

Client:

Project:

Address: Lot 82 South Creek

Signature Homes

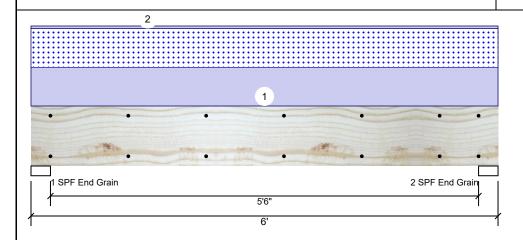
Date: 5/24/2023

Input by: Anthony Williams Job Name: Lot 82 South Creek

Project #: J0523-2661

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

Level: Level



Application:

Design Method:

Building Code:

Load Sharing:

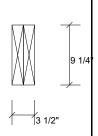
Deck:

ASD

No

IBC/IRC 2015

Not Checked



Page 1 of 8

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

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.
- 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
- 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

Client:

Project: Address: Signature Homes

Lot 82 South Creek

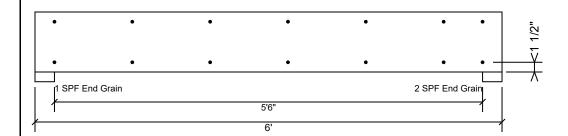
Date: 5/24/2023

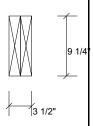
Input by: Anthony Williams Job Name: Lot 82 South Creek

Project #: J0523-2661

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

Level: Level





Page 2 of 8

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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 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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CSD DESIGN



Client:

Project:

Address:

Lot 82 South Creek

Signature Homes

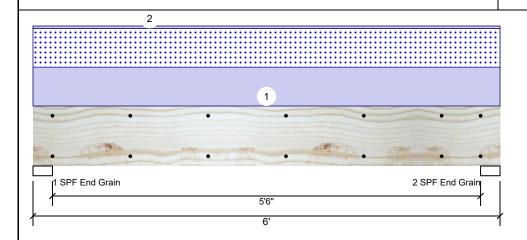
Date: 5/24/2023

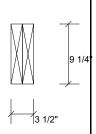
Input by: Anthony Williams Job Name: Lot 82 South Creek

Project #: J0523-2661

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

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

Analysis Results

Temperature:

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. D+S 1 - SPF 3.000" Vert 1594 / 1482 3076 L End Grain 1594 / 1482 3076 L D+S 2 - SPF 3.000" 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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 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
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 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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isDesign

Client:

Project: Address: Signature Homes

Lot 82 South Creek

Date: 5/24/2023 Input by:

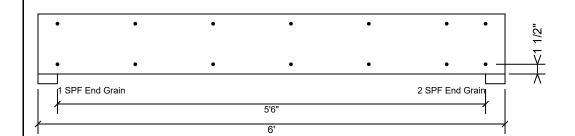
Anthony Williams Job Name: Lot 82 South Creek

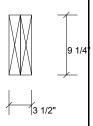
Project #: J0523-2661

1.750" X 9.250" **Kerto-S LVL** HDR-3

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".

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

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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

This design is valid until 11/3/2024

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Manufacturer Info

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







GDH

Client:

Signature Homes

Project:

Address: Lot 82 South Creek 5/24/2023

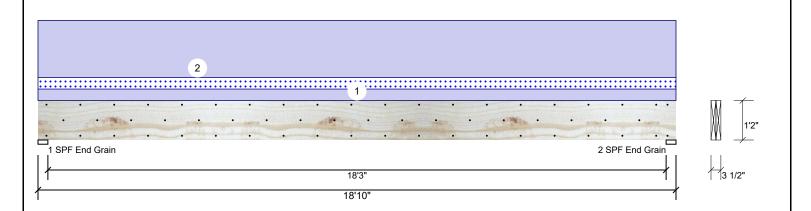
Project #:

Input by: Anthony Williams Job Name: Lot 82 South Creek

J0523-2661

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

Level: Level



Member Information Reactions UNPATTERNED lb (Uplift) Live Wind Type: Application: Brg Direction Dead Snow Const Plies: 2 Design Method: ASD 0 2363 377 0 Vertical 0 1 Moisture Condition: Dry **Building Code: IBC/IRC 2015** 2 Vertical 0 2363 377 0 Deflection LL: 480 Load Sharing: No Deflection TL: 360 Deck: Not Checked Importance: Normal - II Temperature: Temp <= 100°F **Bearings**

Bearing Length

1-SPF 3.500"

2 - SPF 3.500"

End Grain

End Grain Dir.

Vert

Vert

Cap. React D/L lb

27%

2363 / 377

2363 / 377

Total Ld. Case

2739 L

2739 L

Analysis Results

•						
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.

		F-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	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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- 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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0

Ld. Comb. D+S

D+S

This design is valid until 11/3/2024



GDH

Client:

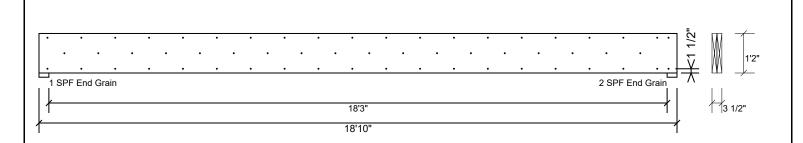
Signature Homes

Project:

Address: Lot 82 South Creek 5/24/2023

Input by: Anthony Williams Job Name: Lot 82 South Creek Project #: J0523-2661

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.		
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

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Manufacturer Info

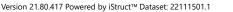
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This design is valid until 11/3/2024

For flat roofs provide proper drainage to prevent ponding







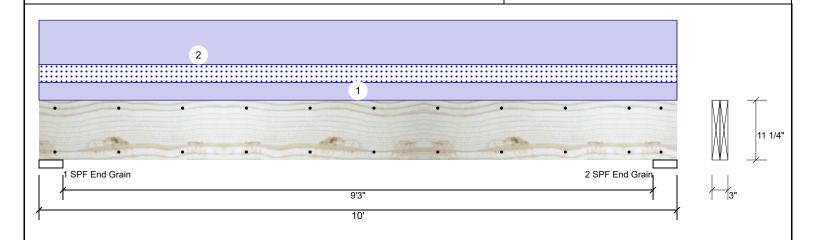
Client:

Project: Address: Signature Homes Lot 82 South Creek Date: 5/24/2023

Input by: Anthony Williams Job Name: Lot 82 South Creek Project #: J0523-2661

2.000" X 12.000" 2-Ply - PASSED GDH-9 **SP #2**

Level: Level



Member Information				Rea	Reactions UNPATTERNED lb (Uplift)							
Type:	Girder	Application:	Floor	Brg	Direction	Live	Dead	Snow	Wind	Const		
Plies:	2	Design Method:	ASD	1	Vertical	0	700	200	0	0		
Moisture Conditi	ion: Dry	Building Code:	IBC/IRC 2015	2	Vertical	0	700	200	0	0		
Deflection LL:	480	Load Sharing:	No									
Deflection TL:	360	Deck:	Not Checked									
Importance:	Normal - II											
Temperature:	Temp <= 100°F											

Grain

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1978 ft-lb	5'	4548 ft-lb	0.435 (43%)	D+S	L
Unbraced	1978 ft-lb	5'	3533 ft-lb	0.560 (56%)	D+S	L
Shear	664 lb	8'8 1/4"	4528 lb	0.147 (15%)	D+S	L
LL Defl inch	0.014 (L/8064)	5'	0.234 (L/480)	0.060 (6%)	S	L
TL Defl inch	0.063 (L/1792)	5'	0.312 (L/360)	0.201 (20%)	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.

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	700	200	0	0

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Bearings										
Bearing	Length	Dir.	Сар.	React D/L lb	Total	Ld. Case	Ld. Comb.			
1 - SPF End Grain	4.500"	Vert	12%	700 / 200	900	L	D+S			
2 - SPF	4.500"	Vert	12%	700 / 200	900	L	D+S			

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	ROOF
2	Uniform			Ton	100 PLF	0 PLF	0 PLF	0 PLF	∩ PLF	\Λ/ΔΙΙ

This design is valid until 11/3/2024

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SP #2

GDH-9

Client:

Signature Homes

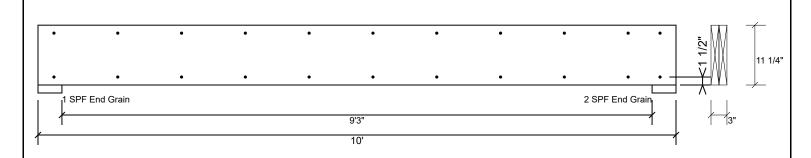
Project:

Address: Lot 82 South Creek Date: 5/24/2023

Input by: Anthony Williams Job Name: Lot 82 South Creek Project #: J0523-2661

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2.000" X 12.000" 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".

Capacity 0.0 PLF Load 202.6 PLF Yield Limit per Foot Yield Limit per Fastener 101.3 lb. Yield Mode IV Edge Distance 1 1/2" Min. End Distance 3" Load Combination Duration Factor 1.00

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CSD DESIGN