

Client: Project: Address:

Signature Home Builders

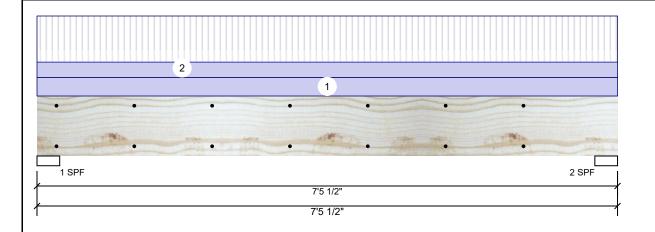
Lot 86 South Creek, Lillington NC

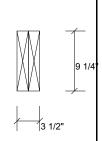
Date: 2/10/2023

Input by: Johnnie Baggett Job Name: 2066 Plan Project #: J0223-0636/0637

Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED FB2

Level: Level





Page 1 of 6

Member Information

Type:	Giraer
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) Snow Wind Brg Direction Live Dead Const 1052 0 Vertical 1395 n 0 1 2 Vertical 1395 1052 0 0 0

Bearings

Bearing I	Length	Dir.	Cap. R	teact D/L lb	Total	Ld. Case	Ld. Comb.
1-SPF	3.500"	Vert	47%	1052 / 1395	2447	L	D+L
2-SPF 3	3.500"	Vert	47%	1052 / 1395	2447	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4019 ft-lb	3'8 3/4"	12542 ft-lb	0.320 (32%)	D+L	L
Unbraced	4019 ft-lb	3'8 3/4"	9278 ft-lb	0.433 (43%)	D+L	L
Shear	1755 lb	1' 3/4"	6907 lb	0.254 (25%)	D+L	L
LL Defl inch	0.052 (L/1618)	3'8 13/16"	0.175 (L/480)	0.297 (30%)	L	L
TL Defl inch	0.091 (L/922)	3'8 13/16"	0.233 (L/360)	0.390 (39%)	D+L	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	150 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL ABOVE	
2	Uniform			Тор	125 PLF	374 PLF	0 PLF	0 PLF	0 PLF	F01	
	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

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





isDesign

FB₂

Client:

Signature Home Builders

Project:

Address: Lot 86 South Creek, Lillington NC Date: 2/10/2023 Input by:

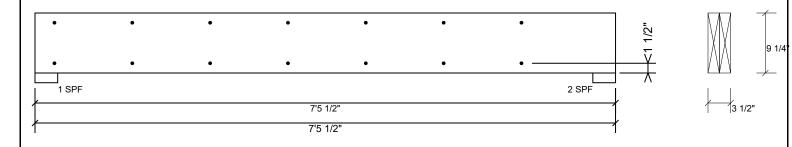
Johnnie Baggett Job Name: 2066 Plan

J0223-0636/0637

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

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".

rusteri dii piles dairig E rows or rod Box ridiis (: 120x3)					
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

For flat roofs provide proper drainage to prevent ponding

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Manufacturer Info

Metsä Wood

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



Client:

Signature Home Builders

Project:

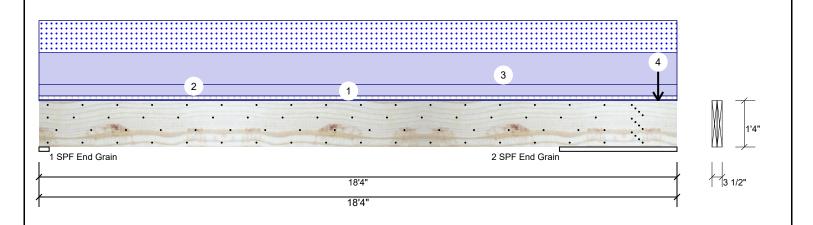
Address: Lot 86 South Creek, Lillington NC 2/10/2023

Input by: Johnnie Baggett Job Name: 2066 Plan Project #: J0223-0636/0637

Kerto-S LVL 1.750" X 16.000" FB1 2-Ply - PASSED

evel: Level

Denetions UNIDATTEDNED IL (Unlift)



Туре:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II	Ceiling:	Gypsum 1/2"
Temperature:	Temp <= 100°F		

Read	ctions UNP	ALIEKNED)			
Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	305	4037	2837	0	0
2	Vertical	428	6785	5100	0	0

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Bearings Bearing Length Dir. Cap. React D/L lb Total Ld. Case Ld. Comb. 1 - SPF 3.500" Vert 4037 / 2837 6874 L D+S End Grain 2 - SPF 40.500" 6785 / 5100 D+S Vert 11885 L End Grain

Analysis Results

Member Information

_							
	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
	Moment	24723 ft-lb	7'7 1/2"	39750 ft-lb	0.622 (62%)	D+S	L
	Unbraced	24723 ft-lb	7'7 1/2"	24857 ft-lb	0.995 (99%)	D+S	L
	Shear	6417 lb	1'7 1/2"	13739 lb	0.467 (47%)	D+S	L
	LL Defl inch	0.190 (L/937)	7'7 9/16"	0.370 (L/480)	0.512 (51%)	S	L
	TL Defl inch	0.460 (L/387)	7'7 9/16"	0.494 (L/360)	0.931 (93%)	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 4 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 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top loads must be supported equally by all plies.
- 7 Top must be laterally braced at a maximum of 4'6 7/8" o.c.

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	15 PLF	40 PLF	0 PLF	0 PLF	0 PLF	FL. LOADING	
2	Uniform			Тор	130 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL ABOVE	
3	Uniform			Far Face	372 PLF	0 PLF	372 PLF	0 PLF	0 PLF	A5	
4	Point	17-9-8		Near Face	1116 lb	0 lb	1116 lb	0 lb	0 lb	A4	
	Self Weight				12 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 11/3/2024

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Manufacturer Info

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Project: Address:

Lot 86 South Creek, Lillington NC

Date: 2/10/2023

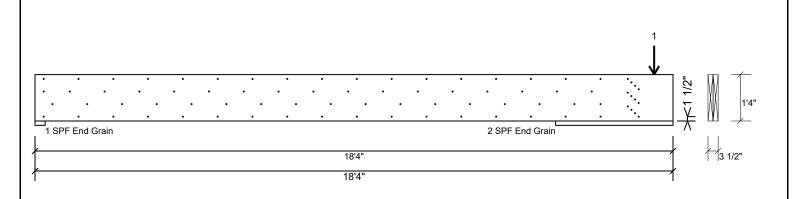
Input by: Johnnie Baggett Job Name: 2066 Plan Project #: J0223-0636/0637

Kerto-S LVL FB1

1.750" X 16.000"

2-Ply - PASSED

evel: Level



Multi-Ply Analysis

Fasten all plies using 4 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"

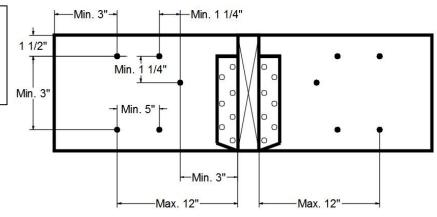
maximum cria distance rist to exceed a .					
Capacity	98.8 %				
Load	372.0 PLF				
Yield Limit per Foot	376.5 PLF				
Yield Limit per Fastener	94.1 lb.				
Yield Mode	IV				
Edge Distance	1 1/2"				
Min. End Distance	3"				
Load Combination	D+S				
Duration Factor	1.15				

Concentrated Load

Fasten at concentrated side load at 17-9-8 with a minimum of (12) – 10d Box nails (.128x3") in the pattern shown.

partern silvern		
Capacity	98.8 %	
Load	1116.0lb.	
Total Yield Limit	1129.3 lb.	
Cg	0.9998	
Yield Limit per Fastener	94.1 lb.	
Yield Mode	IV	
Load Combination	D+S	
Duration Factor	1.15	

Min/Max fastener distances for Concentrated Side Loads



Notes

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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

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Client:

Signature Home Builders

Project: Address:

Lot 86 South Creek, Lillington NC

2/10/2023

Input by: Johnnie Baggett Job Name: 2066 Plan Project #: J0223-0636/0637

Kerto-S LVL 1.750" X 16.000" **GDH** 3-Ply - PASSED Level: Level

Reactions UNPATTERNED Ib (Uplift)

Dir.

Vert

Vert

Cap. React D/L lb

4378 / 3046

4726 / 3294

Total Ld. Case

7424 L

8020 L

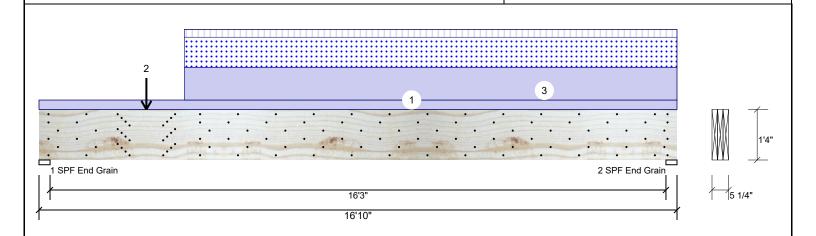
Bearing Length

1-SPF 3.500"

2 - SPF 3.500"

End Grain

End Grain



Wichinger inition					Reactions of the Francisco						
Type:	Girder	Application:	Floor	Brg	Direction	Live	Dead	Snow	Wind	Const	
Plies:	3	Design Method:	ASD	1	Vertical	493	4378	3046	0	0	
Moisture Condition	n: Dry	Building Code:	IBC/IRC 2015	2	Vertical	794	4726	3294	0	0	
Deflection LL:	360	Load Sharing:	Yes								
Deflection TL:	240	Deck:	Not Checked								
Importance:	Normal - II										
Temperature:	Temp <= 100°F										
				Bear	rings						

Analysis Results

Member Information

Analysis Actual Location Allowed Capacity Comb. Moment 32490 ft-lb 8'3 9/16" 62010 ft-lb 0.524 (52%) D+S Unbraced 32490 ft-lb 8'3 9/16" 32596 ft-lb 0.997 (100%) D+S Shear 8291 lb 1'7 1/2" 20608 lb 0.402 (40%) D+S LL Defl inch 0.201 (L/981) 8'4 3/8" 0.547 (L/360) 0.367 (37%) S TL Defl inch 0.485 (L/406) 8'4 1/2" 0.820 (L/240) 0.592 (59%) D+S	•						
Unbraced 32490 ft-lb 8'3 9/16" 32596 ft-lb 0.997 (100%) D+S (100%) Shear 8291 lb 1'7 1/2" 20608 lb 0.402 (40%) D+S (100%) LL Defl inch 0.201 (L/981) 8'4 3/8" 0.547 (L/360) 0.367 (37%) S	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
(100%) Shear 8291 lb 1'7 1/2" 20608 lb 0.402 (40%) D+S LL Defl inch 0.201 (L/981) 8'4 3/8" 0.547 (L/360) 0.367 (37%) S	Moment	32490 ft-lb	8'3 9/16"	62010 ft-lb	0.524 (52%)	D+S	L
LL Defl inch 0.201 (L/981) 8'4 3/8" 0.547 (L/360) 0.367 (37%) S	Unbraced	32490 ft-lb	8'3 9/16"	32596 ft-lb		D+S	L
	Shear	8291 lb	1'7 1/2"	20608 lb	0.402 (40%)	D+S	L
TL Defl inch 0.485 (L/406) 8'4 1/2" 0.820 (L/240) 0.592 (59%) D+S	LL Defl inch	0.201 (L/981)	8'4 3/8"	0.547 (L/360)	0.367 (37%)	S	L
	TL Defl inch	0.485 (L/406)	8'4 1/2"	0.820 (L/240)	0.592 (59%)	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 6 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 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top loads must be supported equally by all plies.
- 7 Top must be laterally braced at a maximum of 5'4 3/16" o.c.
- 8 Bottom must be laterally braced at end bearings.

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	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL	
2	Point	2-10-0		Far Face	1348 lb	0 lb	1348 lb	0 lb	0 lb	A3	
3	Part. Uniform	3-10-0 to 16-10-0		Far Face	417 PLF	99 PLF	384 PLF	0 PLF	0 PLF	A2	
	Self Weight				19 PLF						

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

Handling & Installation

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 lateral displacement and rotation
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Ld. Comb.

D+S

D+S

CSD DESIGN

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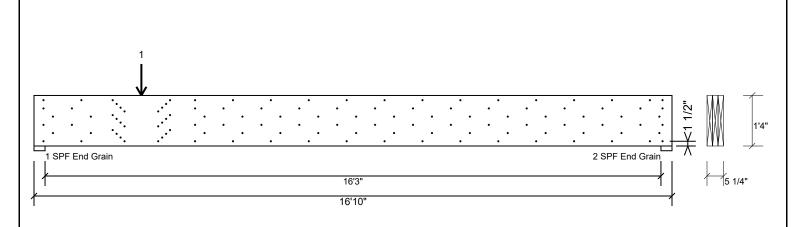
Input by: Johnnie Baggett Job Name: 2066 Plan Project #: J0223-0636/0637

Kerto-S LVL GDH

1.750" X 16.000"

3-Ply - PASSED

Level: Level



Multi-Ply Analysis

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

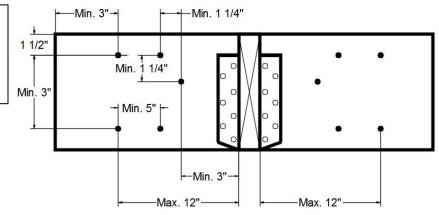
Capacity	94.6 %	
Load	534.0 PLF	
Yield Limit per Foot	564.8 PLF	
Yield Limit per Fastener	94.1 lb.	
Yield Mode	IV	
Edge Distance	1 1/2"	
Min. End Distance	3"	
Load Combination	D+S	
Duration Factor	1.15	

Concentrated Load

Fasten at concentrated side load at 2-10-0 with a minimum of (24) - 10d Box nails (.128x3") in the pattern shown. Repeat fasteners on both sides.

l I		
Capacity Load	79.6 %	
Load	1797.3lb.	
Total Yield Limit	2258.7 lb.	
Cg	0.9998	
Yield Limit per Fastener	94.1 lb.	
Yield Mode	IV	
Load Combination	D+S	
Duration Factor	1 15	

Min/Max fastener distances for Concentrated Side Loads



Notes

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