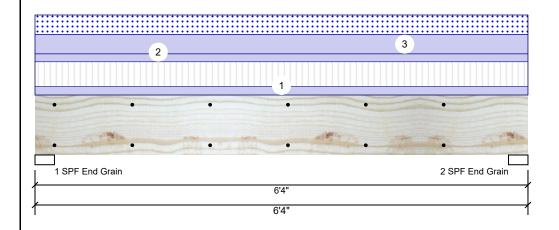


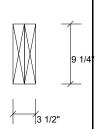
Project: Address: Date: 6/22/2023

Input by: Hampton Horrocks Job Name: Lot 99 South Creek Project #: J0623-3287

2-Ply - PASSED Kerto-S LVL 1.750" X 9.250" BM<sub>3</sub>

Level: 1ST. FLOOR





Page 1 of 13

### Member Information

Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	240
Importance:	Normal -
	_

Ш Temperature: Temp <= 100°F

Application: Design Method: ASD **Building Code:** IBC 2012

Load Sharing: No Deck: Not Checked

## Reactions UNPATTERNED Ib (Uplift)

**Bearings** 

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1131	1641	880	0	0
2	Vertical	1131	1641	880	0	0

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3884 ft-lb	3'2"	12542 ft-lb	0.310 (31%)	D+L	L
Unbraced	4413 ft-lb	3'2"	10614 ft-lb	0.416 (42%)	D+0.75(L+S)	L
Shear	1884 lb	5'3 3/4"	6907 lb	0.273 (27%)	D+L	L
LL Defl inch	0.037 (L/1944)	3'2"	0.149 (L/480)	0.247 (25%)	0.75(L+S)	L
TL Defl inch	0.077 (L/931)	3'2"	0.298 (L/240)	0.258 (26%)	D+0.75(L+S)	L

North Albert					
TL Defl inch	0.077 (L/931)	3'2"	0.298 (L/240)	0.258 (26%) D+0.75(L+S)	L.
LL Defl inch	0.037 (L/1944)	3'2"	0.149 (L/480)	0.247 (25%) 0.75(L+S)	L
Shear	1884 lb	5'3 3/4"	6907 lb	0.273 (27%) D+L	L
Unbraced	4413 ft-lb	3'2"	10614 ft-lb	0.416 (42%) D+0.75(L+S)	L

### **Design Notes**

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at end bearings.
- 7 Bottom must be laterally braced at end bearings.
- 8 Lateral slenderness ratio based on single ply width.

L								
ľ	Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
	1 - SPF End Grain	3.000"	Vert	36%	1641 / 1508	3149	L	D+0.75(L+S)
I	2 - SPF End Grain	3.000"	Vert	36%	1641 / 1508	3149	L	D+0.75(L+S)

### ID Trib Width Comments Load Type Location Side Dead 0.9 Live 1 Snow 1.15 Wind 1.6 Const. 1.25 Uniform 119 PI F 357 PLF 0 PI F 0 PI F 0 PI F F02 Top 2 Uniform 114 PLF 0 PLF 0 PLF 0 PLF 0 PLF Top wall 278 PLF 0 PI F 278 PI F 0 PI F 3 Uniform 0 PLF C01 Top Self Weight 7 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
- 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
- Design assumes top edge is laterally restrained
  Provide lateral support at bearing points to avoid
  lateral displacement and rotation
- 6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

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

**Manufacturer Info** 





Client: Signature Home Builders

Project: Address: Date: 6/22/2023

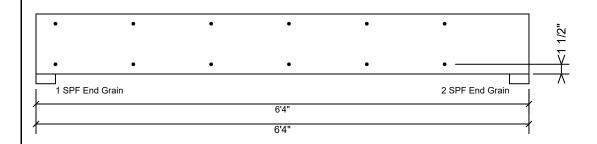
Input by: Hampton Horrocks Job Name: Lot 99 South Creek Project #: J0623-3287

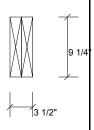
**Kerto-S LVL** BM<sub>3</sub>

1.750" X 9.250"

2-Ply - PASSED

Level: 1ST. FLOOR





Page 2 of 13

## 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 %
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

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

Manufacturer Info

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



This design is valid until 11/3/2024 CSD DESIGN



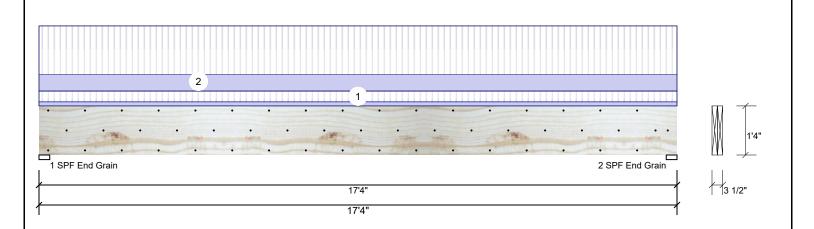
Project: Address: 6/22/2023

Input by: Hampton Horrocks Job Name: Lot 99 South Creek Project #: J0623-3287

Page 3 of 13

1.750" X 16.000" 2-Ply - PASSED Kerto-S LVL BM<sub>1</sub>

Level: 1ST. FLOOR



### Type: Plies: 2 Moisture Condition: Dry Deflection LL: 480 Deflection TL: 360 Importance: Normal - II

Temp <= 100°F

Member Information

Application: Floor Design Method: ASD **Building Code:** IBC 2012 Load Sharing: No Deck: Not Checked Reactions UNPATTERNED Ib (Uplift) Wind Brg Direction Live Dead Snow Const 3813 1408 0 Vertical n 0 1 2 Vertical 3813 1408 0 0 0

## Analysis Results

Temperature:

•						
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	21497 ft-lb	8'8"	34565 ft-lb	0.622 (62%)	D+L	L
Unbraced	21497 ft-lb	8'8"	21533 ft-lb	0.998 (100%)	D+L	L
Shear	4899 lb	1'7 1/2"	11947 lb	0.410 (41%)	D+L	L
LL Defl inch	0.370 (L/548)	8'8 1/16"	0.422 (L/480)	0.876 (88%)	L	L
TL Defl inch	0.507 (L/400)	8'8 1/16"	0.563 (L/360)	0.899 (90%)	D+L	L

## **Bearings**

Grain

Bearing Length Dir. Cap. React D/L lb Total Ld. Case Ld. Comb. 1 - SPF 3.500" Vert 1408 / 3813 5221 I D+I End Grain 2 - SPF 3.500" 1408 / 3813 D+L Vert 5221 L End

### **Design Notes**

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

_		<u> </u>	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	30 PLF	80 PLF	0 PLF	0 PLF	0 PLF	Floor	
	2	Uniform			Near Face	120 PLF	360 PLF	0 PLF	0 PLF	0 PLF	F02	
		Self Weight				12 PI F						

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
- Design assumes top edge is laterally restrained
  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** 



Client: Signature Home Builders

Project: Address:

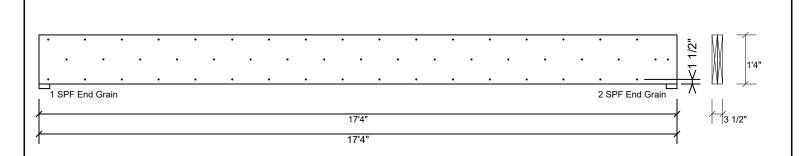
Date: 6/22/2023

Input by: Hampton Horrocks Job Name: Lot 99 South Creek Project #: J0623-3287

Page 4 of 13

1.750" X 16.000" **Kerto-S LVL** 2-Ply - PASSED BM<sub>1</sub>

Level: 1ST. FLOOR



## 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".

aston an phos asing short	, or roa 20% mans (1.20%) at
Capacity	97.7 %
Load	240.0 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. IVI 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

This design is valid until 11/3/2024

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

Manufacturer Info





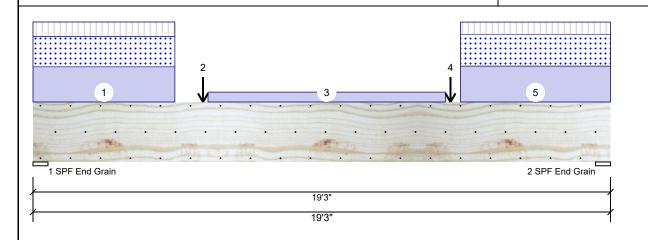


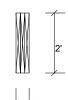
Project: Address: Date: 6/22/2023

Input by: Hampton Horrocks Job Name: Lot 99 South Creek Project #: J0623-3287

**Kerto-S LVL** 1.750" X 24.000" 3-Ply - PASSED GDH1

Level: 1ST. FLOOR





Total Ld. Case

Ld. Comb.

Page 5 of 13

Vlem		

Type: Girder Plies: 3 Moisture Condition: Dry Deflection LL: 480 Deflection TL: 360

Importance: Normal - II

Temp <= 100°F

Application: Floor Design Method: ASD **Building Code:** IBC 2012 Load Sharing: Yes

Deck: Not Checked

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1475	5906	4708	0	0
2	Vertical	1419	6117	4922	0	0

## Analysis Results

Temperature:

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	44505 ft-lb	9'2 1/2"	131295 ft-lb	0.339 (34%)	D+S	L
Unbraced	44505 ft-lb	9'2 1/2"	44534 ft-lb	0.999 (100%)	D+S	L
Shear	9105 lb	16'9"	30912 lb	0.295 (29%)	D+S	L
LL Defl inch	0.123 (L/1793)	9'7 9/16"	0.460 (L/480)	0.268 (27%)	S	L
TL Defl inch	0.282 (L/782)	9'7 9/16"	0.613 (L/360)	0.460 (46%)	D+S	L

ı	Allalysis	Actual	Location	Allowed	Capacity	COITID.	Case
	Moment	44505 ft-lb	9'2 1/2"	131295 ft-lb	0.339 (34%)	D+S	L
	Unbraced	44505 ft-lb	9'2 1/2"	44534 ft-lb	0.999 (100%)	D+S	L
	Shear	9105 lb	16'9"	30912 lb	0.295 (29%)	D+S	L
	LL Defl inch	0.123 (L/1793)	9'7 9/16"	0.460 (L/480)	0.268 (27%)	S	L
	TL Defl inch	0.282 (L/782)	9'7 9/16"	0.613 (L/360)	0.460 (46%)	D+S	L

# **Design Notes**

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at a maximum of 6' 7/16" o.c.
- 7 Bottom must be laterally braced at end bearings.
- 8 Lateral slenderness ratio based on single ply width.

Reactions <b>l</b>	JNPATTERNED	lb (Uplift)
--------------------	-------------	-------------

Dir.

2	Vertical	1419	6117	4922	0	0

## **Bearings**

Grain

Bearing Length

1-SPF 6.000" 5906 / 4708 D+S Vert 10614 L End Grain 2-SPF 6.000" 6117 / 4922 11039 L D+S Vert End

Cap. React D/L lb

### 4 Girders are designed to be supported on the bottom edge only.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments	
1	Part. Uniform	0-0-0 to 4-8-12		Тор	399 PLF	164 PLF	344 PLF	0 PLF	0 PLF	A01	
2	Point	5-8-0		Тор	3352 lb	719 lb	3112 lb	0 lb	0 lb	A02	
	Bearing Length	0-3-8									
3	Part. Uniform	5-10-0 to 13-9-0		Тор	112 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall	

Continued on page 2...

### 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

- 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

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

This design is valid until 11/3/2024

Metsä Wood

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

**Manufacturer Info** 





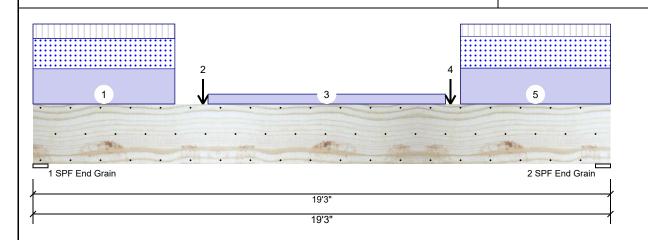


Project: Address: Date: 6/22/2023

Input by: Hampton Horrocks Job Name: Lot 99 South Creek Project #: J0623-3287

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

Level: 1ST. FLOOR





Page 6 of 13

..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	
4	Point	13-11-0		Тор	3323 lb	710 lb	3086 lb	0 lb	0 lb	A02A	
	Bearing Length	0-3-8									
5	Part. Uniform	14-3-0 to 19-3-0		Тор	407 PLF	138 PLF	361 PLF	0 PLF	0 PLF	A01A	
	Self Weight				28 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

## Handling & Installation

- Handling & Installation

  1. IVI 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 11/3/2024

6. For flat roofs provide proper drainage to prevent ponding

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Manufacturer Info







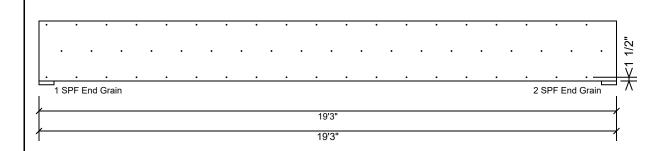
Project: Address: Date: 6/22/2023

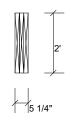
Input by: Hampton Horrocks Job Name: Lot 99 South Creek Project #: J0623-3287

1.750" X 24.000" **Kerto-S LVL** GDH<sub>1</sub>

3-Ply - PASSED

Level: 1ST. FLOOR





Page 7 of 13

## Multi-Ply Analysis

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

Capacity	0.0 %	
Load	0.0 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		
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

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

Manufacturer Info

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



This design is valid until 11/3/2024 CSD DESIGN



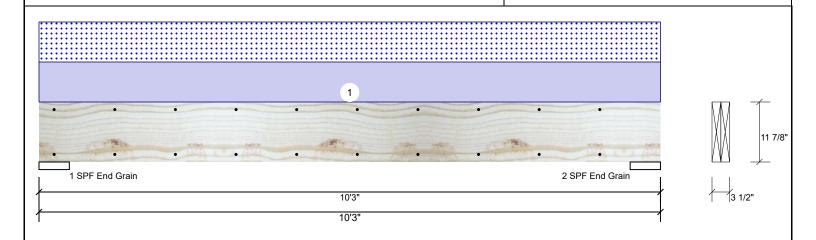
Project: Address: Date:

6/22/2023 Input by: Hampton Horrocks Job Name: Lot 99 South Creek Project #: J0623-3287

1.750" X 11.875" **Kerto-S LVL** 2-Ply - PASSED GDH2

Level: 1ST. FLOOR

Page 8 of 13



Member Info	lember Information R						Reactions UNPATTERNED lb (Uplift)							
Type:	Girder	Application:	Floor	Brg	Direction	Live	Dead	Snow	Wind	Const				
Plies:	2	Design Method:	ASD	1	Vertical	0	1226	1179	0	0				
Moisture Condit	ion: Dry	Building Code:	IBC 2012	2	Vertical	0	1226	1179	0	0				
Deflection LL:	360	Load Sharing:	No											
Deflection TL:	240	Deck:	Not Checked											
Importance:	Normal - II													
Temperature:	Temp <= 100°F													

**Bearings** Bearing Length

End Grain

End Grain

1-SPF 6.000"

2-SPF 6.000"

Dir.

Vert

Vert

Cap. React D/L lb

1226 / 1179

1226 / 1179

Total Ld. Case

2405 L

2405 L

Ld. Comb.

D+S

D+S

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5155 ft-lb	5'1 1/2"	22897 ft-lb	0.225 (23%)	D+S	L
Unbraced	5155 ft-lb	5'1 1/2"	9857 ft-lb	0.523 (52%)	D+S	L
Shear	1715 lb	1'5 7/8"	10197 lb	0.168 (17%)	D+S	L
LL Defl inch	0.048 (L/2347)	5'1 1/2"	0.312 (L/360)	0.153 (15%)	S	L
TL Defl inch	0.098 (L/1151)	5'1 1/2"	0.469 (L/240)	0.209 (21%)	D+S	L

### **Design Notes**

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at end bearings.
- 7 Bottom must be laterally braced at end bearings.
- 8

8 Lateral stenderness 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			Ton	230 PLF	0 PLF	230 PLF	0 PLF	∩ PI F	G01	

IE 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
- 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

Handling & Installation

- Design assumes top edge is laterally restrained
  Provide lateral support at bearing points to avoid
  lateral displacement and rotation
- 6. 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

Manufacturer Info

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



This design is valid until 11/3/2024

Client: Signature Home Builders

Project: Address: Date: Input by: 6/22/2023

Level: 1ST. FLOOR

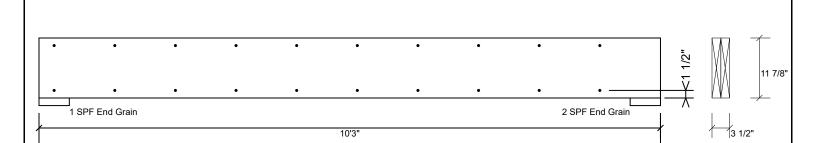
Hampton Horrocks Job Name: Lot 99 South Creek Page 9 of 13

Project #: J0623-3287

**Kerto-S LVL** GDH<sub>2</sub>

1.750" X 11.875"

2-Ply - PASSED



## 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".

10'3"

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 11/3/2024

 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







Client:

Project: Address: Signature Home Builders Date: Input by:

6/22/2023

Project #:

Hampton Horrocks Job Name: Lot 99 South Creek

**Kerto-S LVL** 2-Ply - PASSED 1.750" X 14.000" BM<sub>2</sub>

Application:

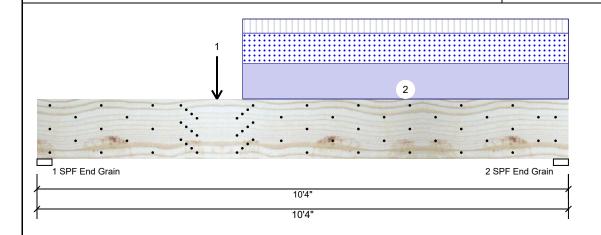
Design Method:

**Building Code:** 

Load Sharing:

Deck:

J0623-3287 Level: 1ST. FLOOR



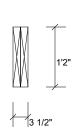
Floor

ASD

No

IBC 2012

Not Checked



D+0.75(L+S)

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### Member Information

Type: Plies: 2 Moisture Condition: Dry Deflection LL: 480 Deflection TL: 360 Importance: Normal - II

Temp <= 100°F Temperature:

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	880	2659	2309	0	0
2	Vertical	1016	2789	2394	0	0

### Analysis Results

•						
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	16457 ft-lb	3'6"	31049 ft-lb	0.530 (53%)	D+0.75(L+S)	L
Unbraced	16457 ft-lb	3'6"	16525 ft-lb	0.996 (100%)	D+0.75(L+S)	L
Shear	5984 lb	1'5 1/2"	12021 lb	0.498 (50%)	D+0.75(L+S)	L
LL Defl inch	0.099 (L/1197)	4'10 13/16"	0.247 (L/480)	0.401 (40%)	0.75(L+S)	L
TL Defl inch	0.208 (L/570)	4'10 3/4"	0.329 (L/360)	0.631 (63%)	D+0.75(L+S)	L

# **Design Notes**

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fasten all plies using 5 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
- 6 Top must be laterally braced at a maximum of 6'1 5/8" o.c.

Reactions U	NPATTERNED	lb (Uplift)
-------------	------------	-------------

Vert

52%

Bearings	s						
Bearing	Length	Dir.	Сар.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End	3.500"	Vert	49%	2659 / 2392	5052	L	D+0.75(L+S)

2789 / 2557

5346 L

to exceed 6".

5 Girders are designed to be supported on the bottom edge only.

7 Bottom must be laterally braced at end bearings. 8 Lateral slenderness ratio based on single ply width Load Type Location Trib Width Side Dead 0.9 Live 1 Snow 1.15 Wind 1.6

ID Const. 1.25 Comments Point 3-6-0 Near Face 2733 lb 851 lb 2449 lb 0 lb 0 lb A02A 1 2 Part. Uniform 4-0-0 to 10-4-0 Near Face 411 PLF 165 PLF 356 PLF 0 PLF 0 PLF A01A 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
- 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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

Grain

End Grain

2 - SPF 3.500"

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**Manufacturer Info** 





Client:

Project: Address: Signature Home Builders

Date: 6/22/2023

Hampton Horrocks Job Name: Lot 99 South Creek Page 11 of 13

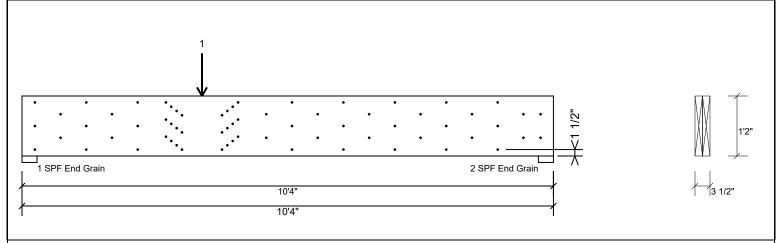
Project #: J0623-3287 2-Ply - PASSED

Input by:

**Kerto-S LVL** BM<sub>2</sub>

1.750" X 14.000"

Level: 1ST. FLOOR



### Multi-Ply Analysis

Fasten all plies using 5 rows of 10d Box nails (.128x3") at 12" o.c.. except for regions covered by concentrated load fastening. Maximum end distance not to exceed 6".

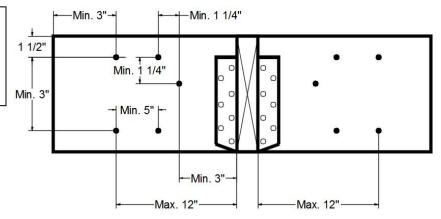
Capacity	85.2 %	
Load	400.9 PLF	
Yield Limit per Foot	470.6 PLF	
Yield Limit per Fastener	94.1 lb.	
Yield Mode	IV	
Edge Distance	1 1/2"	
Min. End Distance	3"	
Load Combination	D+0.75(L+S)	
Duration Factor	1.15	

### Concentrated Load

Fasten at concentrated side load at 3-6-0 with a minimum of (24) – 12d Common nails (.148x3.25") in the pattern shown.

are pattern shown.		
Capacity	88.8 %	
Load	2604.0lb.	
Total Yield Limit	2933.3 lb.	
Cg	0.9998	
Yield Limit per Fastener	122.3 lb.	
Yield Mode	IV	
Load Combination	D+0.75(L+S)	
Duration Factor	1.15	

### Min/Max fastener distances for Concentrated Side Loads



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

This design is valid until 11/3/2024

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Manufacturer Info







Project: Address:

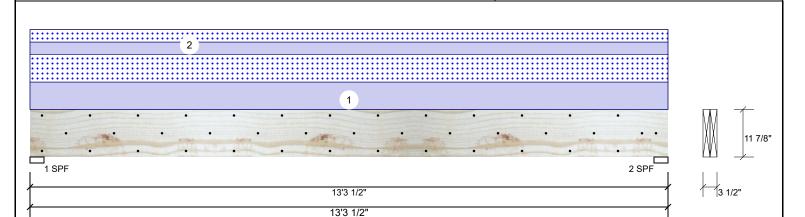
6/22/2023 Date:

Input by: Hampton Horrocks Lot 99 South Creek Project #: J0623-3287

evel: 2ND. FLOOR

Page 12 of 13

1.750" X 11.875" 2-Ply - PASSED Kerto-S LVL BM4



### Member Information Reactions UNPATTERNED Ib (Uplift) Wind Type: Application: Floor Brg Direction Live Dead Snow Const Plies: 2 Design Method: ASD 0 2593 2532 0 Vertical 0 1 Moisture Condition: Dry **Building Code:** IBC 2012 2 Vertical 0 2593 2532 0 0 Deflection LL: 360 Load Sharing: No Deflection TL: 240 Deck: Not Checked Importance: Normal - II Temp <= 100°F Temperature: Bearings Bearing Length Dir. Cap. React D/L lb Total Ld. Case Ld. Comb. D+S 1 - SPF 3.500" Vert 2593 / 2532 5126 L 2 - SPF 3.500" Vert 98% 2593 / 2532 5126 L D+S

### Analysis Results

•						
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	15877 ft-lb	6'7 3/4"	22897 ft-lb	0.693 (69%)	D+S	L
Unbraced	15877 ft-lb	6'7 3/4"	15911 ft-lb	0.998 (100%)	D+S	L
Shear	4901 lb	12' 1/8"	10197 lb	0.481 (48%)	D+S	L
LL Defl inch	0.260 (L/593)	6'7 3/4"	0.428 (L/360)	0.607 (61%)	S	L
TL Defl inch	0.526 (L/293)	6'7 3/4"	0.642 (L/240)	0.820 (82%)	D+S	L

### **Design Notes**

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top must be laterally braced at a maximum of 5'1 3/8" o.c.
- 6 Bottom must be laterally braced at end bearings.
- 7 Lateral slenderness ratio based on single bly width

1 Zatorai cicilacinicoc ratio zacoa ciri cinglo piy matin											
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	261 PLF	0 PLF	261 PLF	0 PLF	0 PLF	C02	
2	Tie-In	0-0-0 to 13-3-8	6-0-0	Near Face	20 PSF	0 PSF	20 PSF	0 PSF	0 PSF	ROOF FRAMING	
	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
- 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
- 6. 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

**Manufacturer Info** 

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



This design is valid until 11/3/2024





Project: Address: 6/22/2023

Input by: Hampton Horrocks Job Name: Lot 99 South Creek Project #: J0623-3287

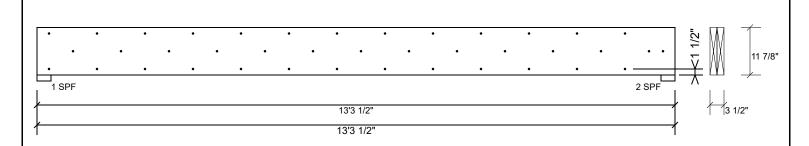
**Kerto-S LVL** BM4

1.750" X 11.875"

2-Ply - PASSED

evel: 2ND. FLOOR

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## 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".

1 3		•	,
Capacity	92.4 %		
Load	261.0 PLF		
Yield Limit per Foot	282.4 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

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

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



This design is valid until 11/3/2024 CSD DESIGN