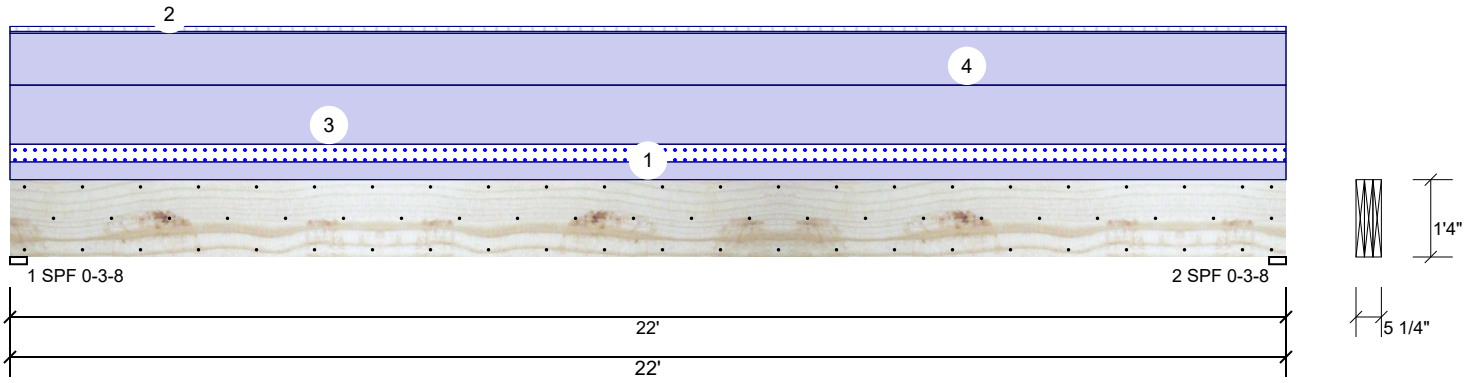
Client:	Hunter's Dream Homes	Date:	3/13/2024
Project:		Input by:	David Landry
Address:		Job Name:	The Bradford Plan
		Project #:	J0324-1481

BM1 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/IRC 2015
Deflection LL:	480	Load Sharing:	Yes
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	220	3159	396	0	0
2	Vertical	220	3159	396	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	46%	3159 / 462	3621	L	D+0.75(L+S)
2 - SPF	3.500"	Vert	46%	3159 / 462	3621	L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	16689 ft-lb	11'	48530 ft-lb	0.344 (34%)	D	Uniform
Unbraced	19130 ft-lb	11'	19139 ft-lb	1.000 (100%)	D+0.75(L+S)	L
Shear	2765 lb	1'7 1/2"	16128 lb	0.171 (17%)	D	Uniform
LL Defl inch	0.060 (L/4288)	11' 1/16"	0.539 (L/480)	0.112 (11%)	0.75(L+S)	L
TL Defl inch	0.473 (L/547)	11' 1/16"	0.719 (L/360)	0.658 (66%)	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". Nail from both sides.
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 9'4 11/16" 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			Near Face	36 PLF	0 PLF	36 PLF	0 PLF	0 PLF	M1
2	Tie-In Far	0-0-0 to 22-0-0	0-6-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	Floor
2	Tie-In Near	0-0-0 to 22-0-0	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	105 PLF	0 PLF	0 PLF	0 PLF	0 PLF	B1GE
	Self Weight				19 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 6/28/2026

Manufacturer Info

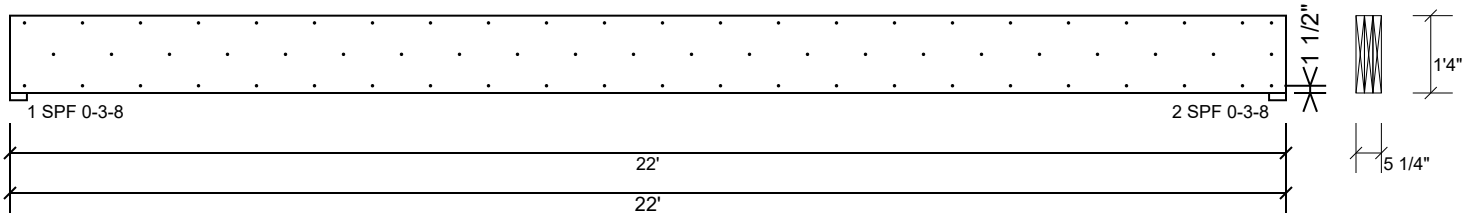
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us

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

Client:	Hunter's Dream Homes	Date:	3/13/2024
Project:		Input by:	David Landry
Address:		Job Name:	The Bradford Plan
		Project #:	J0324-1481

BM1 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	17.0 %
Load	48.0 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

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Lumber

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2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

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2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
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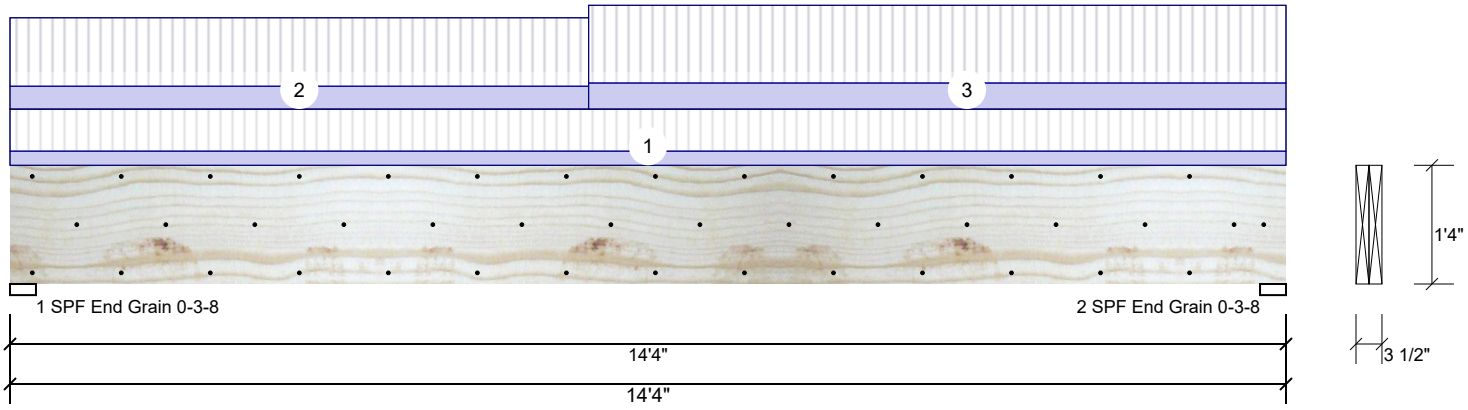
Client:	Hunter's Dream Homes	Date:	3/13/2024
Project:		Input by:	David Landry
Address:		Job Name:	The Bradford Plan
		Project #:	J0324-1481

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	5337	1874	0	0	0
2	Vertical	5561	1951	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	70%	1874 / 5337	7212	L	D+L
2 - SPF End Grain	3.500"	Vert	73%	1951 / 5561	7512	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	24890 ft-lb	7'3 5/16"	34565 ft-lb	0.720 (72%)	D+L	L
Unbraced	24890 ft-lb	7'3 5/16"	24968 ft-lb	0.997 (100%)	D+L	L
Shear	6292 lb	12'8 1/2"	11947 lb	0.527 (53%)	D+L	L
LL Defl inch	0.305 (L/546)	7'2 7/16"	0.347 (L/480)	0.879 (88%)	L	L
TL Defl inch	0.413 (L/404)	7'2 3/8"	0.463 (L/360)	0.891 (89%)	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 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 4'4 3/4" 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			Far Face	93 PLF	277 PLF	0 PLF	0 PLF	0 PLF	F4
2	Part. Uniform	0-0-0 to 6-6-0		Top	150 PLF	450 PLF	0 PLF	0 PLF	0 PLF	F6
3	Part. Uniform	6-6-0 to 14-4-0		Top	171 PLF	511 PLF	0 PLF	0 PLF	0 PLF	F5
	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 6/28/2026

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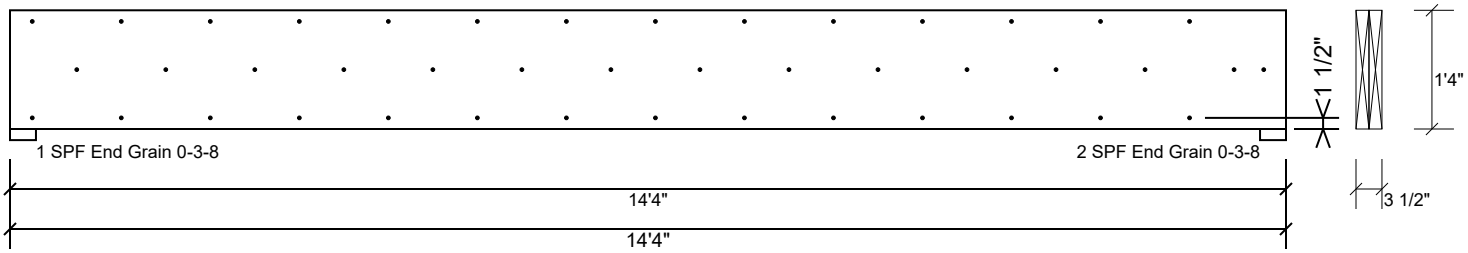
Client:	Hunter's Dream Homes	Date:	3/13/2024
Project:		Input by:	David Landry
Address:		Job Name:	The Bradford Plan
		Project #:	J0324-1481

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	75.3 %
Load	185.0 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

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Lumber

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2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

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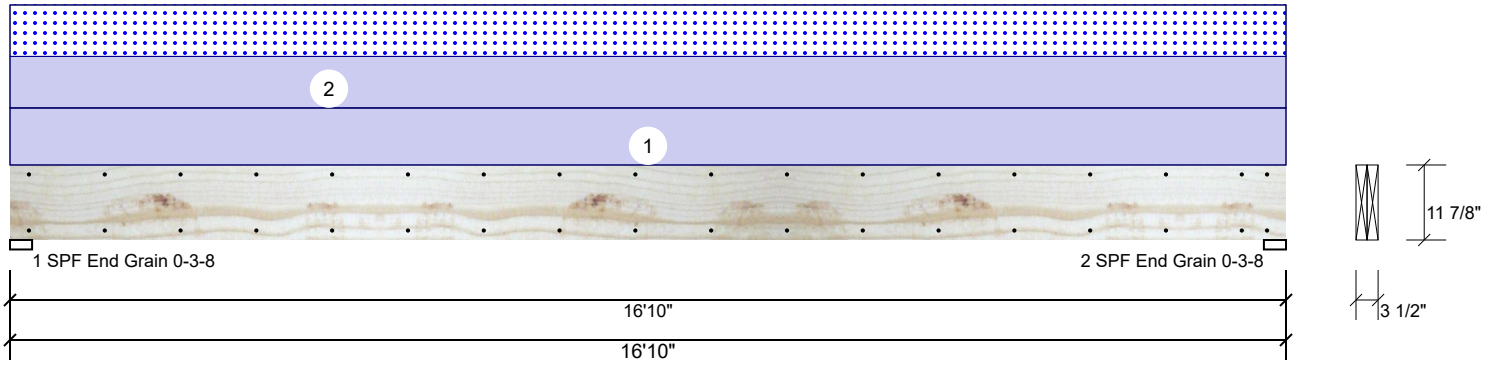
Client:	Hunter's Dream Homes	Date:	3/13/2024
Project:		Input by:	David Landry
Address:		Job Name:	The Bradford Plan
		Project #:	J0324-1481

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:	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	1037	455	0	0
2	Vertical	0	1037	455	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	14%	1037 / 455	1492	L	D+S
2 - SPF End Grain	3.500"	Vert	14%	1037 / 455	1492	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5941 ft-lb	8'5"	22897 ft-lb	0.259 (26%)	D+S	L
Unbraced	5941 ft-lb	8'5"	6086 ft-lb	0.976 (98%)	D+S	L
Shear	1274 lb	1'3 3/8"	10197 lb	0.125 (12%)	D+S	L
LL Defl inch	0.094 (L/2081)	8'5 1/16"	0.409 (L/480)	0.231 (23%)	S	L
TL Defl inch	0.310 (L/634)	8'5 1/16"	0.546 (L/360)	0.568 (57%)	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 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	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall
2	Uniform			Top	54 PLF	0 PLF	54 PLF	0 PLF	0 PLF	M1
	Self Weight				9 PLF					

Notes

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Lumber

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Handling & Installation

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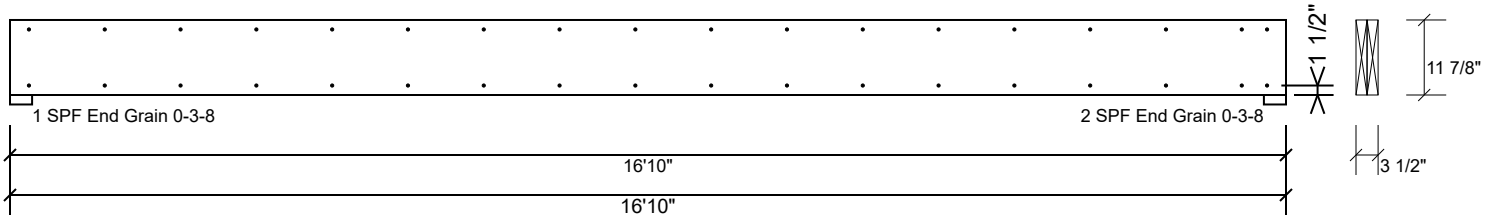

Multi-Ply Analysis

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

Notes

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