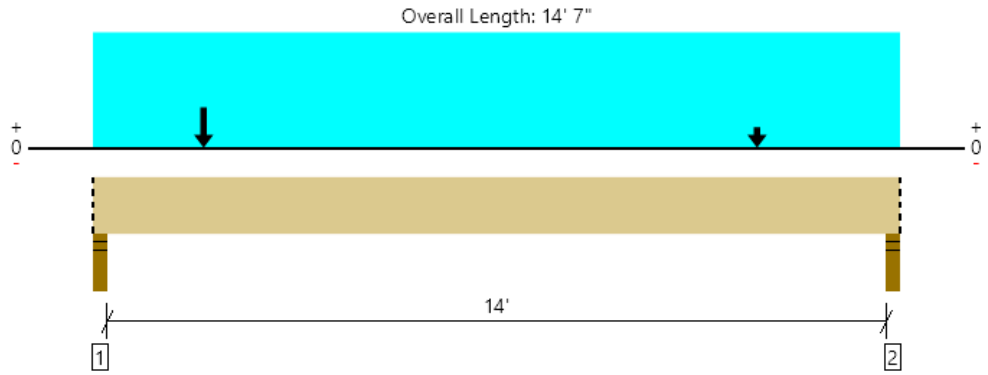
11/9/2023 2:35:51 AM UTC
ForteWEB v3.6, Engine: V8.3.1.5, Data: V8.1.4.1
File Name: SV094

FORTEWEB

MEMBER REPORT

PASSED

ROOF, CEILING JOIST @ DINING
2 piece(s) 2 x 12 DF 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)	1045 @ 2"	6563 (3.50")	Passed (16%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	1022 @ 1' 2 3/4"	4658	Passed (22%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	1879 @ 2'	5458	Passed (34%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.046 @ 6' 8 7/16"	0.356	Passed (L/999+)	--	1.0 D + 0.75 L + 0.75 S (All Spans)
Total Load Defl. (in)	0.120 @ 6' 10 1/8"	0.712	Passed (L/999+)	--	1.0 D + 0.75 L + 0.75 S (All Spans)

System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Applicable calculations are based on NDS.

FOUNDATION SUFFICIENT BY INSPECTION

Supports	Bearing Length			Loads to Supports (lbs)				Accessories
	Total	Available	Required	Dead	Floor Live	Snow	Factored	
1 - Stud wall - DF	3.50"	3.50"	1.50"	584	128	461	1045	Blocking
2 - Stud wall - DF	3.50"	3.50"	1.50"	280	124	68	424	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)	14' 7" o/c	
Bottom Edge (Lu)	14' 7" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 14' 7"	N/A	8.6	--	--	
1 - Uniform (PSF)	0 to 14' 7" (Front)	1'	10.0	10.0	-	CEILING
2 - Point (lb)	2' (Top)	N/A	98	53	-	Linked from: CJ @ DINING POINT LOAD, Support 1
3 - Point (lb)	12' (Top)	N/A	98	53	-	Linked from: CJ @ DINING POINT LOAD, Support 2
4 - Point (lb)	2' (Top)	N/A	398	-	529	Linked from: HIP @ DINING, Support 1

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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
Dennis Nguyen Vista Structural Engineering LLC (503) 515-1124 dn@vistastructural.com	

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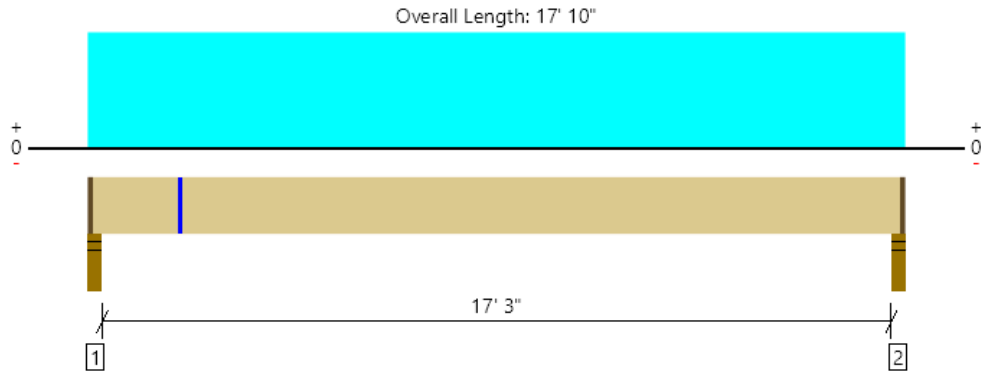
11/9/2023 2:36:29 AM UTC
ForteWEB v3.6, Engine: V8.3.1.5, Data: V8.1.4.1
File Name: SV094

FORTEWEB

MEMBER REPORT

PASSED

ROOF, REC ROOM CEILING
2 piece(s) 2 x 10 DF No.2 @ 16" OC



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)	611 @ 2 1/2"	2869 (2.25")	Passed (21%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	545 @ 1' 3/4"	3330	Passed (16%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	2629 @ 8' 11"	4059	Passed (65%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.349 @ 8' 11"	0.435	Passed (L/599)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.453 @ 8' 11"	0.871	Passed (L/461)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	N/A	N/A	N/A	--	N/A

System : Floor
Member Type : Joist
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- 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.
- No composite action between deck and joist was considered in analysis.

T (@ BOT. OF JOIST) = 2629#-FT / (9.25"/12) = 3410#

REMAINING SECTION = 1.5"*1.5" = 2.25IN^2
Ft = 575psi ft = 575*2.25 = 1294#

TENSION STRAP REQ'D:

F = 3410-1294 = 2116#

USE MSTI26 w/ (26) 0.148 x 1 1/2" NAILS

Supports	Bearing Length			Loads to Supports (lbs)		
	Total	Available	Required	Dead	Floor Live	Facto
1 - Stud wall - SPF	3.50"	2.25"	1.50"	143	476	618
2 - Stud wall - SPF	3.50"	2.25"	1.50"	143	476	618

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

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	15' 1" o/c	
Bottom Edge (Lu)	17' 8" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Load	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 17' 10"	16"	12.0	40.0	FL

Weyerhaeuser Notes

Weyerhaeuser warrants that the sizing of its products will be in accordance with Weyerhaeuser product design criteria and published design values. Weyerhaeuser expressly disclaims any other warranties related to the software. Use of this software is not intended to circumvent the need for a design professional as determined by the authority having jurisdiction. The designer of record, builder or framer is responsible to assure that this calculation is compatible with the overall project. Accessories (Rim Board, Blocking Panels and Squash Blocks) are not designed by this software. Products manufactured at Weyerhaeuser facilities are third-party certified to sustainable forestry standards. Weyerhaeuser Engineered Lumber Products have been evaluated by ICC-ES under evaluation reports ESR-1153 and ESR-1387 and/or tested in accordance with applicable ASTM standards. For current code evaluation reports, Weyerhaeuser product literature and installation details refer to www.weyerhaeuser.com/woodproducts/document-library.

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

ForteWEB Software Operator	Job Notes
Dennis Nguyen Vista Structural Engineering LLC (503) 515-1124 dn@vistastructural.com	

Weyerhaeuser

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ForteWEB v3.6, Engine: V8.3.1.5, Data: V8.1.4.1
File Name: SV094

PHOTO 1: HIP RAFTER @ PANTRY

PHOTO 2: RAFTER NOTCH @ MASTER BATH

PHOTO 3: RAFTER NOTCH @ MASTER BATH

PHOTO 4: HIP RAFTER NOTCH @ KITCHEN

PHOTO 5: HIP RAFTER NOTCH @ MASTER BED

PHOTO 6: JOIST PENETRATION IN REC (ADJACENT TO STEEL BM)

PHOTO 7: JOIST PENETRATION IN REC (ADJACENT TO PATIO DOOR)

PHOTO 8: JOIST PENETRATION IN REC

PHOTO 9: OMITED STUD PACK PER PLAN (NO POINT LOAD)

PHOTO 10: JOIST PENETRATION
NEAR BOT. OF JOIST (DIM.)