Client:

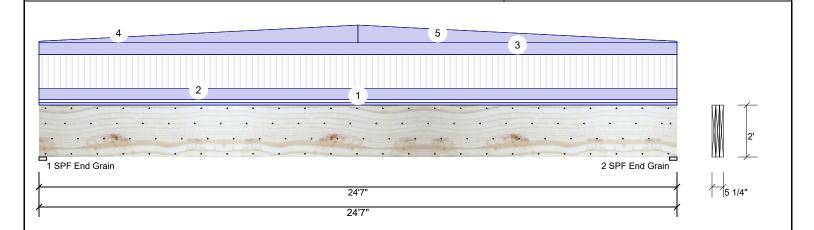
Project: Address: Ben Stout Real Estate

9/18/2020

Input by: David Landry Job Name: Lot 54 Sierra Villas Project #: J0920-4173

1.750" X 24.000" Kerto-S LVL 3-Ply - PASSED BM<sub>1</sub>

Level: Level



Member Inform	nation		Reactions UNPATTERNED Ib (Uplift)							
Type:	Girder	Application:	Floor	Brg	Live	Dead	Snow	Wind		
Plies:	3	Design Method:	ASD	1	4253	4788	344	0		
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015	2	4253	4788	344	0		
Deflection LL:	480	Load Sharing:	Yes							
Deflection TL:	360	Deck:	Not Checked							
Importance:	Normal	Ceiling:	Gypsum 1/2"							
Temperature:	Temp <= 100°F									
				Bearing	S					
				Bearing	Length	Cap. Rea	ct D/L lb	Total Ld. Ca	se	

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	55677 ft-lb	12'3 1/2"	114169 ft-lb	0.488 (49%)	D+L	L
Unbraced	55677 ft-lb	12'3 1/2"	55925 ft-lb	0.996 (100%)	D+L	L
Shear	8539 lb	2'2 5/8"	26880 lb	0.318 (32%)	D+L	L
LL Defl inch	0.242 (L/1198)	12'3 9/16"	0.604 (L/480)	0.400 (40%)	L	L
TL Defl inch	0.531 (L/545)	12'3 9/16"	0.805 (L/360)	0.660 (66%)	D+L	L

## **Design Notes**

- 1 Fasten all plies using 4 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Top must be laterally braced at a maximum of 4'8 1/4" o.c.
- 6 Lateral slenderness ratio based on single ply width

U Lateral Sieriu	erriess ratio based oir sirigie	piy widii.									
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments	
1	Uniform			Near Face	28 PLF	0 PLF	28 PLF	0 PLF	0 PLF	M2	
2	Uniform			Far Face	116 PLF	346 PLF	0 PLF	0 PLF	0 PLF	F1, F3	
3	Uniform			Тор	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall	
4	Tapered Start	0-0-0		Тор	15 PLF	0 PLF	0 PLF	0 PLF	0 PLF	B1GE	
	End	12-3-8			180 PLF	0 PLF	0 PLF	0 PLF	0 PLF		
5	Tapered Start	12-3-8		Тор	180 PLF	0 PLF	0 PLF	0 PLF	0 PLF	B1GE	

Continued on page 2...

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

- Dry service conditions, unless noted otherwise
   LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- LVL beams must not be cut or drilled
  Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals

  2 Damaged Beams must not be used

- Design assumes top edge is laterally restrained
  Provide lateral support at bearing points to avoid
  lateral displacement and rotation
- For flat roofs provide proper drainage to prevent ponding

Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851 (800) 622-5850 www.metsawood.com/us ICC-ES: ESR-3633

Manufacturer Info

57% 4788 / 4253

57% 4788 / 4253

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Page 1 of 7

Const 0

0

Ld. Comb.

D+L

9041 L

9041 L

This design is valid until 2/26/2023

1-SPF 3.500"

2 - SPF 3.500"

End Grain

End Grain

Client: Ben Stout Real Estate

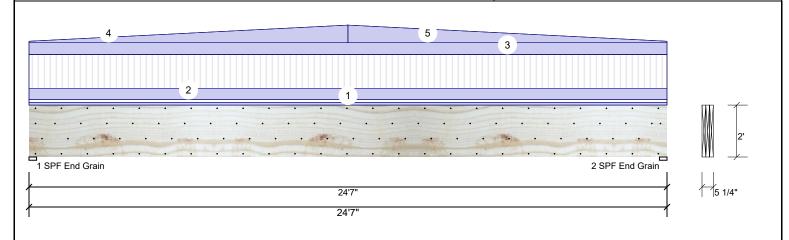
Project: Address: Date:

9/18/2020 Input by: David Landry Job Name: Lot 54 Sierra Villas Project #: J0920-4173

Page 2 of 7

1.750" X 24.000" 3-Ply - PASSED **Kerto-S LVL** BM<sub>1</sub>

Level: Level



.Continued from page 1

ID Load Type Location Trib Width Side Dead 0.9 Live 1 Snow 1.15 Wind 1.6 Const. 1.25 Comments End 24-7-0 15 PLF 0 PLF 0 PLF 0 PLF 0 PLF

> 28 PLF Self Weight

### Notes

NOtes
Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

- Dry service conditions, unless noted otherwise
   LVL not to be treated with fire retardant or corrosive

# Handling & Installation

- Handling & Installation

  1. UVI beams must not be cut or drilled

  2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals

  3. Damaged Beams must not be used

  4. Design assumes top edge is laterally restrained

  5. Provide lateral support at bearing points to avoid lateral displacement and rotation

- 6. For flat roofs provide proper drainage to prevent ponding

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Manufacturer Info

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This design is valid until 2/26/2023

Client:

Project: Address: Ben Stout Real Estate

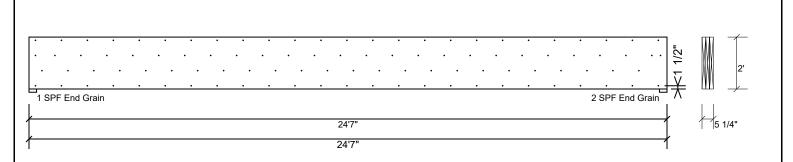
9/18/2020

Input by: David Landry Job Name: Lot 54 Sierra Villas Project #: J0920-4173

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1.750" X 24.000" **Kerto-S LVL** 3-Ply - PASSED BM<sub>1</sub>

Level: Level



## Multi-Ply Analysis

Fasten all plies using 4 rows of 10d Box nails (.128x3") at 12" o.c.. Nail from both sides. Maximum end distance not to exceed

Capacity	94.1 %
Load	308.0 PLF
Yield Limit per Foot	327.4 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	D+L
Duration Factor	1.00

### Notes

NOtes
Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

- Dry service conditions, unless noted otherwise
   LVL not to be treated with fire retardant or corrosive

### Handling & Installation

- Informing & Installation

  I. VIL beams must not be cut or drilled

  Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals

  Damaged Beams must not be used

  Design assumes top edge is laterally restrained

  Design assumes top edge is laterally restrained is provide lateral support at bearing points to avoid lateral displacement and rotation

For flat roofs provide proper drainage to prevent ponding

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This design is valid until 2/26/2023

Manufacturer Info



Client:

Project: Address: Ben Stout Real Estate

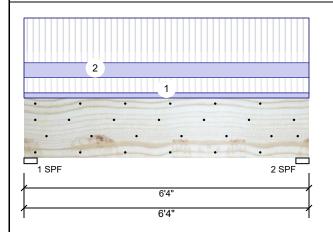
Date: 9/18/2020

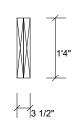
Input by: David Landry Job Name: Lot 54 Sierra Villas Project #: J0920-4173

### 1.750" X 16.000" 2-Ply - PASSED **Kerto-S LVL** BM<sub>2</sub>

Level: Level

Reactions UNPATTERNED Ib (Uplift)





Page 4 of 7

Member Information										
Type:	Girder									
Plies:	2									
Moisture Condition:	Dry									
Deflection LL:	480									
Deflection TL:	360									
Importance:	Normal									
Temperature:	Temp <= 100°F									

Application: Floor Design Method: ASD **Building Code: IBC/IRC 2015** Load Sharing: No Not Checked Deck: Ceiling: Gypsum 1/2"

Brg Dead Snow Wind Live Const 1742 622 0 0 0 1 2 1742 622 0 0 0

### **Bearings** Bearing Length Cap. React D/L lb Total Ld. Case Ld. Comb. 1-SPF 3.500" 622 / 1742 D+L 2364 L 2 - SPF 3.500" 45% 622 / 1742 2364 L D+I

## **Analysis Results**

1	•						
I	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
	Moment	3243 ft-lb	3'2"	34565 ft-lb	0.094 (9%)	D+L	L
	Unbraced	3243 ft-lb	3'2"	19457 ft-lb	0.167 (17%)	D+L	L
	Shear	2184 lb	4'9 3/8"	11947 lb	0.183 (18%)	D+L	L
	LL Defl inch	0.011 (L/6331)	3'2"	0.147 (L/480)	0.080 (8%)	L	L
	TL Defl inch	0.015 (L/4665)	3'2"	0.197 (L/360)	0.080 (8%)	D+L	L

## **Design Notes**

- 1 Fasten all plies using 4 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top braced at bearings.
- 5 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments	
1	Uniform			Near Face	47 PLF	139 PLF	0 PLF	0 PLF	0 PLF	F5	
2	Uniform			Far Face	137 PLF	411 PLF	0 PLF	0 PLF	0 PLF	F4	
	Self Weight				12 PLF						

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

- Dry service conditions, unless noted otherwise
   LVL not to be treated with fire retardant or corrosive
- LVL beams must not be cut or drilled Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals Damaged Beams must not be used

Handling & Installation

Design assumes top edge is laterally restrained
Provide lateral support at bearing points to avoid
lateral displacement and rotation

This design is valid until 2/26/2023

6. For flat roofs provide proper drainage to prevent ponding

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Manufacturer Info

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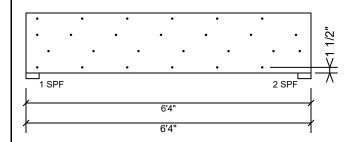
Client: Ben Stout Real Estate

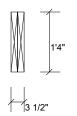
Project: Address: Date: 9/18/2020 Input by:

David Landry Job Name: Lot 54 Sierra Villas Project #: J0920-4173

1.750" X 16.000" 2-Ply - PASSED **Kerto-S LVL BM2** 

Level: Level





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# Multi-Ply Analysis

Fasten all plies using 4 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6"

p	
Capacity	83.7 %
Load	274.0 PLF
Yield Limit per Foot	327.4 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	D+L
Duration Factor	1.00

### Notes

NOtes
Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

- Dry service conditions, unless noted otherwise
   LVL not to be treated with fire retardant or corrosive

# Handling & Installation

- Handling & Installation

  1. UVI beams must not be cut or drilled

  2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals

  3. Damaged Beams must not be used

  4. Design assumes top edge is laterally restrained

  5. Provide lateral support at bearing points to avoid lateral displacement and rotation

For flat roofs provide proper drainage to prevent ponding

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Manufacturer Info

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Client:

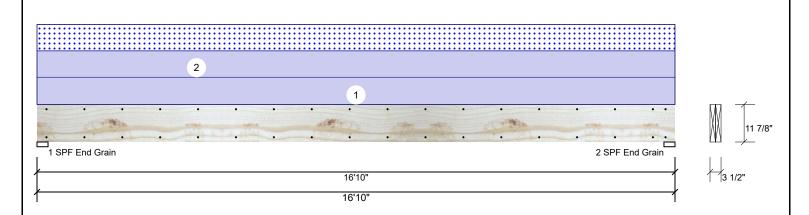
Project: Address: Ben Stout Real Estate

Date: 9/18/2020

Input by: David Landry Job Name: Lot 54 Sierra Villas Project #: J0920-4173

1.750" X 11.875" 2-Ply - PASSED **Kerto-S LVL GDH** 

Level: Level



End Grain 2 - SPF 3.500"

End Grain

Member Info	rmation		Reactions UNPATTERNED lb (Uplift)						
Type:	Girder	Application:	Floor	Brg	Live	Dead	Snow	Wind	
Plies:	2	Design Method:	ASD	1	0	1071	488	0	
Moisture Condition	on: Dry	Building Code:	IBC/IRC 2015	2	0	1071	488	0	
Deflection LL:	480	Load Sharing:	No						
Deflection TL:	360	Deck:	Not Checked						
Importance:	Normal	Ceiling:	Gypsum 1/2"						
Temperature:	Temp <= 100°F								
				Bearing	S				
				Bearing	Length	Cap. Rea	ct D/L lb	Total Ld. Ca	se
				1 - SPF	3.500"	15% 1	071 / 488	1559 L	

Ana	lysis	Resu	lts
-----	-------	------	-----

•						
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6209 ft-lb	8'5"	22897 ft-lb	0.271 (27%)	D+S	L
Unbraced	6209 ft-lb	8'5"	6213 ft-lb	0.999 (100%)	D+S	L
Shear	1333 lb	1'2 5/8"	10197 lb	0.131 (13%)	D+S	L
LL Defl inch	0.101 (L/1937)	8'5 1/16"	0.409 (L/480)	0.250 (25%)	S	L
TL Defl inch	0.324 (L/607)	8'5 1/16"	0.546 (L/360)	0.590 (59%)	D+S	L

## **Design Notes**

- 1 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Top must be laterally braced at a maximum of 16' 3/8" o.c.
- 6 Lateral slenderness ratio based on single ply width.

	3	1 7									
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments	
1	Uniform			Тор	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall	
2	Uniform			Тор	58 PLF	0 PLF	58 PLF	0 PLF	0 PLF	M2	
	Self Weight				9 PLF						

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

- Dry service conditions, unless noted otherwise
   LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- LVL beams must not be cut or drilled
  Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals

  2 Damaged Beams must not be used

- Danaged Beams must not be used
  Design assumes top edge is laterally restrained
  Provide lateral support at bearing points to avoid
  lateral displacement and rotation
- For flat roofs provide proper drainage to prevent ponding

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Manufacturer Info

15%

1071 / 488

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1559 L

Const 0

0

Ld. Comb. D+S

D+S



Page 6 of 7

This design is valid until 2/26/2023 CSD DESIGN

Client:

Project: Address: Ben Stout Real Estate

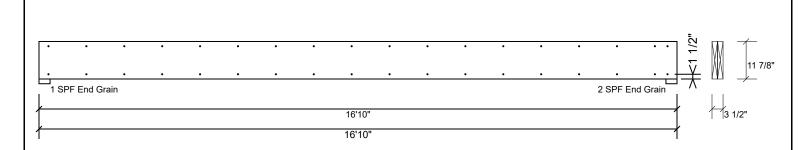
Date: 9/18/2020

Input by: David Landry Job Name: Lot 54 Sierra Villas Project #: J0920-4173

Page 7 of 7

2-Ply - PASSED **Kerto-S LVL** 1.750" X 11.875" **GDH** 

Level: Level



## Multi-Ply Analysis

Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c., Maximum end distance not to exceed 6"

1 3		•	,
Capacity	0.0 %		
Load	0.0 PLF		
Yield Limit per Foot	163.7 PLF		
Yield Limit per Fastener	81.9 lb.		
Yield Mode	IV		
Edge Distance	1 1/2"		
Min. End Distance	3"		
Load Combination			
Duration Factor	1.00		

### Notes

NOtes
Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

- Dry service conditions, unless noted otherwise
   LVL not to be treated with fire retardant or corrosive

# Handling & Installation

- Handling & Installation

  1. UVI beams must not be cut or drilled

  2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals

  3. Damaged Beams must not be used

  4. Design assumes top edge is laterally restrained

  5. Provide lateral support at bearing points to avoid lateral displacement and rotation
- This design is valid until 2/26/2023

For flat roofs provide proper drainage to prevent ponding

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CSD DESIGN