

Client:

Project: Address:

Signature Homes

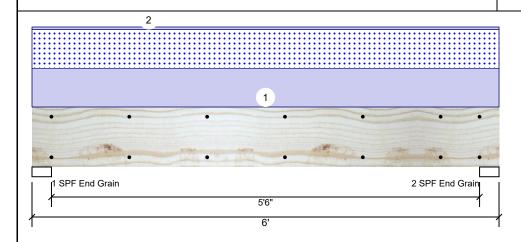
Lot 21 Jones Creek

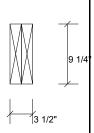
Date: 7/14/2023

Input by: Anthony Williams Job Name: Sinclair Plan Project #: J0723-3615

### **Kerto-S LVL** 1.750" X 9.250" HDR-1 & 2 2-Ply - PASSED

Level: Level





Page 1 of 6

### Member Information

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

Application: Design Method: ASD **Building Code: IBC/IRC 2015** 

Load Sharing: No Deck: Not Checked Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	1447	1335	0	0
2	Vertical	0	1447	1335	0	0

## Analysis Results

Temperature:

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3667 ft-lb	3'	14423 ft-lb	0.254 (25%)	D+S	L
Unbraced	3667 ft-lb	3'	10944 ft-lb	0.335 (34%)	D+S	L
Shear	1841 lb	1' 1/4"	7943 lb	0.232 (23%)	D+S	L
LL Defl inch	0.028 (L/2413)	3'	0.141 (L/480)	0.199 (20%)	S	L
TL Defl inch	0.058 (L/1158)	3'	0.188 (L/360)	0.311 (31%)	D+S	L

# **Bearings**

Bearing Length Dir. Cap. React D/L lb Total Ld. Case Ld. Comb. 1-SPF 3.000" 1447 / 1335 D+S Vert 2782 L End Grain 2 - SPF 3.000" 1447 / 1335 2782 L D+S Vert 32% End Grain

# **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.

Temp <= 100°F

- 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.

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	445 PLF	0 PLF	445 PLF	0 PLF	0 PLF	B2 TRUSS
2	Uniform			Тор	30 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
	Self Weight				7 PLF					

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- 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

**Manufacturer Info** Metsä Wood

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

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





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HDR-1 & 2

Client:

Project: Address: Signature Homes

Lot 21 Jones Creek

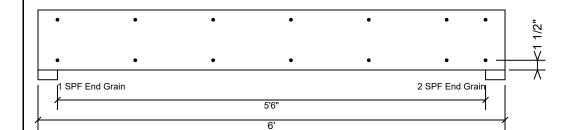
Date: 7/14/2023

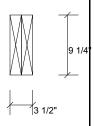
Input by: Anthony Williams Job Name: Sinclair Plan

J0723-3615

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

Level: Level





Page 2 of 6

# 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

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- 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 11/3/2024 CSD DESIGN



Client: Signature Homes

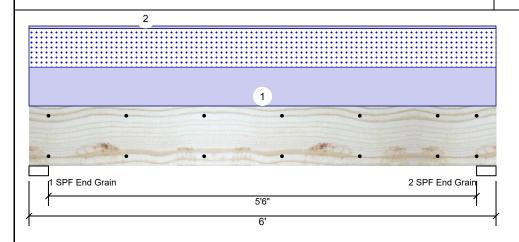
Project:

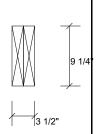
Address: Lot 21 Jones Creek Date: 7/14/2023

Input by: Anthony Williams Job Name: Sinclair Plan Project #: J0723-3615

### 2-Ply - PASSED HDR-3 **Kerto-S LVL** 1.750" X 9.250"

Level: Level





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### Member Information

Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	360
Importance:	Normal - II
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	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	1594	1482	0	0
2	Vertical	0	1594	1482	0	0

# Bearings

Grain

Bearing	Length	Dir.	Cap. F	React D/L lb	Total	Ld. Case	Ld. Com
1 - SPF End Grain	3.000"	Vert	35%	1594 / 1482	3076	L	D+S
2 - SPF End	3.000"	Vert	35%	1594 / 1482	3076	L	D+S

## **Analysis Results**

•						
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4055 ft-lb	3'	14423 ft-lb	0.281 (28%)	D+S	L
Unbraced	4055 ft-lb	3'	10944 ft-lb	0.370 (37%)	D+S	L
Shear	2035 lb	4'11 3/4"	7943 lb	0.256 (26%)	D+S	L
LL Defl inch	0.031 (L/2174)	3'	0.141 (L/480)	0.221 (22%)	S	L
TL Defl inch	0.064 (L/1047)	3'	0.188 (L/360)	0.344 (34%)	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 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	494 PLF	0 PLF	494 PLF	0 PLF	0 PLF	A2 TRUSS
2	Uniform			Тор	30 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
	Self Weight				7 PLF					

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- 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

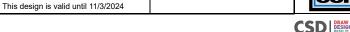
6. For flat roofs provide proper drainage to prevent ponding

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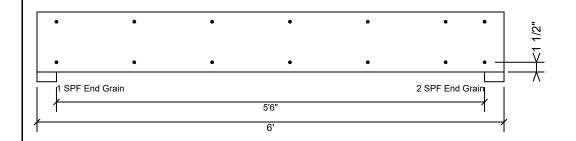
Lot 21 Jones Creek

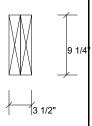
Date: 7/14/2023

Input by: Anthony Williams Job Name: Sinclair Plan Project #: J0723-3615

1.750" X 9.250" **Kerto-S LVL** 2-Ply - PASSED HDR-3

Level: Level





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# 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".

rasterrain pries asing E ro	vis or roa box mans (. 120x5 ) at
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

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- 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

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  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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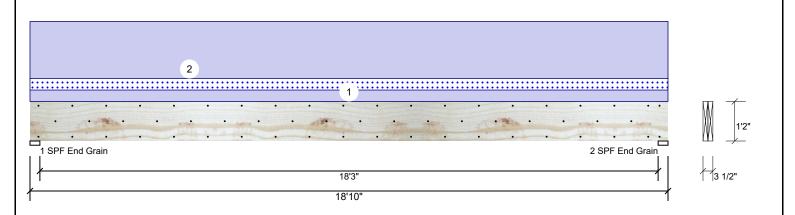
Lot 21 Jones Creek

7/14/2023

Anthony Williams Input by: Sinclair Plan Job Name: Project #: J0723-3615

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

Level: Level



### Member Information Reactions UNPATTERNED lb (Uplift) Type: Application: Floor Brg Direction Live Dead Plies: 2 Design Method: ASD 0 2363 Vertical 1 Moisture Condition: Dry **Building Code: IBC/IRC 2015** 2 Vertical 0 2363 Deflection LL: 480 Load Sharing: No Deflection TL: 360 Deck: Not Checked Importance: Normal - II Temp <= 100°F Temperature: Bearings

0.999

(100%)

0.214 (21%) D

							Bearing	Length	Dir.	Cap. F	React D/L lb	Total	Ld. Case	Ld. Comb.
							1 - SPF End	3.500"	Vert	27%	2363 / 377	2739	L	D+S
Analysis R	esults		•				Grain							
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case	2 - SPF End	3.500"	Vert	27%	2363 / 377	2739	L	D+S
Moment	10589 ft-lb	9'5" 2	24299 ft-lb	0.436 (44%	) D	Uniform	Grain							

L

ı

Uniform

# Design Notes

Unbraced

Shear

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.

9'5" 12288 ft-lb

9'5 1/16" 0.459 (L/480) 0.148 (15%) S

9'5 1/16" 0.612 (L/360) 0.808 (81%) D+S

17'4 1/2" 9408 lb

- 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.

12277 ft-lb

2009 lb

LL Defl inch 0.068 (L/3239)

TL Defl inch 0.495 (L/445)

- 6 Top must be laterally braced at a maximum of 8'6 1/16" o.c.
- 7 Bottom must be laterally braced at end bearings.
- 8 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	40 PLF	0 PLF	40 PLF	0 PLF	0 PLF	R + F	
2	Uniform			Тор	200 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL	
	Self Weight				11 PI F						

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- approvals

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Wind

0

0

Const

0

0

Snow

377

377





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Project:

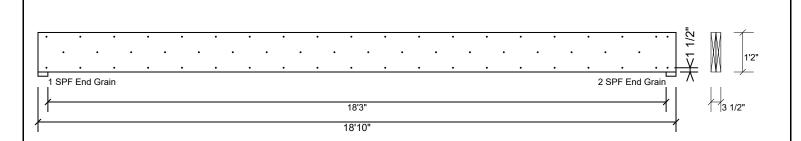
Lot 21 Jones Creek

7/14/2023

Input by: Anthony Williams Job Name: Sinclair Plan Project #: J0723-3615

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

Level: Level



# 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".

, ,		`	,
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

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# Handling & Installation

- Handling & Installation

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