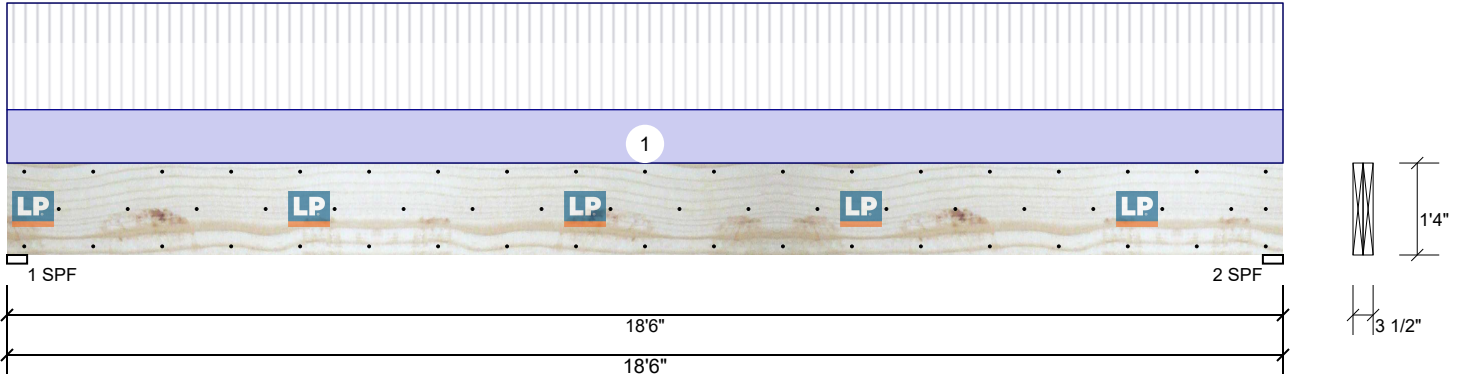


B1 Dining Rm to Kitchen LP-LVL 2900Fb-2.0E 1.750" X 16.000" 2-Ply - PASSED Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	2590	1443	0	0	0
2	Vertical	2590	1443	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	77%	1443 / 2590	4033	L	D+L
2 - SPF	3.500"	Vert	77%	1443 / 2590	4033	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	17782 ft-lb	9'3"	34636 ft-lb	0.513 (51%)	D+L	L
Shear	3346 lb	1'7 1/2"	10640 lb	0.314 (31%)	D+L	L
LL Defl inch	0.304 (L/713)	9'3 1/16"	0.452 (L/480)	0.674 (67%)	L	L
TL Defl inch	0.474 (L/458)	9'3 1/16"	0.903 (L/240)	0.524 (52%)	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 Dead Load Deflection: Instant = 0.169", Long Term = 0.254".
- 3 Fasten all plies using 3 rows of 12d Box nails (.128x3.25") 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 laterally braced at a maximum of 8'1 3/8" o.c.
- 8 Bottom must be laterally braced at end 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			Top	140 PLF	280 PLF	0 PLF	0 PLF	0 PLF	Roof/Ceiling Load
	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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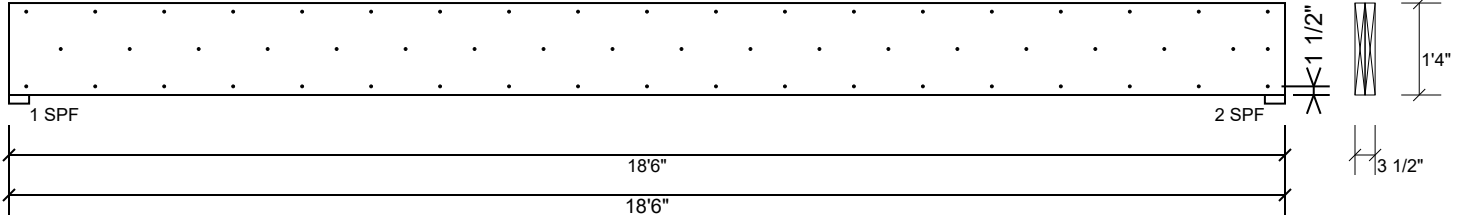
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This design is valid until 11/3/2024

B1 Dining Rm to Kitchen 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 12d Box nails (.128x3.25") 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	278.2 PLF
Yield Limit per Fastener	92.7 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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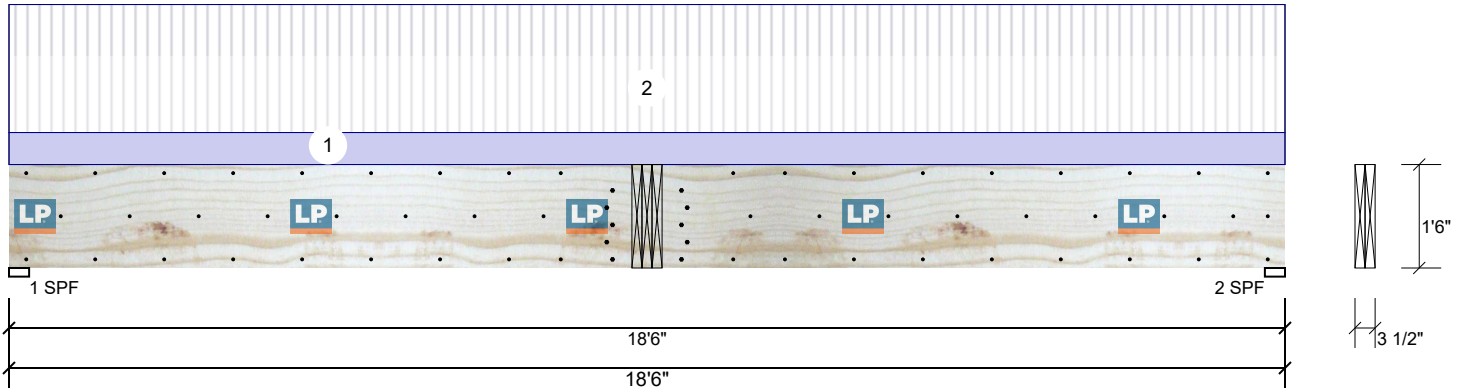
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This design is valid until 11/3/2024

B2 Dining To Great Room LP-LVL 2900Fb-2.0E 1.750" X 18.000" 2-Ply - PASSED Level: Level



Member Information

Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	240
Importance:	Normal - II
Temperature:	Temp <= 100°F

Application:	Floor
Design Method:	ASD
Building Code:	IBC/IRC 2015
Load Sharing:	No
Deck:	Not Checked

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	2365	1955	0	0	0
2	Vertical	2365	1955	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	83%	1955 / 2365	4320	L	D+L
2 - SPF	3.500"	Vert	83%	1955 / 2365	4320	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	36108 ft-lb	9'3"	43105 ft-lb	0.838 (84%)	D+L	L
Shear	4225 lb	1'9 1/2"	11970 lb	0.353 (35%)	D+L	L
LL Defl inch	0.313 (L/693)	9'3 1/16"	0.452 (L/480)	0.693 (69%)	L	L
TL Defl inch	0.574 (L/377)	9'3 1/16"	0.903 (L/240)	0.636 (64%)	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 Dead Load Deflection: Instant = 0.261", Long Term = 0.392".
- 3 Fasten all plies using 3 rows of 12d Box nails (.128x3.25") 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 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
- 6 Simpson fasteners applied from a single side of the member use tip values where published.
- 7 Girders are designed to be supported on the bottom edge only.
- 8 Top loads must be supported equally by all plies.
- 9 Top must be laterally braced at a maximum of 3'11 7/16" o.c.
- 10 Bottom must be laterally braced at end 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		1-0-0	Top	10 PSF	40 PSF	0 PSF	0 PSF	0 PSF	
2	Point	9-3-0		Near Face	3392 lb	3990 lb	0 lb	0 lb	0 lb	B3 Great Room Beam Brg 1
	Self Weight				18 PLF					

Notes

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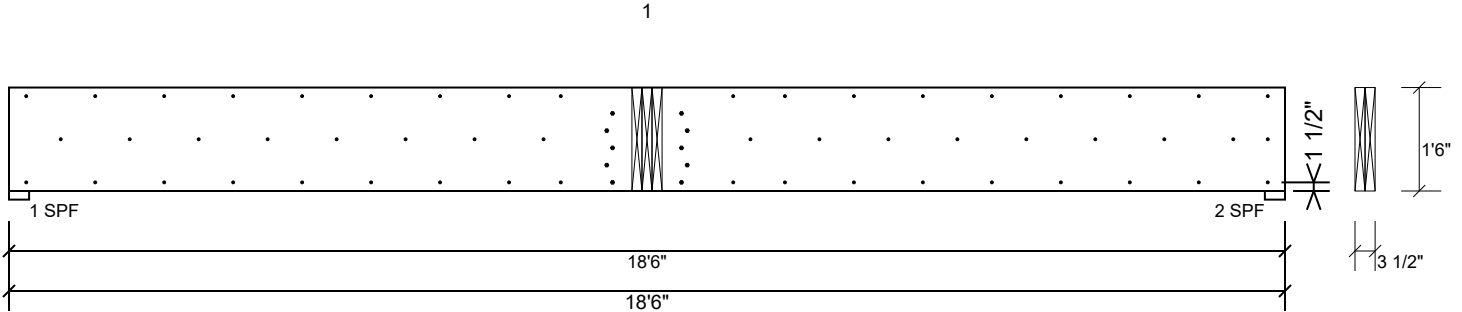
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This design is valid until 11/3/2024

B2 Dining To Great Room LP-LVL 2900Fb-2.0E 1.750" X 18.000" 2-Ply - PASSED Level: Level



Multi-Ply Analysis

Fasten all plies using 3 rows of 12d Box nails (.128x3.25") at 12" o.c.. except for regions covered by concentrated load fastening. Maximum end distance not to exceed 6". Clinch Nails where possible.

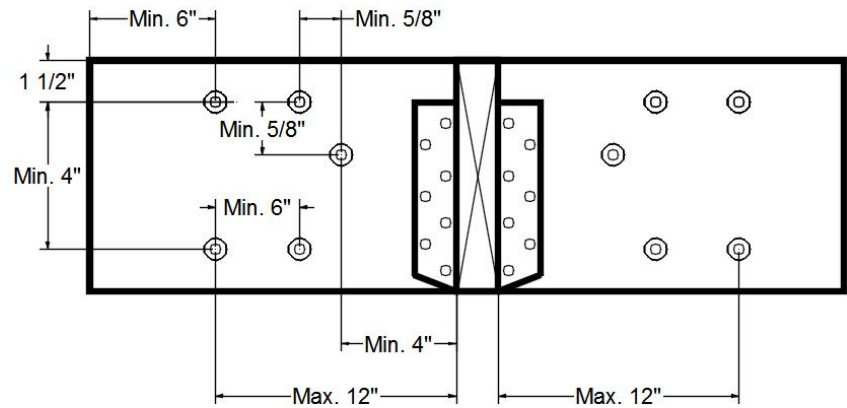
Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	278.2 PLF
Yield Limit per Fastener	92.7 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Concentrated Load

Fasten at concentrated side load at 9-3-0 with a minimum of (10) – SDW22338 in the pattern shown. All fasteners shall be installed with the head on the side of the applied load.

Capacity	92.3 %
Load	3691.0lb.
Total Yield Limit	4000.0 lb.
Cg	1.0000
Yield Limit per Fastener	400.0 lb.
Yield Mode	Lookup
Load Combination	D+L
Duration Factor	1.00

Min/Max fastener distances for Concentrated Side Loads



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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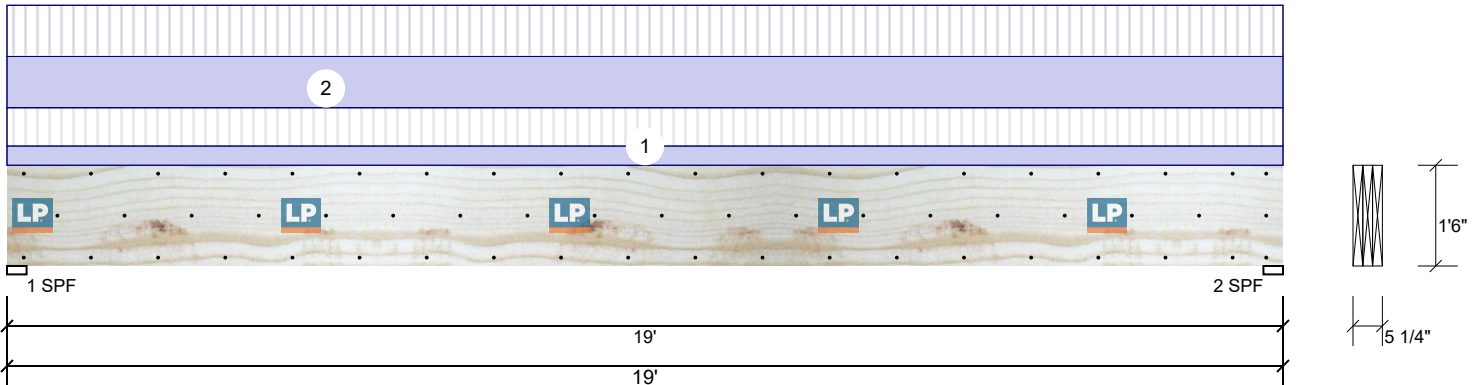
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This design is valid until 11/3/2024

B3 Great Room Beam LP-LVL 2900Fb-2.0E 1.750" X 18.000" 3-Ply - PASSED Level: Level



Member Information

Type:	Girder
Plies:	3
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	240
Importance:	Normal - II
Temperature:	Temp <= 100°F

Application:	Floor
Design Method:	ASD
Building Code:	IBC/IRC 2015
Load Sharing:	Yes
Deck:	Not Checked

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	3990	3392	0	0	0
2	Vertical	3990	3392	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	95%	3392 / 3990	7382	L	D+L
2 - SPF	3.500"	Vert	95%	3392 / 3990	7382	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	33468 ft-lb	9'6"	67243 ft-lb	0.498 (50%)	D+L	L
Shear	6030 lb	1'9 1/2"	17955 lb	0.336 (34%)	D+L	L
LL Defl inch	0.242 (L/921)	9'6 1/16"	0.464 (L/480)	0.521 (52%)	L	L
TL Defl inch	0.448 (L/498)	9'6 1/16"	0.928 (L/240)	0.482 (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 Dead Load Deflection: Instant = 0.206", Long Term = 0.308".
- 3 Fasten all plies using 3 rows of 12d Box nails (.128x3.25") 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 laterally braced at a maximum of 7'3 7/8" o.c.
- 8 Bottom must be laterally braced at end 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			Top	90 PLF	180 PLF	0 PLF	0 PLF	0 PLF	Ceiling Joists
2	Uniform			Top	240 PLF	240 PLF	0 PLF	0 PLF	0 PLF	Roof Load
	Self Weight				27 PLF					

Notes

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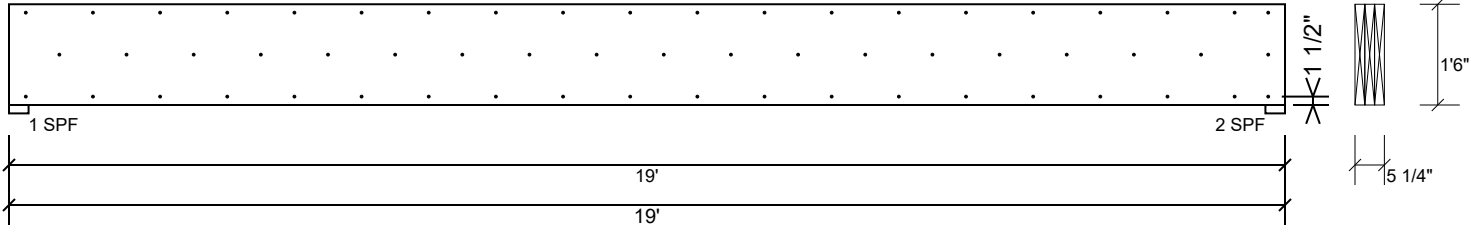
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This design is valid until 11/3/2024

B3 Great Room Beam 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 12d Box nails (.128x3.25") 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	278.2 PLF
Yield Limit per Fastener	92.7 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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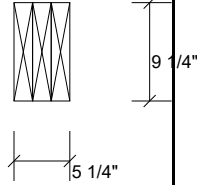
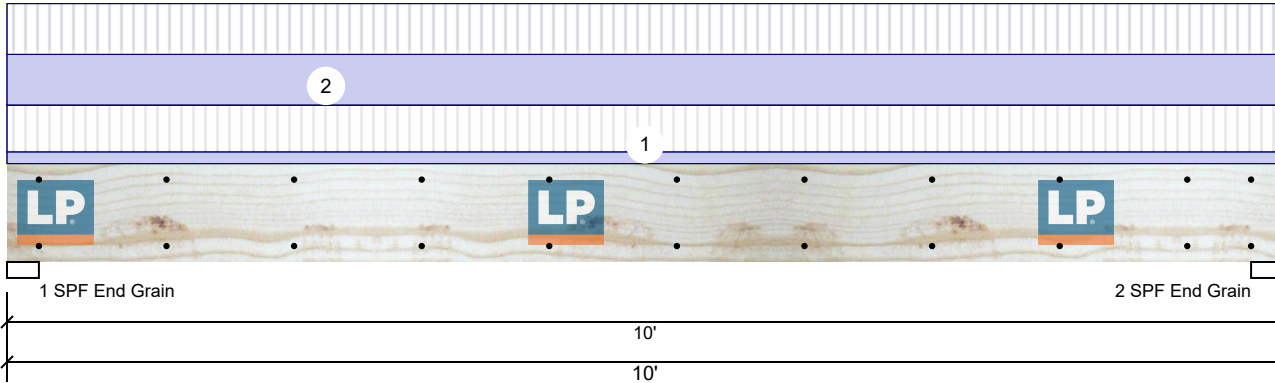
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This design is valid until 11/3/2024

9' Garage Door Header LP-LVL 2900Fb-2.0E 1.750" X 9.250" 3-Ply - PASSED Level: Level



Member Information

Type:	Header	Application:	Floor
Plies:	3	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	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	2500	1669	0	0	0
2	Vertical	2500	1669	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	35%	1669 / 2500	4169	L	D+L
2 - SPF End Grain	3.000"	Vert	35%	1669 / 2500	4169	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	9657 ft-lb	5'	19369 ft-lb	0.499 (50%)	D+L	L
Shear	3329 lb	8'11 3/4"	9227 lb	0.361 (36%)	D+L	L
LL Defl inch	0.153 (L/754)	5'	0.241 (L/480)	0.636 (64%)	L	L
TL Defl inch	0.255 (L/452)	5'	0.481 (L/240)	0.531 (53%)	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 Dead Load Deflection: Instant = 0.102", Long Term = 0.153".
- 3 Fasten all plies using 2 rows of 12d Box nails (.128x3.25") 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 laterally braced at end bearings.
- 8 Bottom must be laterally braced at end 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			Top	60 PLF	240 PLF	0 PLF	0 PLF	0 PLF	Floor Load
2	Uniform			Top	260 PLF	260 PLF	0 PLF	0 PLF	0 PLF	Roof/Ceiling Load
	Self Weight				14 PLF					

Notes

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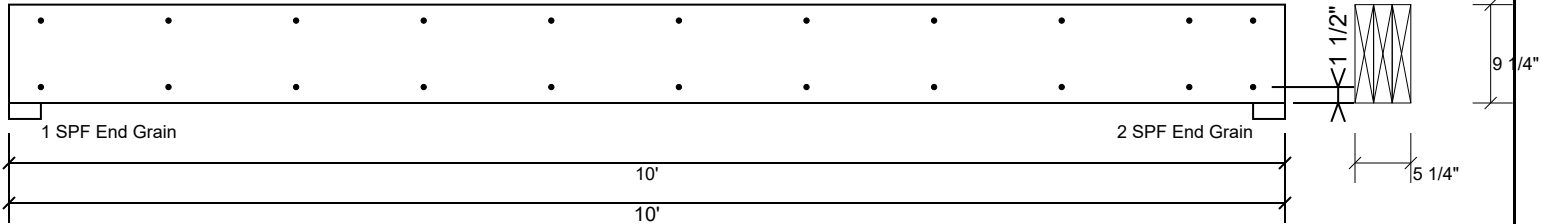
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This design is valid until 11/3/2024

9' Garage Door Header LP-LVL 2900Fb-2.0E 1.750" X 9.250" 3-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 rows of 12d Box nails (.128x3.25") 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	185.4 PLF
Yield Limit per Fastener	92.7 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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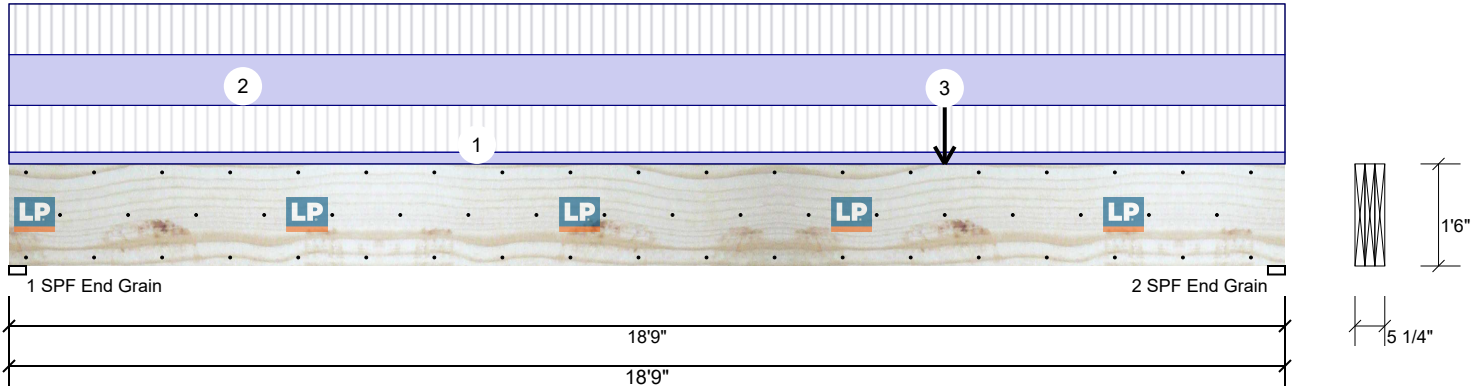
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18' Garage Door Header LP-LVL 2900Fb-2.0E 1.750" X 18.000" 3-Ply - PASSED Level: Level



Member Information

Type:	Header	Application:	Floor
Plies:	3	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	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	4819	3385	0	0	0
2	Vertical	5056	3622	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	69%	3385 / 4819	8203	L	D+L
2 - SPF End Grain	3.000"	Vert	73%	3622 / 5056	8679	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	38282 ft-lb	9'8 3/16"	67243 ft-lb	0.569 (57%)	D+L	L
Shear	7237 lb	17'	17955 lb	0.403 (40%)	D+L	L
LL Defl inch	0.295 (L/747)	9'5 3/8"	0.460 (L/480)	0.642 (64%)	L	L
TL Defl inch	0.506 (L/436)	9'5 9/16"	0.920 (L/240)	0.550 (55%)	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 Dead Load Deflection: Instant = 0.210", Long Term = 0.315".
- 3 Fasten all plies using 3 rows of 12d Box nails (.128x3.25") 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			Top	60 PLF	240 PLF	0 PLF	0 PLF	0 PLF	Floor Load
2	Uniform			Top	260 PLF	260 PLF	0 PLF	0 PLF	0 PLF	Roof Load
3	Point	13-9-0		Top	500 lb	500 lb	0 lb	0 lb	0 lb	Point Load
	Bearing Length	0-3-8								
	Self Weight				27 PLF					

Notes

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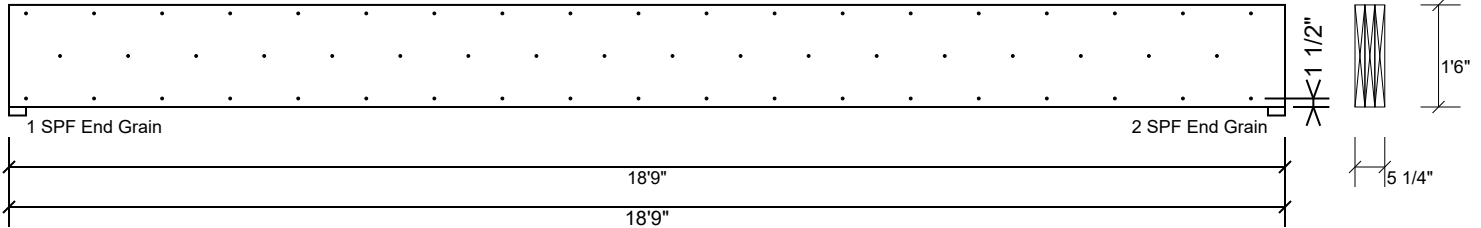
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18' Garage Door Header LP-LVL 2900Fb-2.0E 1.750" X 18.000" 3-Ply - PASSED Level: Level



Multi-Ply Analysis

Fasten all plies using 3 rows of 12d Box nails (.128x3.25") 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	278.2 PLF
Yield Limit per Fastener	92.7 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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Manufacturer Info

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APA: PR-L280, ICC-ES: ESR-2403,
LADBS: RR-25783, Florida: FL15228

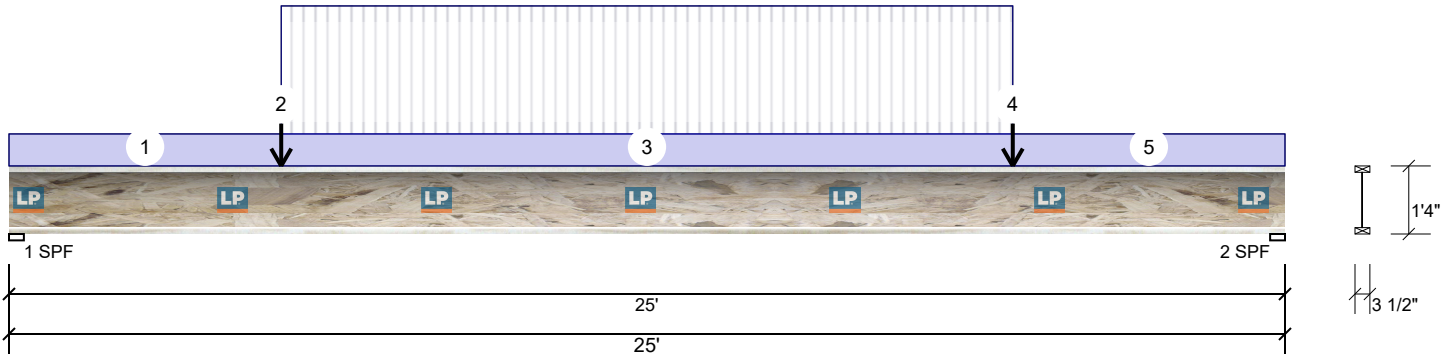
BFS/Locust Lumber Company
312 E. Main Street, North Carolina
28127
704-888-4411



This design is valid until 11/3/2024

Joists over Garage LPI 42 Plus 16.000" - PASSED

Level: Level



Member Information

Type:	Joist
Spacing:	16" o.c.
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	240
Importance:	Normal - II
Temperature:	Temp <= 100°F

Application:	Floor
Design Method:	ASD
Building Code:	IBC/IRC 2015
Load Sharing:	No
Deck:	Not Checked

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	507	229	0	0	0
2	Vertical	507	229	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	48%	229 / 507	736	L	D+L
2 - SPF	3.500"	Vert	48%	229 / 507	736	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5281 ft-lb	12'6"	9725 ft-lb	0.543 (54%)	D+L	L
Shear	733 lb	24'9 1/4"	2115 lb	0.347 (35%)	D+L	L
LL Defl inch	0.436 (L/676)	12'6 1/16"	0.614 (L/480)	0.710 (71%)	L	L
TL Defl inch	0.586 (L/502)	12'6 1/16"	1.227 (L/240)	0.478 (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 Dead Load Deflection: Instant = 0.151", Long Term = 0.226".
- 3 Top flange must be laterally braced at a maximum of 8'1" o.c.
- 4 Bottom flange must be laterally braced at bearings.

ID	Load Type	Location	Trib Width	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Part. Uniform	0-0-0 to 5-4-0		10 PSF	0 PSF	0 PSF	0 PSF	0 PSF	Ceiling Load
2	Point	5-4-0		63 lb	125 lb	0 lb	0 lb	0 lb	Kneewall Load
	Bearing Length	0-3-0							
3	Part. Uniform	5-4-0 to 19-8-0		10 PSF	40 PSF	0 PSF	0 PSF	0 PSF	Floor Load
4	Point	19-8-0		63 lb	125 lb	0 lb	0 lb	0 lb	Kneewall Load
	Bearing Length	0-3-0							
5	Part. Uniform	19-8-0 to 25-0-0		10 PSF	0 PSF	0 PSF	0 PSF	0 PSF	Ceiling Load

Notes

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