

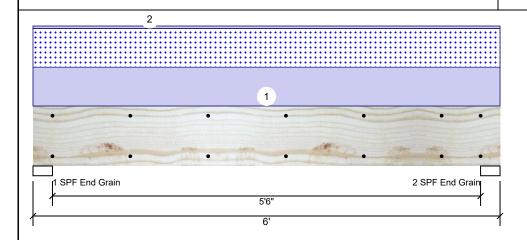
Project: Address: Date: 8/24/2023

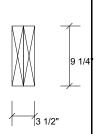
Input by: Anthony Williams Job Name: Lot 105 South Creek

Project #: J0823-4635

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

Level: Level





Ld. Comb.

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

Application: Floor Design Method: ASD **Building Code: IBC/IRC 2015** Load Sharing: No Deck: Not Checked

Reactions UNPATTERNED Ib (Uplift) Wind Brg Direction Live Dead Snow Const 0 1576 1464 0 Vertical 0 2 Vertical 0 1576 1464 0 0

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4007 ft-lb	3'	14423 ft-lb	0.278 (28%)	D+S	L
Unbraced	4007 ft-lb	3'	10944 ft-lb	0.366 (37%)	D+S	L
Shear	2011 lb	1' 1/4"	7943 lb	0.253 (25%)	D+S	L
LL Defl inch	0.031 (L/2200)	3'	0.141 (L/480)	0.218 (22%)	S	L
TL Defl inch	0.064 (L/1060)	3'	0.188 (L/360)	0.340 (34%)	D+S	L

Bearings

Dir.

Bearing Length Cap. React D/L lb Total Ld. Case D+S 1 - SPF 3.000" Vert 34% 1576 / 1464 3040 L End Grain 1576 / 1464 3040 L D+S 2 - SPF 3.000" Vert 34% 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	488 PLF	0 PLF	488 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

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 Homes

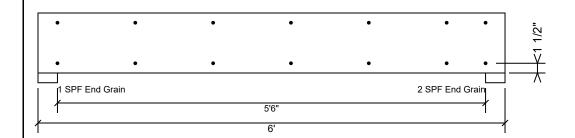
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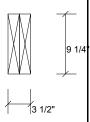
Input by: Anthony Williams Job Name: Lot 105 South Creek

Project #: J0823-4635

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

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".

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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

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







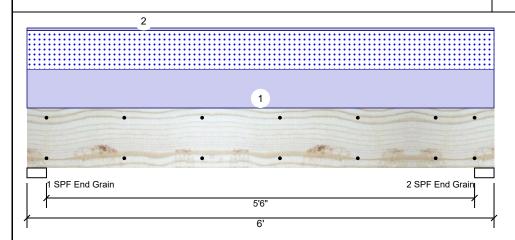
Project: Address: Date: 8/24/2023

Input by: Anthony Williams Job Name: Lot 105 South Creek

Project #: J0823-4635

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

Level: Level



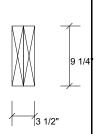
Application:

Design Method:

Building Code:

Load Sharing:

Deck:



Page 3 of 8

Member Information

Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	360
Importance:	Normal - I
_	_

Temp <= 100°F Temperature:

Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	1498	1386	0	0
2	Vertical	0	1498	1386	0	0

Rearing Length Dir

Floor

ASD

No

IBC/IRC 2015

Not Checked

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3802 ft-lb	3'	14423 ft-lb	0.264 (26%)	D+S	L
Unbraced	3802 ft-lb	3'	10944 ft-lb	0.347 (35%)	D+S	L
Shear	1908 lb	1' 1/4"	7943 lb	0.240 (24%)	D+S	L
LL Defl inch	0.029 (L/2324)	3'	0.141 (L/480)	0.207 (21%)	S	L
TL Defl inch	0.060 (L/1117)	3'	0.188 (L/360)	0.322 (32%)	D+S	L

Bearings

Bearing Lengt	h Dir.	Сар.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF 3.000' End Grain	Vert	33%	1498 / 1386	2884	L	D+S
2 - SPF 3.000' End Grain	Vert	33%	1498 / 1386	2884	L	D+S

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.
- $\ensuremath{^{\circ}}$ 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	462 PLF	0 PLF	462 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
 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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Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS



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

Manufacturer Info

Client: Signature Homes

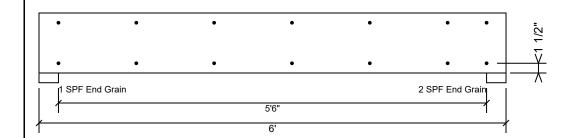
Project: Address: Date: 8/24/2023

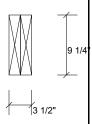
Input by: Anthony Williams Job Name: Lot 105 South Creek

Project #: J0823-4635

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

Level: Level





Page 4 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".

rasterrain pines asing 2 rows or roa box rians (: 12)						
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

This design is valid until 11/3/2024

Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851

Manufacturer Info

(800) 622-5850 www.metsawood.com/us Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS







Project: Address:

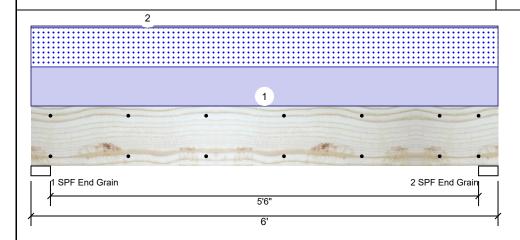
Date: 8/24/2023

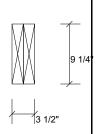
Input by: Anthony Williams Job Name: Lot 105 South Creek

Project #: J0823-4635

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

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

Load Sharing: No

Building Code:

Deck: Not Checked

IBC/IRC 2015

Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	2044	1932	0	0
2	Vertical	0	2044	1932	0	0

Bearings

Grain

Bearing Length Dir. Cap. React D/L lb Total Ld. Case Ld. Comb. 3976 L D+S 1 - SPF 3.000" Vert 2044 / 1932 End Grain 2044 / 1932 3976 L D+S 2 - SPF 3.000" Vert End

Analysis Results

Temperature:

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5241 ft-lb	3'	14423 ft-lb	0.363 (36%)	D+S	L
Unbraced	5241 ft-lb	3'	10944 ft-lb	0.479 (48%)	D+S	L
Shear	2628 lb	1' 1/4"	7943 lb	0.331 (33%)	D+S	L
LL Defl inch	0.040 (L/1667)	3'	0.141 (L/480)	0.288 (29%)	S	L
TL Defl inch	0.083 (L/810)	3'	0.188 (L/360)	0.444 (44%)	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	644 PLF	0 PLF	644 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

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Manufacturer Info

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

Client: Signature Homes

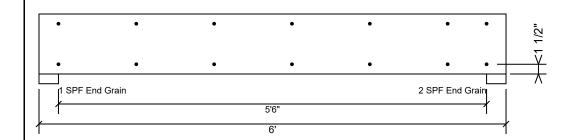
Project: Address: Date: 8/24/2023

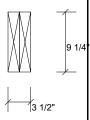
Input by: Anthony Williams Job Name: Lot 105 South Creek

Project #: J0823-4635

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

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

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



CSD DESIGN



Project: Address: 8/24/2023

Input by: Anthony Williams Job Name: Lot 105 South Creek

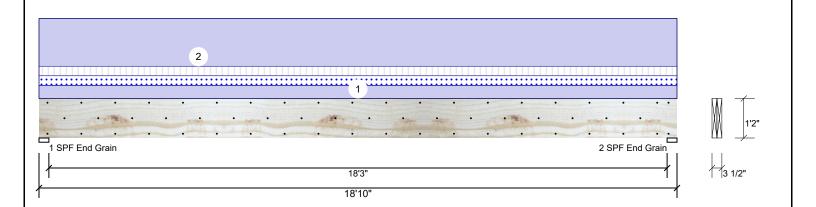
Project #: J0823-4635

Kerto-S LVL GDH-18

1.750" X 14.000"

2-Ply - PASSED Level: Level

Vertical



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

Reactions UNPATTERNED lb (Uplift)								
Brg	Direction	Live	Dead	Snow	Wind	Const		
1	Vertical	377	2504	377	0	0		

377

0

0

2504

377

Page 7 of 8

Bearings	s						
Bearing	Length	Dir.	Cap. F	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	30%	2504 / 565	3069	L	D+0.75(L+S)
2 - SPF End Grain	3.500"	Vert	30%	2504 / 565	3069	L	D+0.75(L+S)

Analysis Results

Member Information

Analysis Actual Location Allowed Capacity Comb. Case Moment 12910 ft-lb 9'5" 26999 ft-lb 0.478 (48%) D+L L Unbraced 13754 ft-lb 9'5" 13784 ft-lb 0.998 (100%) D+0.75(L+S) L Shear 2447 lb 1'5 1/2" 10453 lb 0.234 (23%) D+L L LL Defl inch 0.102 (L/2160) 9'5 1/16" 0.459 (L/480) 0.202 (22%) 0.75(L+S) L TL Defl inch 0.555 (L/398) 9'5 1/16" 0.612 (L/360) 0.905 (91%) D+0.75(L+S) L							
Unbraced 13754 ft-lb 9'5" 13784 ft-lb 0.998 (100%) D+0.75(L+S) L Shear 2447 lb 1'5 1/2" 10453 lb 0.234 (23%) D+L L LL Defl inch 0.102 (L/2160) 9'5 1/16" 0.459 (L/480) 0.222 (22%) 0.75(L+S) L	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Shear 2447 lb 1'5 1/2" 10453 lb 0.234 (23%) D+L L LL Defl inch 0.102 (L/2160) 9'5 1/16" 0.459 (L/480) 0.222 (22%) 0.75(L+S) L	Moment	12910 ft-lb	9'5"	26999 ft-lb	0.478 (48%)	D+L	L
LL Defl inch 0.102 (L/2160) 9'5 1/16" 0.459 (L/480) 0.222 (22%) 0.75(L+S) L	Unbraced	13754 ft-lb	9'5"	13784 ft-lb		D+0.75(L+S)	L
	Shear	2447 lb	1'5 1/2"	10453 lb	0.234 (23%)	D+L	L
TL Defl inch 0.555 (L/398) 9'5 1/16" 0.612 (L/360) 0.905 (91%) D+0.75(L+S) L	LL Defl inch	0.102 (L/2160)	9'5 1/16"	0.459 (L/480)	0.222 (22%)	0.75(L+S)	L
	TL Defl inch	0.555 (L/398)	9'5 1/16"	0.612 (L/360)	0.905 (91%)	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 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 7'5 9/16" o.c.
- 7 Bottom must be laterally braced at end bearings.

o Lateral sier	iderness ratio based or	i 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	55 PLF	40 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
- L. UV. 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





Client: Signature Homes

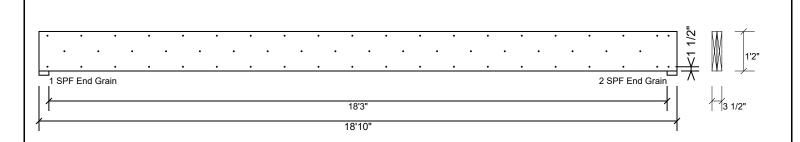
Project: Address: 8/24/2023

Input by: Anthony Williams Job Name: Lot 105 South Creek Project #: J0823-4635

Page 8 of 8

1.750" X 14.000" 2-Ply - PASSED **Kerto-S LVL GDH-18**

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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- 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