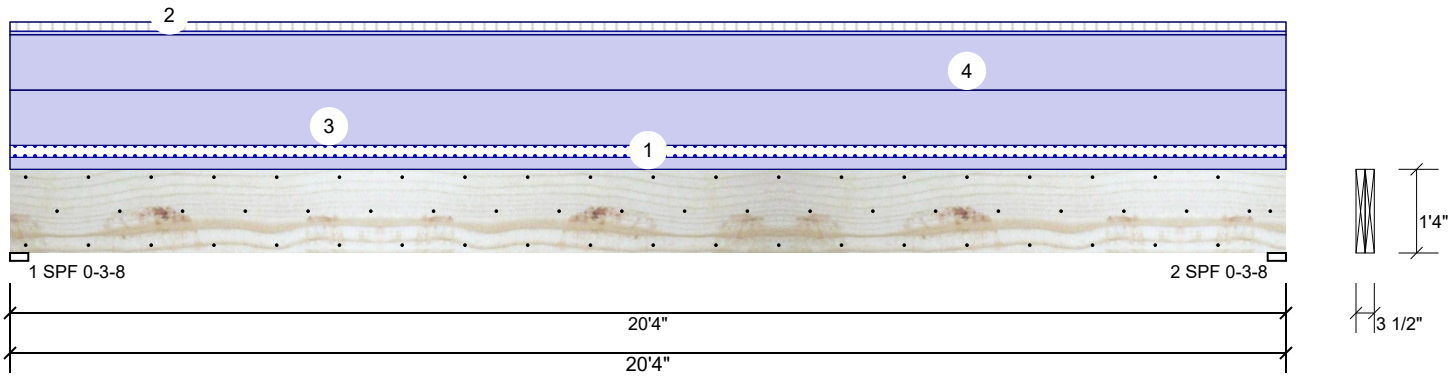
Client:	Hunter's Dream Homes	Date:	3/11/2024
Project:		Input by:	David Landry
Address:		Job Name:	The Hazel Plan
		Project #:	J0324-1425

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/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II	Ceiling:	Gypsum 1/2"
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	407	2983	264	0	0
2	Vertical	407	2983	264	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	67%	2983 / 503	3487	L	D+0.75(L+S)
2 - SPF	3.500"	Vert	67%	2983 / 503	3487	L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	16499 ft-lb	10'2"	34565 ft-lb	0.477 (48%)	D+L	L
Unbraced	16969 ft-lb	10'2"	17058 ft-lb	0.995 (99%)	D+0.75(L+S)	L
Shear	2899 lb	18'8 1/2"	11947 lb	0.243 (24%)	D+L	L
LL Defl inch	0.078 (L/3058)	10'2 1/16"	0.497 (L/480)	0.157 (16%)	0.75(L+S)	L
TL Defl inch	0.541 (L/441)	10'2 1/16"	0.663 (L/360)	0.816 (82%)	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. Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
3. Refer to last page of calculations for fasteners required for specified loads.
4. Girders are designed to be supported on the bottom edge only.
5. Top loads must be supported equally by all plies.
6. Top must be laterally braced at a maximum of 6'11" 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	Uniform			Near Face	26 PLF	0 PLF	26 PLF	0 PLF	0 PLF	M1
2	Tie-In Far	0-0-0 to 20-4-0	1-0-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	Floor
2	Tie-In Near	0-0-0 to 20-4-0	0-0-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	Floor
3	Uniform			Top	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall
4	Uniform			Top	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	B1GE
	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 6/28/2026

Manufacturer Info

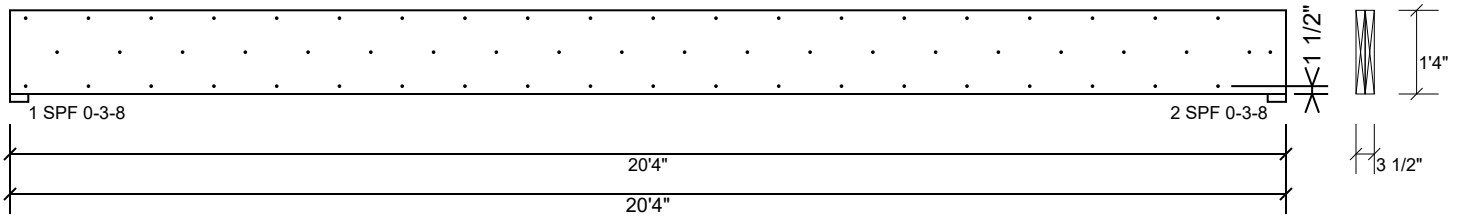
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us

Comtech, Inc.
1001 S Reilly Rd., NC 28314
(910) 864-8787

Client:	Hunter's Dream Homes	Date:	3/11/2024
Project:		Input by:	David Landry
Address:		Job Name:	The Hazel Plan
		Project #:	J0324-1425

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	9.2 %
Load	26.0 PLF
Yield Limit per Foot	282.4 PLF
Yield Limit per Fastener	94.1 lb.
C_M	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	D+S
Duration Factor	1.15

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 6/28/2026

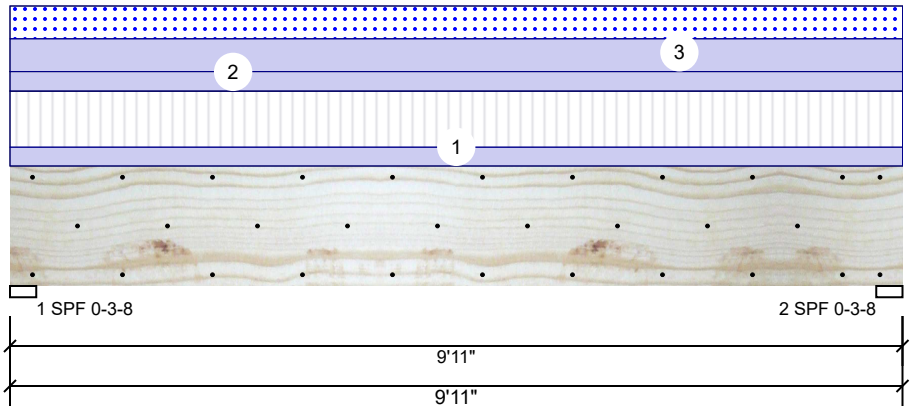
Manufacturer Info

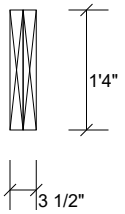
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us

Comtech, Inc.
1001 S Reilly Rd., NC
28314
(910) 864-8787

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

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1716	2233	1002	0	0
2	Vertical	1716	2233	1002	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	82%	2233 / 2038	4271	L	D+0.75(L+S)
2 - SPF	3.500"	Vert	82%	2233 / 2038	4271	L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	8946 ft-lb	4'11 1/2"	34565 ft-lb	0.259 (26%)	D+L	L
Unbraced	9676 ft-lb	4'11 1/2"	12654 ft-lb	0.765 (76%)	D+0.75(L+S)	L
Shear	3287 lb	1'7 1/2"	11947 lb	0.275 (28%)	D+L	L
LL Defl inch	0.041 (L/2792)	4'11 1/2"	0.237 (L/480)	0.172 (17%)	0.75(L+S)	L
TL Defl inch	0.085 (L/1332)	4'11 1/2"	0.316 (L/360)	0.270 (27%)	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 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
3 Refer to last page of calculations for fasteners required for specified loads.
4 Girders are designed to be supported on the bottom edge only.
5 Top loads must be supported equally by all plies.
6 Top 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			Near Face	116 PLF	346 PLF	0 PLF	0 PLF	0 PLF	F4
2	Uniform			Top	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall
3	Uniform			Top	202 PLF	0 PLF	202 PLF	0 PLF	0 PLF	A1
	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 6/28/2026

Manufacturer Info

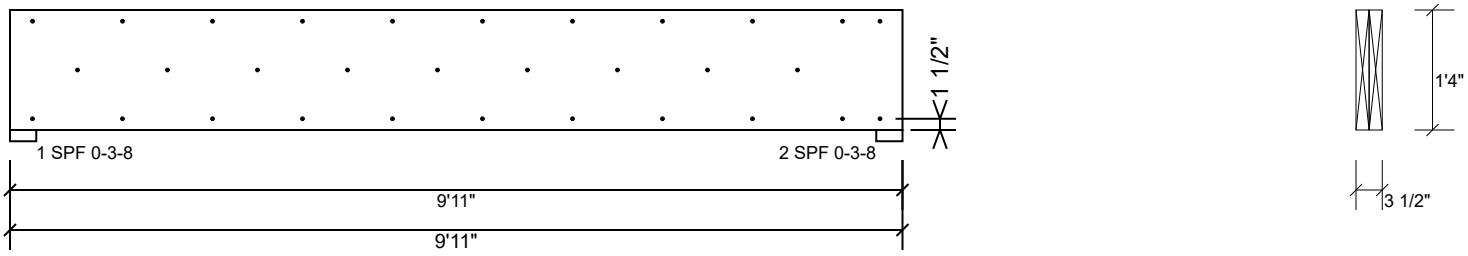
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us

Comtech, Inc.
1001 S Reilly Rd., NC
28314
(910) 864-8787

Client:	Hunter's Dream Homes	Date:	3/11/2024
Project:		Input by:	David Landry
Address:		Job Name:	The Hazel Plan
		Project #:	J0324-1425

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	94.1 %
Load	231.0 PLF
Yield Limit per Foot	245.6 PLF
Yield Limit per Fastener	81.9 lb.
C_M	1
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

This design is valid until 6/28/2026

Manufacturer Info

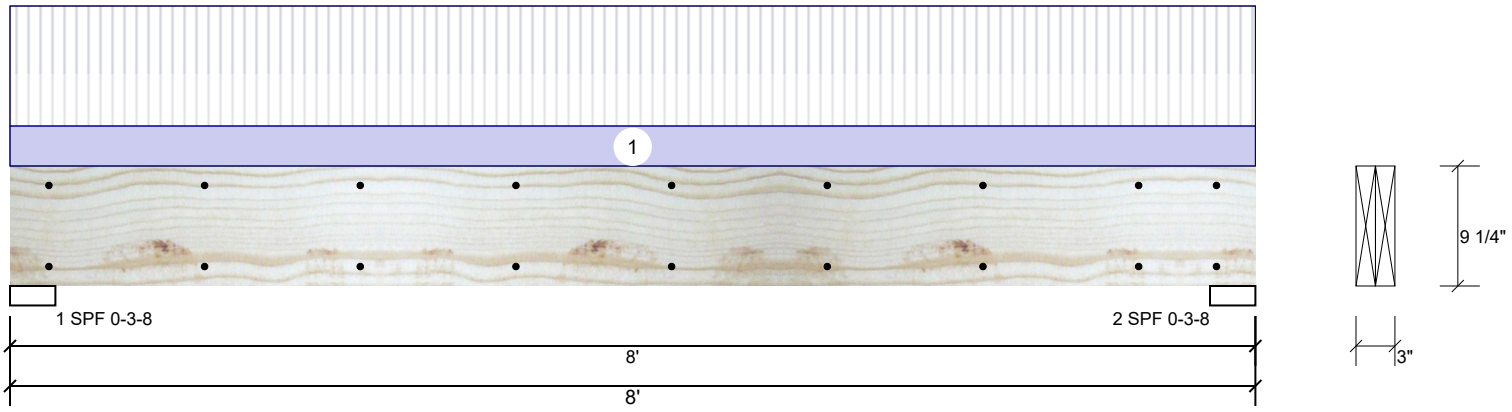
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us

Comtech, Inc.
1001 S Reilly Rd., NC
28314
(910) 864-8787

Client:	Hunter's Dream Homes	Date:	3/11/2024
Project:		Input by:	David Landry
Address:		Job Name:	The Hazel Plan
		Project #:	J0324-1425

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

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1380	460	0	0	0
2	Vertical	1380	460	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	41%	460 / 1380	1840	L	D+L
2 - SPF	3.500"	Vert	41%	460 / 1380	1840	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3270 ft-lb	4'	3431 ft-lb	0.953 (95%)	D+L	L
Unbraced	3270 ft-lb	4'	3271 ft-lb	1.000 (100%)	D+L	L
Shear	1351 lb	1' 3/4"	2498 lb	0.541 (54%)	D+L	L
LL Defl inch	0.091 (L/998)	4' 1/16"	0.189 (L/480)	0.481 (48%)	L	L
TL Defl inch	0.121 (L/749)	4' 1/16"	0.251 (L/360)	0.481 (48%)	D+L	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. Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
3. Refer to last page of calculations for fasteners required for specified loads.
4. Girders are designed to be supported on the bottom edge only.
5. Top loads must be supported equally by all plies.
6. Top must be laterally braced at a maximum of 4'6 7/16" 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	Uniform			Top	115 PLF	345 PLF	0 PLF	0 PLF	0 PLF	F2

This design is valid until 6/28/2026

Manufacturer Info

Comtech, Inc.
1001 S Reilly Rd., NC 28314
(910) 864-8787

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

This design is valid until 6/28/2026

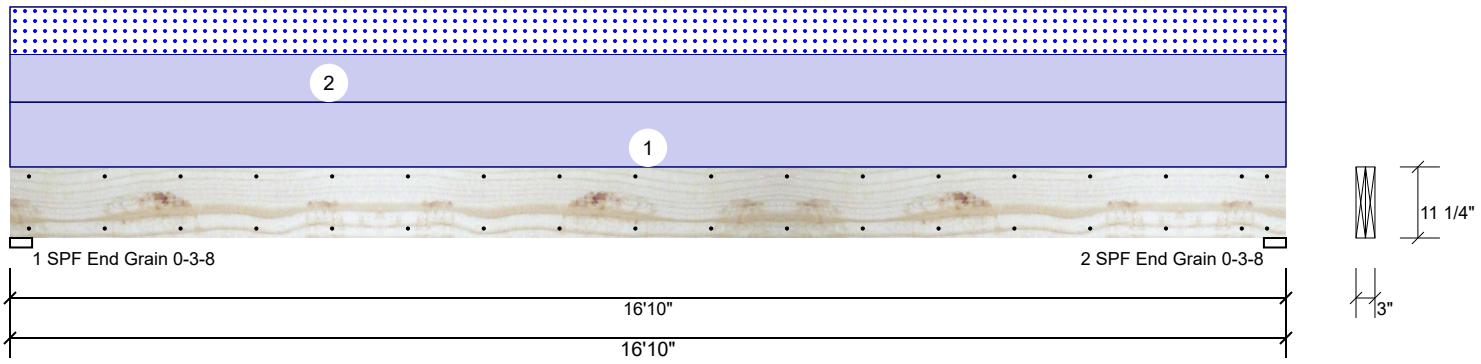
Manufacturer Info

Comtech, Inc.
1001 S Reilly Rd., NC
28314
(910) 864-8787

Client:	Hunter's Dream Homes	Date:	3/11/2024
Project:		Input by:	David Landry
Address:		Job Name:	The Hazel Plan
		Project #:	J0324-1425

GDH S-P-F #2 2.000" X 12.000" 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 - II	Ceiling:	Gypsum 1/2"
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	875	370	0	0
2	Vertical	0	875	370	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	28%	875 / 370	1246	L	D+S
2 - SPF End Grain	3.500"	Vert	28%	875 / 370	1246	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4961 ft-lb	8'5"	5306 ft-lb	0.935 (93%)	D+S	L
Unbraced	4961 ft-lb	8'5"	4964 ft-lb	0.999 (100%)	D+S	L
Shear	1064 lb	1'2 3/4"	3493 lb	0.305 (30%)	D+S	L
LL Defl inch	0.143 (L/1376)	8'5 1/16"	0.409 (L/480)	0.349 (35%)	S	L
TL Defl inch	0.480 (L/409)	8'5 1/16"	0.546 (L/360)	0.880 (88%)	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. Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
3. Refer to last page of calculations for fasteners required for specified loads.
4. Girders are designed to be supported on the bottom edge only.
5. Top loads must be supported equally by all plies.
6. Top must be laterally braced at a maximum of 4'3 1/16" 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	Uniform			Top	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall
2	Uniform			Top	44 PLF	0 PLF	44 PLF	0 PLF	0 PLF	M1

This design is valid until 6/28/2026

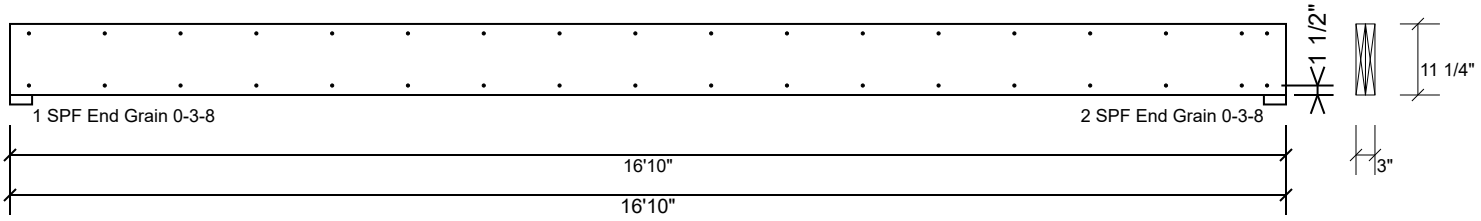
Manufacturer Info

Comtech, Inc.
1001 S Reilly Rd., NC
28314
(910) 864-8787

Client:	Hunter's Dream Homes	Date:	3/11/2024
Project:		Input by:	David Landry
Address:		Job Name:	The Hazel Plan
		Project #:	J0324-1425

GDH S-P-F #2 2.000" X 12.000" 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.
C_M	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

This design is valid until 6/28/2026

Manufacturer Info

Comtech, Inc.
1001 S Reilly Rd., NC
28314
(910) 864-8787