



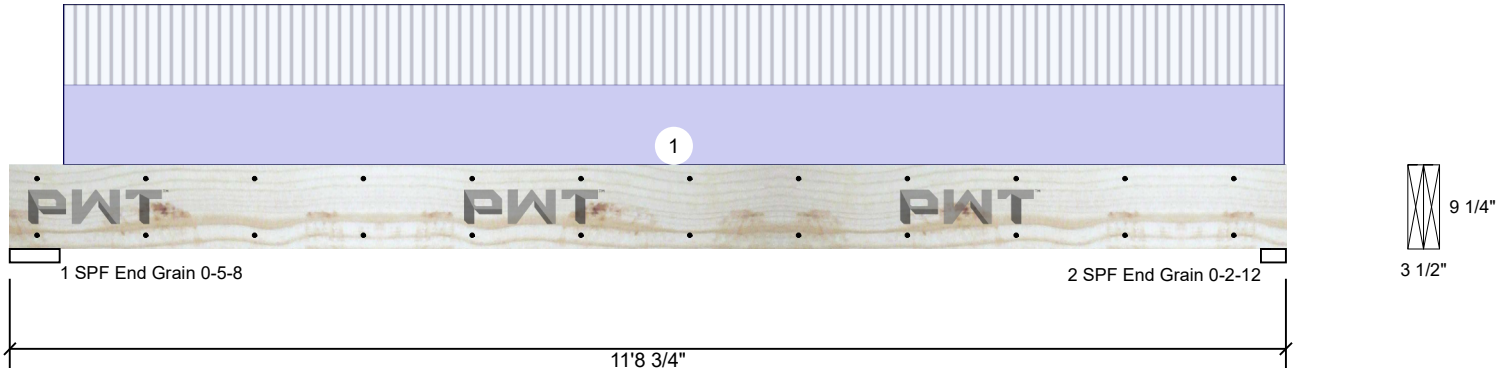
Client: 84 Lumber-Fayetteville #2307
Project: CL3281-3C-GR-CS518
Address: CL3281-3C-GR-CS518

Date: 9/16/2025
Input by: Will Evans
Job Name: 202509-81714
Project #: 81714

Page 1 of 2

DB1 2.0E 2900Fb PWT LVL 1.750" X 9.250" 2-Ply - PASSED

Level: 2ND FLR



Member Information

Type: Girder
Plies: 2
Moisture Condition: Dry
Deflection LL: 360
Deflection TL: 240
Importance: Normal - II
Temperature: Temp <= 100°F
General Load
Floor Live: 40 PSF
Dead: 10 PSF

Application: Floor
Design Method: ASD
Building Code: IRC 2021
Load Sharing: No
Deck: Not Checked

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	575	631	0	0	0
2	Vertical	602	655	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	5.500"	Vert	8%	631 / 575	1206	L	D+L
2 - SPF End Grain	2.750"	Vert	17%	655 / 602	1256	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3417 ft-lb	5'11 3/4"	12416 ft-lb	28%	D+L	L
Shear	1042 lb	1'2 3/4"	6151 lb	17%	D+L	L
LL Defl inch	0.085 (L/1570)	5'11 3/4"	0.372 (L/360)	23%	L	L
TL Defl inch	0.178 (L/752)	5'11 3/4"	0.558 (L/240)	32%	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings.
- 2 Dead Load Deflection: Instant = 0.093", Long Term = 0.139".
- 3 Fasten all plies using 2 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 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	Part. Uniform	0-6-0 to 11-8-8		Top	105 PLF	105 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				9 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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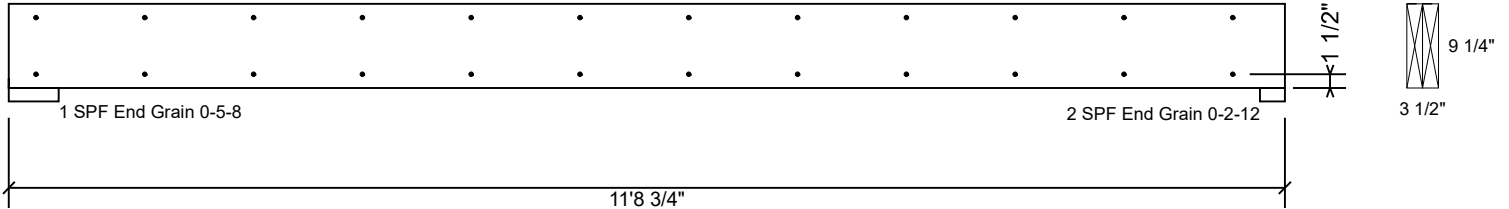
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DB1 2.0E 2900Fb PWT LVL 1.750" X 9.250" 2-Ply - PASSED

Level: 2ND FLR



Multi-Ply Analysis

Fasten all plies using 2 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	235.2 PLF
Yield Limit per Fastener	117.6 lb.
C _m	1
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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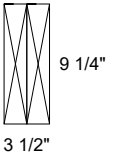
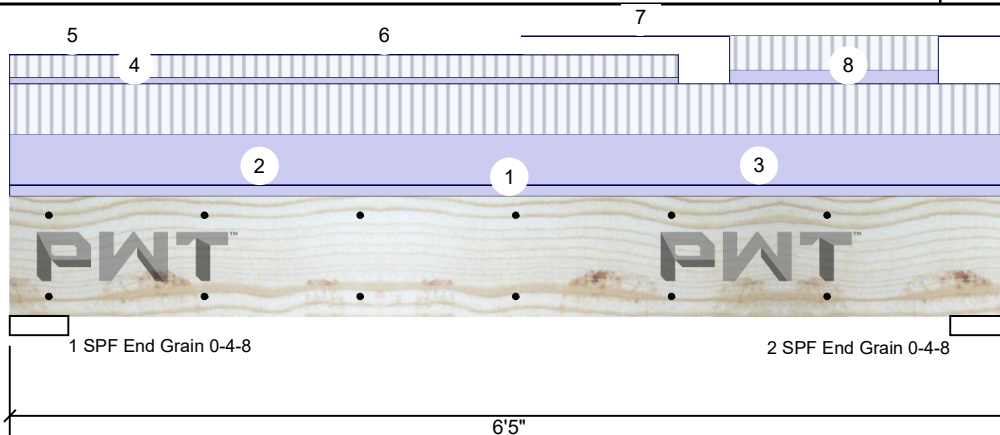
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Project #: 81714

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HD1-A 2.0E 2900Fb PWT LVL 1.750" X 9.250" 2-Ply - PASSED

Level: 2ND FLR



Member Information

Type: Girder
Plies: 2
Moisture Condition: Dry
Deflection LL: 360
Deflection TL: 240
Importance: Normal - II
Temperature: Temp <= 100°F
General Load
Floor Live: 40 PSF
Dead: 10 PSF

Application: Floor
Design Method: ASD
Building Code: IRC 2021
Load Sharing: No
Deck: Not Checked

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	2091	2019	0	0	0
2	Vertical	2066	2046	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	4.500"	Vert	35%	2019 / 2091	4110	L	D+L
2 - SPF End Grain	4.500"	Vert	35%	2046 / 2066	4112	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5380 ft-lb	3'2 9/16"	12416 ft-lb	43%	D+L	L
Shear	2653 lb	5'3 1/4"	6151 lb	43%	D+L	L
LL Defl inch	0.045 (L/1528)	3'2 1/2"	0.193 (L/360)	24%	L	L
TL Defl inch	0.090 (L/776)	3'2 1/2"	0.290 (L/240)	31%	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings.
- 2 Dead Load Deflection: Instant = 0.044", Long Term = 0.066".
- 3 Fasten all plies using 2 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 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	Part. Uniform	0-0-0 to 6-5-0		Top	96 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
2	Part. Uniform	0-0-0 to 6-5-0		Top	5 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
3	Part. Uniform	0-0-0 to 6-5-0		Top	450 PLF	450 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-0-0 to 4-3-8		Top	67 PLF	201 PLF	0 PLF	0 PLF	0 PLF	J10
5	Tapered Start	0-0-0		Top	0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	
	End	1-3-8		Top	0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	

Continued on page 2...

Notes

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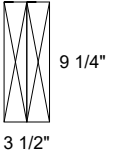
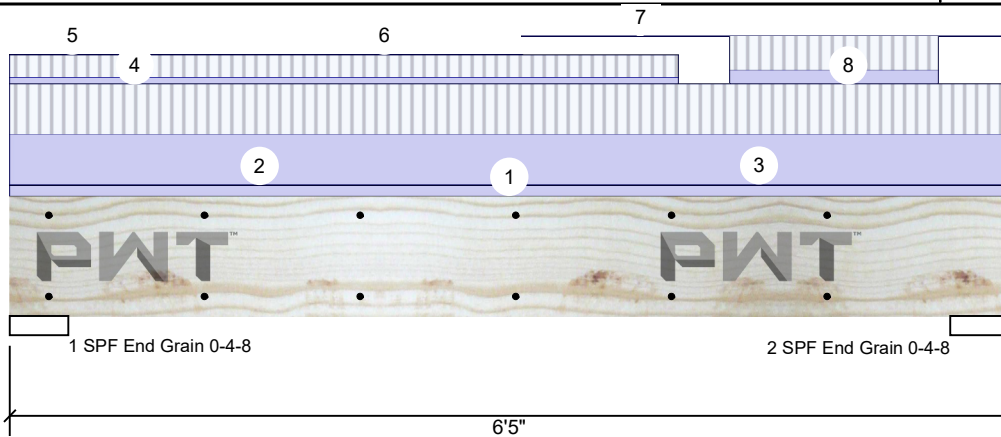
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Project: CL3281-3C-GR-CS518
Address: CL3281-3C-GR-CS518

Date: 9/16/2025
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Job Name: 202509-81714
Project #: 81714

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HD1-A 2.0E 2900Fb PWT LVL 1.750" X 9.250" 2-Ply - PASSED

Level: 2ND FLR



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
6	Tapered Start	1-3-8		Top	0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	
	End	3-3-8			0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	
7	Tapered Start	3-3-8		Top	0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	
	End	6-5-0			0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	
8	Part. Uniform	4-7-8 to 5-11-8		Top	137 PLF	300 PLF	0 PLF	0 PLF	0 PLF	J10
	Self Weight				9 PLF					

Notes

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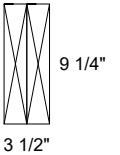
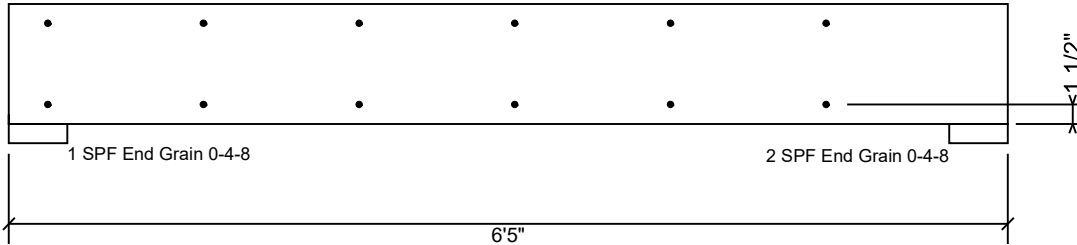
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Project #: 81714

Page 3 of 3

HD1-A 2.0E 2900Fb PWT LVL 1.750" X 9.250" 2-Ply - PASSED

Level: 2ND FLR



Multi-Ply Analysis

Fasten all plies using 2 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	235.2 PLF
Yield Limit per Fastener	117.6 lb.
C _m	1
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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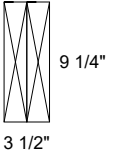
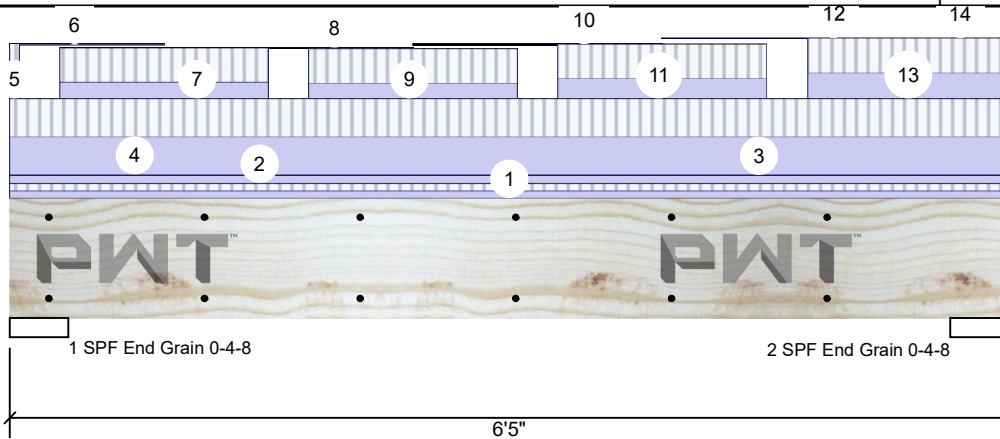
Client: 84 Lumber-Fayetteville #2307
Project: CL3281-3C-GR-CS518
Address: CL3281-3C-GR-CS518

Date: 9/16/2025
Input by: Will Evans
Job Name: 202509-81714
Project #: 81714

Page 1 of 3

HD1-B 2.0E 2900Fb PWT LVL 1.750" X 9.250" 2-Ply - PASSED

Level: 2ND FLR



Member Information

Type: Girder
Plies: 2
Moisture Condition: Dry
Deflection LL: 360
Deflection TL: 240
Importance: Normal - II
Temperature: Temp <= 100°F
General Load
Floor Live: 40 PSF
Dead: 10 PSF

Application: Floor
Design Method: ASD
Building Code: IRC 2021
Load Sharing: No
Deck: Not Checked

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	2771	2605	0	0	0
2	Vertical	2859	2797	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	4.500"	Vert	46%	2605 / 2771	5376	L	D+L
2 - SPF End Grain	4.500"	Vert	48%	2797 / 2859	5656	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	7142 ft-lb	3'2 5/16"	12416 ft-lb	58%	D+L	L
Shear	3484 lb	1'1 3/4"	6151 lb	57%	D+L	L
LL Defl inch	0.061 (L/1135)	3'2 3/8"	0.193 (L/360)	32%	L	L
TL Defl inch	0.119 (L/584)	3'2 1/2"	0.290 (L/240)	41%	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings.
- 2 Dead Load Deflection: Instant = 0.058", Long Term = 0.087".
- 3 Fasten all plies using 2 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 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	Part. Uniform	0-0-0 to 6-5-0		Top	88 PLF	88 PLF	0 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-0-0 to 6-5-0		Top	96 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Part. Uniform	0-0-0 to 6-5-0		Top	5 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
4	Part. Uniform	0-0-0 to 6-5-0		Top	450 PLF	450 PLF	0 PLF	0 PLF	0 PLF	
5	Part. Uniform	0-0-0 to 0-0-11		Top	238 PLF	406 PLF	0 PLF	0 PLF	0 PLF	J4
6	Tapered Start	0-0-0		Top	0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	

Continued on page 2...

Notes

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HD1-B 2.0E 2900Fb PWT LVL 1.750" X 9.250" 2-Ply - PASSED

Level: 2ND FLR

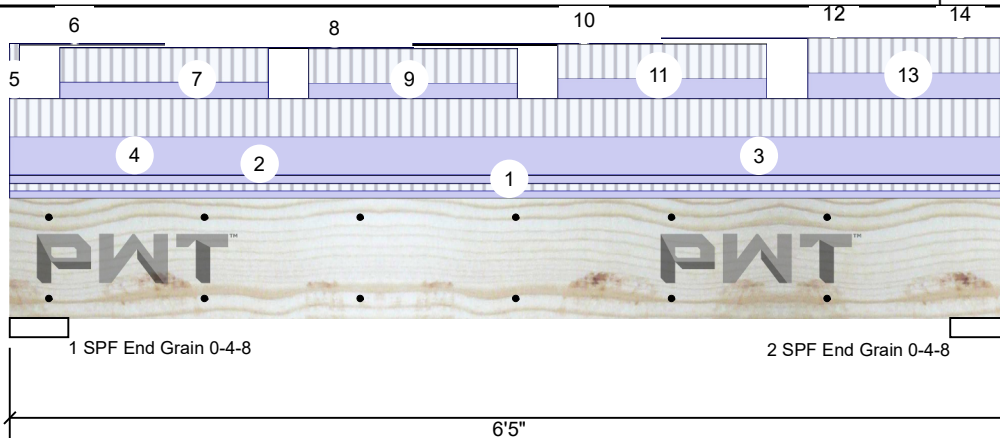


Diagram of a rectangular box with a width of $3 \frac{1}{2}$ " and a height of $9 \frac{1}{4}$ ". The box is divided into four triangular sections by a vertical line and two diagonal lines.

...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
	End	0-11-14			0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	
7	Part. Uniform	0-3-14 to 1-7-14		Top	196 PLF	406 PLF	0 PLF	0 PLF	0 PLF	J4
8	Tapered Start	0-11-14		Top	0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	
	End	2-7-2			0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	
9	Part. Uniform	1-11-2 to 3-3-2		Top	186 PLF	406 PLF	0 PLF	0 PLF	0 PLF	J4
10	Tapered Start	2-7-2		Top	0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	
	End	4-2-5			0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	
11	Part. Uniform	3-6-5 to 4-10-5		Top	237 PLF	406 PLF	0 PLF	0 PLF	0 PLF	J4
12	Tapered Start	4-2-5		Top	0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	
	End	5-9-8			0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	
13	Part. Uniform	5-1-8 to 6-5-0		Top	312 PLF	406 PLF	0 PLF	0 PLF	0 PLF	J4
14	Tapered Start	5-9-8		Top	0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	
	End	6-5-0			0 PLF	1 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				9 PLF					

Notes

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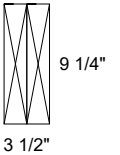
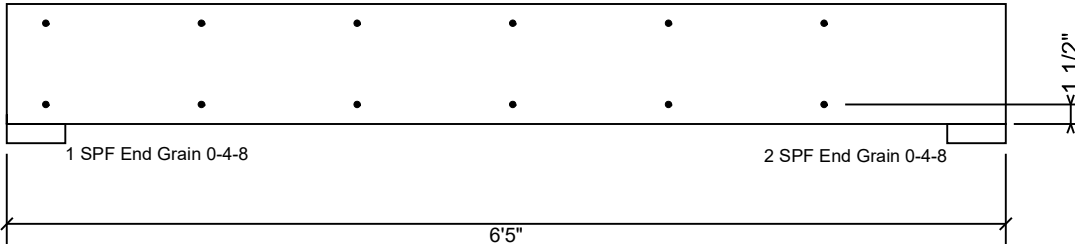
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HD1-B 2.0E 2900Fb PWT LVL 1.750" X 9.250" 2-Ply - PASSED

Level: 2ND FLR



Multi-Ply Analysis

Fasten all plies using 2 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	235.2 PLF
Yield Limit per Fastener	117.6 lb.
C _m	1
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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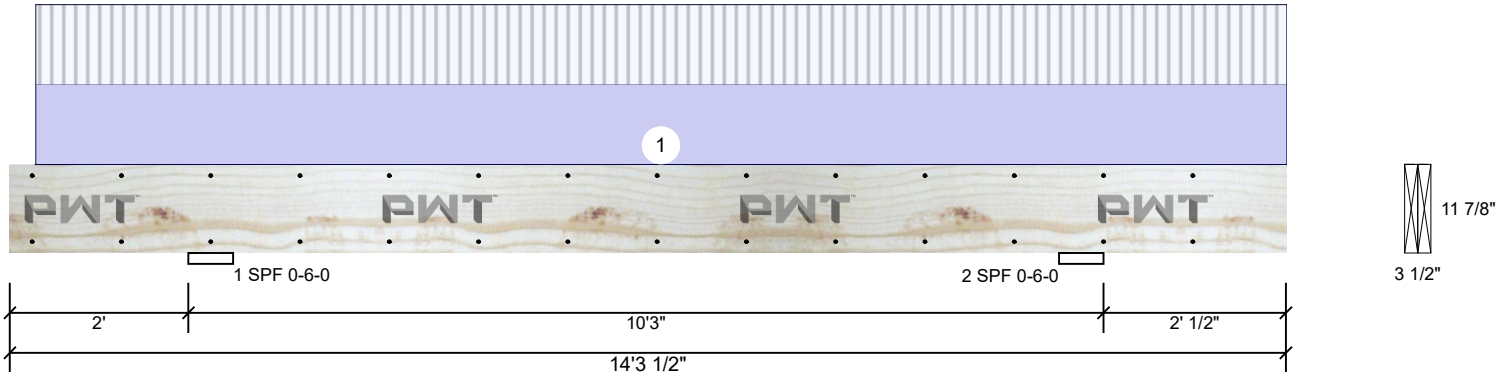
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Address: CL3281-3C-GR-CS518

Date: 9/16/2025
Input by: Will Evans
Job Name: 202509-81714
Project #: 81714

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HD2 2.0E 2900Fb PWT LVL 1.750" X 11.875" 2-Ply - PASSED

Level: 2ND FLR



Member Information

Type: Girder
Plies: 2
Moisture Condition: Dry
Deflection LL: 360
Deflection TL: 240
Importance: Normal - II
Temperature: Temp <= 100°F
General Load
Floor Live: 40 PSF
Dead: 10 PSF

Application: Floor
Design Method: ASD
Building Code: IRC 2021
Load Sharing: No
Deck: Not Checked

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1494	1533	0	0	0
2	Vertical	1579	1633	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.000"	Vert	34%	1533 / 1494	3028	LL_	D+L
2 - SPF	6.000"	Vert	36%	1633 / 1579	3212	_LL	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-917 ft-lb	12'3"	19902 ft-lb	5%	D+L	LLL
Pos Moment	4824 ft-lb	7'1 1/8"	19902 ft-lb	24%	D+L	_L_
Shear	1659 lb	10'9 1/8"	7897 lb	21%	D+L	_LL
LL Defl inch	0.052 (L/2268)	7'1 1/2"	0.325 (L/360)	16%	L	_L_
TL Defl inch	0.098 (L/1199)	7'1 3/8"	0.488 (L/240)	20%	D+L	_L_
LL Cant	-0.030 (2L/1642)	Rt Cant	0.204 (2L/240)	15%	L	_L_
TL Cant	-0.052 (2L/921)	Lt Cant	0.300 (2L/180)	17%	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 = 0.046", Long Term = 0.069".
- 3 Fasten all plies using 2 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 laterally braced at end bearings.
- 8 Bottom must be laterally braced at end bearings.

Notes

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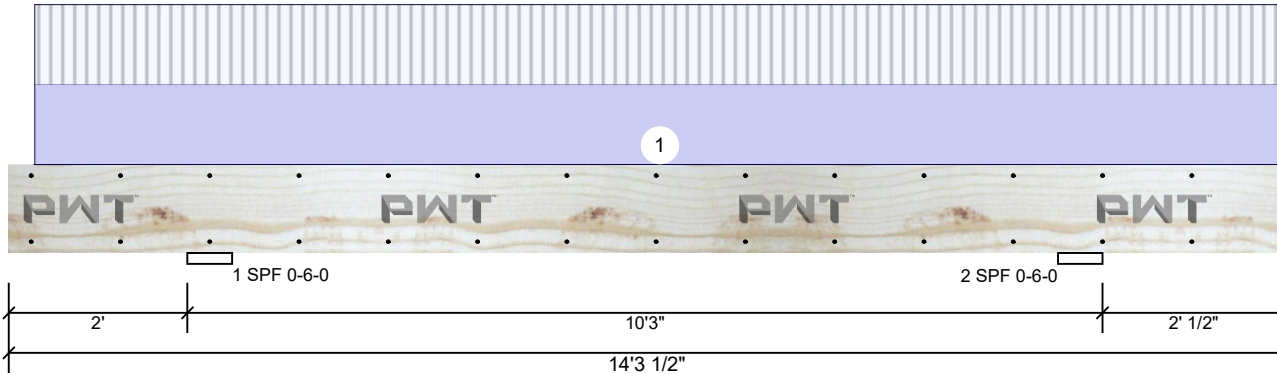
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Project: CL3281-3C-GR-CS518
Address: CL3281-3C-GR-CS518

Date: 9/16/2025
Input by: Will Evans
Job Name: 202509-81714
Project #: 81714

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HD2 2.0E 2900Fb PWT LVL 1.750" X 11.875" 2-Ply - PASSED

Level: 2ND FLR



ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Part. Uniform	0-3-8 to 14-3-8		Top	214 PLF	214 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				12 PLF					

Notes

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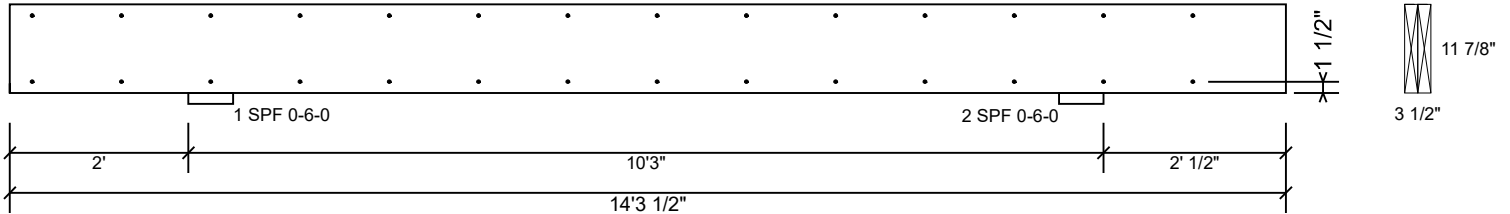
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Project: CL3281-3C-GR-CS518
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Date: 9/16/2025
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Project #: 81714

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HD2 2.0E 2900Fb PWT LVL 1.750" X 11.875" 2-Ply - PASSED

Level: 2ND FLR



Multi-Ply Analysis

Fasten all plies using 2 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	235.2 PLF
Yield Limit per Fastener	117.6 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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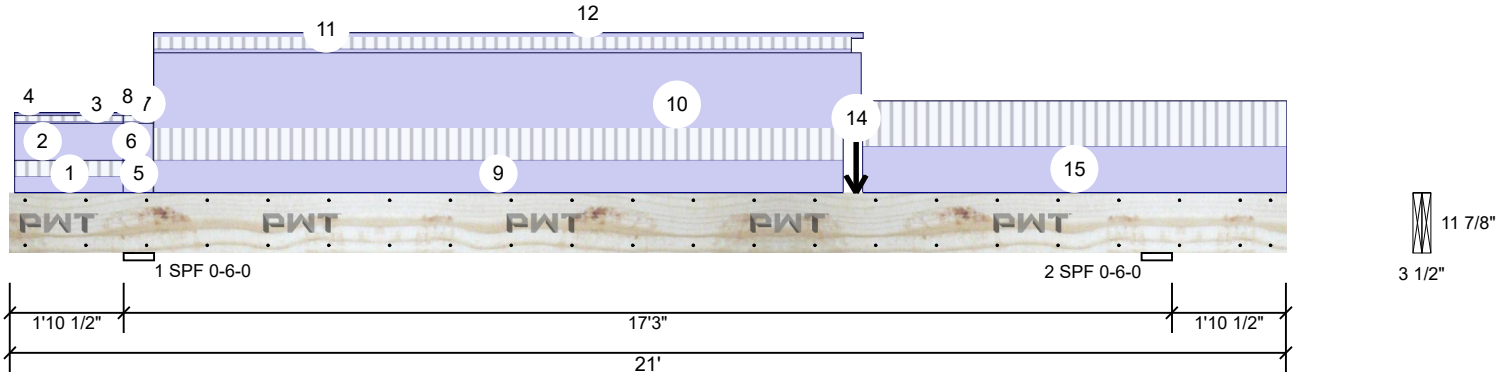
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Project: CL3281-3C-GR-CS518
Address: CL3281-3C-GR-CS518

Date: 9/16/2025
Input by: Will Evans
Job Name: 202509-81714
Project #: 81714

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HD3 2.0E 2900Fb PWT LVL 1.750" X 11.875" 2-Ply - PASSED

Level: 2ND FLR



Member Information

Type: Girder
Plies: 2
Moisture Condition: Dry
Deflection LL: 360
Deflection TL: 240
Importance: Normal - II
Temperature: Temp <= 100°F
General Load
Floor Live: 40 PSF
Dead: 10 PSF

Application: Floor
Design Method: ASD
Building Code: IRC 2021
Load Sharing: No
Deck: Not Checked

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	595	1617	135	0	0
2	Vertical	807	1596	322	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.000"	Vert	25%	1617 / 595	2212	LL_	D+L
2 - SPF	6.000"	Vert	27%	1596 / 846	2443	_LL	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-221 ft-lb	19'1 1/2"	19902 ft-lb	1%	D+L	_LL
Pos Moment	9418 ft-lb	11'7 3/4"	19902 ft-lb	47%	D+L	_L_
Shear	1979 lb	17'7 5/8"	7897 lb	25%	D+L	_LL
LL Defl inch	0.160 (L/1254)	11' 3/8"	0.558 (L/360)	29%	0.75(L+S)	_L_
TL Defl inch	0.522 (L/385)	10'9 7/16"	0.838 (L/240)	62%	D+0.75(L+S)	_L_
LL Cant	-0.058 (2L/775)	Rt Cant	0.200 (2L/240)	29%	0.75(L+S)	_L_
TL Cant	-0.181 (2L/248)	Rt Cant	0.300 (2L/180)	60%	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 Dead Load Deflection: Instant = 0.361", Long Term = 0.542".
- 3 Fasten all plies using 2 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 laterally braced at a maximum of 12'3 5/8" o.c.
- 8 Bottom must be laterally braced at end bearings.

Notes

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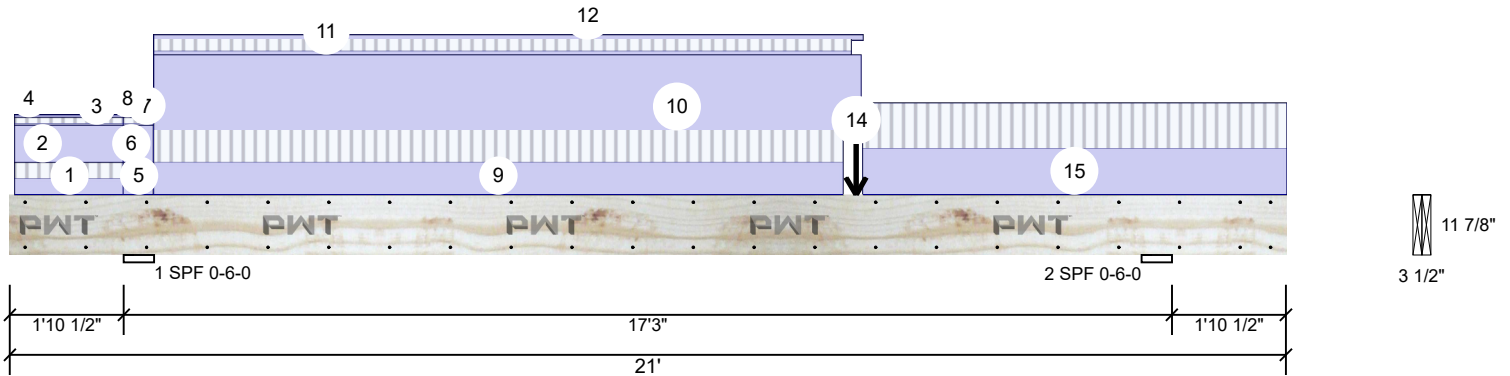
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Address: CL3281-3C-GR-CS518

Date: 9/16/2025
Input by: Will Evans
Job Name: 202509-81714
Project #: 81714

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HD3 2.0E 2900Fb PWT LVL 1.750" X 11.875" 2-Ply - PASSED

Level: 2ND FLR



ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Part. Uniform	0-1-2 to 1-10-8		Top	20 PLF	20 PLF	0 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-1-2 to 1-10-8		Top	47 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Tapered Start	0-1-2		Top	2 PLF	7 PLF	0 PLF	0 PLF	0 PLF	
	End	1-10-8			2 PLF	7 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-1-2 to 1-10-8		Top	3 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
5	Part. Uniform	1-10-8 to 2-4-8		Top	20 PLF	20 PLF	0 PLF	0 PLF	0 PLF	
6	Part. Uniform	1-10-8 to 2-4-8		Top	47 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
7	Tapered Start	1-10-8		Top	2 PLF	7 PLF	0 PLF	0 PLF	0 PLF	
	End	2-4-8			2 PLF	7 PLF	0 PLF	0 PLF	0 PLF	
8	Part. Uniform	1-10-8 to 2-4-8		Top	3 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
9	Part. Uniform	2-4-8 to 13-8-8		Top	40 PLF	40 PLF	0 PLF	0 PLF	0 PLF	
10	Part. Uniform	2-4-8 to 14-0-0		Top	94 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
11	Tapered Start	2-4-8		Top	5 PLF	14 PLF	0 PLF	0 PLF	0 PLF	
	End	13-10-0			5 PLF	14 PLF	0 PLF	0 PLF	0 PLF	
12	Part. Uniform	2-4-8 to 14-0-8		Top	6 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
13	Point	13-11-0		Top	310 lb	0 lb	310 lb	0 lb	0 lb	PL3
	Bearing Length	0-3-8								
14	Point	13-11-4		Top	419 lb	321 lb	147 lb	0 lb	0 lb	FB5
	Bearing Length	0-3-8								
15	Part. Uniform	14-0-8 to 21-0-0		Top	57 PLF	57 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				12 PLF					

Notes

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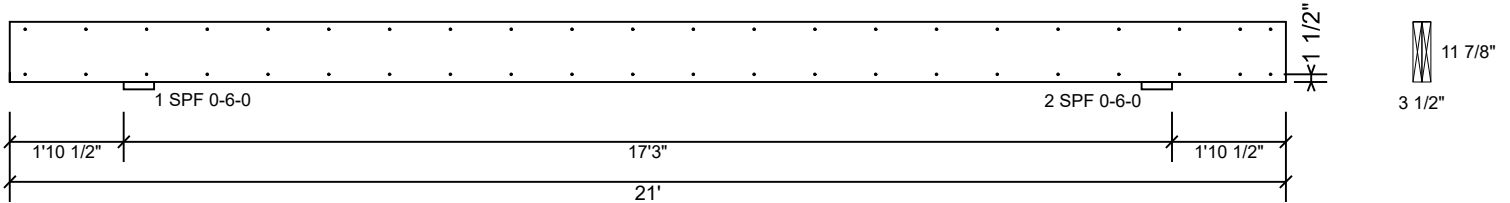
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Address: CL3281-3C-GR-CS518

Date: 9/16/2025
Input by: Will Evans
Job Name: 202509-81714
Project #: 81714

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HD3 2.0E 2900Fb PWT LVL 1.750" X 11.875" 2-Ply - PASSED

Level: 2ND FLR



Multi-Ply Analysis

Fasten all plies using 2 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	235.2 PLF
Yield Limit per Fastener	117.6 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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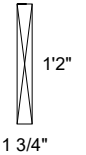
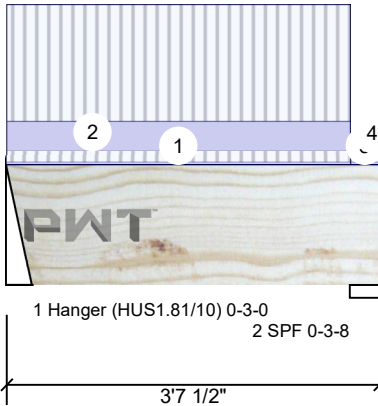
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Project: CL3281-3C-GR-CS518
Address: CL3281-3C-GR-CS518

Date: 9/16/2025
Input by: Will Evans
Job Name: 202509-81714
Project #: 81714

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FB1 2.0E 2900Fb PWT LVL 1.750" X 14.000" - PASSED

Level: 2ND FLR



Member Information

Type: Girder
Plies: 1
Moisture Condition: Dry
Deflection LL: 360
Deflection TL: 240
Importance: Normal - II
Temperature: Temp <= 100°F
General Load
Floor Live: 40 PSF
Dead: 10 PSF

Application: Floor
Design Method: ASD
Building Code: IRC 2021
Load Sharing: No
Deck: Not Checked

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	470	130	0	0	0
2	Vertical	412	117	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	Vert	15%	130 / 470	600	L	D+L
2 - SPF	3.500"	Vert	20%	117 / 412	529	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	431 ft-lb	1'9 1/2"	13396 ft-lb	3%	D+L	L
Shear	126 lb	2'2"	4655 lb	3%	D+L	L
LL Defl inch	0.002 (L/16270)	1'9 1/2"	0.107 (L/360)	2%	L	L
TL Defl inch	0.003 (L/12743)	1'9 1/2"	0.160 (L/240)	2%	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings.
- 2 Dead Load Deflection: Instant = 0.001", Long Term = 0.001".
- 3 Fill all hanger nailing holes.
- 4 Left Header: SPF, Thickness: 2 1/2"
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top must be laterally braced at end bearings.
- 7 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	Tie-In	0-0-0 to 3-4-0	0-6-11	Top	10 PSF	40 PSF	0 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-0-0 to 3-4-0		Top	60 PLF	240 PLF	0 PLF	0 PLF	0 PLF	
3	Tie-In	3-4-0 to 3-7-8	0-7-7	Top	10 PSF	30 PSF	0 PSF	0 PSF	0 PSF	
4	Tie-In	3-5-2 to 3-7-8	0-4-9	Top	10 PSF	30 PSF	0 PSF	0 PSF	0 PSF	
	Self Weight				7 PLF					

Notes

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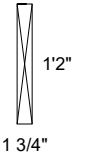
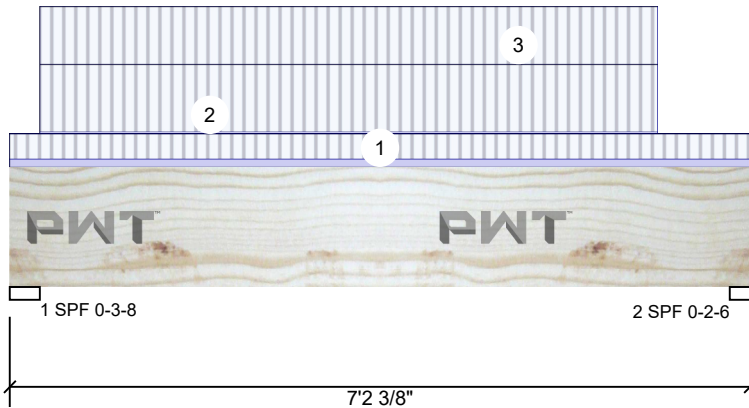
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Address: CL3281-3C-GR-CS518

Date: 9/16/2025
Input by: Will Evans
Job Name: 202509-81714
Project #: 81714

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FB2 2.0E 2900Fb PWT LVL 1.750" X 14.000" - PASSED

Level: 2ND FLR



Member Information

Type: Girder
Plies: 1
Moisture Condition: Dry
Deflection LL: 360
Deflection TL: 240
Importance: Normal - II
Temperature: Temp <= 100°F
General Load
Floor Live: 40 PSF
Dead: 10 PSF

Application: Floor
Design Method: ASD
Building Code: IRC 2021
Load Sharing: No
Deck: Not Checked

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	386 (-235)	73	0	0	0
2	Vertical	331 (-191)	69	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	18%	73 / 386	458 (-163)	L	D+L(D+L)
2 - SPF	2.375"	Vert	23%	69 / 331	400 (-122)	L	D+L(D+L)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-287 ft-lb	3'7 1/16"	13396 ft-lb	2%	D+L	L
Pos Moment	767 ft-lb	3'7 7/16"	13396 ft-lb	6%	D+L	L
Shear	391 lb	5'10"	4655 lb	8%	D+L	L
LL Defl inch	0.010 (L/8320)	3'7 9/16"	0.228 (L/360)	4%	L	L
TL Defl inch	0.012 (L/7046)	3'7 9/16"	0.342 (L/240)	3%	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings.
- 2 Dead Load Deflection: Instant = 0.002", Long Term = 0.003".
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Tie-down connection required at bearing 1 for uplift 163 lb (Combination D+L, Load Case L).
- 5 Top must be laterally braced at end bearings.
- 6 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	Tie-In	0-0-0 to 7-2-6	1-0-3	Top	10 PSF	30 PSF	0 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-3-8 to 6-3-8		Far Face	3 PLF	83 PLF	0 PLF	0 PLF	0 PLF	
3	Part. Uniform	0-3-8 to 6-3-8		Far Face	0 PLF	-71 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				7 PLF					

Notes

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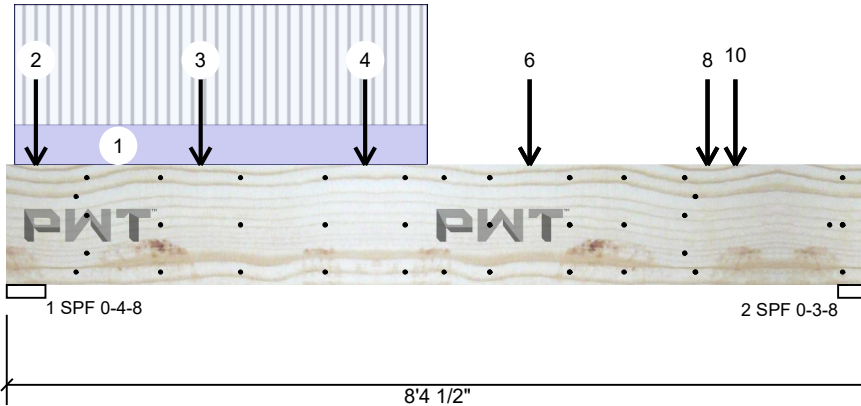
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Project: CL3281-3C-GR-CS518
Address: CL3281-3C-GR-CS518

Date: 9/16/2025
Input by: Will Evans
Job Name: 202509-81714
Project #: 81714

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FB3-A 2.0E 2900Fb PWT LVL 1.750" X 14.000" 2-Ply - PASSED

Level: 2ND FLR



Member Information

Type: Girder
Plies: 2
Moisture Condition: Dry
Deflection LL: 360
Deflection TL: 240
Importance: Normal - II
Temperature: Temp <= 100°F
General Load
Floor Live: 40 PSF
Dead: 10 PSF

Application: Floor
Design Method: ASD
Building Code: IRC 2021
Load Sharing: No
Deck: Not Checked

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	2144	1354	0	0	0
2	Vertical	1335	1068	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.500"	Vert	52%	1354 / 2144	3498	L	D+L
2 - SPF	3.500"	Vert	46%	1068 / 1335	2403	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4764 ft-lb	3'6 11/16"	26792 ft-lb	18%	D+L	L
Shear	2692 lb	6'11"	9310 lb	29%	D+L	L
LL Defl inch	0.028 (L/3306)	4' 5/16"	0.261 (L/360)	11%	L	L
TL Defl inch	0.044 (L/2128)	4'1 5/8"	0.392 (L/240)	11%	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings.
- 2 Dead Load Deflection: Instant = 0.016", Long Term = 0.024".
- 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 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
- 6 Girders are designed to be supported on the bottom edge only.
- 7 Top loads must be supported equally by all plies.
- 8 Top must be laterally braced at end bearings.
- 9 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	Part. Uniform	0-1-0 to 4-1-0		Far Face	66 PLF	199 PLF	0 PLF	0 PLF	0 PLF	
2	Point	0-3-6		Near Face	594 lb	526 lb	0 lb	0 lb	0 lb	J4
3	Point	1-10-10		Near Face	204 lb	526 lb	0 lb	0 lb	0 lb	J4
4	Point	3-5-13		Near Face	193 lb	484 lb	0 lb	0 lb	0 lb	J4
5	Point	5-1-0		Far Face	184 lb	397 lb	0 lb	0 lb	0 lb	J10

Continued on page 2...

Notes

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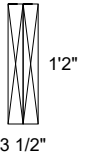
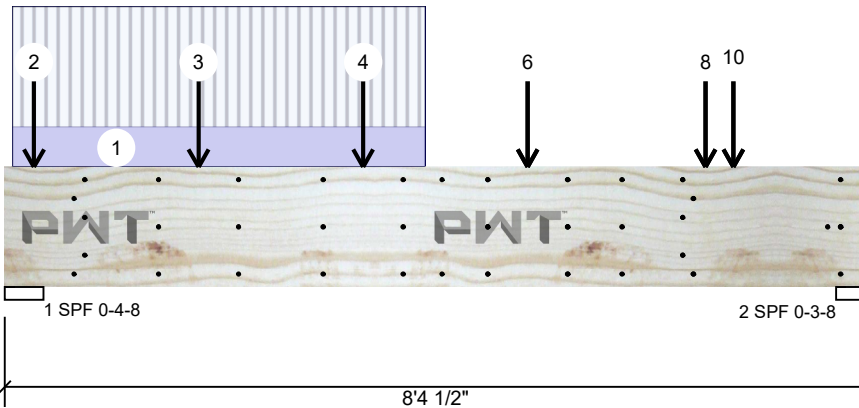
Client: 84 Lumber-Fayetteville #2307
Project: CL3281-3C-GR-CS518
Address: CL3281-3C-GR-CS518

Date: 9/16/2025
Input by: Will Evans
Job Name: 202509-81714
Project #: 81714

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FB3-A 2.0E 2900Fb PWT LVL 1.750" X 14.000" 2-Ply - PASSED

Level: 2ND FLR



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
6	Point	5-1-0		Near Face	112 lb	144 lb	0 lb	0 lb	0 lb	J2
7	Point	6-9-12		Top	22 lb	0 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-3-8								
8	Point	6-9-12		Top	9 lb	0 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-3-8								
9	Point	7-1-0		Far Face	595 lb	444 lb	0 lb	0 lb	0 lb	J10
10	Point	7-1-0		Near Face	128 lb	162 lb	0 lb	0 lb	0 lb	J2
	Self Weight				14 PLF					

Notes

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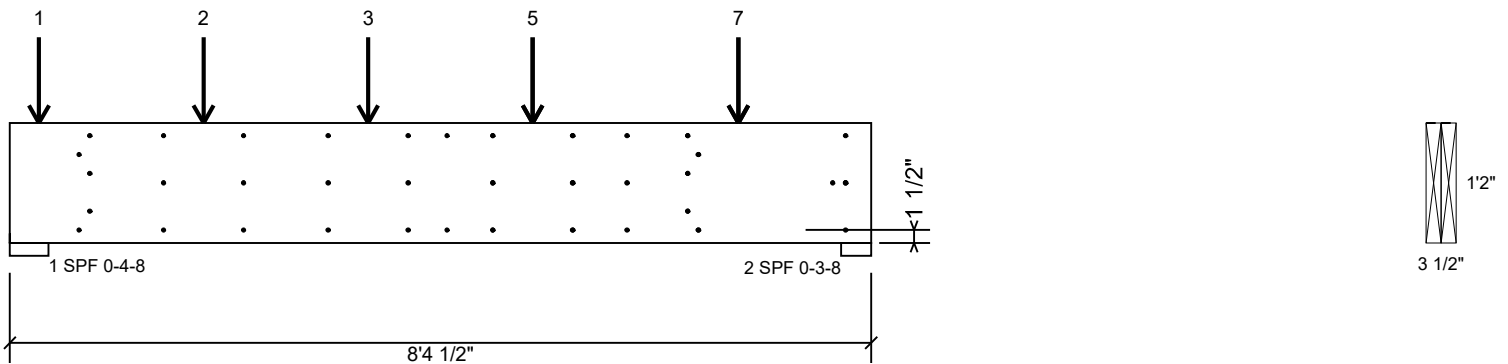
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FB3-A 2.0E 2900Fb PWT LVL 1.750" X 14.000" 2-Ply - PASSED

Level: 2ND FLR



Multi-Ply Analysis

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

Capacity	37.6 %
Load	132.5 PLF
Yield Limit per Foot	352.8 PLF
Yield Limit per Fastener	117.6 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	D+L
Duration Factor	1.00

Concentrated Load

Fasten at concentrated side load at 0-3-6 with a minimum of (5) – 16d Sinker Nails (.148x3.25") in the pattern shown.

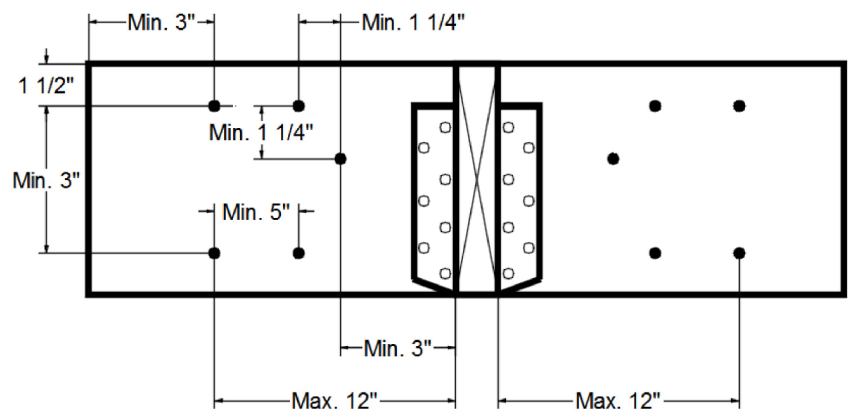
Capacity	95.3 %
Load	560.0lb.
Total Yield Limit	587.8 lb.
C _g	0.9998
C _m	1
Yield Limit per Fastener	117.6 lb.
Yield Mode	IV
Load Combination	D+L
Duration Factor	1.00

Concentrated Load

Fasten at concentrated side load at 1-10-10 with a minimum of (6) – 16d Sinker Nails (.148x3.25") in the pattern shown.

Capacity	51.7 %
Load	365.0lb.
Total Yield Limit	705.4 lb.
C _g	0.9998
C _m	1
Yield Limit per Fastener	117.6 lb.
Yield Mode	IV
Load Combination	D+L
Duration Factor	1.00

Min/Max fastener distances for Concentrated Side Loads



Notes

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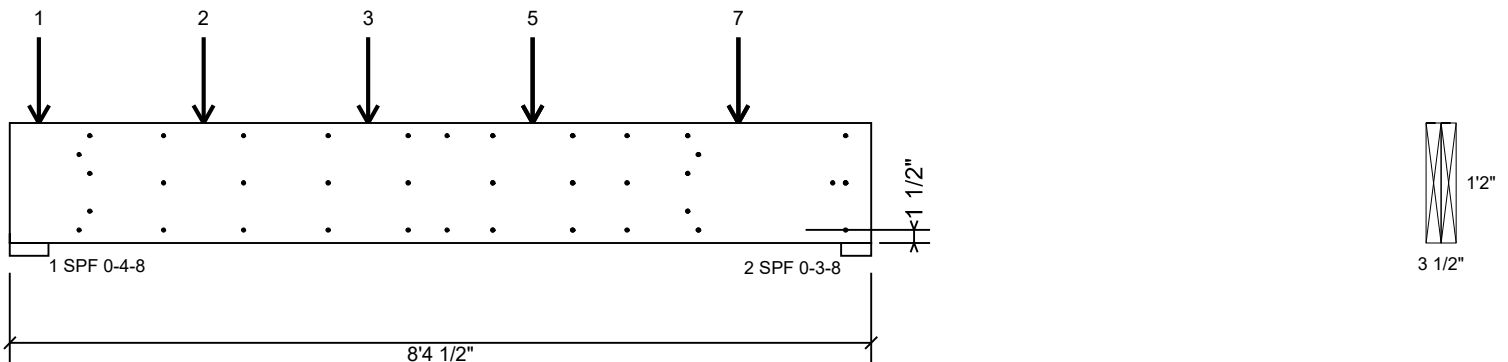
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FB3-A 2.0E 2900Fb PWT LVL 1.750" X 14.000" 2-Ply - PASSED

Level: 2ND FLR



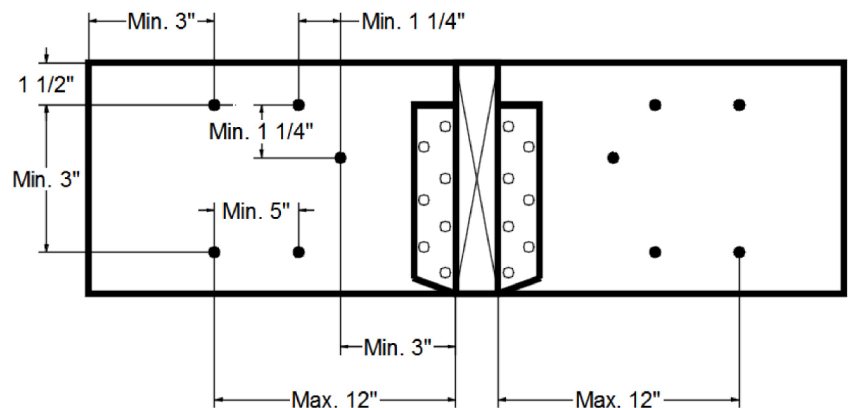
Multi-Ply Analysis

Concentrated Load

Fasten at concentrated side load at 3-5-13 with a minimum of (6) – 16d Sinker Nails (.148x3.25") in the pattern shown.

Capacity	48.0 %
Load	338.5lb.
Total Yield Limit	705.4 lb.
Cg	0.9998
Cm	1
Yield Limit per Fastener	117.6 lb.
Yield Mode	IV
Load Combination	D+L
Duration Factor	1.00

Min/Max fastener distances for Concentrated Side Loads



Concentrated Load

Fasten at concentrated side load at 5-1-0 with a minimum of (6) – 16d Sinker Nails (.148x3.25") in the pattern shown.

Capacity	41.2 %
Load	290.5lb.
Total Yield Limit	705.4 lb.
Cg	0.9998
Cm	1
Yield Limit per Fastener	117.6 lb.
Yield Mode	IV
Load Combination	D+L
Duration Factor	1.00

Notes

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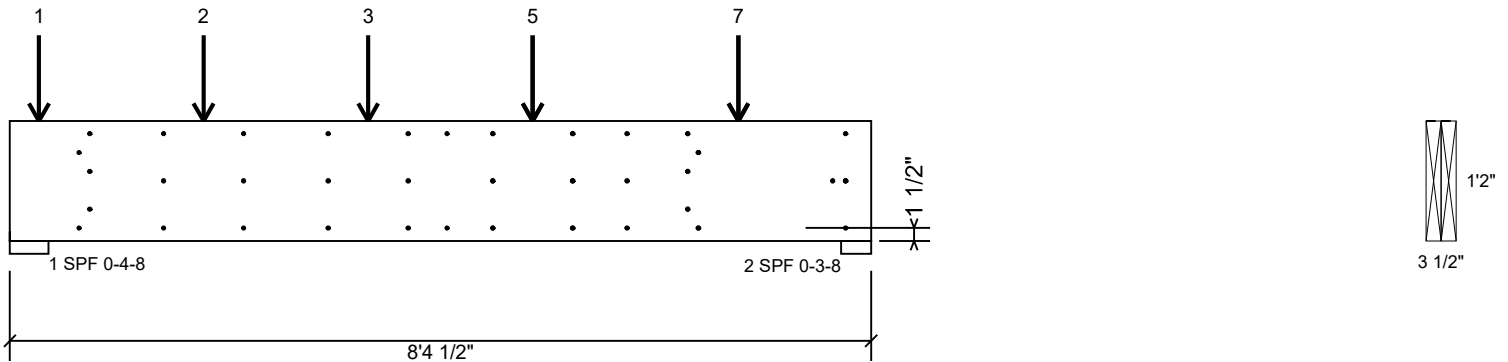
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FB3-A 2.0E 2900Fb PWT LVL 1.750" X 14.000" 2-Ply - PASSED

Level: 2ND FLR



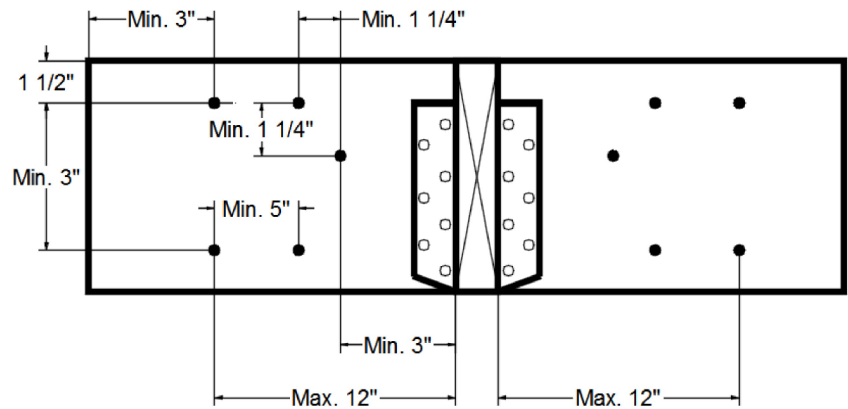
Multi-Ply Analysis

Concentrated Load

Fasten at concentrated side load at 7-1-0 with a minimum of (5) – 16d Sinker Nails (.148x3.25") in the pattern shown.

Capacity	88.4 %
Load	519.5lb.
Total Yield Limit	587.8 lb.
C _g	0.9998
C _m	1
Yield Limit per Fastener	117.6 lb.
Yield Mode	IV
Load Combination	D+L
Duration Factor	1.00

Min/Max fastener distances for Concentrated Side Loads



Notes

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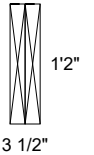
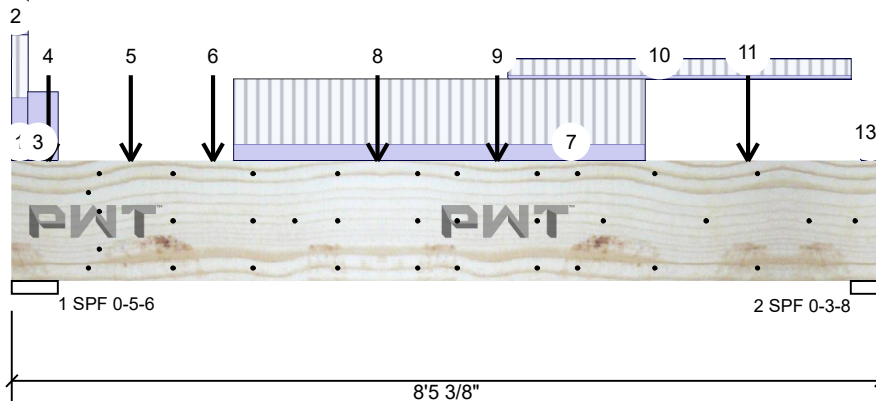
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Address: CL3281-3C-GR-CS518

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FB3-B 2.0E 2900Fb PWT LVL 1.750" X 14.000" 2-Ply - PASSED

Level: 2ND FLR



Member Information

Type: Girder
Plies: 2
Moisture Condition: Dry
Deflection LL: 360
Deflection TL: 240
Importance: Normal - II
Temperature: Temp <= 100°F
General Load
Floor Live: 40 PSF
Dead: 10 PSF

Application: Floor
Design Method: ASD
Building Code: IRC 2021
Load Sharing: No
Deck: Not Checked

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1906	1078	0	0	0
2	Vertical	1062	410	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.375"	Vert	37%	1078 / 1906	2984	L	D+L
2 - SPF	3.500"	Vert	28%	410 / 1062	1472	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4324 ft-lb	4'8 5/8"	26792 ft-lb	16%	D+L	L
Shear	1813 lb	1'7 3/8"	9310 lb	19%	D+L	L
LL Defl inch	0.028 (L/3365)	4'3 1/4"	0.261 (L/360)	11%	L	L
TL Defl inch	0.038 (L/2460)	4'3 3/4"	0.392 (L/240)	10%	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings.
- 2 Dead Load Deflection: Instant = 0.010", Long Term = 0.015".
- 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 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
- 6 Girders are designed to be supported on the bottom edge only.
- 7 Top loads must be supported equally by all plies.
- 8 Top must be laterally braced at end bearings.
- 9 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	Part. Uniform	0-0-0 to 0-1-14		Top	88 PLF	88 PLF	0 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-0-0 to 0-1-14		Top	48 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Part. Uniform	0-1-14 to 0-5-6		Top	96 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Point	0-4-4		Far Face	556 lb	529 lb	0 lb	0 lb	0 lb	J4
5	Point	1-1-14		Near Face	34 lb	134 lb	0 lb	0 lb	0 lb	J2

Continued on page 2...

Notes

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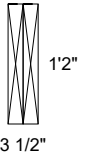
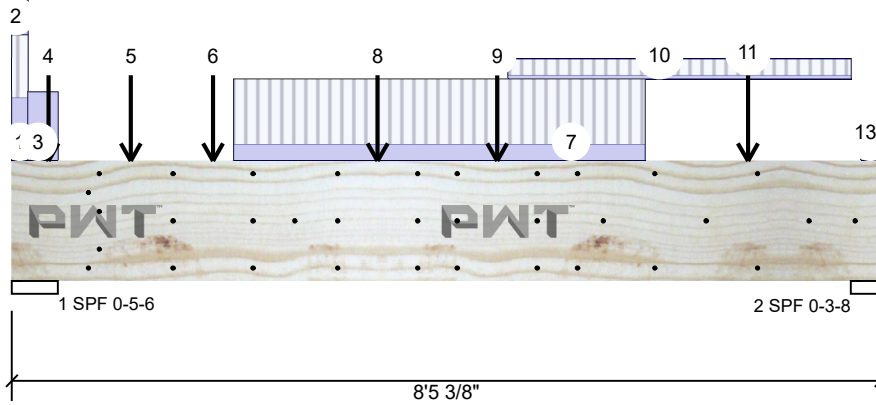
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Project #: 81714

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FB3-B 2.0E 2900Fb PWT LVL 1.750" X 14.000" 2-Ply - PASSED

Level: 2ND FLR



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
6	Point	1-11-8		Far Face	134 lb	529 lb	0 lb	0 lb	0 lb	J4
7	Part. Uniform	2-1-14 to 6-1-14		Near Face	23 PLF	91 PLF	0 PLF	0 PLF	0 PLF	
8	Point	3-6-11		Far Face	117 lb	461 lb	0 lb	0 lb	0 lb	J4
9	Point	4-8-10		Far Face	332 lb	719 lb	0 lb	0 lb	0 lb	FB4
10	Tie-In	4-9-14 to 8-1-14	0-6-11	Top	10 PSF	40 PSF	0 PSF	0 PSF	0 PSF	
11	Point	7-1-14		Near Face	35 lb	138 lb	0 lb	0 lb	0 lb	J2
12	Tie-In	8-3-0 to 8-5-6	0-2-2	Top	10 PSF	30 PSF	0 PSF	0 PSF	0 PSF	
13	Tie-In	8-3-0 to 8-5-6	0-9-14	Top	10 PSF	30 PSF	0 PSF	0 PSF	0 PSF	
	Self Weight				14 PLF					

Notes

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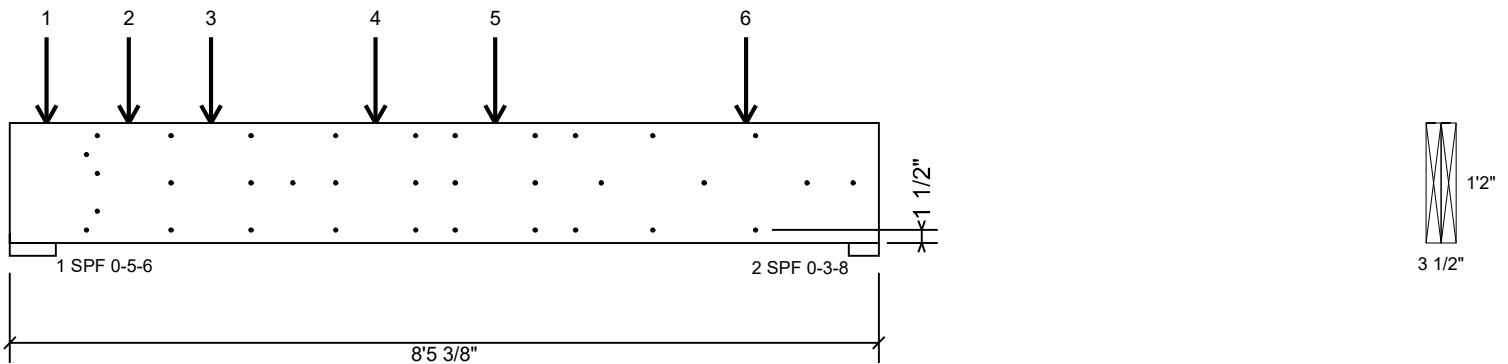
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FB3-B 2.0E 2900Fb PWT LVL 1.750" X 14.000" 2-Ply - PASSED

Level: 2ND FLR



Multi-Ply Analysis

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

Capacity	16.2 %
Load	57.0 PLF
Yield Limit per Foot	352.8 PLF
Yield Limit per Fastener	117.6 lb.
C _M	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	D+L
Duration Factor	1.00

Concentrated Load

Fasten at concentrated side load at 0-4-4 with a minimum of (5) – 16d Sinker Nails (.148x3.25") in the pattern shown.

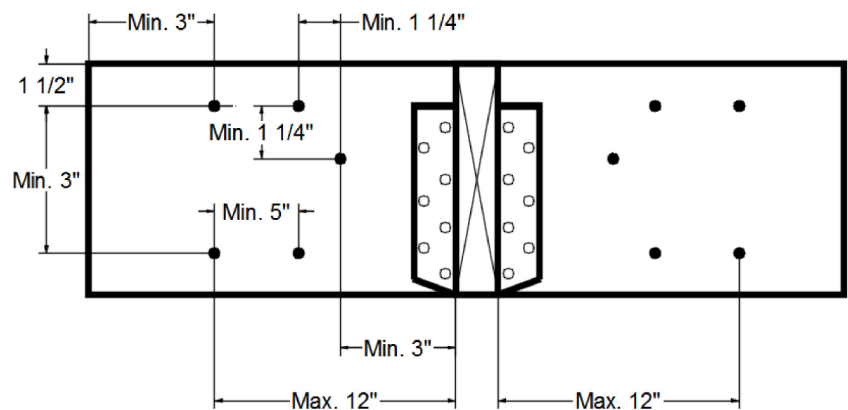
Capacity	92.3 %
Load	542.5lb.
Total Yield Limit	587.8 lb.
C _g	0.9998
C _M	1
Yield Limit per Fastener	117.6 lb.
Yield Mode	IV
Load Combination	D+L
Duration Factor	1.00

Concentrated Load

Fasten at concentrated side load at 1-11-8 with a minimum of (6) – 16d Sinker Nails (.148x3.25") in the pattern shown.

Capacity	47.0 %
Load	331.5lb.
Total Yield Limit	705.4 lb.
C _g	0.9998
C _M	1
Yield Limit per Fastener	117.6 lb.
Yield Mode	IV
Load Combination	D+L
Duration Factor	1.00

Min/Max fastener distances for Concentrated Side Loads



Notes

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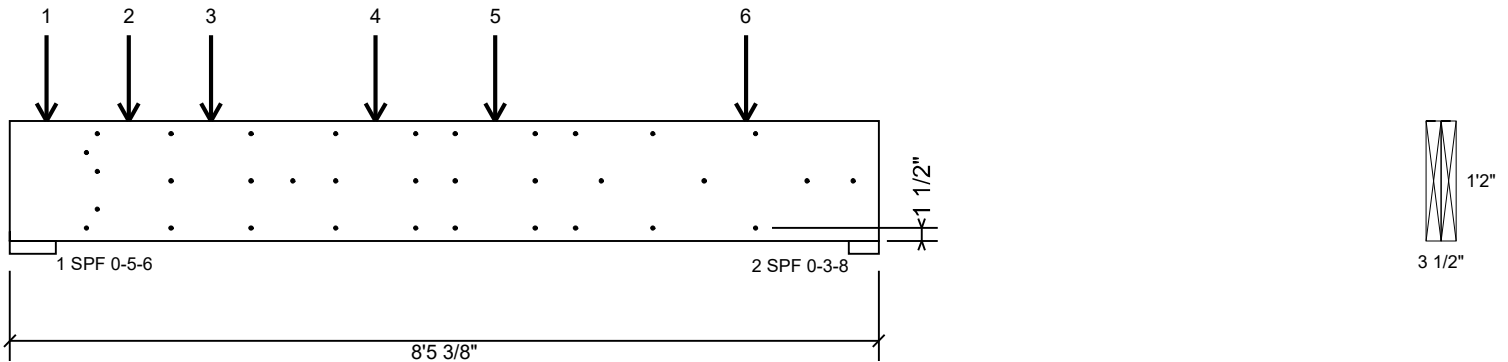
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FB3-B 2.0E 2900Fb PWT LVL 1.750" X 14.000" 2-Ply - PASSED

Level: 2ND FLR



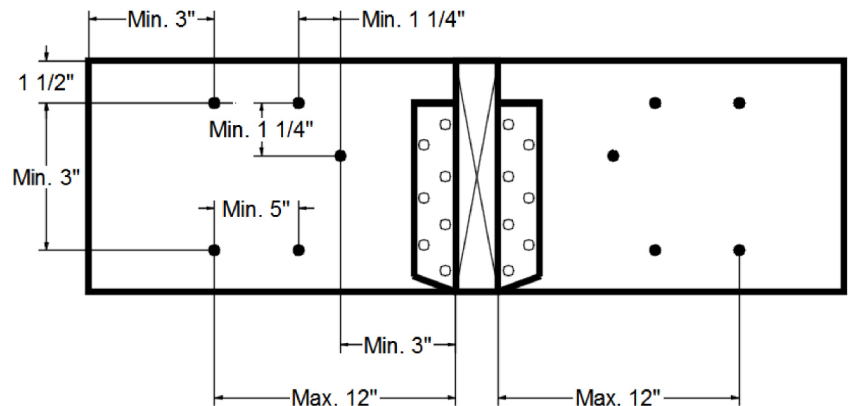
Multi-Ply Analysis

Concentrated Load

Fasten at concentrated side load at 3-6-11 with a minimum of (6) – 16d Sinker Nails (.148x3.25") in the pattern shown.

Capacity	41.0 %
Load	289.0lb.
Total Yield Limit	705.4 lb.
Cg	0.9998
Cm	1
Yield Limit per Fastener	117.6 lb.
Yield Mode	IV
Load Combination	D+L
Duration Factor	1.00

Min/Max fastener distances for Concentrated Side Loads



Concentrated Load

Fasten at concentrated side load at 4-8-10 with a minimum of (6) – 16d Sinker Nails (.148x3.25") in the pattern shown.

Capacity	74.5 %
Load	525.5lb.
Total Yield Limit	705.4 lb.
Cg	0.9998
Cm	1
Yield Limit per Fastener	117.6 lb.
Yield Mode	IV
Load Combination	D+L
Duration Factor	1.00

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