

Project: Address:

8/30/2023

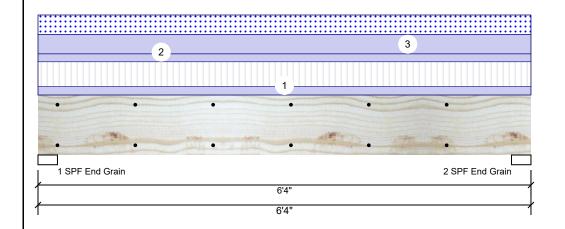
Date:

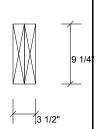
Input by: Hampton Horrocks Job Name: 245 Mamie Upchurch Rd

Project #: J0823-4774

1.750" X 9.250" Kerto-S LVL 2-Ply - PASSED BM₃

Level: 1ST. FLOOR





Page 1 of 13

Member Information

Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	240
Importance:	Normal - II
Temperature:	Temp <= 100°F

Application: Design Method: ASD **Building Code:** IBC 2012 Load Sharing: No Deck: Not Checked Reactions UNPATTERNED Ib (Uplift) Brg Snow Wind Direction Live Dead Const 880 0 Vertical 1131 1641 0 1 2 Vertical 1131 1641 880 0 0

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3884 ft-lb	3'2"	12542 ft-lb	0.310 (31%)	D+L	L
Unbraced	4413 ft-lb	3'2"	10614 ft-lb	0.416 (42%)	D+0.75(L+S)	L
Shear	1884 lb	5'3 3/4"	6907 lb	0.273 (27%)	D+L	L
LL Defl inch	0.037 (L/1944)	3'2"	0.149 (L/480)	0.247 (25%)	0.75(L+S)	L
TL Defl inch	0.077 (L/931)	3'2"	0.298 (L/240)	0.258 (26%)	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 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.

	Bearings	S						
I	Bearing	Length	Dir.	Сар.	React D/L lb	Total	Ld. Case	Ld. Comb.
	1 - SPF End Grain	3.000"	Vert	36%	1641 / 1508	3149	L	D+0.75(L+S)
1	2 - SPF End	3.000"	Vert	36%	1641 / 1508	3149	L	D+0.75(L+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	119 PLF	357 PLF	0 PLF	0 PLF	0 PLF	F02
2	Uniform			Тор	114 PLF	0 PLF	0 PLF	0 PLF	0 PLF	wall
3	Uniform			Тор	278 PLF	0 PLF	278 PLF	0 PLF	0 PLF	C01
	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

Grain

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

Manufacturer Info





Client: Signature Home Builders

Project: Address:

Date: 8/30/2023

Input by: Hampton Horrocks Job Name: 245 Mamie Upchurch Rd

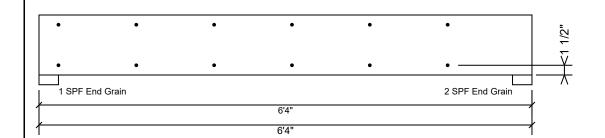
Project #: J0823-4774

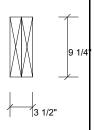
Kerto-S LVL BM₃

1.750" X 9.250"

2-Ply - PASSED

Level: 1ST. FLOOR





Page 2 of 13

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".

process and process across a contract the contract (contract) and						
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







Project: Address:

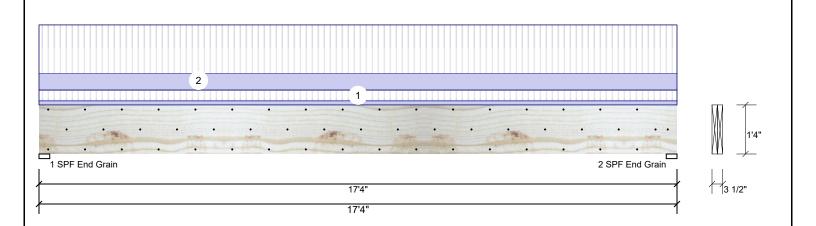
8/30/2023 Date:

Hampton Horrocks Input by: Job Name: 245 Mamie Upchurch Rd Page 3 of 13

Project #: J0823-4774

2-Ply - PASSED Kerto-S LVL 1.750" X 16.000" BM₁

Level: 1ST. FLOOR



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

Temp <= 100°F

Member Information

Application: Floor Design Method: ASD **Building Code:** IBC 2012 Load Sharing: No Deck: Not Checked

F	Reactions UNPATTERNED lb (Uplift)												
Е	Brg	Direction	Live	Dead	Snow	Wind	Const						
l	1	Vertical	3813	1408	0	0	0						
	2	Vertical	3813	1408	0	0	0						

Analysis Results Analysis Actual Location Allowed Comb. Case Capacity Moment 21497 ft-lb 8'8" 34565 ft-lb 0.622 (62%) D+L L Unbraced 21497 ft-lb 8'8" 21533 ft-lb 0.998 L (100%)4899 lb 1'7 1/2" 11947 lb 0.410 (41%) D+L Shear L LL Defl inch 0.370 (L/548) 8'8 1/16" 0.422 (L/480) 0.876 (88%) L ı TL Defl inch 0.507 (L/400) 8'8 1/16" 0.563 (L/360) 0.899 (90%) D+L

Bearings Bearing Length Dir. Cap. React D/L lb Total Ld. Case Ld. Comb. 1 - SPF 3.500" Vert 1408 / 3813 5221 I D+I End Grain 1408 / 3813 D+L 2 - SPF 3.500" Vert 51% 5221 L End Grain

Design Notes

Temperature:

- 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 5'3 3/8" o.c.
- 7 Bottom must be laterally braced at end bearings.
- 8 Lateral slenderness ratio based on single ply width

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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	30 PLF	80 PLF	0 PLF	0 PLF	0 PLF	Floor	
2	Uniform			Near Face	120 PLF	360 PLF	0 PLF	0 PLF	0 PLF	F02	
	Self Weight				12 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
- 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

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

www.metsawood.com/us

Client: Signature Home Builders

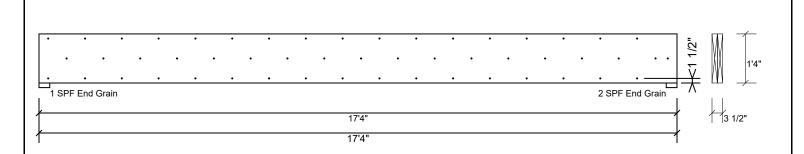
Project: Address: Date: 8/30/2023

Input by: Hampton Horrocks Job Name: 245 Mamie Upchurch Rd Page 4 of 13

Project #: J0823-4774

1.750" X 16.000" **Kerto-S LVL** 2-Ply - PASSED BM₁

Level: 1ST. FLOOR



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	97.7 %	
Load	240.0 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	D+L	
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

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 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

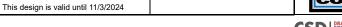
For flat roofs provide proper drainage to prevent ponding

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Manufacturer Info

Metsä Wood









Project: Address:

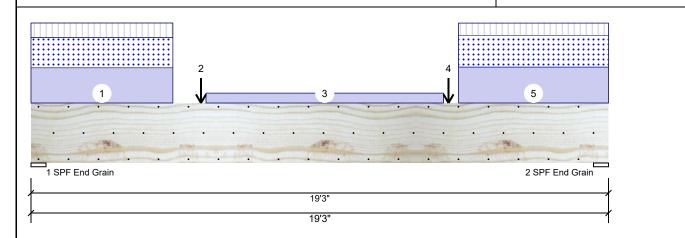
Date: 8/30/2023

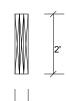
Input by: Hampton Horrocks Job Name: 245 Mamie Upchurch Rd

Project #: J0823-4774

Kerto-S LVL 1.750" X 24.000" 3-Ply - PASSED GDH1

Level: 1ST. FLOOR





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Member Information

Type: Plies: 3 Moisture Condition: Dry Deflection LL: 480 Deflection TL: 360 Importance:

Normal - II Temperature: Temp <= 100°F

Application: Floor Design Method: ASD **Building Code:** IBC 2012

Load Sharing: Yes

Deck: Not Checked

Reactions UNPATTERNED Ib (Uplift)

Vert

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1475	5906	4708	0	0
2	Vertical	1419	6117	4922	0	0

Bearings

Bearing Length Dir. Cap. React D/L lb Total Ld. Case Ld. Comb. 1-SPF 6.000" 5906 / 4708 D+S Vert 10614 L End Grain 6117 / 4922 11039 L D+S

2 - SPF 6.000" End Grain

Analysis Results

-						
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	44505 ft-lb	9'2 1/2"	131295 ft-lb	0.339 (34%)	D+S	L
Unbraced	44505 ft-lb	9'2 1/2"	44534 ft-lb	0.999 (100%)	D+S	L
Shear	9105 lb	16'9"	30912 lb	0.295 (29%)	D+S	L
LL Defl inch	0.123 (L/1793)	9'7 9/16"	0.460 (L/480)	0.268 (27%)	S	L
TL Defl inch	0.282 (L/782)	9'7 9/16"	0.613 (L/360)	0.460 (46%)	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 6' 7/16" o.c.
- 7 Bottom must be laterally braced at end bearings.
- 8 Lateral slenderness ratio based on single ply width.

• =====================================		9)									
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments	
1	Part. Uniform	0-0-0 to 4-8-12		Тор	399 PLF	164 PLF	344 PLF	0 PLF	0 PLF	A01	
2	Point	5-8-0		Тор	3352 lb	719 lb	3112 lb	0 lb	0 lb	A02	
	Bearing Length	0-3-8									
3	Part. Uniform	5-10-0 to 13-9-0		Тор	112 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall	

Continued on page 2...

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
- 6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

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Manufacturer Info





Client: Signature Home Builders

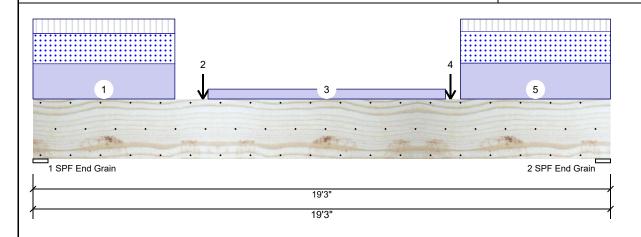
Project: Address: Date: 8/30/2023

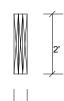
Input by: Hampton Horrocks Job Name: 245 Mamie Upchurch Rd

Project #: J0823-4774

1.750" X 24.000" 3-Ply - PASSED **Kerto-S LVL** GDH₁

Level: 1ST. FLOOR





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Continued	from	page	1
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ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
4	Point	13-11-0		Тор	3323 lb	710 lb	3086 lb	0 lb	0 lb	A02A
	Bearing Length	0-3-8								
5	Part. Uniform	14-3-0 to 19-3-0		Тор	407 PLF	138 PLF	361 PLF	0 PLF	0 PLF	A01A
	Self Weight				28 PLF					

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. IVI 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

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 BUILD

Client: Signature Home Builders

Project: Address:

Date:

Input by:

8/30/2023

Hampton Horrocks

Job Name: 245 Mamie Upchurch Rd J0823-4774

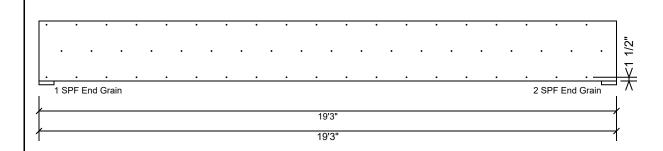
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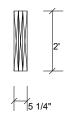
Kerto-S LVL GDH₁

1.750" X 24.000"

3-Ply - PASSED

Level: 1ST. FLOOR





Page 7 of 13

Multi-Ply Analysis

Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c.. Nail from both sides. Maximum end distance not to exceed

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

Informing & Installation

I. VIL 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

Design assumes top edge is laterally restrained is 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

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

Manufacturer Info

Metsä Wood

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



CSD DESIGN



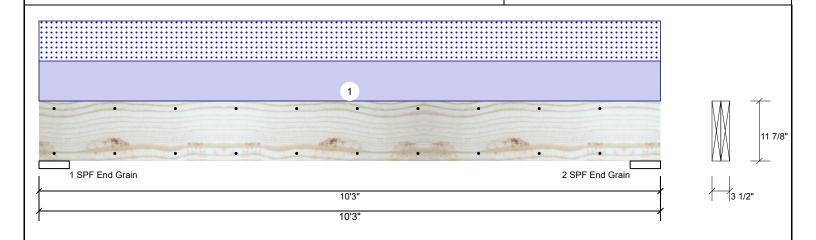
Project: Address: Date: 8/30/2023

Input by: Hampton Horrocks Job Name: 245 Mamie Upchurch Rd Page 8 of 13

Project #: J0823-4774

1.750" X 11.875" **Kerto-S LVL** 2-Ply - PASSED GDH2

Level: 1ST. FLOOR



Member Info	ember Information					Reactions UNPATTERNED lb (Uplift)							
Type:	Girder	Application:	Floor	Brg	Direction	Live	Dead	Snow	Wind	Const			
Plies:	2	Design Method:	ASD	1	Vertical	0	1226	1179	0	0			
Moisture Conditi	on: Dry	Building Code:	IBC 2012	2	Vertical	0	1226	1179	0	0			
Deflection LL:	360	Load Sharing:	No										
Deflection TL:	240	Deck:	Not Checked										
Importance:	Normal - II												
Temperature:	Temp <= 100°F												

Grain

Analysis Results

7	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
1	Moment	5155 ft-lb	5'1 1/2"	22897 ft-lb	0.225 (23%)	D+S	L
ı	Jnbraced	5155 ft-lb	5'1 1/2"	9857 ft-lb	0.523 (52%)	D+S	L
5	Shear	1715 lb	1'5 7/8"	10197 lb	0.168 (17%)	D+S	L
ı	L Defl inch	0.048 (L/2347)	5'1 1/2"	0.312 (L/360)	0.153 (15%)	S	L
-	TL Defl inch	0.098 (L/1151)	5'1 1/2"	0.469 (L/240)	0.209 (21%)	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.

Bearings	s						
Bearing	Length	Dir.	Сар.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	6.000"	Vert	14%	1226 / 1179	2405	L	D+S
2 - SPF End	6.000"	Vert	14%	1226 / 1179	2405	L	D+S

ID Location Trib Width Load Type Side Dead 0.9 Live 1 Snow 1.15 Wind 1.6 Const. 1.25 Comments 1 Uniform 230 PLF 0 PLF 230 PLF 0 PLF 0 PLF G01 Top

Self Weight 9 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





Client: Signature Home Builders

Project: Address:

8/30/2023

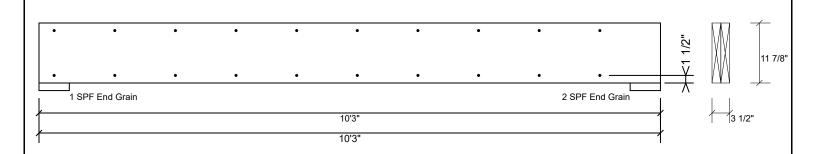
Date:

Input by: Hampton Horrocks Job Name: 245 Mamie Upchurch Rd Page 9 of 13

Project #: J0823-4774

1.750" X 11.875" **Kerto-S LVL** 2-Ply - PASSED GDH₂

Level: 1ST. FLOOR



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

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

Manufacturer Info







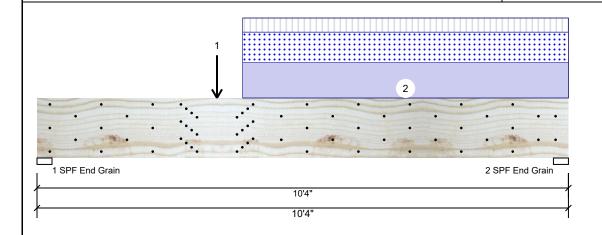
Project: Address: Date: 8/30/2023

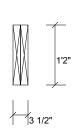
Input by: Hampton Horrocks Job Name: 245 Mamie Upchurch Rd

Project #: J0823-4774

Kerto-S LVL 2-Ply - PASSED 1.750" X 14.000" BM₂

Level: 1ST. FLOOR





Page 10 of 13

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 2012

Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	880	2659	2309	0	0
2	Vertical	1016	2789	2394	0	0

Bearings

Bearing Length Dir. Cap. React D/L lb Total Ld. Case Ld. Comb. D+0.75(L+S) 1 - SPF 3.500" Vert 2659 / 2392 5052 L End Grain

2789 / 2557 D+0.75(L+S) 2 - SPF 3.500" Vert 52% 5346 L End Grain

Analysis Results

Temperature:

•						
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	16457 ft-lb	3'6"	31049 ft-lb	0.530 (53%)	D+0.75(L+S)	L
Unbraced	16457 ft-lb	3'6"	16525 ft-lb	0.996 (100%)	D+0.75(L+S)	L
Shear	5984 lb	1'5 1/2"	12021 lb	0.498 (50%)	D+0.75(L+S)	L
LL Defl inch	0.099 (L/1197)	4'10 13/16"	0.247 (L/480)	0.401 (40%)	0.75(L+S)	L
TL Defl inch	0.208 (L/570)	4'10 3/4"	0.329 (L/360)	0.631 (63%)	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 5 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
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top must be laterally braced at a maximum of 6'1 5/8" 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	Point	3-6-0		Near Face	2733 lb	851 lb	2449 lb	0 lb	0 lb	A02A	
2	Part. Uniform	4-0-0 to 10-4-0		Near Face	411 PLF	165 PLF	356 PLF	0 PLF	0 PLF	A01A	
	Self Weight				11 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 11/3/2024

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Manufacturer Info





Client:

Project: Address: Signature Home Builders

Date: 8/30/2023 Input by:

Hampton Horrocks Job Name: 245 Mamie Upchurch Rd Page 11 of 13

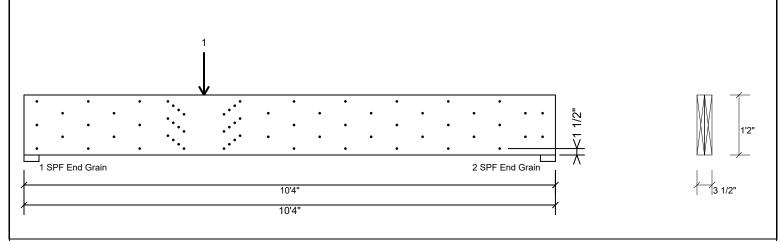
Project #: J0823-4774

Kerto-S LVL BM₂

1.750" X 14.000"

2-Ply - PASSED

Level: 1ST. FLOOR



Multi-Ply Analysis

Fasten all plies using 5 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".

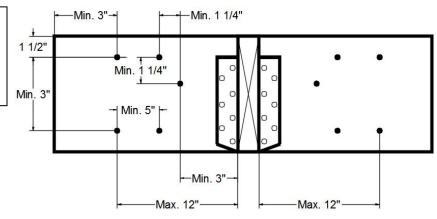
Capacity	85.2 %	
Load	400.9 PLF	
Yield Limit per Foot	470.6 PLF	
Yield Limit per Fastener	94.1 lb.	
Yield Mode	IV	
Edge Distance	1 1/2"	
Min. End Distance	3"	
Load Combination	D+0.75(L+S)	
Duration Factor	1.15	

Concentrated Load

Fasten at concentrated side load at 3-6-0 with a minimum of (24) – 12d Common nails (.148x3.25") in the pattern shown

the pattern shown.		
Capacity	88.8 %	
Load	2604.0lb.	
Total Yield Limit	2933.3 lb.	
Cg	0.9998	
Yield Limit per Fastener	122.3 lb.	
Yield Mode	IV	
Load Combination	D+0.75(L+S)	
Duration Factor	1.15	

Min/Max fastener distances for Concentrated Side Loads



Notes

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
 - - This design is valid until 11/3/2024

6. For flat roofs provide proper drainage to prevent ponding

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

Manufacturer Info







Project: Address:

8/30/2023

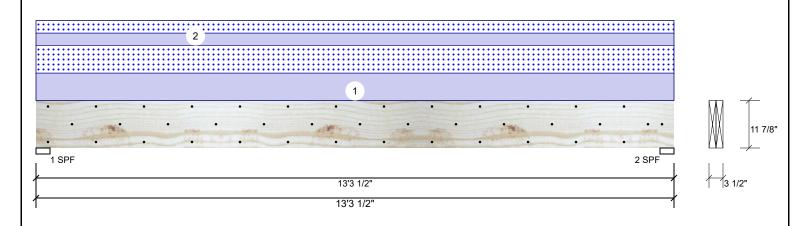
Input by: Hampton Horrocks Job Name: 245 Mamie Upchurch Rd Page 12 of 13

Project #: J0823-4774

1.750" X 11.875" **Kerto-S LVL** BM4

2-Ply - PASSED

evel: 2ND. FLOOR



Member Info	rmation			Rea	ctions UNP	ATTERN	NED Ib	(Uplift)			
Type:	Girder	Application:	Floor	Brg	Direction	Live		Dead :	Snow	Wind	Const
Plies:	2	Design Method:	ASD	1	Vertical	0)	2593	2532	0	0
Moisture Condition	on: Dry	Building Code:	IBC 2012	2	Vertical	0)	2593	2532	0	0
Deflection LL:	360	Load Sharing:	No								
Deflection TL:	240	Deck:	Not Checked								
Importance:	Normal - II										
Temperature:	Temp <= 100°F										
				Bea	rings						
				Bea	aring Length	Dir.	Cap. F	React D/L lb	Total	Ld. Case	Ld. Comb.
				1 -	SPF 3.500"	Vert	98%	2593 / 2532	5126	L	D+S

2 - SPF 3.500"

Vert

98%

2593 / 2532

5126 L

D+S

Analysis Results

•						
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	15877 ft-lb	6'7 3/4"	22897 ft-lb	0.693 (69%)	D+S	L
Unbraced	15877 ft-lb	6'7 3/4"	15911 ft-lb	0.998 (100%)	D+S	L
Shear	4901 lb	12' 1/8"	10197 lb	0.481 (48%)	D+S	L
LL Defl inch	0.260 (L/593)	6'7 3/4"	0.428 (L/360)	0.607 (61%)	S	L
TL Defl inch	0.526 (L/293)	6'7 3/4"	0.642 (L/240)	0.820 (82%)	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 must be laterally braced at a maximum of 5'1 3/8" o.c.
- 6 Bottom must be laterally braced at end bearings.
- 7 Lateral slenderness ratio based on single ply width

IE	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments	
1	Uniform			Far Face	261 PLF	0 PLF	261 PLF	0 PLF	0 PLF	C02	
2	Tie-In	0-0-0 to 13-3-8	6-0-0	Near Face	20 PSF	0 PSF	20 PSF	0 PSF	0 PSF	ROOF FRAMING	
	Self Weight				9 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
- 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

Handling & Installation

- 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 Home Builders

Project: Address: Date: 8/30/2023

Input by: Hampton Horrocks Job Name: 245 Mamie Upchurch Rd Page 13 of 13

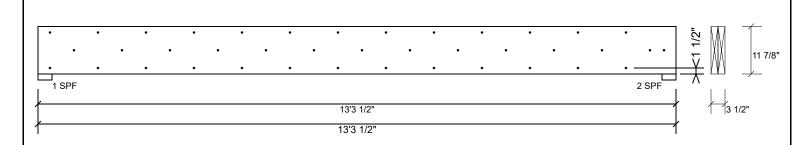
Project #: J0823-4774

Kerto-S LVL BM4

1.750" X 11.875"

2-Ply - PASSED

evel: 2ND. FLOOR



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	92.4 %		
Load	261.0 PLF		
Yield Limit per Foot	282.4 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		

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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