

Project: Address:

Lot 15 Jones Creek

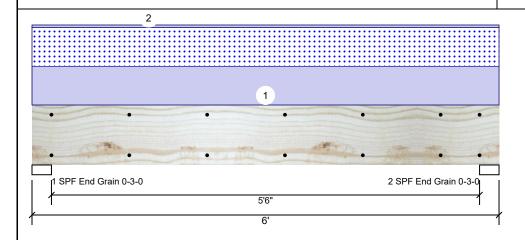
Signature Homes

Date: 5/21/2024

Input by: Anthony Williams Job Name: Sinclair Plan Project #: J0524-3016

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

Level: Level



Application:

Design Method:

**Building Code:** 

Load Sharing:

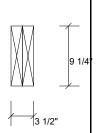
Deck:

ASD

No

**IBC/IRC 2015** 

Not Checked



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### Member Information

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

Temperature: Temp <= 100°F

## 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

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**

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

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 6/28/2026

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

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Project: Address: Signature Homes

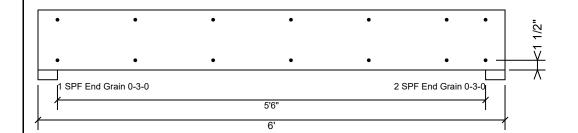
Lot 15 Jones Creek

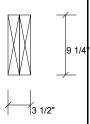
Date: 5/21/2024

Input by: Anthony Williams Job Name: Sinclair Plan Project #: J0524-3016

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

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".

	, , ,
Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	163.7 PLF
Yield Limit per Fastener	81.9 lb.
CM	1
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

This design is valid until 6/28/2026

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Manufacturer Info



Project: Address:

Signature Homes

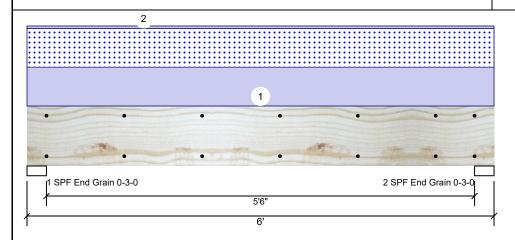
Lot 15 Jones Creek

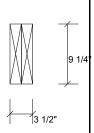
Date: 5/21/2024

Input by: Anthony Williams Job Name: Sinclair Plan Project #: J0524-3016

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

Level: Level





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### Member Information

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

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	1594	1482	0	0
2	Vertical	0	1594	1482	0	0

# **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

# **Bearings**

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

  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 6/28/2026

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

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Project: Address: Signature Homes

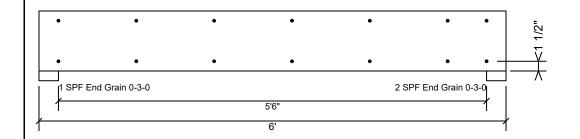
Lot 15 Jones Creek

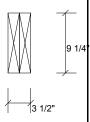
Date: 5/21/2024

Input by: Anthony Williams Job Name: Sinclair Plan Project #: J0524-3016

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

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".

	, , ,	
Capacity	0.0 %	
Load	0.0 PLF	
Yield Limit per Foot	163.7 PLF	
Yield Limit per Fastener	81.9 lb.	
См	1	
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

This design is valid until 6/28/2026

Manufacturer Info



Signature Homes

Project:

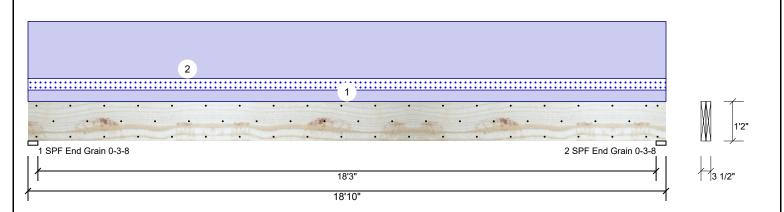
Address: Lot 15 Jones Creek 5/21/2024

Input by: Anthony Williams Job Name: Sinclair Plan Project #: J0524-3016

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

Level: Level



Member Inforn	nation			Rea	ctions UNF	PATTERN	NED Ib	(Uplift)			
Type:	Girder	Application:	Floor	Brg	Direction	Live		Dead	Snow	Wind	Const
Plies:	2	Design Method:	ASD	1	Vertical	0		2363	377	0	0
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015	2	Vertical	0		2363	377	0	0
Deflection LL:	480	Load Sharing:	No								
Deflection TL:	360	Deck:	Not Checked								
Importance:	Normal - II										
Temperature:	Temp <= 100°F										
				Bea	rings						
				Bea	aring Length	Dir.	Сар.	React D/L lb	Total	Ld. Case	Ld. Comb.
				1 - End	SPF 3.500"	Vert	27%	2363 / 377	2739	L	D+S
Analysis Result	s			Gra	ain						
Analysis Act		- 1	,	ase 2 -	SPF 3.500" d	Vert	27%	2363 / 377	2739	L	D+S

Grain

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	10589 ft-lb	9'5"	24299 ft-lb	0.436 (44%)	D	Uniform
Unbraced	12277 ft-lb	9'5"	12288 ft-lb	0.999 (100%)	D+S	L
Shear	2009 lb	17'4 1/2"	9408 lb	0.214 (21%)	D	Uniform
LL Defl inch	0.068 (L/3239)	9'5 1/16"	0.459 (L/480)	0.148 (15%)	S	L
TL Defl inch	0.495 (L/445)	9'5 1/16"	0.612 (L/360)	0.808 (81%)	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 loads must be supported equally by all plies.
- 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

o Eater a sicrition reason and based on single pry water.											
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 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

This design is valid until 6/28/2026

Manufacturer Info

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



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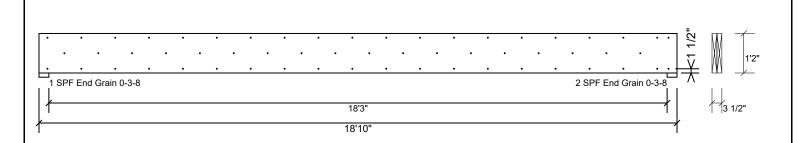
Project:

Address: Lot 15 Jones Creek 5/21/2024

Input by: Anthony Williams Job Name: Sinclair Plan Project #: J0524-3016

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**GDH Kerto-S LVL** 1.750" X 14.000" 2-Ply - PASSED 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.	
См	1	
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

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# 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

Manufacturer Info Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851 (800) 622-5850

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