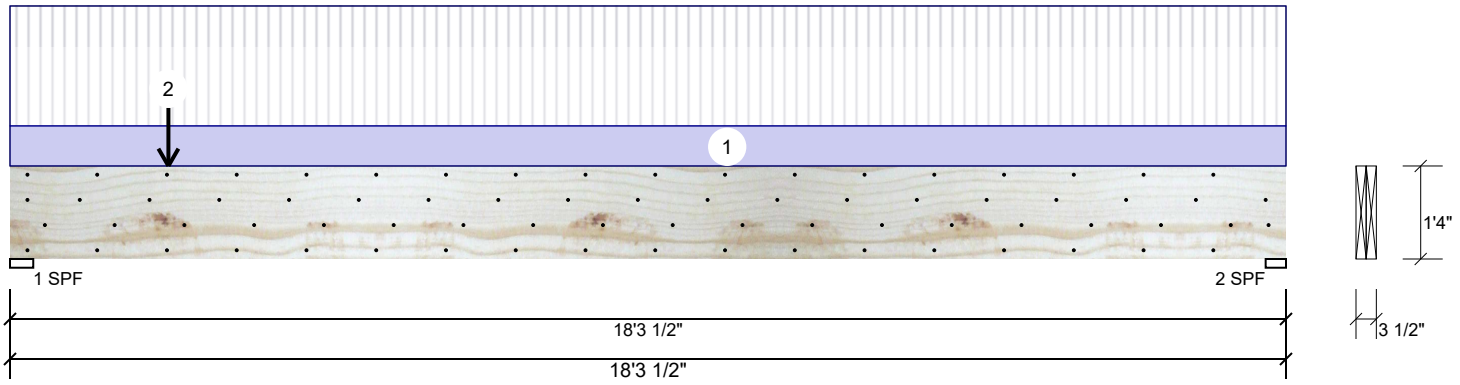
Client:	Signature Home Builders	Date:	2/24/2021
Project:		Input by:	Anthony Williams
Address:	24 Joel Way Lillington, NC	Job Name:	Lot 1 Finley's Crossing
		Project #:	J0221-1077&1078

BM1 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 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	3863	1405	0	0	0
2	3516	1289	0	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.000"	89%	1405 / 3863	5268	L	D+L
2 - SPF	3.500"	92%	1289 / 3516	4804	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	21179 ft-lb	9' 1/2"	34565 ft-lb	0.613 (61%)	D+L	L
Unbraced	21179 ft-lb	9' 1/2"	21280 ft-lb	0.995 (100%)	D+L	L
Shear	5116 lb	1'7 1/8"	11947 lb	0.428 (43%)	D+L	L
LL Defl inch	0.404 (L/529)	9'1 7/16"	0.445 (L/480)	0.910 (91%)	L	L
TL Defl inch	0.552 (L/387)	9'1 7/16"	0.594 (L/360)	0.930 (93%)	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 must be laterally braced at a maximum of 5'3 3/4" o.c.
5 Bottom braced at bearings.
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			Far Face	127 PLF	380 PLF	0 PLF	0 PLF	0 PLF	F03
2	Point	2-3-4		Near Face	143 lb	428 lb	0 lb	0 lb	0 lb	F11
	Self Weight				12 PLF					

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
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 11/13/2022

Manufacturer Info

Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us
ICC-ES: ESR-3633

Comtech, Inc.
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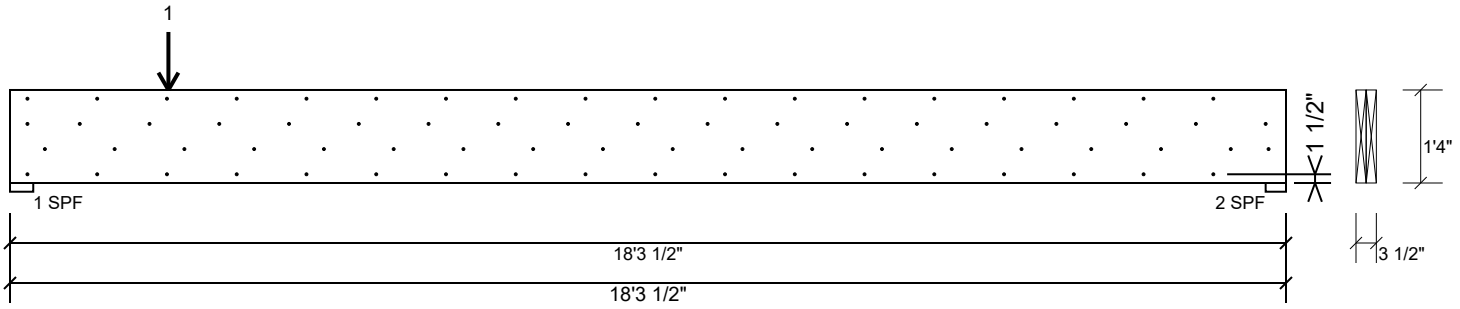
USA
28314
910-864-TRUS

Client:	Signature Home Builders	Date:	2/24/2021
Project:		Input by:	Anthony Williams
Address:	24 Joel Way Lillington, NC	Job Name:	Lot 1 Finley's Crossing
		Project #:	J0221-1077&1078

BM1 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	77.4 %
Load	253.5 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
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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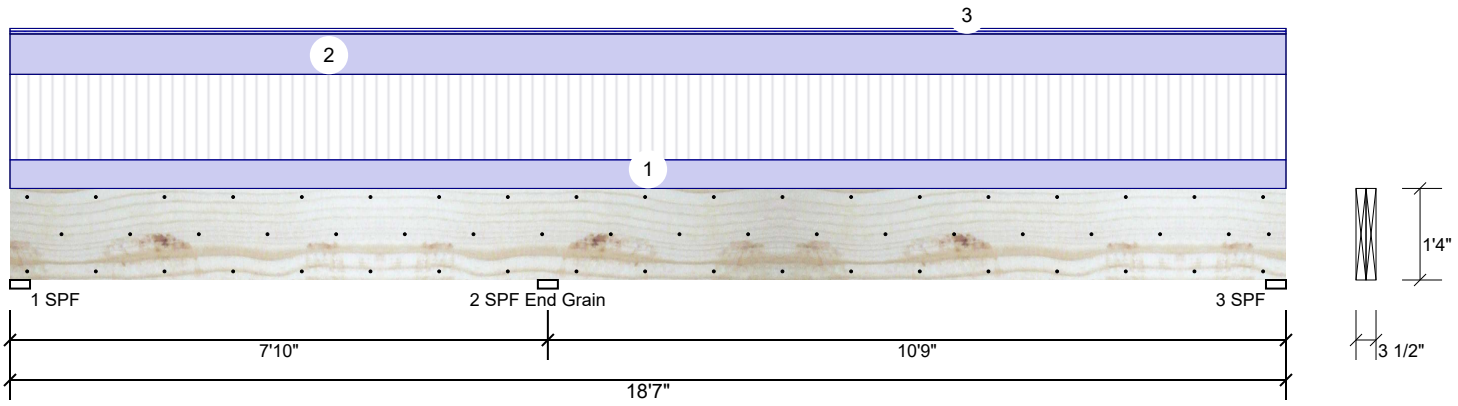
Client:	Signature Home Builders	Date:	2/24/2021
Project:		Input by:	Anthony Williams
Address:	24 Joel Way Lillington, NC	Job Name:	Lot 1 Finley's Crossing
		Project #:	J0221-1077&1078

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 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	859	755	27	0	0
2	3595	3158	113	0	0
3	1437	1262	45	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	36%	716 / 1150	1865	L_	D+L
2 - SPF End Grain	3.500"	65%	3225 / 3671	6896	LL	D+L
3 - SPF	3.500"	52%	1234 / 1496	2730	_L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-6602 ft-lb	7'10"	34565 ft-lb	0.191 (19%)	D+L	LL
Unbraced	-6602 ft-lb	7'10"	11591 ft-lb	0.570 (57%)	D+L	LL
Pos Moment	5677 ft-lb	14'	34565 ft-lb	0.164 (16%)	D+L	_L
Unbraced	5677 ft-lb	14'	11591 ft-lb	0.490 (49%)	D+L	_L
Shear	2968 lb	9'2"	11947 lb	0.248 (25%)	D+L	LL
LL Defl inch	0.034 (L/3685)	13'4 1/8"	0.263 (L/480)	0.130 (13%)	L	_L
TL Defl inch	0.061 (L/2084)	13'4 13/16"	0.351 (L/360)	0.170 (17%)	D+L	_L

Design Notes

1 Fasten all plies using 3 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 braced at bearings.
6 Bottom braced at 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			Top	106 PLF	317 PLF	0 PLF	0 PLF	0 PLF	F05
2	Uniform			Top	150 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
3	Uniform			Top	10 PLF	0 PLF	10 PLF	0 PLF	0 PLF	G1
	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

This design is valid until 11/13/2022

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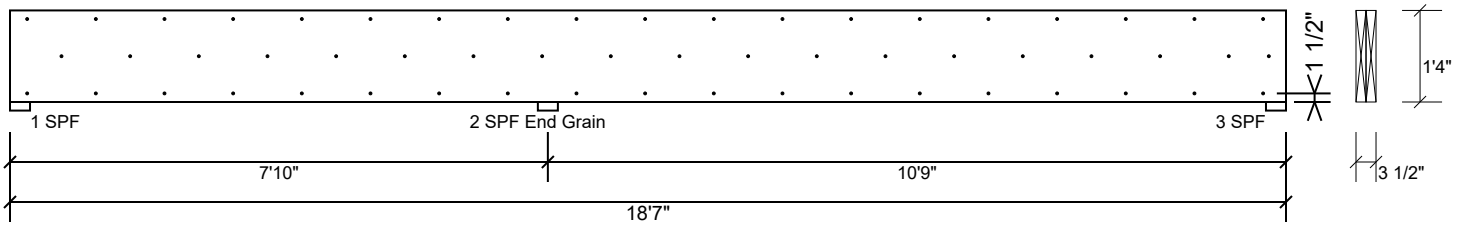
Client:	Signature Home Builders	Date:	2/24/2021
Project:		Input by:	Anthony Williams
Address:	24 Joel Way Lillington, NC	Job Name:	Lot 1 Finley's Crossing
		Project #:	J0221-1077&1078

BM2 Kerto-S LVL 1.750" X 16.000" 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

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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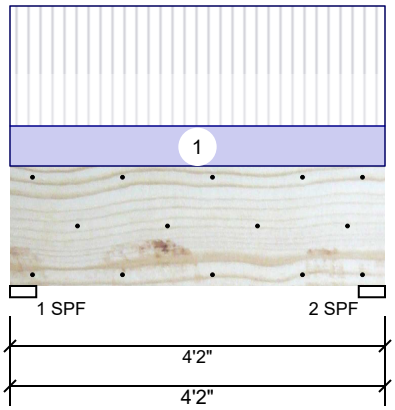
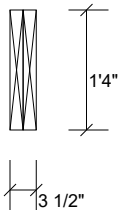
Address:	24 Joel Way Lillington, NC	Job Name:	Lot 1 Finley's Crossing
		Project #:	J0221-1077&1078

BM3 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 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	763	280	0	0	0
2	763	280	0	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	20%	280 / 763	1043	L	D+L
2 - SPF	3.500"	20%	280 / 763	1043	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	870 ft-lb	2'1"	34565 ft-lb	0.025 (3%)	D+L	L
Unbraced	870 ft-lb	2'1"	27449 ft-lb	0.032 (3%)	D+L	L
Shear	917 lb	2'7 3/8"	11947 lb	0.077 (8%)	D+L	L
LL Defl inch	0.002 (L/22654)	2'1 1/16"	0.093 (L/480)	0.020 (2%)	L	L
TL Defl inch	0.003 (L/16568)	2'1 1/16"	0.124 (L/360)	0.020 (2%)	D+L	L

Design Notes

1 Fasten all plies using 3 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 Bottom braced at bearings.
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	122 PLF	366 PLF	0 PLF	0 PLF	0 PLF	F08
	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

This design is valid until 11/13/2022

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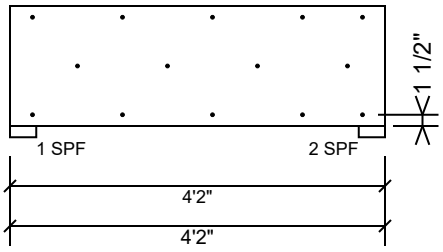
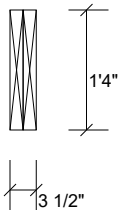
		Project #:	J0221-1077&1078

BM3 Kerto-S LVL 1.750" X 16.000" 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	99.4 %
Load	244.0 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

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
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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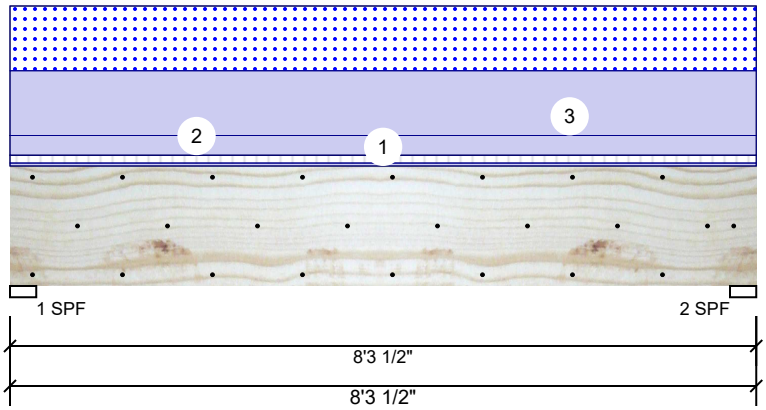
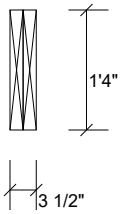
Client:	Signature Home Builders	Date:	2/24/2021
Project:		Input by:	Anthony Williams
Address:	24 Joel Way Lillington, NC	Job Name:	Lot 1 Finley's Crossing
		Project #:	J0221-1077&1078

BM4 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 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	166	1892	1364	0	0
2	166	1892	1364	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	63%	1892 / 1364	3256	L	D+S
2 - SPF	3.500"	63%	1892 / 1364	3256	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6057 ft-lb	4'1 3/4"	39750 ft-lb	0.152 (15%)	D+S	L
Unbraced	6057 ft-lb	4'1 3/4"	15085 ft-lb	0.401 (40%)	D+S	L
Shear	2037 lb	1'6 5/8"	13739 lb	0.148 (15%)	D+S	L
LL Defl inch	0.017 (L/5541)	4'1 13/16"	0.196 (L/480)	0.090 (9%)	S	L
TL Defl inch	0.041 (L/2321)	4'1 13/16"	0.262 (L/360)	0.160 (16%)	D+S	L

Design Notes

1 Fasten all plies using 3 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 braced at bearings.
6 Bottom braced at 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			Top	15 PLF	40 PLF	0 PLF	0 PLF	0 PLF	FLOOR
2	Uniform			Top	100 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
3	Uniform			Top	329 PLF	0 PLF	329 PLF	0 PLF	0 PLF	A2
	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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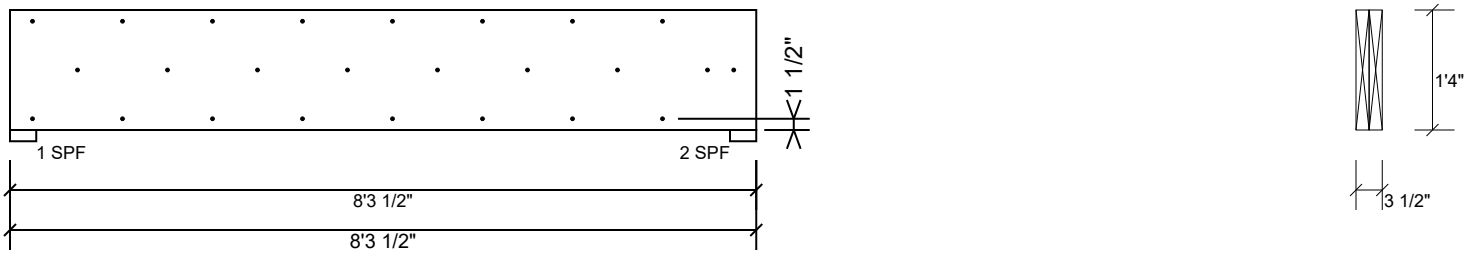
BM4 Kerto-S LVL 1.750" X 16.000" 2-Ply - PASSED

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

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Lumber

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Handling & Installation

1. LVL beams must not be cut or drilled
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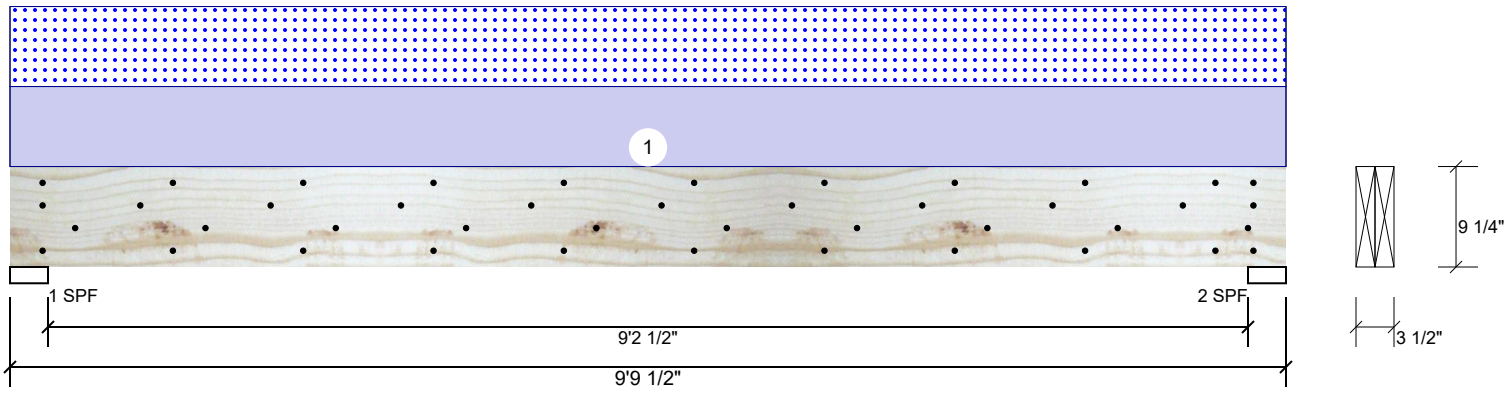
28314
910-864-TRUS

Client:	Signature Home Builders	Date:	2/24/2021
Project:		Input by:	Anthony Williams
Address:	24 Joel Way Lillington, NC	Job Name:	Lot 1 Finley's Crossing
		Project #:	J0221-1077&1078

BM5 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	1573	1537	0	0
2	0	1573	1537	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	60%	1573 / 1537	3110	L	D+S
2 - SPF	3.500"	60%	1573 / 1537	3110	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6917 ft-lb	4'10 3/4"	14423 ft-lb	0.480 (48%)	D+S	L
Unbraced	6917 ft-lb	4'10 3/4"	7832 ft-lb	0.883 (88%)	D+S	L
Shear	2959 lb	1'	7943 lb	0.373 (37%)	D+S	L
LL Defl inch	0.128 (L/873)	4'10 3/4"	0.233 (L/480)	0.550 (55%)	S	L
TL Defl inch	0.260 (L/432)	4'10 3/4"	0.311 (L/360)	0.830 (83%)	D+S	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 Bottom braced at bearings.
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			Far Face	314 PLF	0 PLF	314 PLF	0 PLF	0 PLF	A3
	Self Weight				7 PLF					

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
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 11/13/2022

Manufacturer Info

Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us
ICC-ES: ESR-3633

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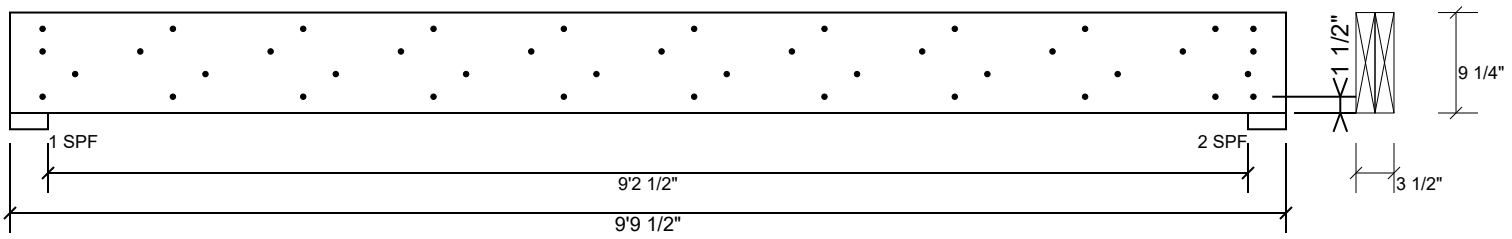
		Project #:	J0221-1077&1078

BM5 Kerto-S LVL 1.750" X 9.250" 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	83.4 %
Load	314.0 PLF
Yield Limit per Foot	376.5 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

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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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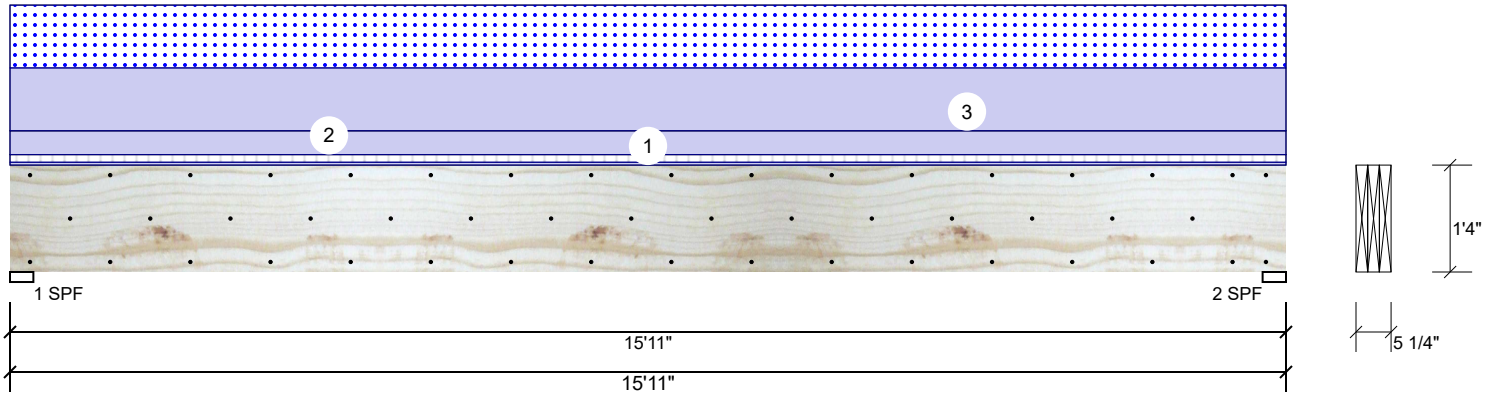
		Project #:	J0221-1077&1078

BM6 Kerto-S LVL 1.750" X 16.000" 3-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	3	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
Deflection LL:	480	Load Sharing:	Yes
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	318	3881	2618	0	0
2	318	3881	2618	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	83%	3881 / 2618	6499	L	D+S
2 - SPF	3.500"	83%	3881 / 2618	6499	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	24460 ft-lb	7'11 1/2"	62010 ft-lb	0.394 (39%)	D+S	L
Unbraced	24460 ft-lb	7'11 1/2"	24466 ft-lb	1.000 (100%)	D+S	L
Shear	5232 lb	1'6 5/8"	20608 lb	0.254 (25%)	D+S	L
LL Defl inch	0.132 (L/1406)	7'11 9/16"	0.387 (L/480)	0.340 (34%)	S	L
TL Defl inch	0.328 (L/567)	7'11 9/16"	0.516 (L/360)	0.640 (64%)	D+S	L

Design Notes

1. Fasten all plies using 3 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 7'3" o.c.
6. Bottom braced at 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			Top	15 PLF	40 PLF	0 PLF	0 PLF	0 PLF	FLOOR
2	Uniform			Top	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
3	Uniform			Top	329 PLF	0 PLF	329 PLF	0 PLF	0 PLF	A2
	Self Weight				19 PLF					

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
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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		Project #:	J0221-1077&1078

BM6 Kerto-S LVL 1.750" X 16.000" 3-Ply - PASSED

Level: Level

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 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

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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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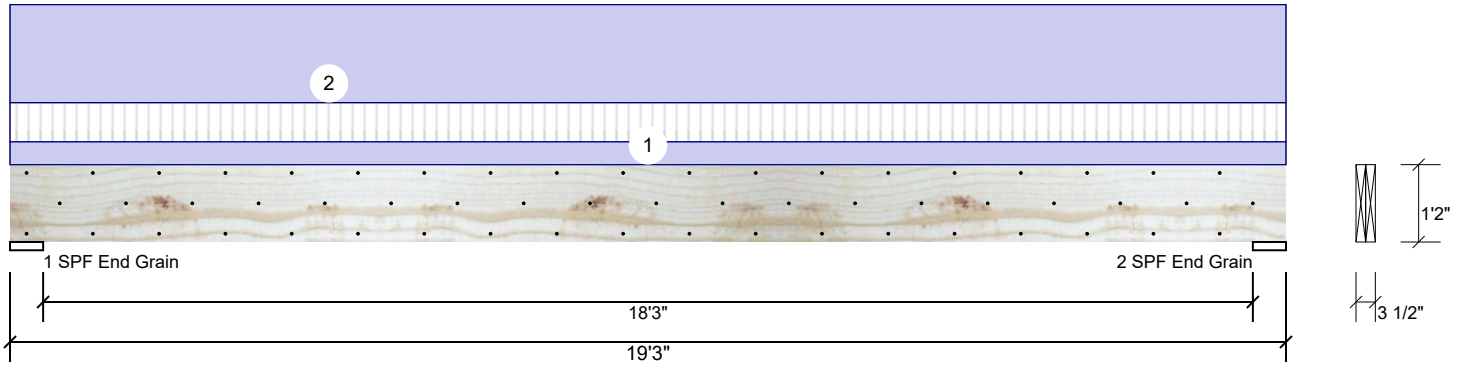
		Project #:	J0221-1077&1078

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

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	578	1885	0	0	0
2	578	1885	0	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	6.000"	13%	1885 / 578	2463	L	D+L
2 - SPF End Grain	6.000"	13%	1885 / 577	2463	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	10800 ft-lb	9'7 1/2"	26999 ft-lb	0.400 (40%)	D+L	L
Unbraced	10800 ft-lb	9'7 1/2"	10812 ft-lb	0.999 (100%)	D+L	L
Shear	2052 lb	1'7 1/4"	10453 lb	0.196 (20%)	D+L	L
LL Defl inch	0.102 (L/2160)	9'7 9/16"	0.459 (L/480)	0.220 (22%)	L	L
TL Defl inch	0.435 (L/506)	9'7 9/16"	0.612 (L/360)	0.710 (71%)	D+L	L

Design Notes

1. Fasten all plies using 3 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 9'11 1/4" o.c.
6. Bottom braced at 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			Top	35 PLF	60 PLF	0 PLF	0 PLF	0 PLF	F+4
2	Uniform			Top	150 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
	Self Weight				11 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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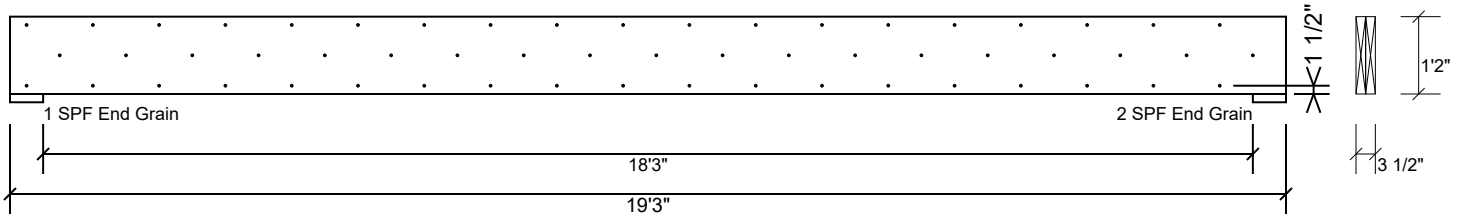
		Project #:	J0221-1077&1078

GDH 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

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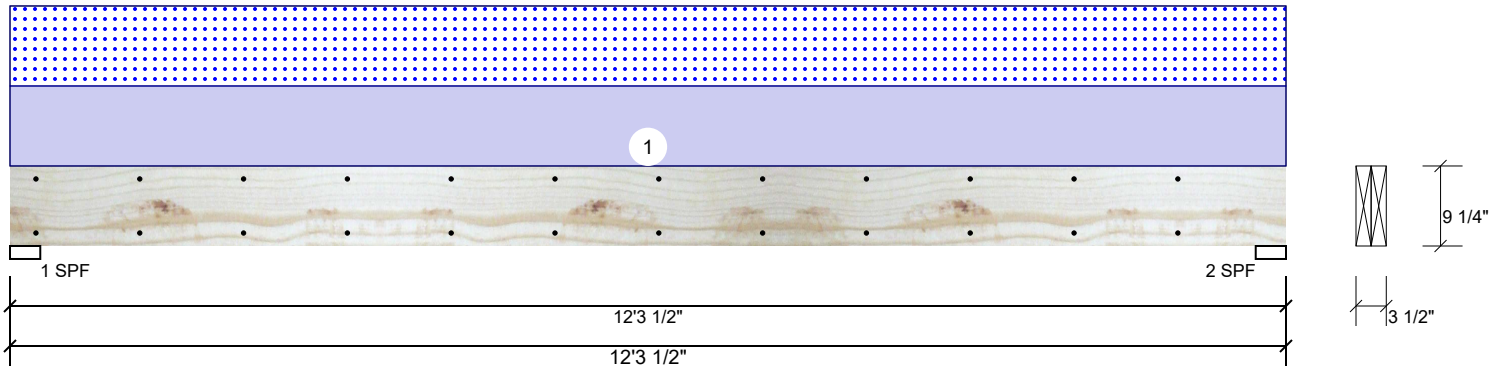
BPB Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	1058	1014	0	0
2	0	1058	1014	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	40%	1058 / 1014	2072	L	D+S
2 - SPF	3.500"	40%	1058 / 1014	2072	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5902 ft-lb	6'1 3/4"	14423 ft-lb	0.409 (41%)	D+S	L
Unbraced	5902 ft-lb	6'1 3/4"	6421 ft-lb	0.919 (92%)	D+S	L
Shear	1735 lb	11'3 1/2"	7943 lb	0.218 (22%)	D+S	L
LL Defl inch	0.168 (L/846)	6'1 3/4"	0.296 (L/480)	0.570 (57%)	S	L
TL Defl inch	0.343 (L/414)	6'1 3/4"	0.394 (L/360)	0.870 (87%)	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 braced at bearings.
6 Bottom braced at 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			Top	165 PLF	0 PLF	165 PLF	0 PLF	0 PLF	P2
	Self Weight				7 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

1. LVL beams must not be cut or drilled
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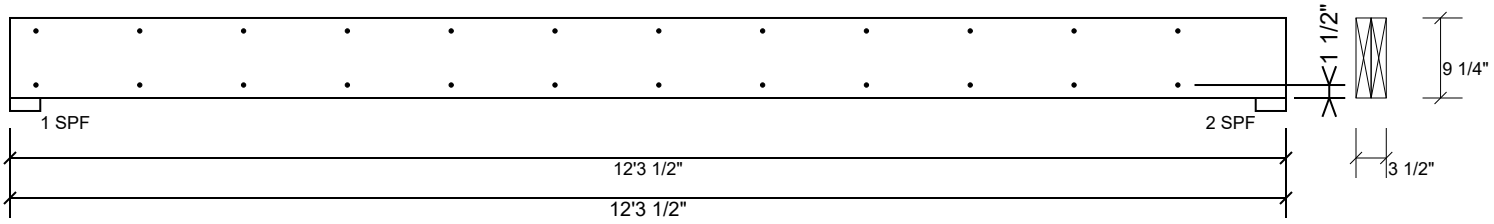

Multi-Ply Analysis

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

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
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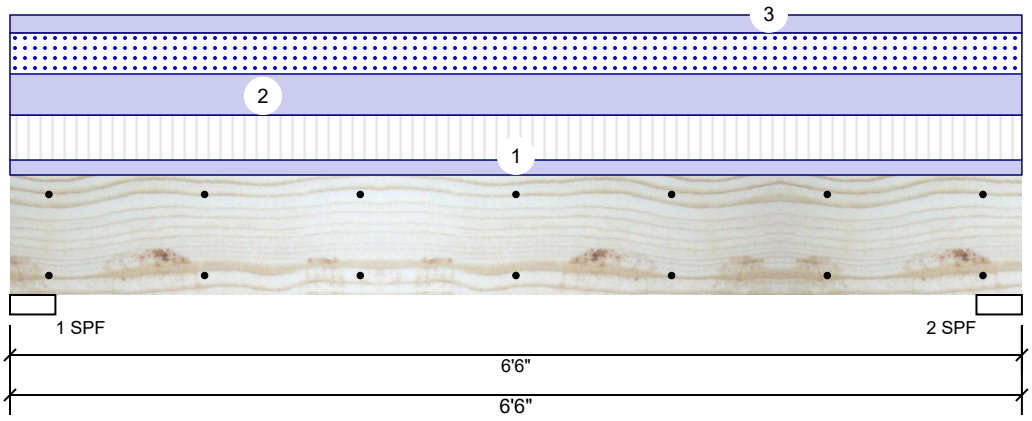
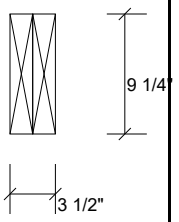
H6 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level





Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	1229	2045	1125	0	0
2	1229	2045	1125	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	73%	2045 / 1765	3810	L	D+0.75(L+S)
2 - SPF	3.500"	73%	2045 / 1765	3810	L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5348 ft-lb	3'3"	14423 ft-lb	0.371 (37%)	D+0.75(L+S)	L
Unbraced	5348 ft-lb	3'3"	10533 ft-lb	0.508 (51%)	D+0.75(L+S)	L
Shear	2637 lb	5'6"	7943 lb	0.332 (33%)	D+0.75(L+S)	L
LL Defl inch	0.044 (L/1645)	3'3"	0.151 (L/480)	0.290 (29%)	0.75(L+S)	L
TL Defl inch	0.095 (L/762)	3'3"	0.201 (L/360)	0.470 (47%)	D+0.75(L+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 braced at bearings.
6 Bottom braced at 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			Top	126 PLF	378 PLF	0 PLF	0 PLF	0 PLF	F03
2	Uniform			Top	346 PLF	0 PLF	346 PLF	0 PLF	0 PLF	A3A
3	Uniform			Top	150 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
	Self Weight				7 PLF					

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
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 11/13/2022

Manufacturer Info

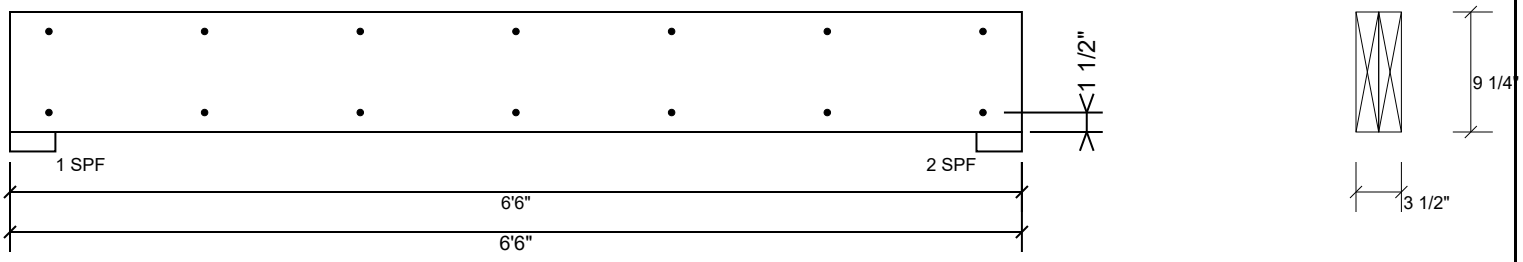
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us
ICC-ES: ESR-3633

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

Client:	Signature Home Builders	Date:	2/24/2021
Project:		Input by:	Anthony Williams
Address:	24 Joel Way Lillington, NC	Job Name:	Lot 1 Finley's Crossing
		Project #:	J0221-1077&1078

H6 Kerto-S LVL 1.750" X 9.250" 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 %
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

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
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 11/13/2022

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