

BM₁

Client:

Signature Home Builders

Project:

Address: Lot 12 Williams Farms Date: 3/18/2024

Input by: Anthony Williams Job Name: The Clark 1960 Project #: J0324-1565 & 1566

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

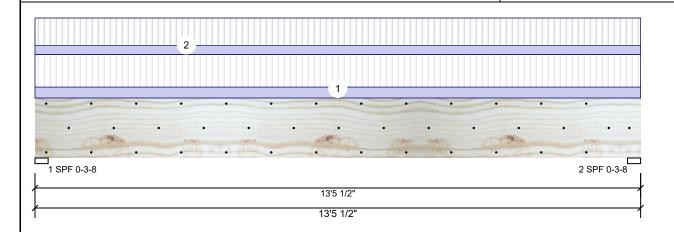
Design Method:

Building Code:

Load Sharing:

Deck:

Level: Level

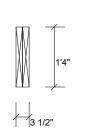


ASD

No

IBC 2012

Not Checked



Page 1 of 6

Member Information

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

Temp <= 100°F Temperature:

Reactions UNPATTERNED Ib (Uplift) Application: Floor

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	3768	1342	0	0	0
2	Vertical	3768	1342	0	0	0

Bearings

Bearing L	ength D	Dir. Cap.	React D/L lb	Total	Ld. Case	$Ld.\ Comb.$
1 - SPF 3	.500" V	/ert 98%	1342 / 3768	5110	L	D+L
2 - SPF 3	.500" V	/ert 98%	1342 / 3768	5110	L	D+L

Analysis Results

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Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	16095 ft-lb	6'8 3/4"	34565 ft-lb	0.466 (47%)	D+L	L
Unbraced	16095 ft-lb	6'8 3/4"	16135 ft-lb	0.997 (100%)	D+L	L
Shear	4889 lb	1'7 1/2"	11947 lb	0.409 (41%)	D+L	L
LL Defl inch	0.176 (L/888)	6'8 3/4"	0.326 (L/480)	0.541 (54%)	L	L
TL Defl inch	0.239 (L/655)	6'8 3/4"	0.434 (L/360)	0.550 (55%)	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 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 7'3 1/4" o.c.
- 6 Bottom must be laterally braced at end bearings.
- 7 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			Near Face	102 PLF	305 PLF	0 PLF	0 PLF	0 PLF	F04
2	Uniform			Far Face	85 PLF	255 PLF	0 PLF	0 PLF	0 PLF	f10
	Self Weight				12 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

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

This design is valid until 6/28/2026



Signature Home Builders

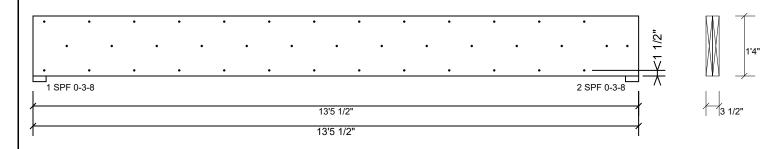
Project:

Address: Lot 12 Williams Farms Date: 3/18/2024

Input by: Anthony Williams Job Name: The Clark 1960 Project #: J0324-1565 & 1566 Page 2 of 6

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

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".

rasterrain piles asing s rows or roa box rians (: 120x				
Capacity	82.9 %			
Load	203.5 PLF			
Yield Limit per Foot	245.6 PLF			
Yield Limit per Fastener	81.9 lb.			
CM	1			
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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 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

(800) 622-5850



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Project:

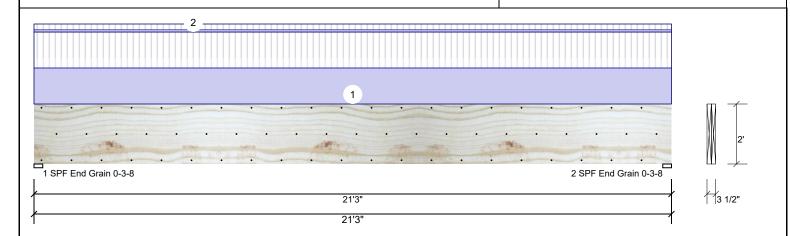
Address: Lot 12 Williams Farms

3/18/2024 Date:

Input by: Anthony Williams Job Name: The Clark 1960 Project #: J0324-1565 & 1566

Kerto-S LVL 1.750" X 24.000" 2-Ply - PASSED BM₂

Level: Level



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 2012 Load Sharing: No Deck: Not Checked

Reactions UNPATTERNED Ib (Uplift)												
Brg	Direction	Live	Dead	Snow	Wind	Const						
1	Vertical	3060	2993	0	0	0						
2	Vertical	3060	2993	0	0	0						

Page 3 of 6

Analysis Results Comb. Case Analysis Actual Location Allowed Capacity Moment 30845 ft-lb 10'7 1/2" 73185 ft-lb 0.421 (42%) D+L L Unbraced 30845 ft-lb 10'7 1/2" 30998 ft-lb 0.995 L (100%)4785 lb Shear 18'11 1/2" 17920 lb 0.267 (27%) D+L LL Defl inch 0.172 (L/1451) 10'7 9/16" 0.520 (L/480) 0.331 (33%) L ı TL Defl inch 0.341 (L/733) 10'7 9/16" 0.694 (L/360) 0.491 (49%) D+L

Bearings Bearing Length Dir. Cap. React D/L lb Total Ld. Case Ld. Comb. 1 - SPF 3.500" Vert 2993 / 3060 6053 L D+I End Grain 2 - SPF 3.500" 2993 / 3060 6053 L D+L 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 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 5'8 3/4" 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	248 PLF	248 PLF	0 PLF	0 PLF	0 PLF	B1	
	2	Uniform			Тор	15 PLF	40 PLF	0 PLF	0 PLF	0 PLF	FLOOR	
		Self Weight				19 PLF						

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- 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

6. For flat roofs provide proper drainage to prevent ponding

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1 Dry coming conditions unless noted athenuise	Design assumes top edge is laterally restrained Provide lateral support at bearing points to avoid lateral displacement and rotation
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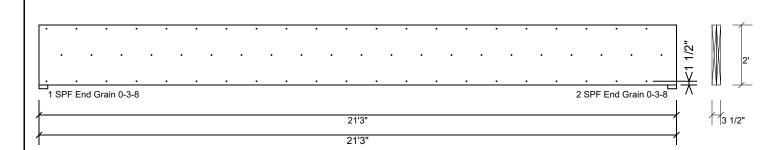
Project:

Address: Lot 12 Williams Farms 3/18/2024

Input by: Anthony Williams Job Name: The Clark 1960 Project #: J0324-1565 & 1566 Page 4 of 6

1.750" X 24.000" 2-Ply - PASSED **BM2 Kerto-S LVL**

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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 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 6/28/2026

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Manufacturer Info



GDH

Client:

Signature Home Builders

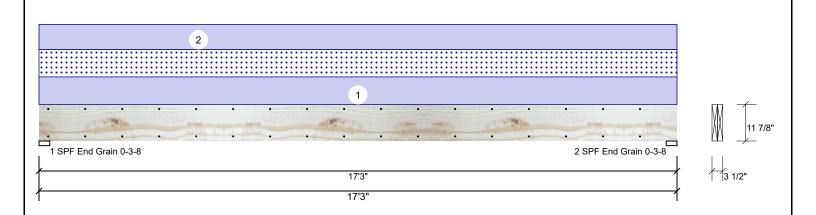
Project:

Address: Lot 12 Williams Farms 3/18/2024

Input by: Anthony Williams Job Name: The Clark 1960 Project #: J0324-1565 & 1566 Page 5 of 6

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

Level: Level



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	1529	759	0	0			
Moisture Conditi	on: Dry	Building Code:	IBC 2012	2	Vertical	0	1529	759	0	0			
Deflection LL:	480	Load Sharing:	No										
Deflection TL:	360	Deck:	Not Checked										
Importance:	Normal - II												
Temperature:	Temp <= 100°F												

Bearings Bearing Length

End Grain

End Grain

1-SPF 3.500"

2 - SPF 3.500"

Dir.

Vert

Vert

Cap. React D/L lb

22%

1529 / 759

1529 / 759

Total Ld. Case

2288 L

2288 L

Ld. Comb.

D+S

D+S

Analysis Results

•						
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	9348 ft-lb	8'7 1/2"	22897 ft-lb	0.408 (41%)	D+S	L
Unbraced	9348 ft-lb	8'7 1/2"	9362 ft-lb	0.998 (100%)	D+S	L
Shear	1957 lb	15'11 5/8"	10197 lb	0.192 (19%)	D+S	L
LL Defl inch	0.170 (L/1187)	8'7 9/16"	0.420 (L/480)	0.404 (40%)	S	L
TL Defl inch	0.512 (L/394)	8'7 9/16"	0.560 (L/360)	0.914 (91%)	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 a maximum of 10' 1/16" o.c.

/ 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	88 PLF	0 PLF	88 PLF	0 PLF	0 PLF	B1
2	Uniform			Тор	80 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
	Self Weight				9 PLF					

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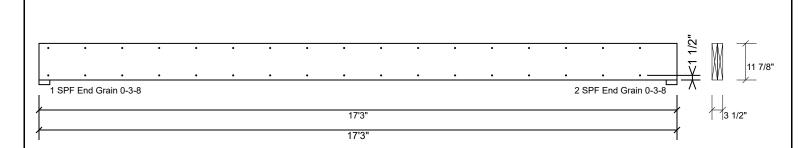
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1.750" X 11.875" 2-Ply - PASSED **Kerto-S LVL GDH**

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 %	
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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