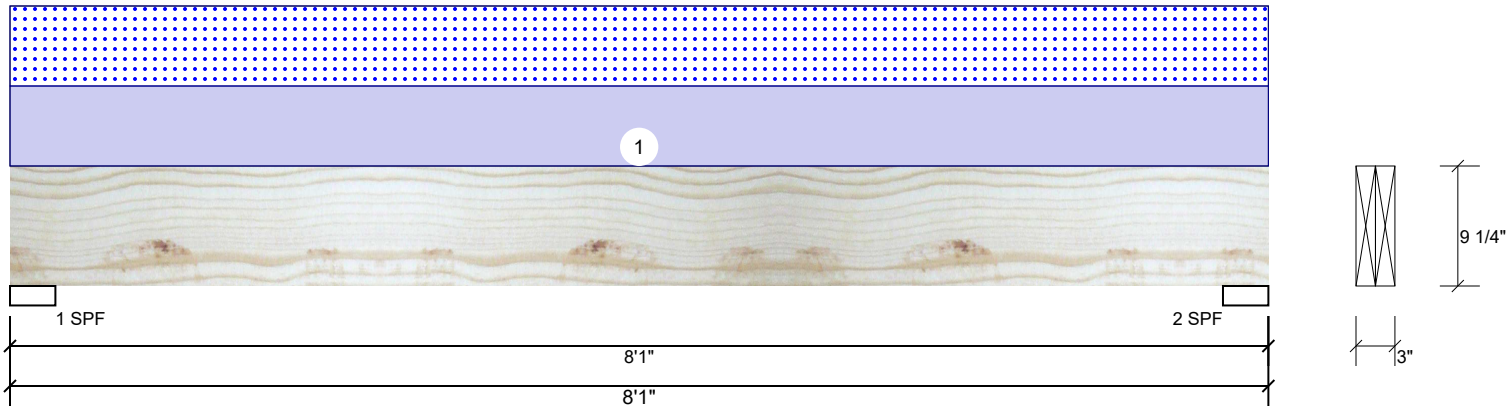
Client:	Matthews Builder/Developer	Date:	5/26/2022
Project:	Winston Residence	Input by:	Jonathan Landry
Address:	75 Lakewind Court Sanford, NC 27332	Job Name:	75 Lakewind Ct.
		Project #:	J0522-2779

BM1 S-P-F #1 2.000" X 10.000" 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:	240	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	849	849	0	0
2	Vertical	0	849	849	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	38%	849 / 849	1698	L	D+S
2 - SPF	3.500"	Vert	38%	849 / 849	1698	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3052 ft-lb	4' 1/2"	3946 ft-lb	0.774 (77%)	D+S	L
Unbraced	3052 ft-lb	4' 1/2"	3315 ft-lb	0.921 (92%)	D+S	L
Shear	1251 lb	1' 3/4"	2872 lb	0.436 (44%)	D+S	L
LL Defl inch	0.058 (L/1587)	4' 9/16"	0.191 (L/480)	0.302 (30%)	S	L
TL Defl inch	0.115 (L/793)	4' 9/16"	0.381 (L/240)	0.302 (30%)	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. Girders are designed to be supported on the bottom edge only.
3. Multiple plies must be fastened together as per manufacturer's details.
4. Top loads must be supported equally by all plies.
5. Top must be laterally braced at end bearings.
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			Top	210 PLF	0 PLF	210 PLF	0 PLF	0 PLF	M2

This design is valid until 11/3/2024

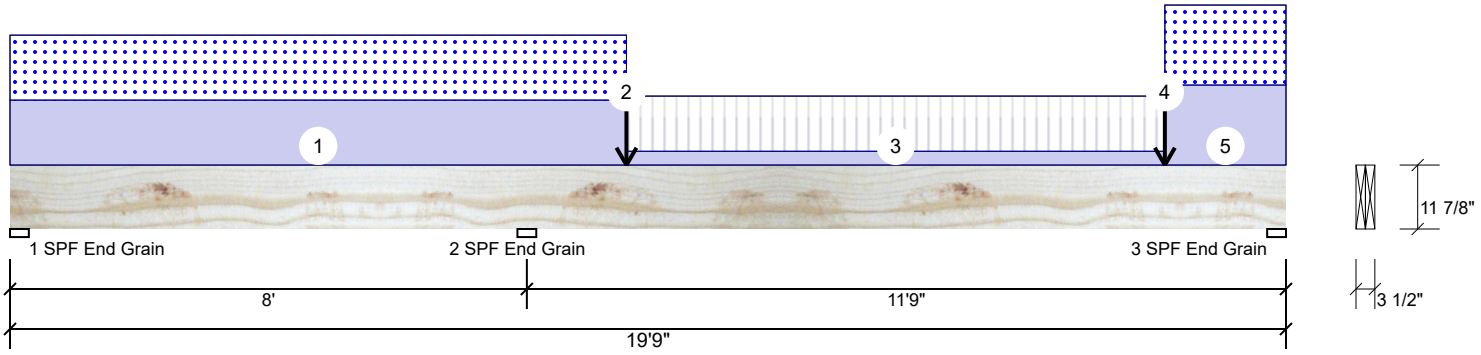
Manufacturer Info

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

Client:	Matthews Builder/Developer	Date:	5/26/2022
Project:	Winston Residence	Input by:	Jonathan Landry
Address:	75 Lakewind Court Sanford, NC 27332	Job Name:	75 Lakewind Ct.
		Project #:	J0522-2779

BM2 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:	240	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0 (-478)	555	651	0	0
2	Vertical	2651	4687	3911	0	0
3	Vertical	1494	2804	2385	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	13%	526 / 797	1322	L_	D+S
2 - SPF End Grain	3.500"	Vert	85%	4735 / 4980	9715	LL	D+0.75(L+S)
3 - SPF End Grain	3.500"	Vert	55%	2785 / 2911	5696	_L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-9971 ft-lb	8'	22897 ft-lb	0.435 (44%)	D+0.75(L+S)	LL
Unbraced	-9971 ft-lb	8'	9974 ft-lb	1.000 (100%)	D+0.75(L+S)	LL
Pos Moment	8434 ft-lb	15'2 1/2"	19911 ft-lb	0.424 (42%)	D+L	_L
Unbraced	9216 ft-lb	15'11 1/2"	9236 ft-lb	0.998 (100%)	D+0.75(L+S)	_L
Shear	6119 lb	9'1 5/8"	10197 lb	0.600 (60%)	D+0.75(L+S)	LL
LL Defl inch	0.146 (L/944)	14'2 13/16"	0.288 (L/480)	0.508 (51%)	0.75(L+S)	_L
TL Defl inch	0.244 (L/567)	14'4 1/16"	0.576 (L/240)	0.423 (42%)	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 Girders are designed to be supported on the bottom edge only.
3 Multiple plies must be fastened together as per manufacturer's details.
4 Top loads must be supported equally by all plies.
5 Top must be laterally braced at a maximum of 10'2 1/16" o.c.
6 Bottom must be laterally braced at a maximum of 9'2 13/16" o.c.
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	Part. Uniform	0-0-0 to 9-6-8		Top	259 PLF	0 PLF	259 PLF	0 PLF	0 PLF	A5
2	Point	9-6-8		Top	1722 lb	0 lb	1722 lb	0 lb	0 lb	A5-GR
	Bearing Length	0-3-8								

Continued on page 2...

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 11/3/2024

Manufacturer Info

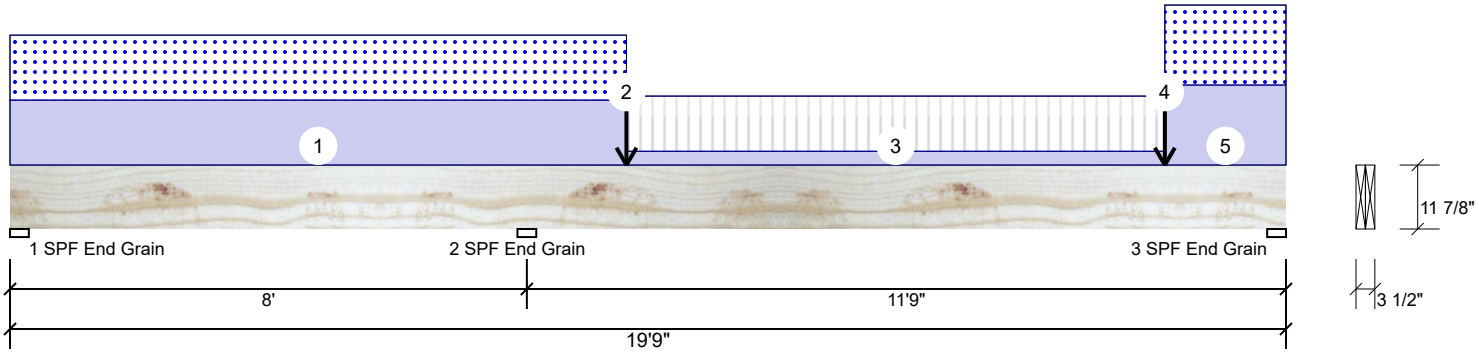
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us

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

Client:	Matthews Builder/Developer	Date:	5/26/2022
Project:	Winston Residence	Input by:	Jonathan Landry
Address:	75 Lakewind Court Sanford, NC 27332	Job Name:	75 Lakewind Ct.
		Project #:	J0522-2779

BM2 Kerto-S LVL 1.750" X 11.875" 2-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
3	Tie-In Far	9-6-8 to 17-10-8	5-0-0	Far Face	10 PSF	40 PSF	0 PSF	0 PSF	0 PSF	Floor
3	Tie-In Near	9-6-8 to 17-10-8	6-0-0	Near Face	10 PSF	40 PSF	0 PSF	0 PSF	0 PSF	Floor
4	Point	17-10-8		Top	2155 lb	0 lb	2155 lb	0 lb	0 lb	A4-GR
	Bearing Length	0-3-8								
5	Part. Uniform	17-10-8 to 19-9-0		Top	319 PLF	0 PLF	319 PLF	0 PLF	0 PLF	A4
	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

This design is valid until 11/3/2024

Manufacturer Info

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

Comtech, Inc.
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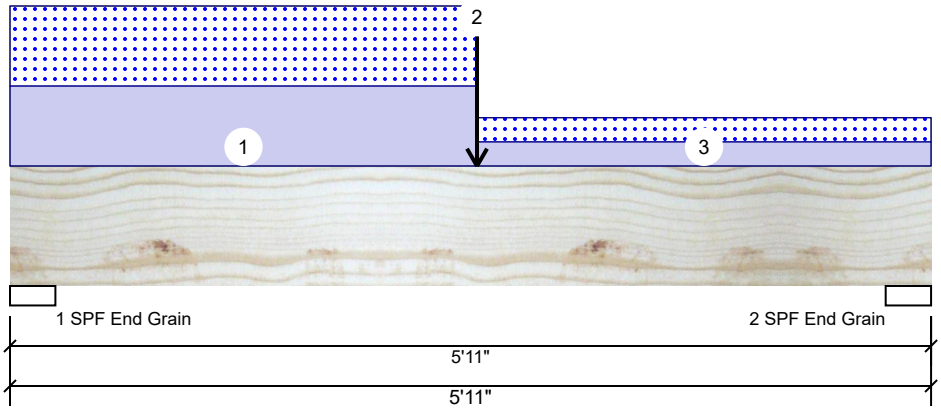
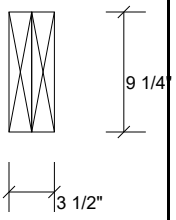
910-864-TRUS

Client:	Matthews Builder/Developer	Date:	5/26/2022
Project:	Winston Residence	Input by:	Jonathan Landry
Address:	75 Lakewind Court Sanford, NC 27332	Job Name:	75 Lakewind Ct.
		Project #:	J0522-2779

BM3 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/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	2548	2527	0	0
2	Vertical	0	2137	2116	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	49%	2548 / 2527	5075	L	D+S
2 - SPF End Grain	3.500"	Vert	41%	2137 / 2116	4253	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	10351 ft-lb	3'	14423 ft-lb	0.718 (72%)	D+S	L
Unbraced	10351 ft-lb	3'	11110 ft-lb	0.932 (93%)	D+S	L
Shear	4199 lb	1' 3/4"	7943 lb	0.529 (53%)	D+S	L
LL Defl inch	0.069 (L/953)	3'	0.136 (L/480)	0.503 (50%)	S	L
TL Defl inch	0.138 (L/475)	3'	0.273 (L/240)	0.505 (50%)	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 Girders are designed to be supported on the bottom edge only.
3 Multiple plies must be fastened together as per manufacturer's details.
4 Top loads must be supported equally by all plies.
5 Top must be laterally braced at end bearings.
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	Part. Uniform	0-0-0 to 3-0-0		Top	411 PLF	0 PLF	411 PLF	0 PLF	0 PLF	A5
2	Point	3-0-0		Top	3048 lb	0 lb	3048 lb	0 lb	0 lb	A5-GR
	Bearing Length	0-3-8								
3	Part. Uniform	3-0-0 to 5-11-0		Top	124 PLF	0 PLF	124 PLF	0 PLF	0 PLF	M3
	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 11/3/2024

Manufacturer Info

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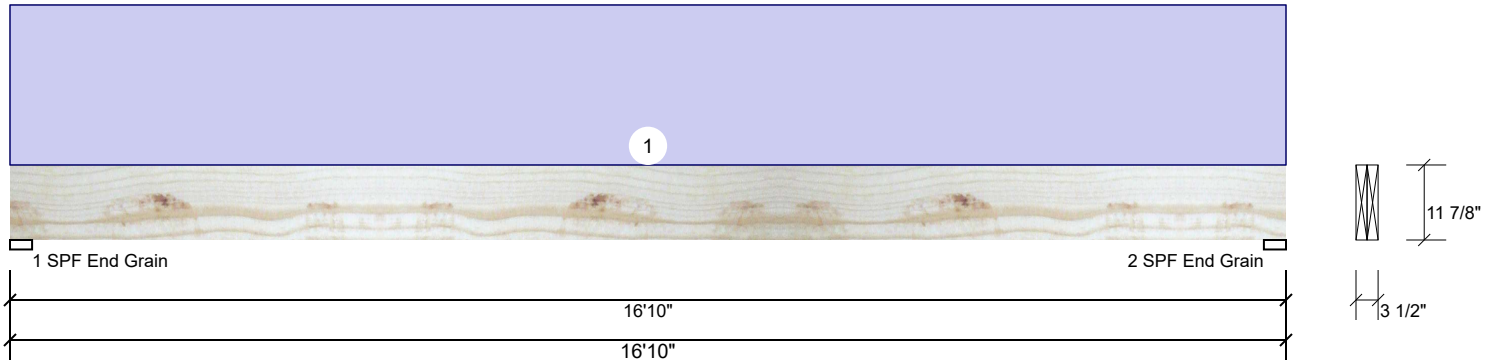
Client:	Matthews Builder/Developer	Date:	5/26/2022
Project:	Winston Residence	Input by:	Jonathan Landry
Address:	75 Lakewind Court Sanford, NC 27332	Job Name:	75 Lakewind Ct.
		Project #:	J0522-2779

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:	240	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	1719	0	0	0
2	Vertical	0	1719	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	17%	1719 / 0	1719	Uniform	D
2 - SPF End Grain	3.500"	Vert	17%	1719 / 0	1719	Uniform	D

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6845 ft-lb	8'5"	17919 ft-lb	0.382 (38%)	D	Uniform
Unbraced	6845 ft-lb	8'5"	6853 ft-lb	0.999 (100%)	D	Uniform
Shear	1466 lb	15'6 5/8"	7980 lb	0.184 (18%)	D	Uniform
LL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
TL Defl inch	0.357 (L/550)	8'5 1/16"	0.819 (L/240)	0.436 (44%)	D	Uniform

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. Girders are designed to be supported on the bottom edge only.
3. Multiple plies must be fastened together as per manufacturer's details.
4. Top loads must be supported equally by all plies.
5. Top must be laterally braced at a maximum of 14'4 5/16" 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			Top	195 PLF	0 PLF	0 PLF	0 PLF	0 PLF	B1GE
	Self Weight				9 PLF					

Notes

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Lumber

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