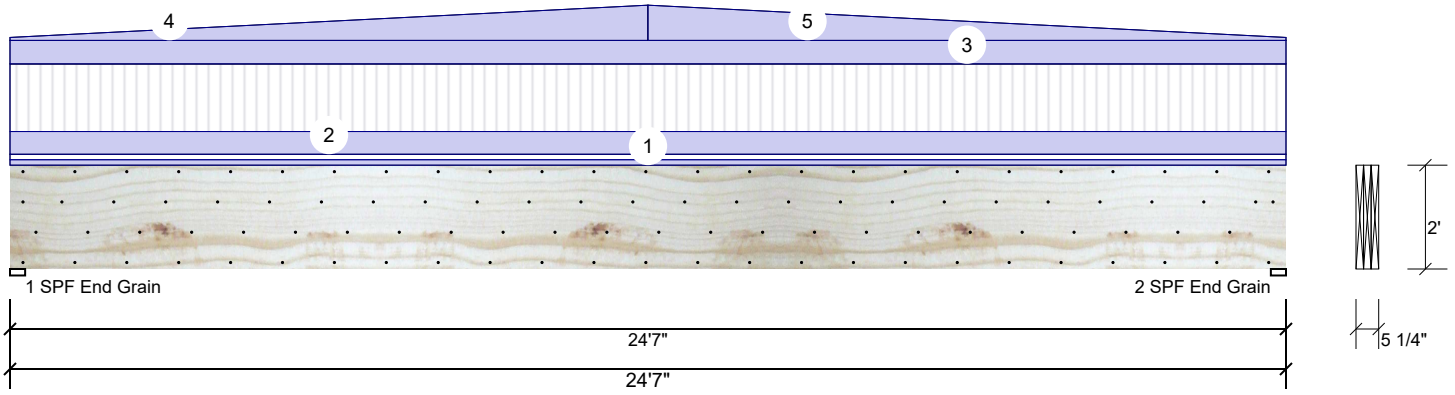
Client:	Ben Stout Real Estate	Date:	1/7/2021
Project:		Input by:	David Landry
Address:		Job Name:	Lot 2 Sierra Villas
		Project #:	J0121-0105

BM1 Kerto-S LVL 1.750" X 24.000" 3-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	3	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	Yes
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal	Ceiling:	Gypsum 1/2"
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	4253	4788	344	0	0
2	4253	4788	344	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	57%	4788 / 4253	9041	L	D+L
2 - SPF End Grain	3.500"	57%	4788 / 4253	9041	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	55677 ft-lb	12'3 1/2"	114169 ft-lb	0.488 (49%)	D+L	L
Unbraced	55677 ft-lb	12'3 1/2"	55925 ft-lb	0.996 (100%)	D+L	L
Shear	8539 lb	2'2 5/8"	26880 lb	0.318 (32%)	D+L	L
LL Defl inch	0.242 (L/1198)	12'3 9/16"	0.604 (L/480)	0.400 (40%)	L	L
TL Defl inch	0.531 (L/545)	12'3 9/16"	0.805 (L/360)	0.660 (66%)	D+L	L

Design Notes

1. Fasten all plies using 4 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
2. Refer to last page of calculations for fasteners required for specified loads.
3. Girders are designed to be supported on the bottom edge only.
4. Top loads must be supported equally by all plies.
5. Top must be laterally braced at a maximum of 4'8 1/4" o.c.
6. 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	28 PLF	0 PLF	28 PLF	0 PLF	0 PLF	M2
2	Uniform			Far Face	116 PLF	346 PLF	0 PLF	0 PLF	0 PLF	F1, F3
3	Uniform			Top	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall
4	Tapered Start	0-0-0		Top	15 PLF	0 PLF	0 PLF	0 PLF	0 PLF	B1GE
	End	12-3-8			180 PLF	0 PLF	0 PLF	0 PLF	0 PLF	
5	Tapered Start	12-3-8		Top	180 PLF	0 PLF	0 PLF	0 PLF	0 PLF	B1GE

Continued on page 2...

Notes

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Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL 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 2/26/2023

Manufacturer Info

Metsä Wood
301 Merritt 7 Building, 2nd Floor
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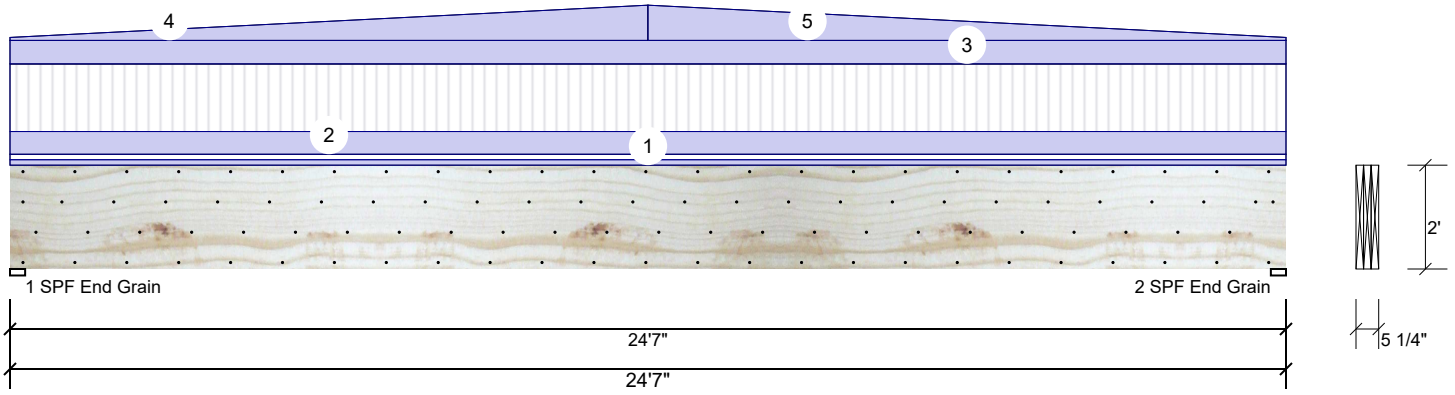
(800) 622-5850
www.metsawood.com/us
ICC-ES: ESR-3633

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

Client:	Ben Stout Real Estate	Date:	1/7/2021
Project:		Input by:	David Landry
Address:		Job Name:	Lot 2 Sierra Villas
		Project #:	J0121-0105

BM1 Kerto-S LVL 1.750" X 24.000" 3-Ply - PASSED

Level: Level



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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
	End	24-7-0			15 PLF	0 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				28 PLF					

Notes

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Lumber

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2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

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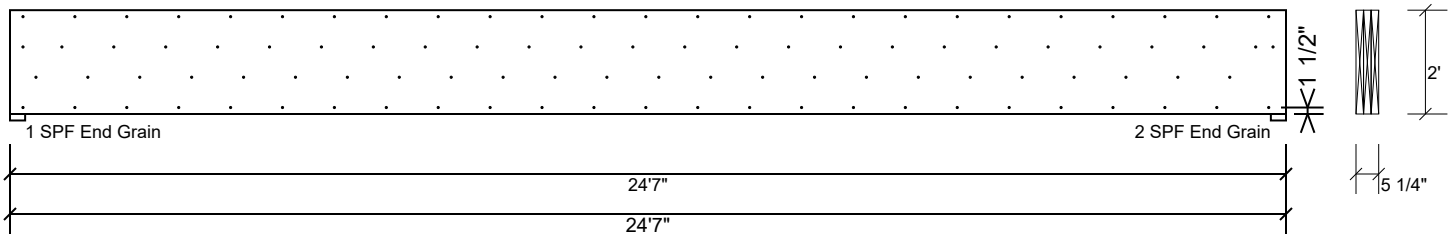
Project:		Input by:	David Landry
Address:		Job Name:	Lot 2 Sierra Villas
		Project #:	J0121-0105

BM1 Kerto-S LVL 1.750" X 24.000" 3-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 4 rows of 10d Box nails (.128x3") at 12" o.c.. Nail from both sides. Maximum end distance not to exceed 6"

Capacity	94.1 %
Load	308.0 PLF
Yield Limit per Foot	327.4 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

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Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL 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 2/26/2023

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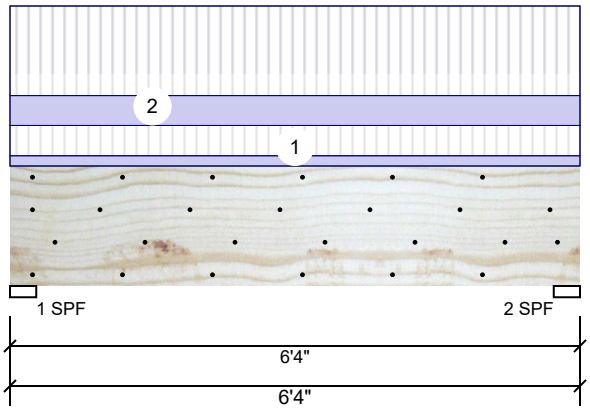
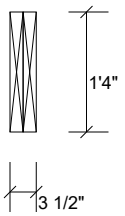
BM2 Kerto-S LVL 1.750" X 16.000" 2-Ply - PASSED

Level: Level





Member Information

Type:	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	Ceiling:	Gypsum 1/2"
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	1742	622	0	0	0
2	1742	622	0	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	45%	622 / 1742	2364	L	D+L
2 - SPF	3.500"	45%	622 / 1742	2364	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3243 ft-lb	3'2"	34565 ft-lb	0.094 (9%)	D+L	L
Unbraced	3243 ft-lb	3'2"	19457 ft-lb	0.167 (17%)	D+L	L
Shear	2184 lb	4'9 3/8"	11947 lb	0.183 (18%)	D+L	L
LL Defl inch	0.011 (L/6331)	3'2"	0.147 (L/480)	0.080 (8%)	L	L
TL Defl inch	0.015 (L/4665)	3'2"	0.197 (L/360)	0.080 (8%)	D+L	L

Design Notes

1 Fasten all plies using 4 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
2 Refer to last page of calculations for fasteners required for specified loads.
3 Girders are designed to be supported on the bottom edge only.
4 Top braced at bearings.
5 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	47 PLF	139 PLF	0 PLF	0 PLF	0 PLF	F5
2	Uniform			Far Face	137 PLF	411 PLF	0 PLF	0 PLF	0 PLF	F4
	Self Weight				12 PLF					

Notes

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Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL 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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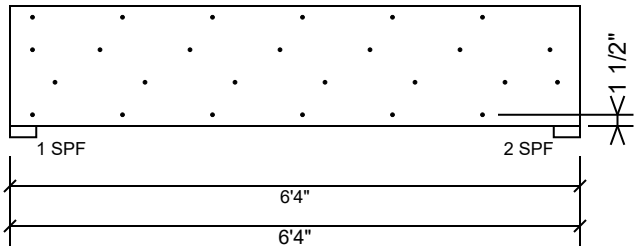
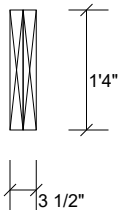
BM2 Kerto-S LVL 1.750" X 16.000" 2-Ply - PASSED

Level: Level





Multi-Ply Analysis

Fasten all plies using 4 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6"

Capacity	83.7 %
Load	274.0 PLF
Yield Limit per Foot	327.4 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

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.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL 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
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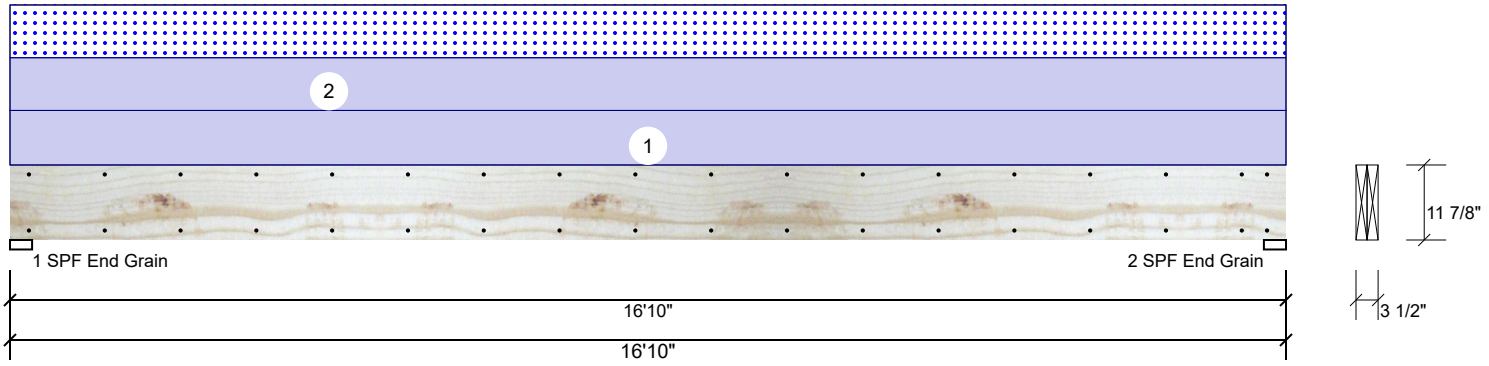
Client:	Ben Stout Real Estate	Date:	1/7/2021
Project:		Input by:	David Landry
Address:		Job Name:	Lot 2 Sierra Villas
		Project #:	J0121-0105

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

Level: Level



Member Information

Type:	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	Ceiling:	Gypsum 1/2"
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	1071	488	0	0
2	0	1071	488	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	15%	1071 / 488	1559	L	D+S
2 - SPF End Grain	3.500"	15%	1071 / 488	1559	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6209 ft-lb	8'5"	22897 ft-lb	0.271 (27%)	D+S	L
Unbraced	6209 ft-lb	8'5"	6213 ft-lb	0.999 (100%)	D+S	L
Shear	1333 lb	1'2 5/8"	10197 lb	0.131 (13%)	D+S	L
LL Defl inch	0.101 (L/1937)	8'5 1/16"	0.409 (L/480)	0.250 (25%)	S	L
TL Defl inch	0.324 (L/607)	8'5 1/16"	0.546 (L/360)	0.590 (59%)	D+S	L

Design Notes

1 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
2 Refer to last page of calculations for fasteners required for specified loads.
3 Girders are designed to be supported on the bottom edge only.
4 Top loads must be supported equally by all plies.
5 Top must be laterally braced at a maximum of 16' 3/8" o.c.
6 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			Top	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall
2	Uniform			Top	58 PLF	0 PLF	58 PLF	0 PLF	0 PLF	M2
	Self Weight				9 PLF					

Notes

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Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL 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
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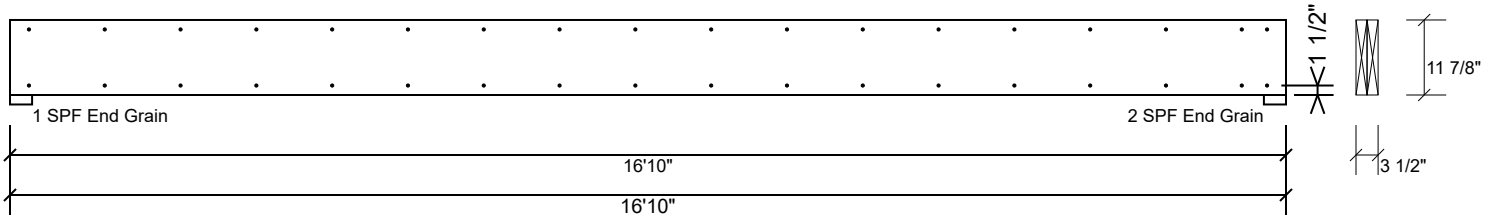
Level: Level



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.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Notes

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Lumber

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