

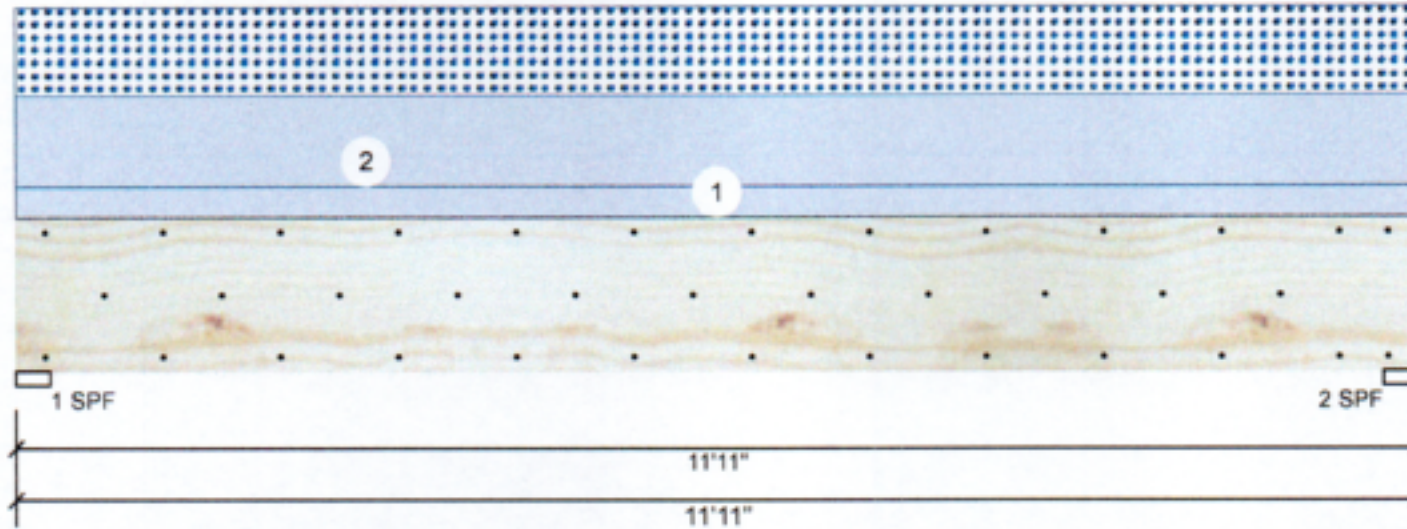


Client: Southern Touch Homes
 Project:
 Address: 2 Microtower Road

Date: 9/30/2021
 Input by: David Landry
 Job Name: The Hickory II Plan
 Project #: J0921-5770

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

Level: Level



Member Information

Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	360
Importance:	Normal
Temperature:	Temp <= 100°F

Application:	Floor
Design Method:	ASD
Building Code:	IBC/IRC 2015
Load Sharing:	No
Deck:	Not Checked
Ceiling:	Gypsum 1/2"

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	2869	2079	0	0
2	0	2869	2079	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total Ld.	Case	Ld. Comb.
1 - SPF	3.500"	95%	2869 / 2079	4948	L	D+S
2 - SPF	3.500"	95%	2869 / 2079	4948	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	13679 ft-lb	5'11 1/2"	39750 ft-lb	0.344 (34%)	D+S	L
Unbraced	13679 ft-lb	5'11 1/2"	13695 ft-lb	0.999 (100%)	D+S	L
Shear	3659 lb	1'6 5/8"	13739 lb	0.266 (27%)	D+S	L
LL Defl inch	0.069 (L/2000)	5'11 1/2"	0.287 (L/480)	0.240 (24%)	S	L
TL Defl inch	0.164 (L/840)	5'11 1/2"	0.383 (L/360)	0.430 (43%)	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 8'8 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			Top	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall
2	Uniform			Top	349 PLF	0 PLF	349 PLF	0 PLF	0 PLF	A2
	Self Weight				12 PLF					

Notes Calculated Structural 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 4/24/2023	Manufacturer Info Metsa 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. Rolly Road, Suite #639 Fayetteville, NC USA 28314 910-854-TRUS

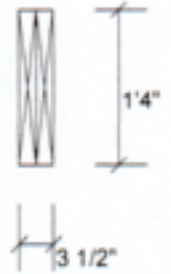
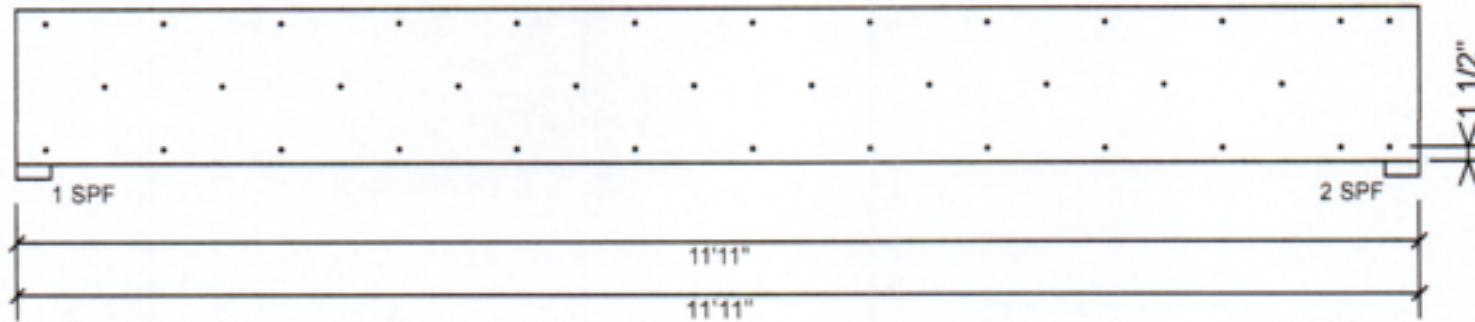


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BM1 Kerto-S LVL 1.750" X 16.000" 2-Ply - PASSED

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

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

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 4/24/2023

Manufacturer Info

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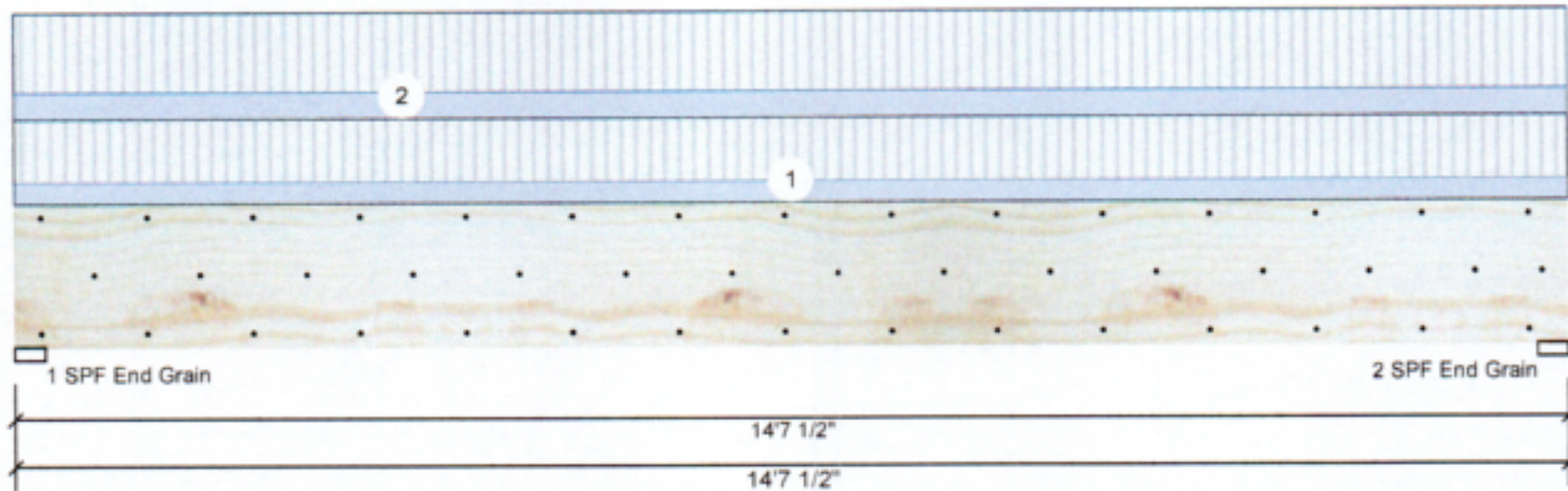


Client: Southern Touch Homes
 Project: 2 Microtower Road
 Address: 2 Microtower Road

Date: 9/30/2021
 Input by: David Landry
 Job Name: The Hickory II Plan
 Project #: J0921-5770

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

Level: Level



Member Information

Type: Girder	Application: Floor
Ply: 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	3868	1385	0	0	0
2	3868	1385	0	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	49%	1385 / 3868	5254	L	D+L
2 - SPF End Grain	3.500"	49%	1385 / 3868	5254	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	18077 ft-lb	7'3 3/4"	34565 ft-lb	0.523 (52%)	D+L	L
Unbraced	18077 ft-lb	7'3 3/4"	18150 ft-lb	0.996 (100%)	D+L	L
Shear	5080 lb	13' 7/8"	11947 lb	0.425 (43%)	D+L	L
LL Defl inch	0.229 (L/743)	7'3 13/16"	0.355 (L/480)	0.650 (65%)	L	L
TL Defl inch	0.311 (L/547)	7'3 13/16"	0.473 (L/360)	0.660 (66%)	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 must be laterally braced at a maximum of 6'4 1/2" o.c.
- 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	79 PLF	235 PLF	0 PLF	0 PLF	0 PLF	F5
2	Uniform			Far Face	98 PLF	294 PLF	0 PLF	0 PLF	0 PLF	F4
	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 4/24/2023

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 Metsa Wood
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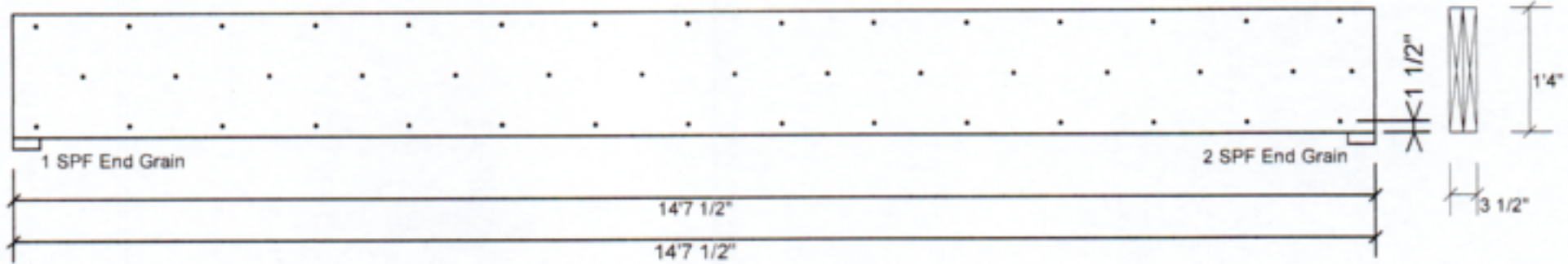


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 Job Name: The Hickory II Plan
 Project #: J0921-5770

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	79.8 %
Load	196.0 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

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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 4/24/2023

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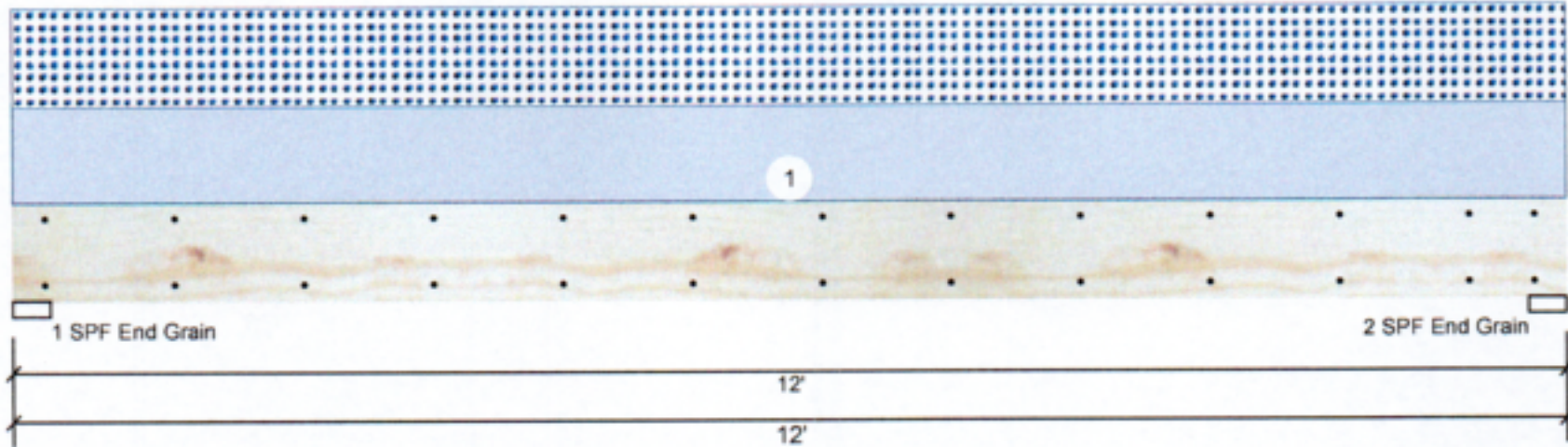


Client: Southern Touch Homes
 Project: 2 Microtower Road
 Address: 2 Microtower Road

Date: 9/30/2021
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 Job Name: The Hickory II Plan
 Project #: J0921-5770

BM3 S-P-F #2 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: 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	564	564	0	0
2	0	564	564	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	25%	564 / 564	1128	L	D+S
2 - SPF End Grain	3.500"	25%	564 / 564	1128	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3130 ft-lb	6'	3946 ft-lb	0.793 (79%)	D+S	L
Unbraced	3130 ft-lb	6'	3132 ft-lb	1.000 (100%)	D+S	L
Shear	940 lb	11'	2872 lb	0.327 (33%)	D+S	L
LL Defl inch	0.135 (L/1022)	6'	0.289 (L/480)	0.470 (47%)	S	L
TL Defl inch	0.271 (L/511)	6'	0.385 (L/360)	0.700 (70%)	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 8'8 5/8" 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	94 PLF	0 PLF	94 PLF	0 PLF	0 PLF	C1

Manufacturer Info

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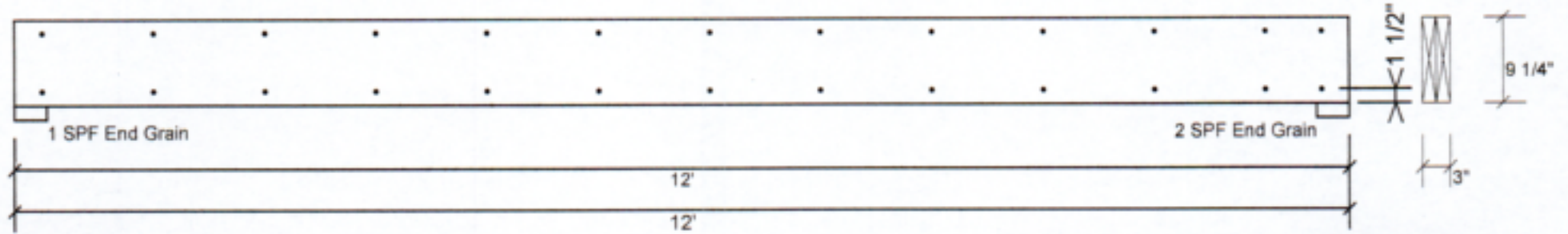


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 Project #: J0921-5770

BM3 S-P-F #2 2.000" X 10.000" 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	157.4 PLF
Yield Limit per Fastener	78.7 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Manufacturer Info	Comtech, Inc. 1001 S. Rally Road, Suite #539 Fayetteville, NC USA 28314 910-854-TRUS
	

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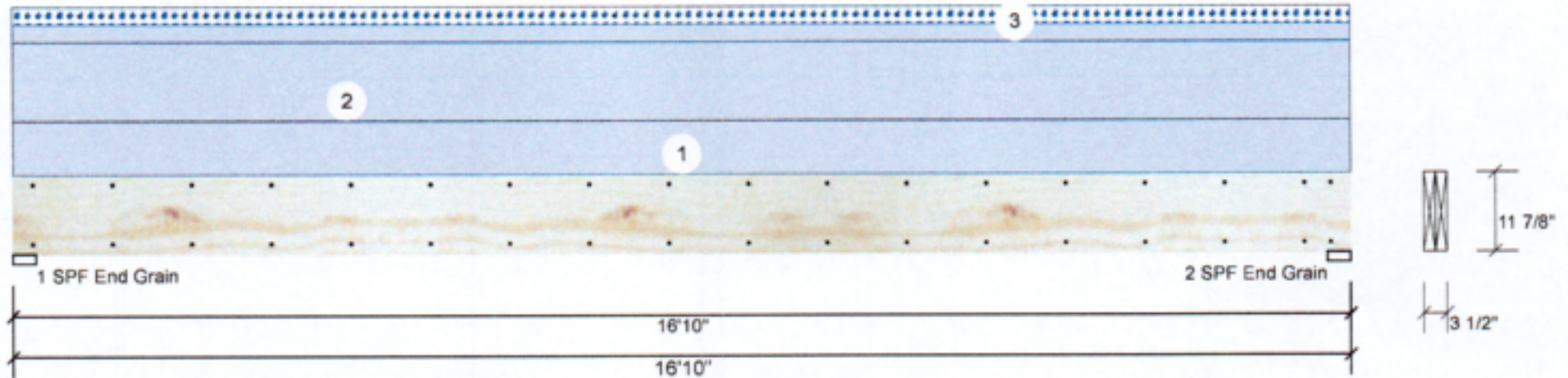


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 Project #: J0921-5770

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

Level: Level



Member Information

Type: Girder	Application: Floor
Plyes: 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	1509	168	0	0
2	0	1509	168	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	16%	1509 / 168	1677	L	D+S
2 - SPF End Grain	3.500"	16%	1509 / 168	1677	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6008 ft-lb	8'5"	17919 ft-lb	0.335 (34%)	D	Uniform
Unbraced	6678 ft-lb	8'5"	6683 ft-lb	0.999 (100%)	D+S	L
Shear	1290 lb	1'2 5/8"	7980 lb	0.162 (16%)	D	Uniform
LL Defl inch	0.035 (L/5617)	8'5 1/16"	0.409 (L/480)	0.090 (9%)	S	L
TL Defl inch	0.348 (L/564)	8'5 1/16"	0.546 (L/360)	0.640 (64%)	D+S	L

Design Notes

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- 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 14'10 1/2" 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	90 PLF	0 PLF	0 PLF	0 PLF	0 PLF	B1GE
3	Tie-In	0-0-0 to 16-10-0	1-0-0	Top	20 PSF	0 PSF	20 PSF	0 PSF	0 PSF	Roof Load
	Self Weight				9 PLF					

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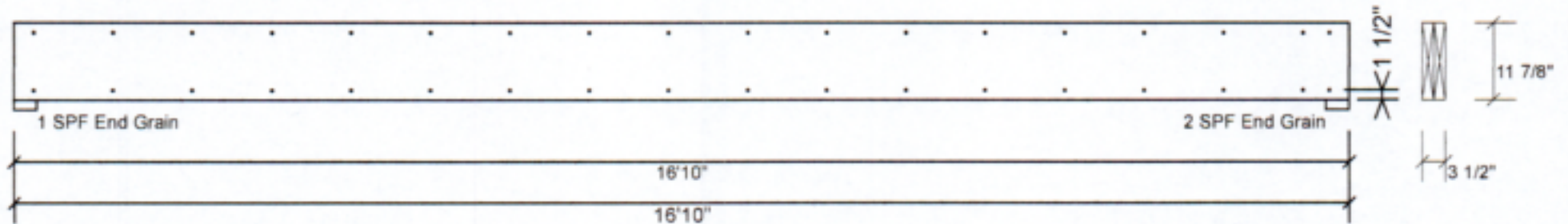


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GDH Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

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

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