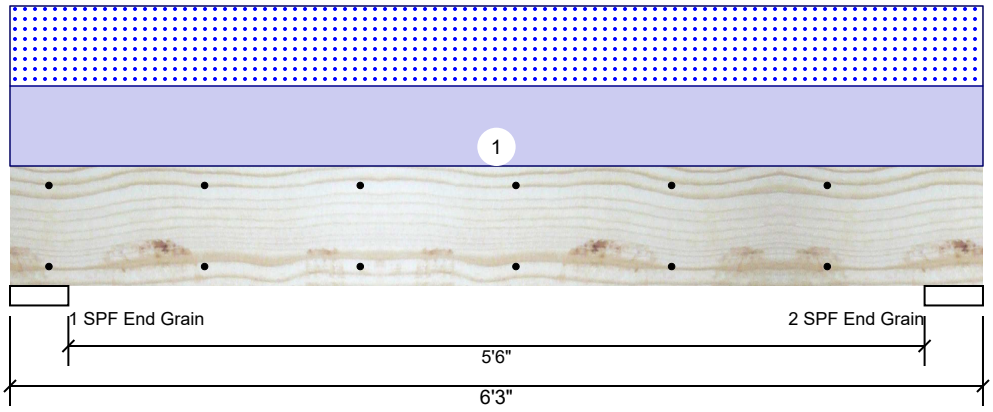
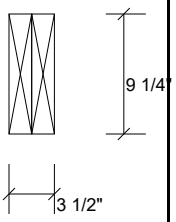
Client:	Signature Homes	Date:	10/23/2020
Project:		Input by:	David Landry
Address:		Job Name:	Lot 51 South Creek
		Project #:	J1020-4925

BM1 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	1297	1275	0	0
2	0	1297	1275	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	4.500"	19%	1297 / 1275	2572	L	D+S
2 - SPF End Grain	4.500"	19%	1297 / 1275	2572	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3256 ft-lb	3'1 1/2"	14423 ft-lb	0.226 (23%)	D+S	L
Unbraced	3256 ft-lb	3'1 1/2"	10944 ft-lb	0.297 (30%)	D+S	L
Shear	1681 lb	1'1"	7943 lb	0.212 (21%)	D+S	L
LL Defl inch	0.026 (L/2632)	3'1 1/2"	0.141 (L/480)	0.180 (18%)	S	L
TL Defl inch	0.052 (L/1304)	3'1 1/2"	0.188 (L/360)	0.280 (28%)	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	408 PLF	0 PLF	408 PLF	0 PLF	0 PLF	
	Self Weight				7 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 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.
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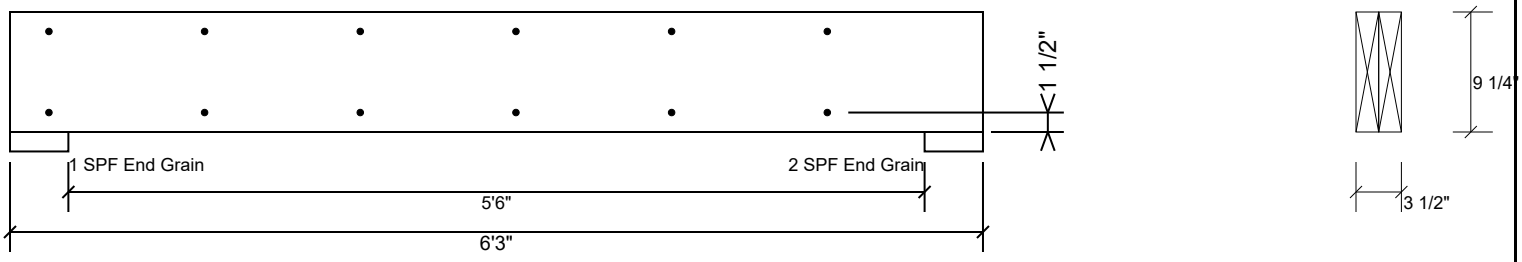
Fayetteville, NC
USA
28314
910-864-TRUS

Client:	Signature Homes	Date:	10/23/2020
Project:		Input by:	David Landry
Address:		Job Name:	Lot 51 South Creek
		Project #:	J1020-4925

BM1 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

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Lumber

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Handling & Installation

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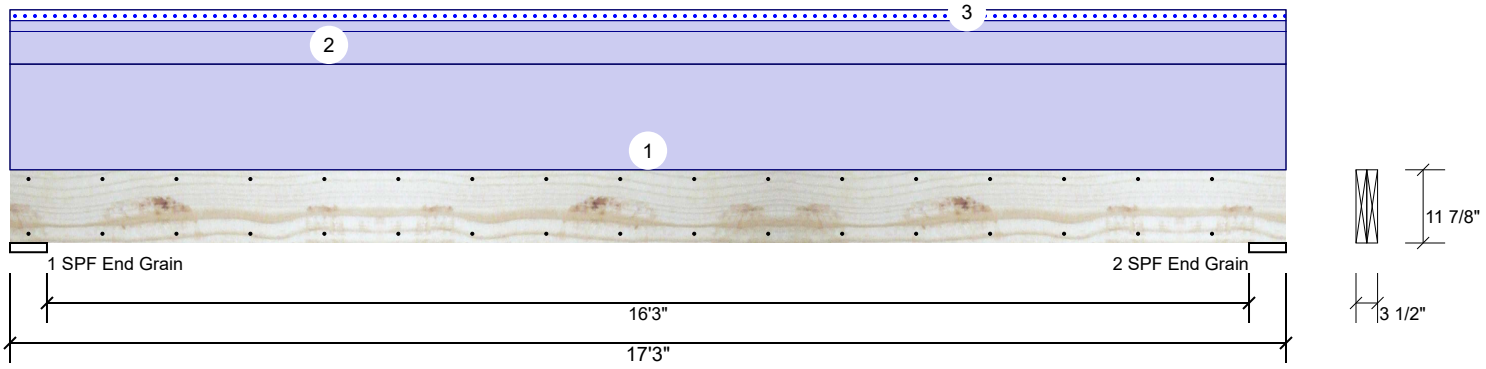
Client:	Signature Homes	Date:	10/23/2020
Project:		Input by:	David Landry
Address:		Job Name:	Lot 51 South Creek
		Project #:	J1020-4925

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 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	2452	173	0	0
2	0	2452	173	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	6.000"	14%	2452 / 173	2624	L	D+S
2 - SPF End Grain	6.000"	14%	2452 / 173	2624	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	9527 ft-lb	8'7 1/2"	17919 ft-lb	0.532 (53%)	D	Uniform
Unbraced	9527 ft-lb	8'7 1/2"	17919 ft-lb	0.532 (53%)	D	Uniform
Shear	2046 lb	15'9 7/8"	7980 lb	0.256 (26%)	D	Uniform
LL Defl inch	0.035 (L/5617)	8'7 9/16"	0.409 (L/480)	0.090 (9%)	S	L
TL Defl inch	0.532 (L/369)	8'7 9/16"	0.546 (L/360)	0.970 (97%)	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 continuously braced.
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	195 PLF	0 PLF	0 PLF	0 PLF	0 PLF	C1
2	Uniform			Top	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall
3	Tie-In	0-0-0 to 17-3-0	1-0-0	Top	20 PSF	0 PSF	20 PSF	0 PSF	0 PSF	Roof
	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
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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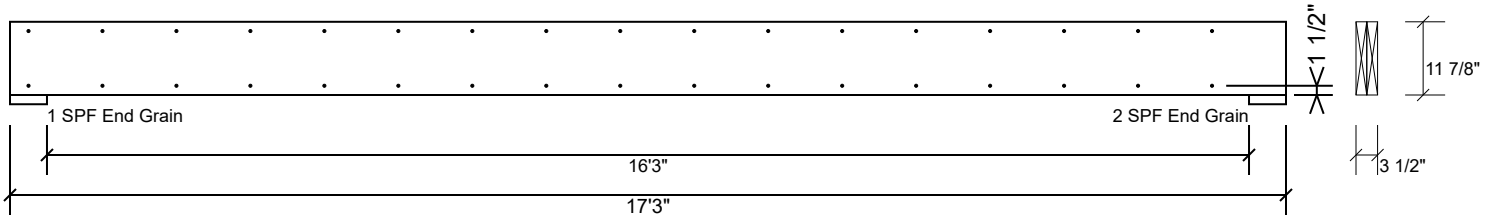
Client:	Signature Homes	Date:	10/23/2020
Project:		Input by:	David Landry
Address:		Job Name:	Lot 51 South Creek
		Project #:	J1020-4925

GDH Kerto-S LVL 1.750" X 11.875" 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
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Client:	Signature Homes	Date:	10/23/2020
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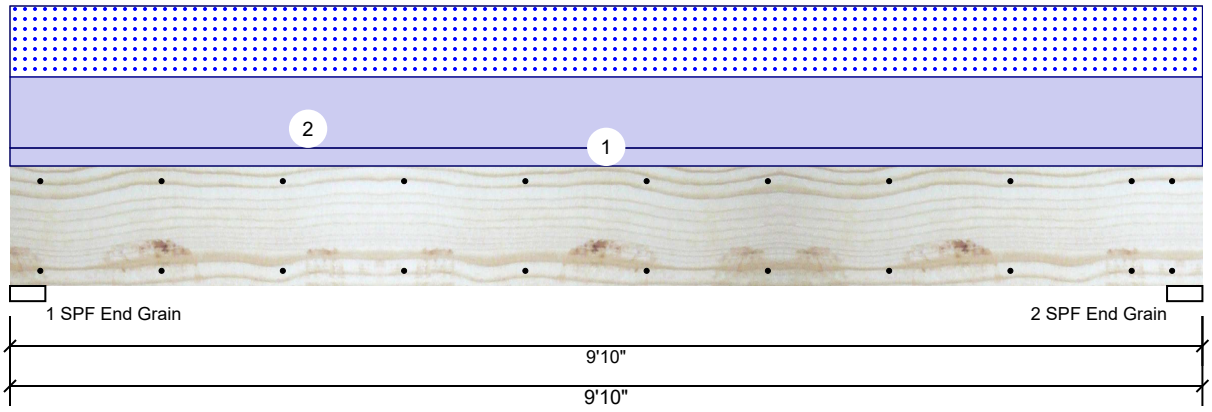
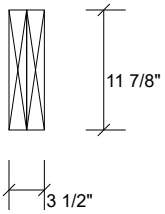
		Project #:	J1020-4925

GDH2 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 2012
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	1496	1155	0	0
2	0	1496	1155	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	25%	1496 / 1155	2651	L	D+S
2 - SPF End Grain	3.500"	25%	1496 / 1155	2651	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5924 ft-lb	4'11"	22897 ft-lb	0.259 (26%)	D+S	L
Unbraced	5924 ft-lb	4'11"	9857 ft-lb	0.601 (60%)	D+S	L
Shear	1994 lb	8'7 3/8"	10197 lb	0.196 (20%)	D+S	L
LL Defl inch	0.049 (L/2297)	4'11"	0.234 (L/480)	0.210 (21%)	S	L
TL Defl inch	0.112 (L/1001)	4'11"	0.312 (L/360)	0.360 (36%)	D+S	L

Design Notes

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5 Top 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			Top	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall
2	Uniform			Top	235 PLF	0 PLF	235 PLF	0 PLF	0 PLF	G1
	Self Weight				9 PLF					

Notes

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Lumber

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Handling & Installation

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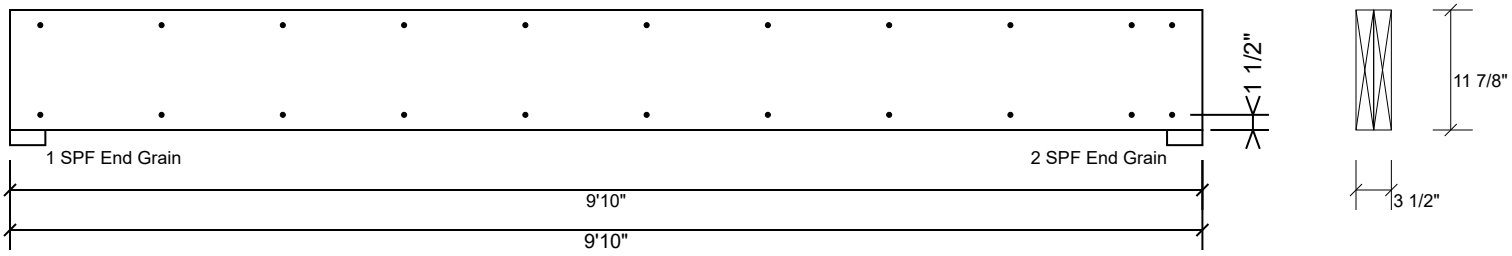
GDH2 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

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

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