

NOTES:

- THIS DETAIL IS PICTORIAL ONLY!!!
- COLLAR TIES TO BE INSTALLED 1/3 OF THE WAY DOWN FROM THE RIDGE TO THE TOP OF THE TOP PLATE.
- SIZE OF LUMBER AND SPACING SHOWN MAY VARY FROM ACTUAL LUMBER SPECIFIED (AND SUPPLIED) ON ROOF FRAMING PLAN.

COLLAR TIE DETAIL

NO SCALE



Client: 84 Lumber-Fayetteville #2307

Date: 3/16/2022

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Project:

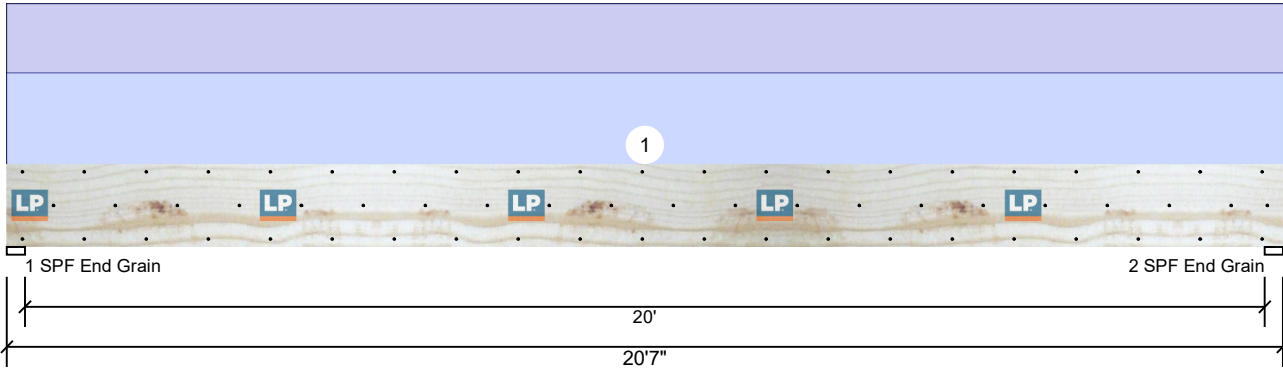
Input by: Kyle Militzer

Address: 258 Willow Croft Ct
Dunn, NC.

Job Name: 31522-JP-JMS

Project #: 31522-JP-JMS

Structural Ridge LP-LVL 2900Fb-2.0E 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:	IRC 2018
Deflection LL:	240	Load Sharing:	No
Deflection TL:	180	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	2481	0	0	3088
2	Vertical	0	2481	0	0	3088

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	61%	2481 / 3088	5568	L	D+C
2 - SPF End Grain	3.500"	Vert	61%	2481 / 3088	5568	L	D+C

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	27447 ft-lb	10'3 1/2"	43295 ft-lb	0.634 (63%)	D+C	L
Shear	4710 lb	1'7 1/2"	13300 lb	0.354 (35%)	D+C	L
LL Defl inch	0.497 (L/487)	10'3 9/16"	1.007 (L/240)	0.493 (49%)	C	L
TL Defl inch	0.896 (L/270)	10'3 9/16"	1.343 (L/180)	0.667 (67%)	D+C	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 Dead Load Deflection: Instant = 0.399", Long Term = 0.599".
- 3 Fasten all plies using 3 rows of 16d Sinkers (.148x3.25") at 12" o.c. Maximum end distance not to exceed 6". Clinch Nails where possible.
- 4 Refer to last page of calculations for fasteners required for specified loads.
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top loads must be supported equally by all plies.
- 7 Top must be continuously laterally braced.
- 8 Bottom must have sheathing attached or be continuously braced.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform		15-0-0	Top	15 PSF	0 PSF	0 PSF	0 PSF	20 PSF	
	Self Weight				16 PLF					

Notes

This component analysis is based on the loads, geometry and other conditions as entered by the user and listed in this report. The user is responsible to ensure the accuracy of the input and the applicability to the actual conditions of the structure for which this component is intended. This analysis is valid only for the product listed.
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Manufacturer Info

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414 Union Street, Suite 2000
Nashville, TN 37219
(888) 820-0325
www.lpcorp.com
APA: PR-L280, ICC-ES: ESR-2403,
LADBS: RR-25783, Florida: FL15228

U.S. Lumber
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U.S.A
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This design is valid until 11/3/2024



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Date: 3/16/2022

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Project:

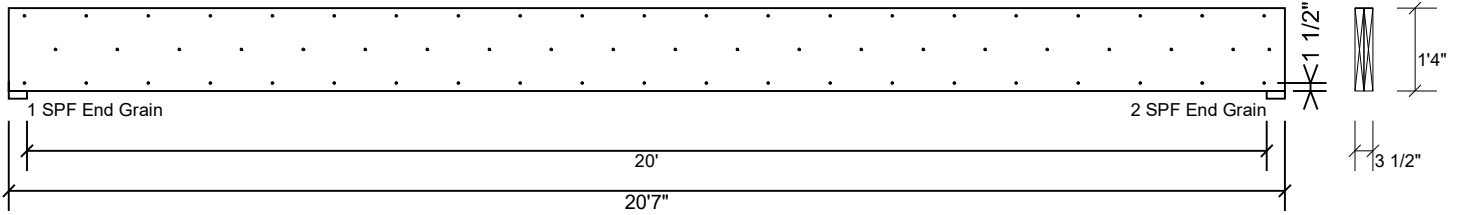
Input by: Kyle Militzer

Address: 258 Willow Croft Ct
Dunn, NC.

Job Name: 31522-JP-JMS

Project #: 31522-JP-JMS

Structural Ridge LP-LVL 2900Fb-2.0E 1.750" X 16.000" 2-Ply - PASSED Level: Level



Multi-Ply Analysis

Fasten all plies using 3 rows of 16d Sinker Nails (.148x3.25") at 12" o.c.. Maximum end distance not to exceed 6". Clinch Nails where possible.

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	352.8 PLF
Yield Limit per Fastener	117.6 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Notes

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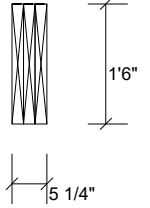
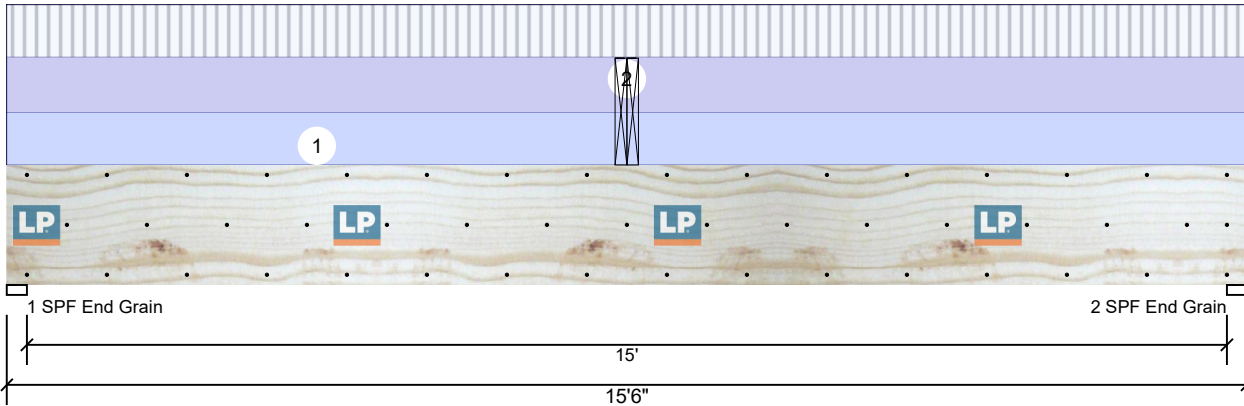
Input by: Kyle Militzer

Address: 258 Willow Croft Ct
Dunn, NC.

Job Name: 31522-JP-JMS

Project #: 31522-JP-JMS

15' Header if door/window opening LP-LVL 2900Fb-2.0E 1.750" X 18.000" 3-Ply - PASSED Level: Level



Member Information

Type: Header	Application: Floor
Plies: 3	Design Method: ASD
Moisture Condition: Dry	Building Code: IRC 2018
Deflection LL: 360	Load Sharing: Yes
Deflection TL: 240	Header Supports: No
Importance: Normal - II	Glass:
Temperature: Temp <= 100°F	Deck: Not Checked

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1163	2670	0	0	2706
2	Vertical	1163	2670	0	0	2706

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	47%	2670 / 2902	5572	Uniform	D+0.75(L+C)
2 - SPF End Grain	3.000"	Vert	47%	2670 / 2902	5572	Uniform	D+0.75(L+C)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	30676 ft-lb	7'9"	84054 ft-lb	0.365 (36%)	D+C	L
Shear	4896 lb	1'9"	22444 lb	0.218 (22%)	D+0.75(L+C)	Uniform
LL Defl inch	0.130 (L/1398)	7'9 1/16"	0.505 (L/360)	0.257 (26%)	C	L
TL Defl inch	0.251 (L/723)	7'9 1/16"	0.757 (L/240)	0.332 (33%)	D+C	L

Design Notes

- 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.
- Dead Load Deflection: Instant = 0.122", Long Term = 0.182".
- Fasten all plies using 3 rows of 16d Sinker Nails (.148x3.25") at 12" o.c. Maximum end distance not to exceed 6". Clinch Nails where possible.
- Refer to last page of calculations for fasteners required for specified loads.
- Girders are designed to be supported on the bottom edge only.
- Top loads must be supported equally by all plies.
- Top must be continuously laterally braced.
- Bottom must be laterally braced at bearings.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform		7-6-0	Top	21 PSF	20 PSF	0 PSF	0 PSF	20 PSF	
2	Point	7-9-0		Top	2481 lb	0 lb	0 lb	0 lb	3088 lb	Structural Ridge Brg 1
	Bearing Length	0-3-8								
	Self Weight				27 PLF					

Notes

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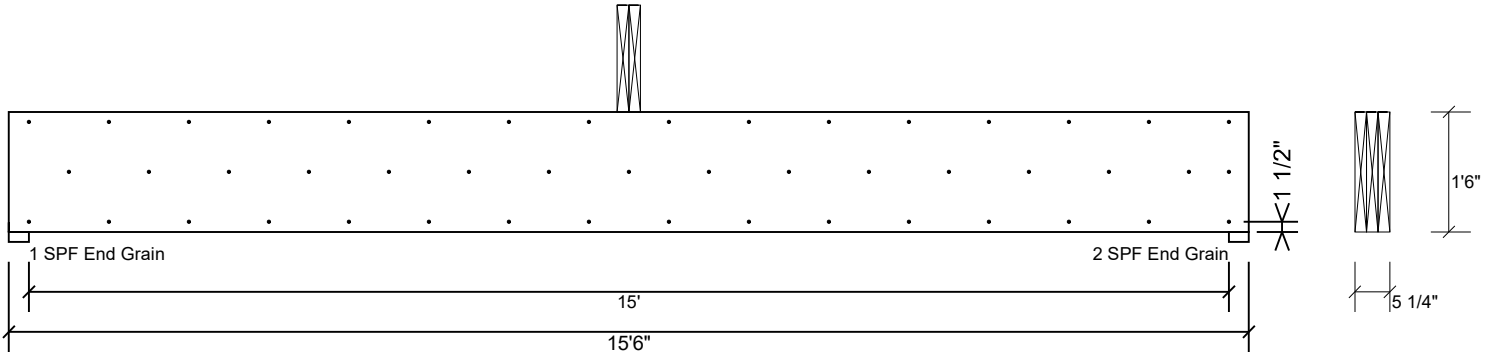
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This design is valid until 11/3/2024

15' Header if door/window opening LP-LVL 2900Fb-2.0E 1.750" X 18.000" 3-Ply - PASSED Level: Level



Multi-Ply Analysis

Fasten all plies using 3 rows of 16d Sinker Nails (.148x3.25") at 12" o.c.. Nail from both sides. Maximum end distance not to exceed 6". Clinch Nails where possible.

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	352.8 PLF
Yield Limit per Fastener	117.6 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Notes

This component analysis is based on the loads, geometry and other conditions as entered by the user and listed in this report. The user is responsible to ensure the accuracy of the input and the applicability to the actual conditions of the structure for which this component is intended. This analysis is valid only for the product listed.

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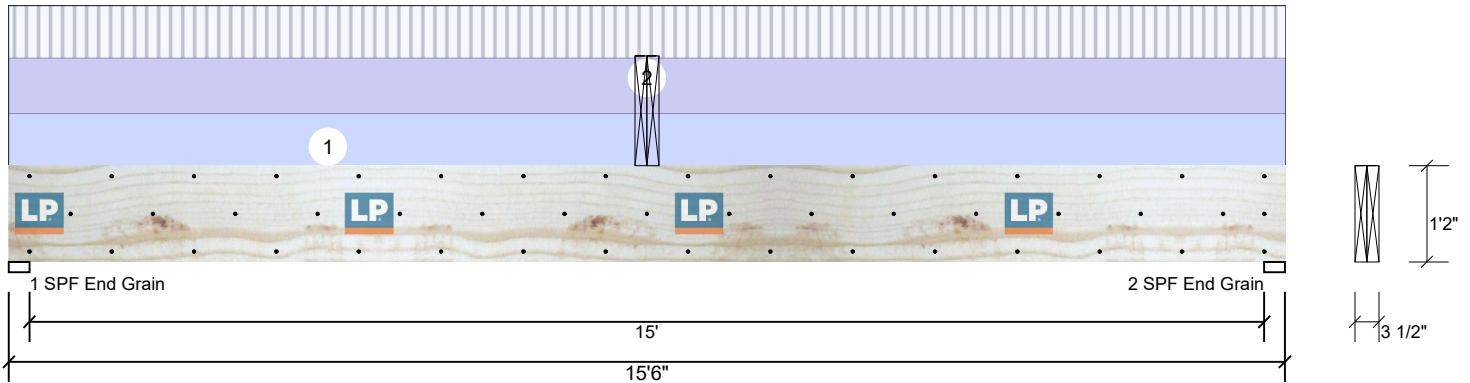
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U.S.A
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This design is valid until 11/3/2024

15' Header if cased opening LP-LVL 2900Fb-2.0E 1.750" X 14.000" 2-Ply - PASSED

Level: Level


Member Information

Type:	Header
Plies:	2
Moisture Condition:	Dry
Deflection LL:	360
Deflection TL:	240
Importance:	Normal - II
Temperature:	Temp <= 100°F

Application:	Floor
Design Method:	ASD
Building Code:	IRC 2018
Load Sharing:	No
Header Supports:	No
Glass:	
Deck:	Not Checked

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1163	2570	0	0	2706
2	Vertical	1163	2570	0	0	2706

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	69%	2570 / 2902	5471	Uniform	D+0.75(L+C)
2 - SPF End Grain	3.000"	Vert	69%	2570 / 2902	5471	Uniform	D+0.75(L+C)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	30248 ft-lb	7'9"	33786 ft-lb	0.895 (90%)	D+C	L
Shear	4926 lb	1'5"	11638 lb	0.423 (42%)	D+0.75(L+C)	Uniform
LL Defl inch	0.388 (L/468)	7'9 1/16"	0.504 (L/360)	0.770 (77%)	C	L
TL Defl inch	0.741 (L/245)	7'9 1/16"	0.756 (L/240)	0.980 (98%)	D+C	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 Dead Load Deflection: Instant = 0.353", Long Term = 0.529".
- 3 Fasten all plies using 3 rows of 16d Sinker Nails (.148x3.25") at 12" o.c. Maximum end distance not to exceed 6". Clinch Nails where possible.
- 4 Refer to last page of calculations for fasteners required for specified loads.
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top loads must be supported equally by all plies.
- 7 Top must be continuously laterally braced.
- 8 Bottom must be laterally braced at bearings.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform		7-6-0	Top	21 PSF	20 PSF	0 PSF	0 PSF	20 PSF	
2	Point	7-9-0		Top	2481 lb	0 lb	0 lb	0 lb	3088 lb	Structural Ridge Brg 1
	Bearing Length	0-3-8								
	Self Weight				14 PLF					

Notes

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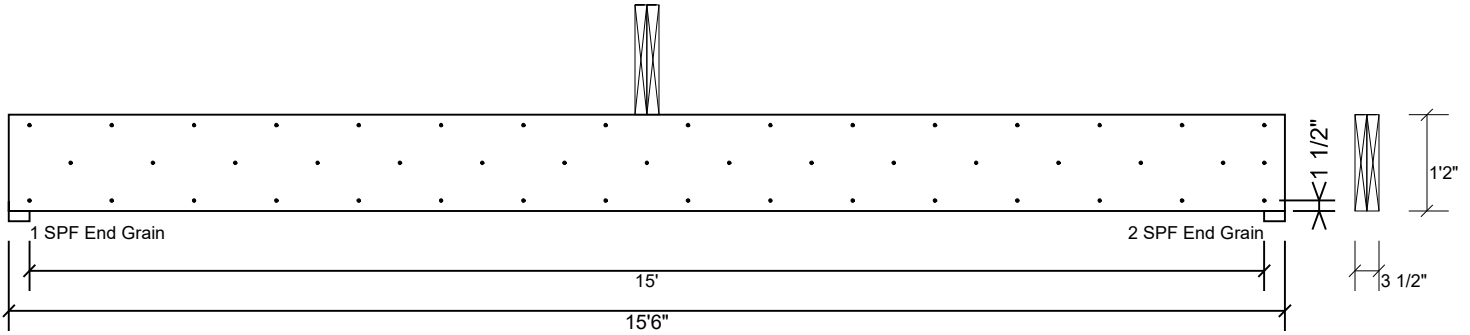
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This design is valid until 11/3/2024

15' Header if cased opening LP-LVL 2900Fb-2.0E 1.750" X 14.000" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 3 rows of 16d Sinker Nails (.148x3.25") at 12" o.c.. Maximum end distance not to exceed 6". Clinch Nails where possible.

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	352.8 PLF
Yield Limit per Fastener	117.6 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Notes

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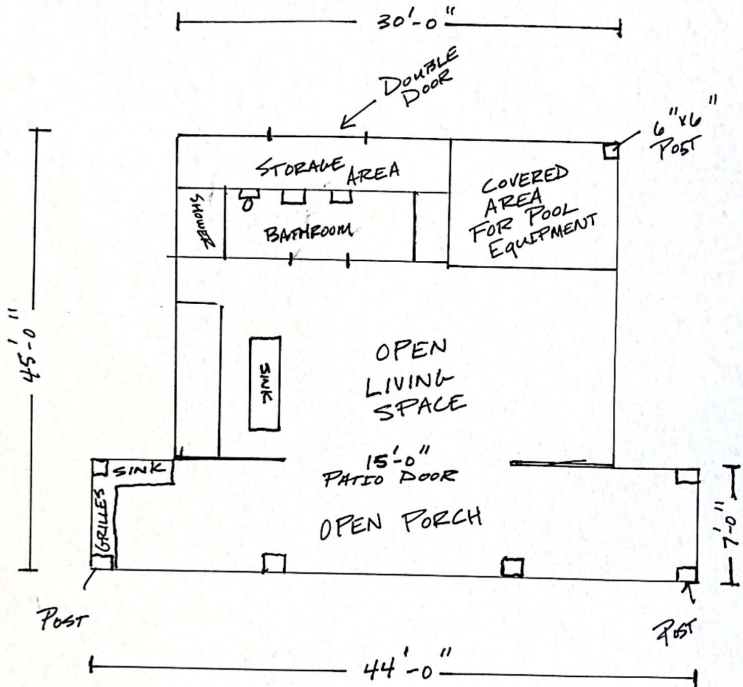
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258 WILLOWCROFT

CABANA



NOTES:

- MONOLITHIC SLAB
- 2"x6"x105" WALLS
- 2"x4" RAFTERS STEEL FRAMED
- 2"x10" HEADERS
- 2"x10" RIDGE BEAM