

Client: Project:

Address:

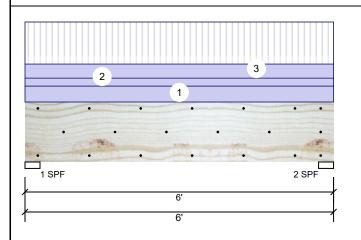
Benjamin Stout Real Estate

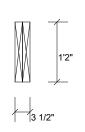
Date: 9/18/2020

Input by: David Landry Job Name: Lot 55 Sierra Villas Project #: J0920-4175

1.750" X 14.000" **Kerto-S LVL** 2-Ply - PASSED BM₁

Level: Level





Page 1 of 10

Member Information

Type:	Giraer
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 Deck: Not Checked

Reactions UNPATTERNED Ib (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	951	891	0	0	0
2	951	891	0	0	0

Bearings

Bearing	Length	Cap. Re	act D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	35%	891 / 951	1842	L	D+L
2 - SPF	3 500"	35%	891 / 951	1842	1	D+I

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2357 ft-lb	3'	26999 ft-lb	0.087 (9%)	D+L	L
Unbraced	2357 ft-lb	3'	26999 ft-lb	0.087 (9%)	D+L	L
Shear	1478 lb	4'7 1/4"	10453 lb	0.141 (14%)	D+L	L
LL Defl inch	0.007 (L/9415)	3'	0.139 (L/480)	0.050 (5%)	L	L
TL Defl inch	0.014 (L/4862)	3'	0.185 (L/360)	0.070 (7%)	D+L	L

Design Notes

- 1 Fasten all plies using 3 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 continuously braced.
- 6 Bottom braced at bearings.

/ Lateral siend	derness ratio based on single	e 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			Тор	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Above
2	Uniform			Тор	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	C1GE
3	Uniform			Far Face	106 PLF	317 PLF	0 PLF	0 PLF	0 PLF	F2
	Self Weight				11 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 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

Manufacturer Info Metsä Wood

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

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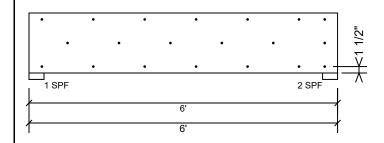
Client: Benjamin Stout Real Estate

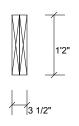
Project: Address: Date: 9/18/2020

Input by: David Landry Job Name: Lot 55 Sierra Villas Project #: J0920-4175

1.750" X 14.000" 2-Ply - PASSED **Kerto-S LVL** BM₁

Level: Level





Page 2 of 10

Multi-Ply Analysis

Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6"

rasterrain pries asing 5 i	ovis or roa box mans (boxs) at
Capacity	86.1 %
Load	211.5 PLF
Yield Limit per Foot	245.6 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

6. For flat roofs provide proper drainage to prevent ponding

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Manufacturer Info

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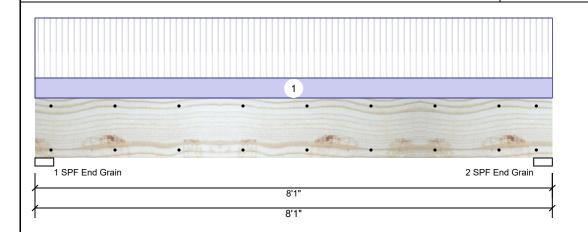
Client: Project: Address: Benjamin Stout Real Estate

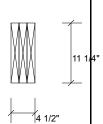
Date: 9/18/2020

Input by: David Landry Job Name: Lot 55 Sierra Villas Project #: J0920-4175

2.000" X 12.000" 3-Ply - PASSED S-P-F #2

Level: Level





Page 3 of 10

Temp <= 100°F

Member Information

Application: Design Method: ASD **Building Code: IBC/IRC 2015** Load Sharing: Yes Deck: Not Checked

I	Reactions UNPATTERNED lb (Uplift)												
E	3rg	Live	Dead	Snow	Wind	Const							
	1	2837	946	0	0	0							
	2	2837	946	0	0	0							
١													

Analysis Results Case Actual Comb. Analysis Location Allowed Capacity Moment 6802 ft-lb 4' 1/2" 7960 ft-lb 0.855 (85%) D+L L Unbraced 6802 ft-lb 4' 1/2" 7960 ft-lb 0.855 (85%) D+L L 2691 lb 0.591 (59%) D+L Shear 1'2" 4556 lb L LL Defl inch 0.071 (L/1281) 4' 9/16" 0.254 (L/360) 0.280 (28%) L L TL Defl inch 0.095 (L/961) 4' 9/16" 0.381 (L/240) 0.250 (25%) D+L L

Bearings Bearing Length Cap. React D/L lb Total Ld. Case Ld. Comb. 1-SPF 3.500" 946 / 2837 3783 L D+L End Grain 2 - SPF 3.500" 946 / 2837 3783 L D+L End Grain

Design Notes

Temperature:

- 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 continuously braced.
- 6 Bottom braced at bearings.
- 7 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			Тор	234 PLF	702 PLF	0 PLF	0 PLF	0 PLF	F1

This design is valid until 2/26/2023

Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS Manufacturer Info соттесн

Client: Benjamin Stout Real Estate Date: 9/18/2020 Page 4 of 10 Project: Input by: David Landry isDesign Address: Job Name: Lot 55 Sierra Villas Project #: J0920-4175 Level: Level 2.000" X 12.000" 3-Ply - PASSED S-P-F #2 **BM2** 1 SPF End Grain 2 SPF End Grain 8'1" 8'1"

This design is valid until 2/26/2023

Multi-Ply Analysis

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

Capacity	0.0 %	
Load	0.0 PLF	
Yield Limit per Foot	157.4 PLF	
Yield Limit per Fastener	78.7 lb.	
Yield Mode	IV	
Edge Distance	1 1/2"	
Min. End Distance	3"	
Load Combination		
Duration Factor	1 00	

Manufacturer Info

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101 S. Reilly Road, Suite #639
Fayetreville, NC
USA
28314
910-864-TRUS



Client: Project: Address: Benjamin Stout Real Estate

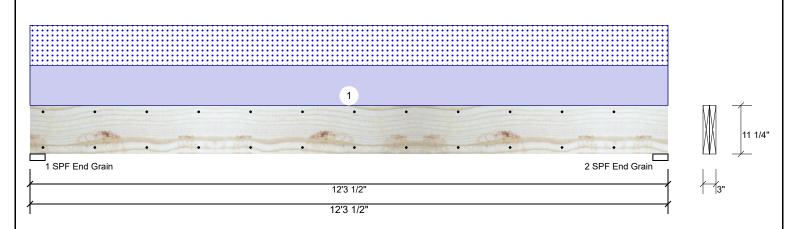
Date: 9/18/2020 Input by:

David Landry Job Name: Lot 55 Sierra Villas Project #: J0920-4175

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2.000" X 12.000" 2-Ply - PASSED S-P-F #2 BM₃

Level: Level



Member Inforr	nation						Reaction	ns UNPAT	TERNE	D lb (Uplift))		
Type:	Girder		Applicat	tion:	Floor		Brg	Live	Dead	d Snow		Wind	Const
Plies:	2		Design	Method:	ASD		1	0	799	9 799		0	0
Moisture Condition	: Dry		Building	Code:	IBC/IRC 2015		2	0	799	9 799		0	0
Deflection LL:	360		Load Sh	naring:	No								
Deflection TL:	240		Deck:		Not Checked								
Importance:	Normal												
Temperature:	Temp <= 100°	°F					Bearings	s					
							Bearing	Length	Сар.	React D/L lb	Total	Ld. Case	Ld. Comb
							1 - SPF End	3.500"	36%	799 / 799	1598	L	D+S
Analysis Result	:S						Grain						
Analysis Ac	tual	Location	Allowed	Capacity	Comb.	Case	2-SPF	3.500"	36%	799 / 799	1598	L	D+S
Moment 455	51 ft-lb	6'1 3/4"	5306 ft-lb	0.858 (86	%) D+S	L	End Grain						
Unbraced 455	51 ft-lb	6'1 3/4"	5306 ft-lb	0.858 (86	%) D+S	L							
Shear 129	95 lb	1'2"	3493 lb	0.371 (37	%) D+S	1							

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".

6'1 3/4" 0.394 (L/360) 0.290 (29%) S

6'1 3/4" 0.592 (L/240) 0.390 (39%) D+S

- 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 continuously braced.

LL Defl inch 0.115 (L/1234)

TL Defl inch 0.230 (L/617)

6 Bottom braced at bearings.

7	Lateral	slenderness	ratio	based	on	sinale	vla	width

/ Lateral	i sicriacificas fallo basca off a	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			Тор	130 PLF	0 PLF	130 PLF	0 PLF	0 PLF	D1	

This design is valid until 2/26/2023

L

Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS Manufacturer Info соттесн

Client: Benjamin Stout Real Estate Date: 9/18/2020 Page 6 of 10 Project: Input by: David Landry isDesign Address: Job Name: Lot 55 Sierra Villas Project #: J0920-4175 2-Ply - PASSED Level: Level 2.000" X 12.000" **BM3** S-P-F #2 1 SPF End Grain 2 SPF End Grain 12'3 1/2" 12'3 1/2" 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" Capacity 0.0 PLF Load 157.4 PLF Yield Limit per Foot Yield Limit per Fastener 78.7 lb. Yield Mode IV Edge Distance 1 1/2" Min. End Distance 3" Load Combination Duration Factor 1.00

Manufacturer Info

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Fayetteville, NC
USA
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Client:

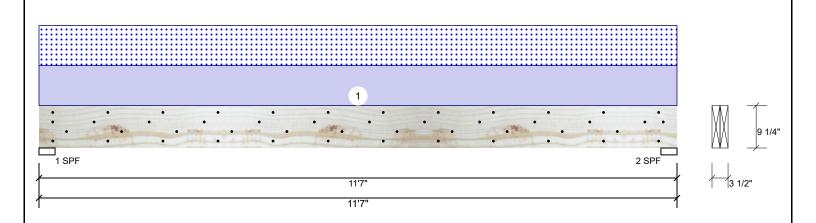
Project: Address: Benjamin Stout Real Estate

9/18/2020

Input by: David Landry Job Name: Lot 55 Sierra Villas Project #: J0920-4175

1.750" X 9.250" **Kerto-S LVL** 2-Ply - PASSED

Level: Level



Member Info	rmation	Reactio	Reactions UNPATTERNED lb (Uplift)							
Type:	Girder	Application:	Roof	Brg	Live	Dead	Snow	V	Vind	Const
Plies:	2	Slope:	0/12	1	0	1721	1680		0	0
Moisture Condition	on: Dry	Design Method:	ASD	2	0	1721	1680		0	0
Deflection LL:	360	Building Code:	IBC/IRC 2015							
Deflection TL:	240	Load Sharing:	No							
Importance:	Normal	Deck:	Not Checked							
Temperature:	Temp <= 100°F									
				Bearing	gs					
				Bearing	g Length	Cap. Rea	ct D/L lb	Total	Ld. Case	Ld. Comb.
				1 - SPF	3.500"	65% 17	21 / 1680	3401	L	D+S
				2 - SPE	3 500"	65% 17	21 / 1680	3401	I	D+S

Analysis Results

ı							
ı	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
	Moment	9084 ft-lb	5'9 1/2"	14423 ft-lb	0.630 (63%)	D+S	L
	Unbraced	9084 ft-lb	5'9 1/2"	14423 ft-lb	0.630 (63%)	D+S	L
	Shear	3261 lb	10'7"	7943 lb	0.411 (41%)	D+S	L
	LL Defl inch	0.232 (L/574)	5'9 1/2"	0.371 (L/360)	0.630 (63%)	S	L
	TL Defl inch	0.471 (L/284)	5'9 1/2"	0.556 (L/240)	0.850 (85%)	D+S	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 must be continuously braced.
- 5 Bottom braced at bearings.
- 6 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			Far Face	290 PLF	0 PLF	290 PLF	0 PLF	0 PLF	A2
	Self Weight				7 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

- 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: Benjamin Stout Real Estate

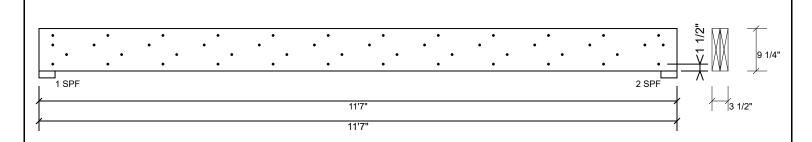
9/18/2020

Input by: David Landry Job Name: Lot 55 Sierra Villas Project #: J0920-4175

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1.750" X 9.250" **Kerto-S LVL** 2-Ply - PASSED BM4

Level: Level



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"

Capacity	77.0 %	
Load	290.0 PLF	
Yield Limit per Foot	376.5 PLF	
Yield Limit per Fastener	94.1 lb.	
Yield Mode	IV	
Edge Distance	1 1/2"	
Min. End Distance	3"	
Load Combination	D+S	
Duration Factor	1 15	

Notes

NOtes

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- 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

This design is valid until 2/26/2023

For flat roofs provide proper drainage to prevent ponding Manufacturer Info

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Client: Project:

Address:

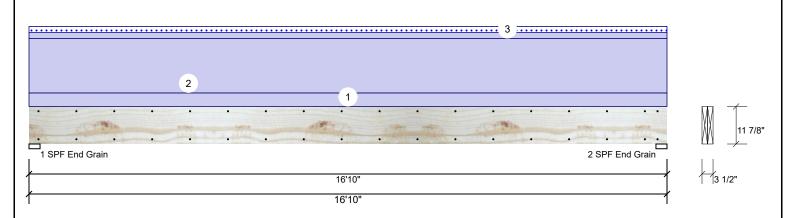
Benjamin Stout Real Estate

Date: 9/18/2020

Input by: David Landry Job Name: Lot 55 Sierra Villas Project #: J0920-4175

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

Level: Level



Member Infor	mation				Reaction	ns UNPAT	TERNED I	b (Uplift)		
Type:	Girder	Application:	Floor		Brg	Live	Dead	Snow	Wind	Const
Plies:	2	Design Method:	ASD		1	0	2140	168	0	0
Moisture Condition	n: Dry	Building Code:	IBC/IRC 2015		2	0	2140	168	0	0
Deflection LL:	360	Load Sharing:	No							
Deflection TL:	240	Deck:	Not Checked							
Importance:	Normal									
Temperature:	Temp <= 100°F									
					Bearing	s				
					Bearing	Length	Cap. Rea	act D/L lb	Total Ld. Cas	e Ld. Comb.
					1 - SPF	3.500"	22% 2	140 / 168	2308 L	D+S
					End					
Analysis Resul	ts				Grain					
Analysis Ad	tual Location	Allowed Capac	ity Comb.	Case	2-SPF	3.500"	22% 2	140 / 168	2308 L	D+S
Moment 85	21 ft-lb 8'5"	17919 ft-lb 0.476 (48%) D	Uniform	End Grain					

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	8521 ft-lb	8'5"	17919 ft-lb	0.476 (48%)	D	Uniform
Unbraced	8521 ft-lb	8'5"	17919 ft-lb	0.476 (48%)	D	Uniform
Shear	1830 lb	15'7 3/8"	7980 lb	0.229 (23%)	D	Uniform
LL Defl inch	0.035 (L/5617)	8'5 1/16"	0.546 (L/360)	0.060 (6%)	S	L
TL Defl inch	0.480 (L/410)	8'5 1/16"	0.819 (L/240)	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 continuously braced.
- 6 Bottom braced at bearings.

/ Lateral Si	enderness 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			Тор	45 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Above	
2	Uniform			Тор	180 PLF	0 PLF	0 PLF	0 PLF	0 PLF	B1GE	
3	Tie-In	0-0-0 to 16-10-0	1-0-0	Тор	20 PSF	0 PSF	20 PSF	0 PSF	0 PSF	Roof Load	
	Self Weight				9 PLF						

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- 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

This design is valid until 2/26/2023

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Manufacturer Info

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Client:

Project: Address: Benjamin Stout Real Estate

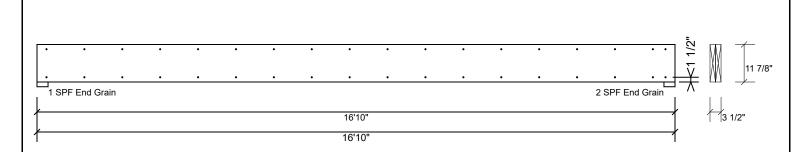
Date: 9/18/2020

Input by: David Landry Job Name: Lot 55 Sierra Villas Project #: J0920-4175

Page 10 of 10

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

For flat roofs provide proper drainage to prevent ponding

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Manufacturer Info

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CSD DESIGN

