

Graphical Illustration - Not To Scale
 Member Cut Length - 15' 2 3/4"
 MemberPitch - 0/12

Design Information:

Building Code:	IRC 2009	Floor Dead Load:	10.0 lb/ft ²	Roof Dead Load:	10.0 lb/ft ²	Ground Snow Load:	20.0 lb/ft ²
Design Methodology:	ASD	Floor Live Load:	40.0 lb/ft ²	Roof Live Load:	20.0 lb/ft ²		
		Unbraced Length	Top: 0'- 4 11/16"	Bottom:	15'- 2 3/4"		

Design Results:

	Location	Design	Control	Result	LDF	Load Combination
Critical Moment (Pos)	12'- 1 9/16"	7245.78 lb ft	19980.98 lb ft	Passed - 36%	1.00	D + L
Critical Moment (Neg)	7'- 10 1/2"	-8269.19 lb ft	19980.98 lb ft	Passed - 41%	1.00	D + L
Critical Shear	8'- 9 1/4"	6484.87 lb	9388.75 lb	Passed - 69%	1.00	D + L
Live Load Deflection	11'- 6 3/8"	0'- 1/16"	0'- 3/4" (L/360)	Passed - L/999	-	0.75(L + Lr + W)
Total Load Deflection	11'- 7 5/16"	0'- 1/16"	0'- 1" (L/240)	Passed - L/894	-	D + 0.75(L + Lr + W)
Max. Reaction			<u>Supported Mt</u> <u>Supporting Mt</u>			
	0'- 7"	3719.85 lb	31499.93 lb 30449.93 lb	Passed - 12%	1.00	D + L
	6'- 9 1/2"	6217.48 lb	27562.50 lb 26643.75 lb	Passed - 23%	1.00	D + L
	7'- 10 1/2"	9263.99 lb	27562.50 lb 26643.75 lb	Passed - 35%	1.00	D + L
	14'- 9"	4554.67 lb	26527.88 lb 25643.62 lb	Passed - 18%	1.00	D + L

Design Notes:

* Member design assumed proper ply to ply connection. Verify connection between plies according to code specification

Loading:

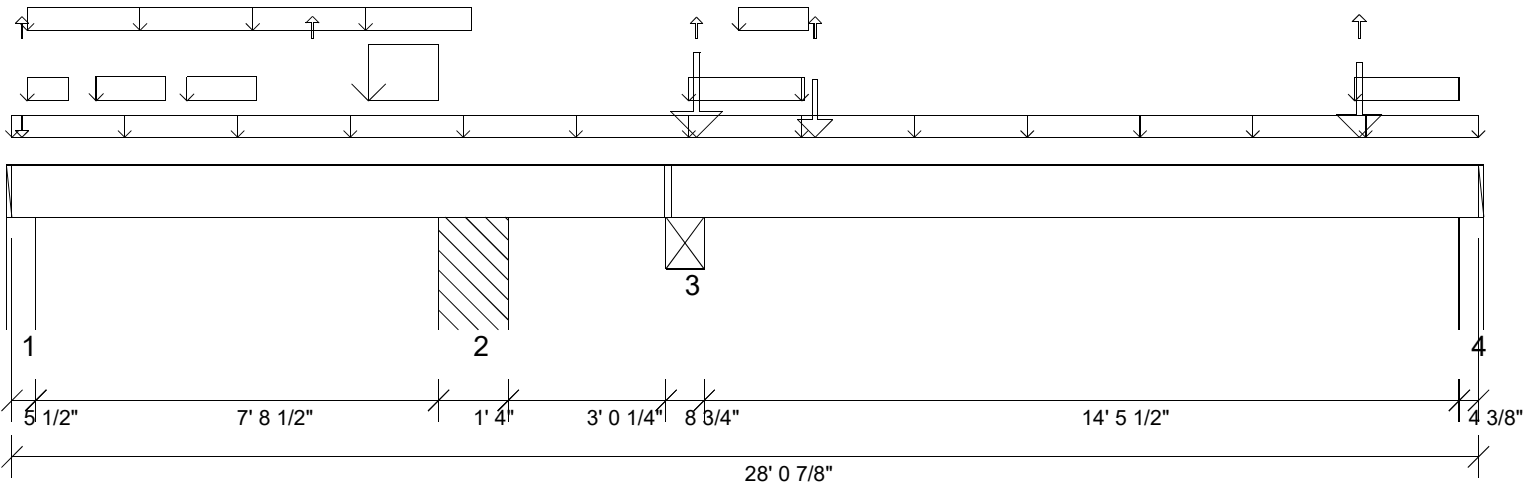
Type	Start	End	Source	Maximum Load Magnitudes			
				Dead	Floor Live	Roof Live	Snow
Self Weight	0'	15'- 2 3/4"	Self Weight	13 lb/ft	-	-	-
Uniform	9'- 8 13/16"	14'- 6 3/8"	Smoothed Load	-	793 lb/ft	-	-
Point	0'- 11 3/16"	0'- 11 3/16"	J32-1(i5597)	312.00 lb	1250.00 lb	-	-
Point	2'- 6 13/16"	2'- 6 13/16"	-	915.00 lb	1250.00 lb	470.00/-47.00 lb	144.00 lb
Point	4'- 1 3/8"	4'- 1 3/8"	-	1395.00 lb	1250.00 lb	612.00/-62.00 lb	187.00 lb
Point	5'- 8 3/16"	5'- 8 3/16"	-	1505.00 lb	1177.00 lb	802.00/-81.00 lb	245.00 lb
Point	7'- 3"	7'- 3"	-	2012.00 lb	1269.00 lb	942.00/-95.00 lb	288.00 lb
Point	8'- 11 13/16"	8'- 11 13/16"	-	1296.00 lb	1250.00 lb	800.00/-81.00 lb	245.00 lb
Point	10'- 6 13/16"	10'- 6 13/16"	-	1442.00 lb	-	612.00/-61.00 lb	187.00 lb
Point	12'- 1 1/8"	12'- 1 1/8"	-	1277.00 lb	-	612.00/-62.00 lb	187.00 lb
Point	13'- 7 15/16"	13'- 7 15/16"	-	1503.00 lb	-	802.00/-81.00 lb	245.00 lb

Support Information:

Support	Start	End	Source	Maximum Analysis Reactions			
				Dead	Floor Live	Roof Live	Snow
1	0'	0'- 8"	PBO9(i32)	1468.00 lb	2370.00/-259.00 lb	517.00/-204.00 lb	144.00 lb
2	6'- 8"	8'	PBO7(i29)	8397.00 lb	8434.00 lb	5304.00/-406.00 lb	1231.00 lb
==>	6'- 9 1/2"	6'- 9 1/2"	PBO7(i29)	2868.00 lb	3993.00 lb	2367.00/-110.00 lb	333.00 lb
==>	7'- 10 1/2"	7'- 10 1/2"	PBO7(i29)	5529.00 lb	4441.00 lb	2937.00/-296.00 lb	898.00 lb
3	14'- 8"	15'- 2 3/4"	PBO6(i28)	2432.00 lb	2261.00/-167.00 lb	1257.00/-271.00 lb	353.00 lb

Errors, Warnings & Notes:

- * The dead loads used in the design of this member were applied to the structure as sloped dead loads.
- * The member graphic, dimensions, and locations shown on this report are based on the centerline of the member.
- * Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.



Graphical Illustration - Not To Scale
 Member Cut Length - 28'- 7/8"
 MemberPitch - 0/12

Design Information:

Building Code: IRC 2009	Floor Dead Load: 10.0 lb/ft ²	Roof Dead Load: 10.0 lb/ft ²	Ground Snow Load: 20.0 lb/ft ²
Design Methodology: ASD	Floor Live Load: 40.0 lb/ft ²	Roof Live Load: 20.0 lb/ft ²	
	Unbraced Length Top: 0'	Bottom: 14'- 10 3/4"	

Design Results:

	Location	Design	Control	Result	LDF	Load Combination
Critical Moment (Pos)	25'- 9 1/2"	6462.40 lb ft	21278.02 lb ft	Passed - 30%	1.00	D + L
Critical Moment (Neg)	12'- 10 5/8"	-8924.74 lb ft	21278.02 lb ft	Passed - 42%	1.00	D + L
Critical Shear	11'- 6 3/8"	3606.53 lb	8035.42 lb	Passed - 45%	1.00	D + L
Live Load Deflection	21'- 6 7/8"	0'- 1/8"	0'- 3/4" (L/360)	Passed - L/999	-	L
Total Load Deflection	21'- 7 1/16"	0'- 3/16"	0'- 1" (L/240)	Passed - L/914	-	D + L
Max. Reaction			Supported Mt Supporting Mt			
	0'- 4 1/2"	854.67 lb	14437.53 lb 10876.27 lb	Passed - 8%	1.00	D + L
	8'- 3 1/2"	8569.34 lb	18375.00 lb 17762.50 lb	Passed - 48%	1.00	D + L
	9'- 4 1/2"	-9312.57 lb	18375.00 lb -	Passed - 52%	1.00	D + L
	12'- 10 5/8"	11427.54 lb	22968.91 lb 22203.28 lb	Passed - 51%	1.00	D + L
	27'- 9 1/2"	3368.66 lb	11484.33 lb 8651.53 lb	Passed - 39%	1.00	D + L

Design Notes:

* Member design assumed proper ply to ply connection. Verify connection between plies according to code specification

Loading:

Type	Start	End	Source	Maximum Load Magnitudes			
				Dead	Floor Live	Roof Live	Snow
Self Weight	0'	28'- 7/8"	Self Weight	11 lb/ft	-	-	-
Uniform	-0'	28'- 7/8"	FC1 Floor Material	8 lb/ft	32 lb/ft	-	-
Uniform	0'- 3 1/2"	8'- 9 1/2"	3(i122)	73 lb/ft	-	-	-
Uniform	0'- 3 1/2"	1'- 1"	3(i122)	102 lb/ft	-	-	-
Uniform	1'- 7 3/8"	2'- 11 3/8"	3(i122)	130 lb/ft	-	-	-
Uniform	3'- 4 3/16"	4'- 8 3/16"	3(i122)	104 lb/ft	-	-	-
Uniform	6'- 9 15/16"	8'- 1 15/16"	3(i122)	741 lb/ft	604 lb/ft	-	-
Uniform	12'- 11 1/2"	15'- 2"	54(i2841)	73 lb/ft	-	-	-
Uniform	13'- 11"	15'- 3"	54(i2841)	84 lb/ft	-	-	-
Uniform	25'- 8 1/2"	27'- 8 1/2"	52(i2839)	73 lb/ft	-	-	-
Point	0'- 2 5/16"	0'- 2 5/16"	-	-	-4.00 lb	18.00/-18.00 lb	3.00 lb
Point	5'- 9 1/16"	5'- 9 1/16"	3(i122)	-	-72.00 lb	-	-
Point	13'- 1 1/4"	13'- 1 1/4"	-	1696.00 lb	2315.00/-5.00 lb	12.00/-1.00 lb	4.00 lb
Point	15'- 4 1/2"	15'- 4 1/2"	54(i2841)	1195.00 lb	1132.00/-45.00 lb	-	-
Point	25'- 9 1/2"	25'- 9 1/2"	52(i2839)	1706.00 lb	1700.00/-177.00 lb	-	-

Support Information:

Support	Start	End	Source	Maximum Analysis Reactions			
				Dead	Floor Live	Roof Live	Snow
1	0'	0'- 5 1/2"	W14(i15)	760.00 lb	360.00/-16.00 lb	19.00/-19.00 lb	3.00 lb
2	8'- 2"	9'- 6"	PBO8(i30)	798.00 lb	1494.00/-1038.00 lb	7.00/-7.00 lb	-1.00 lb
==>	8'- 3 1/2"	8'- 3 1/2"	PBO8(i30)	798.00 lb	1221.00/-1038.00 lb	4.00/-4.00 lb	-1.00 lb
==>	9'- 4 1/2"	9'- 4 1/2"	PBO8(i30)	-	273.00 lb	3.00/-3.00 lb	-
3	12'- 6 1/4"	13'- 3"	-	4442.00 lb	5055.00/-175.00 lb	13.00/-1.00 lb	5.00 lb
++>	12'- 8"	12'- 8"	DB15-2(i5621)	1777.00 lb	2022.00/-70.00 lb	5.00 lb	2.00 lb
++>	13'- 3/8"	13'- 3/8"	PBO17(i1698)	2665.00 lb	3033.00/-105.00 lb	8.00/-1.00 lb	3.00 lb
4	27'- 8 1/2"	28'- 7/8"	W9(i5)	1727.00 lb	1659.00/-145.00 lb	-	-

Errors, Warnings & Notes:

* The dead loads used in the design of this member were applied to the structure as sloped dead loads.

- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.

- This report is based on modeled conditions input by the user. Actual field conditions may differ from those shown. These results should be reviewed by a qualified design professional.



Job: 19100095

Member Type: Beam | Level: CRAWL

MiTek SAPPHIRE™ Structure Version 8.3.1.215.Update6

Designed by Single Member Design Engine

Member: 2 - 2.0 RigidLam LVL 1-3/4 x 11-7/8

Label: FB2-2-i5625

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Date: 11/15/2019 07:40:02

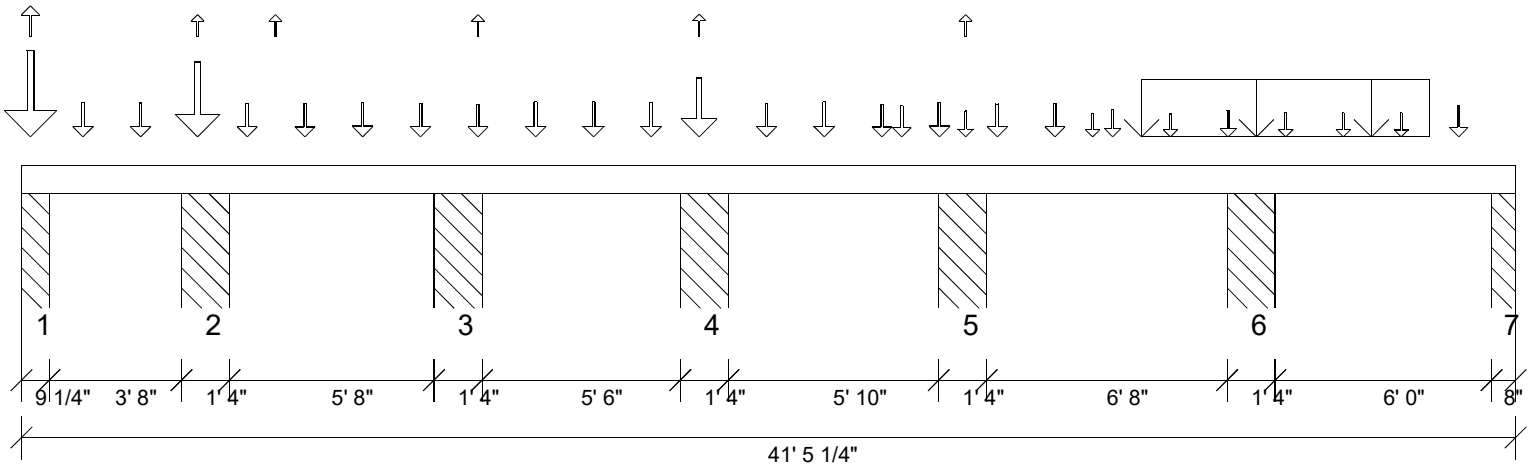
Status: Design Passed

* The member graphic, dimensions, and locations shown on this report are based on the centerline of the member.

* Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.

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Graphical Illustration - Not To Scale
 Member Cut Length - 41'- 5 1/4"
 MemberPitch - 0/12

Design Information:

Building Code: IRC 2009	Floor Dead Load: 10.0 lb/ft ²	Roof Dead Load: 10.0 lb/ft ²	Ground Snow Load: 20.0 lb/ft ²
Design Methodology: ASD	Floor Live Load: 40.0 lb/ft ²	Roof Live Load: 20.0 lb/ft ²	
	Unbraced Length Top: 0'- 2"	Bottom: 41'- 5 1/4"	

Design Results:

	Location	Design	Control	Result	LDF	Load Combination
Critical Moment (Pos)	38'- 3 3/16"	2684.98 lb ft	13315.61 lb ft	Passed - 20%	1.00	D + L
Critical Moment (Neg)	25'- 6 3/4"	-3349.43 lb ft	7421.62 lb ft	Passed - 45%	1.00	D + L
Critical Shear	24'- 8"	2966.48 lb	6259.17 lb	Passed - 47%	1.00	D + L
Live Load Deflection	37'- 11 5/16"	0'	0'- 3/4" (L/360)	Passed - L/999	-	L
Total Load Deflection	37'- 11 3/4"	0'- 1/16"	0'- 1" (L/240)	Passed - L/999	-	D + L
Max. Reaction			Supported Mt Supporting Mt			
	0'- 8 1/4"	8701.63 lb	24314.25 lb 23503.78 lb	Passed - 37%	1.00	D + L
	4'- 6 3/4"	2888.20 lb	18375.00 lb 17762.50 lb	Passed - 16%	1.00	D + L
	4'- 6 3/4"	-335.49 lb	21131.25 lb -	Passed - 2%	1.15	D + 0.75(L + Lr)
	5'- 7 3/4"	8351.39 lb	18375.00 lb 17762.50 lb	Passed - 47%	1.00	D + L
	11'- 6 3/4"	3180.60 lb	18375.00 lb 17762.50 lb	Passed - 18%	1.00	D + L
	12'- 7 3/4"	3604.37 lb	18375.00 lb 17762.50 lb	Passed - 20%	1.00	D + L
	18'- 4 3/4"	7770.93 lb	18375.00 lb 17762.50 lb	Passed - 44%	1.00	D + L
	19'- 5 3/4"	6703.95 lb	18375.00 lb 17762.50 lb	Passed - 38%	1.00	D + L
	19'- 5 3/4"	-209.80 lb	18375.00 lb -	Passed - 1%	1.00	D + L
	25'- 6 3/4"	5401.13 lb	18375.00 lb 17762.50 lb	Passed - 30%	1.00	D + L
	26'- 7 3/4"	3757.31 lb	18375.00 lb 17762.50 lb	Passed - 21%	1.00	D + L
	33'- 6 3/4"	3177.61 lb	18375.00 lb 17762.50 lb	Passed - 18%	1.00	D + L
	34'- 7 3/4"	3819.59 lb	18375.00 lb 17762.50 lb	Passed - 22%	1.00	D + L
	40'- 10 1/4"	1586.71 lb	20999.80 lb 20299.80 lb	Passed - 8%	1.00	D + L

Design Notes:

* Member design assumed proper ply to ply connection. Verify connection between plies according to code specification

Loading:

Type	Start	End	Source	Maximum Load Magnitudes			
				Dead	Floor Live	Roof Live	Snow
Self Weight	0'	41'- 5 1/4"	Self Weight	9 lb/ft	-	-	-
Uniform	31'- 3/4"	39'- 3/4"	Smoothed Load	-	514 lb/ft	-	-
Point	0'- 3"	0'- 3"	FB9-2(i5652)	5147.00 lb	1250.00 lb	793.00/-60.00 lb	233.00 lb
Point	1'- 8 7/16"	1'- 8 7/16"	J32-1(i5629)	298.00 lb	1193.00 lb	-	-
Point	3'- 3 5/8"	3'- 3 5/8"	J32-1(i5654)	289.00 lb	1158.00 lb	-	-
Point	4'- 10 5/8"	4'- 10 5/8"	-	2793.00 lb	3416.00 lb	-4.00 lb	-1.00 lb
Point	6'- 3 3/16"	6'- 3 3/16"	J32-1(i5613)	330.00 lb	1027.00 lb	-	-
Point	7'- 1/2"	7'- 1/2"	J18-1(i5647)	-	-3.00 lb	-	-
Point	7'- 10 3/8"	7'- 10 3/8"	J34-1(i5644)	315.00 lb	1109.00 lb	-	-
Point	9'- 5 9/16"	9'- 5 9/16"	J34-1(i5643)	288.00 lb	1256.00 lb	-	-
Point	11'- 3/4"	11'- 3/4"	J34-1(i5620)	268.00 lb	1162.00 lb	-	-
Point	12'- 7 15/16"	12'- 7 15/16"	-	261.00 lb	1044.00/-4.00 lb	-	-
Point	14'- 3 3/16"	14'- 3 3/16"	J32-1(i5648)	313.00 lb	1250.00 lb	-	-
Point	15'- 10 3/8"	15'- 10 3/8"	J32-1(i5649)	335.00 lb	1250.00 lb	-	-
Point	17'- 5 9/16"	17'- 5 9/16"	J32-1(i5619)	379.00 lb	1130.00 lb	-	-
Point	18'- 9 9/16"	18'- 9 9/16"	-	1777.00 lb	2632.00/-70.00 lb	-	-
Point	20'- 8"	20'- 8"	J28-1(i5622)	276.00 lb	1105.00 lb	-	-
Point	22'- 3 3/16"	22'- 3 3/16"	J28-1(i5632)	499.00 lb	1105.00 lb	-	-
Point	23'- 10 3/8"	23'- 10 3/8"	J28-1(i5617)	338.00 lb	951.00 lb	-	-
Point	24'- 5"	24'- 5"	J14-2(i5627)	408.00 lb	676.00 lb	-	-
Point	25'- 5 9/16"	25'- 5 9/16"	J28-1(i5614)	406.00 lb	1139.00 lb	-	-
Point	26'- 2 1/4"	26'- 2 1/4"	J14-2(i5624)	496.00 lb	-2.00 lb	12.00/-11.00 lb	-

- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.

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Member: 2 - 2.0 RigidLam LVL 1-3/4 x 9-1/4

Status: Design Passed

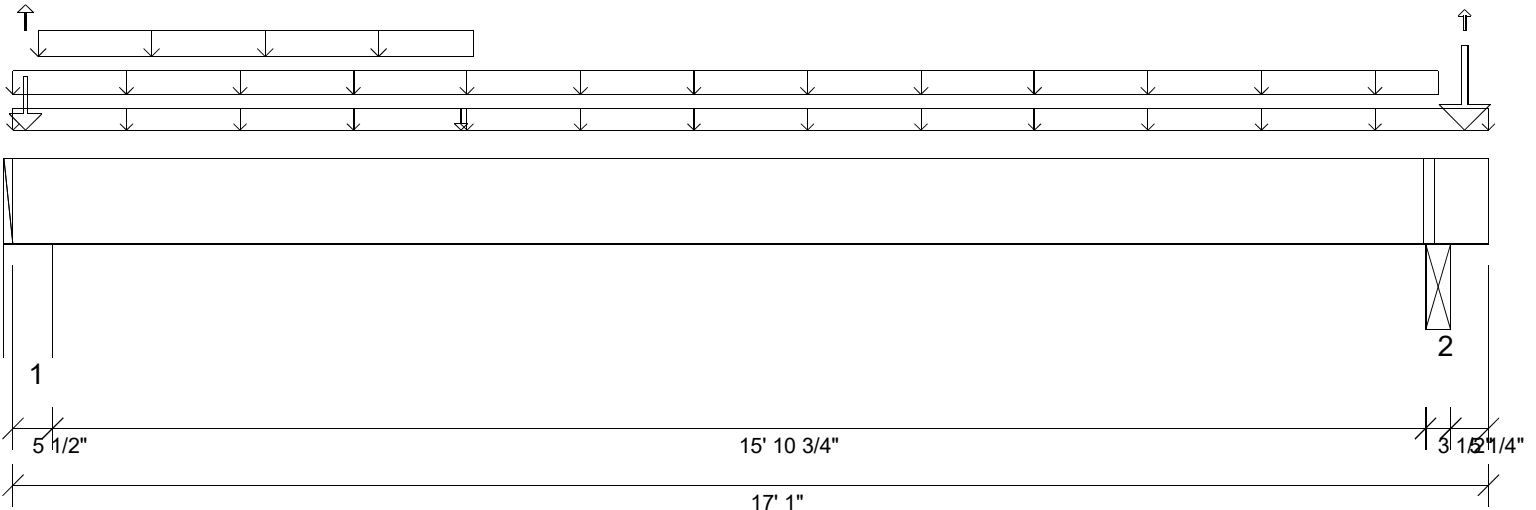
Point	27'- 3/4"	27'- 3/4"	J28-1(i5650)	324.00 lb	999.00 lb	-	-
Point	28'- 8"	28'- 8"	J28-1(i5631)	342.00 lb	1014.00 lb	-	-
Point	29'- 8 1/2"	29'- 8 1/2"	J14-1(i5645)	223.00 lb	-	-	-
Point	30'- 3 3/16"	30'- 3 3/16"	J20-1(i5628)	-	639.00 lb	-	-
Point	31'- 10 3/8"	31'- 10 3/8"	J20-1(i5615)	206.00 lb	-	-	-
Point	33'- 5 9/16"	33'- 5 9/16"	J20-1(i5639)	562.00 lb	-	-	-
Point	35'- 3/4"	35'- 3/4"	J20-1(i5661)	379.00 lb	-	-	-
Point	36'- 8"	36'- 8"	J20-1(i5653)	324.00 lb	-	-	-
Point	38'- 3 3/16"	38'- 3 3/16"	J20-1(i5610)	307.00 lb	-	-	-
Point	39'- 10 3/8"	39'- 10 3/8"	J20-1(i5641)	307.00 lb	823.00 lb	-	-

Support Information:

Support	Start	End	Source	Maximum Analysis Reactions			
				Dead	Floor Live	Roof Live	Snow
1	0'	0'- 9 1/4"	PBO6(i28)	6676.00 lb	2602.00/-31.00 lb	990.00/-75.00 lb	291.00 lb
2	4'- 5 1/4"	5'- 9 1/4"	PBO5(i27)	3658.00/-1007.00 lb	10546.00/-723.00 lb	254.00/-434.00 lb	65.00/-122.00 lb
==>	4'- 6 3/4"	4'- 6 3/4"	PBO5(i27)	-1007.00 lb	4610.00/-718.00 lb	31.00/-415.00 lb	-122.00 lb
==>	5'- 7 3/4"	5'- 7 3/4"	PBO5(i27)	3658.00 lb	5936.00/-5.00 lb	223.00/-19.00 lb	65.00 lb
3	11'- 5 1/4"	12'- 9 1/4"	PBO4(i26)	1308.00 lb	5714.00/-6.00 lb	10.00/-15.00 lb	3.00/-4.00 lb
==>	11'- 6 3/4"	11'- 6 3/4"	PBO4(i26)	531.00 lb	2765.00/-4.00 lb	1.00/-14.00 lb	-4.00 lb
==>	12'- 7 3/4"	12'- 7 3/4"	PBO4(i26)	777.00 lb	2949.00/-2.00 lb	9.00/-1.00 lb	3.00 lb
4	18'- 3 1/4"	19'- 7 1/4"	PBO3(i25)	3259.00 lb	9948.00/-1280.00 lb	6.00/-1.00 lb	2.00 lb
==>	18'- 4 3/4"	18'- 4 3/4"	PBO3(i25)	1699.00 lb	4405.00/-1257.00 lb	4.00/-1.00 lb	1.00 lb
==>	19'- 5 3/4"	19'- 5 3/4"	PBO3(i25)	1560.00 lb	5543.00/-23.00 lb	2.00 lb	1.00 lb
5	25'- 5 1/4"	26'- 9 1/4"	PBO2(i24)	2658.00 lb	6089.00/-3.00 lb	12.00/-11.00 lb	-
==>	25'- 6 3/4"	25'- 6 3/4"	PBO2(i24)	1572.00 lb	3084.00/-1.00 lb	5.00/-5.00 lb	-
==>	26'- 7 3/4"	26'- 7 3/4"	PBO2(i24)	1086.00 lb	3005.00/-2.00 lb	7.00/-6.00 lb	-
6	33'- 5 1/4"	34'- 9 1/4"	PBO1(i23)	1941.00 lb	4916.00/-7.00 lb	-	-
==>	33'- 6 3/4"	33'- 6 3/4"	PBO1(i23)	812.00 lb	2500.00/-7.00 lb	-	-
==>	34'- 7 3/4"	34'- 7 3/4"	PBO1(i23)	1129.00 lb	2416.00 lb	-	-
7	40'- 9 1/4"	41'- 5 1/4"	PBO10(i33)	465.00 lb	1356.00/-132.00 lb	-	-

Errors, Warnings & Notes:

- * The dead loads used in the design of this member were applied to the structure as sloped dead loads.
- * The member graphic, dimensions, and locations shown on this report are based on the centerline of the member.
- * Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.



Graphical Illustration - Not To Scale
 Member Cut Length - 17'- 1"
 MemberPitch - 0/12

Design Information:

Building Code:	IRC 2009	Floor Dead Load:	10.0 lb/ft ²	Roof Dead Load:	10.0 lb/ft ²	Ground Snow Load:	20.0 lb/ft ²
Design Methodology:	ASD	Floor Live Load:	40.0 lb/ft ²	Roof Live Load:	20.0 lb/ft ²		
		Unbraced Length	Top: 0'	Bottom:	15'- 10 3/4"		

Design Results:

	Location	Design	Control	Result	LDF	Load Combination	
Critical Moment (Pos)	5'- 11 11/16"	1506.99 lb ft	21278.02 lb ft	Passed - 7%	1.00	D + L	
Critical Moment (Neg)	16'- 6"	-1315.39 lb ft	21278.02 lb ft	Passed - 6%	1.00	D + L	
Critical Shear	1'- 5 3/8"	552.71 lb	8035.42 lb	Passed - 7%	1.00	D + L	
Live Load Deflection	7'- 10"	0'	0'- 3/4" (L/360)	Passed - L/999	-	L	
Total Load Deflection	7'- 6 15/16"	0'- 1/16"	0'- 1" (L/240)	Passed - L/999	-	D + L	
Max. Reaction	0'- 4 1/2"	2326.87 lb	Supported MtI 14437.48 lb	Supported MtI 10876.23 lb	Passed - 21%	1.00	D + L
	16'- 6"	4817.18 lb	10171.67 lb	9187.30 lb	Passed - 52%	1.00	D + L

Design Notes:

- * The deflection at the cantilever for either live and/or total loads is less than 3/8" and therefore has been excluded from the deflection ratio considerations.
- * Member design assumed proper ply to ply connection. Verify connection between plies according to code specification

Loading:

Type	Start	End	Source	Maximum Load Magnitudes			
				Dead	Floor Live	Roof Live	Snow
Self Weight	0'	17'- 1"	Self Weight	11 lb/ft	-	-	-
Uniform	0'	17'- 1"	FC1 Floor Material	-	5 lb/ft	-	-
Uniform	0'	16'- 6"	FC1 Floor Material	7 lb/ft	27 lb/ft	-	-
Uniform	0'- 3 1/2"	5'- 4"	6(i131)	73 lb/ft	-	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	E5(i106)	1255.00 lb	361.00 lb	343.00/-23.00 lb	119.00 lb
Point	5'- 2 1/4"	5'- 2 1/4"	FC1 Floor Material	39.00 lb	-	-	-
Point	16'- 9 11/16"	16'- 9 11/16"	PBO11(i120)	2053.00 lb	2218.00 lb	8.00/-4.00 lb	3.00/-1.00 lb

Support Information:

Support	Start	End	Source	Maximum Analysis Reactions			
				Dead	Floor Live	Roof Live	Snow
1	0'	0'- 5 1/2"	W6(i9)	1710.00 lb	559.00 lb	351.00/-23.00 lb	122.00 lb
2	16'- 4 1/4"	16'- 7 3/4"	DB15-2(i5621)	2325.00 lb	2550.00 lb	-4.00 lb	-1.00 lb

Errors, Warnings & Notes:

- * The dead loads used in the design of this member were applied to the structure as sloped dead loads.
- * The member graphic, dimensions, and locations shown on this report are based on the centerline of the member.
- * Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.



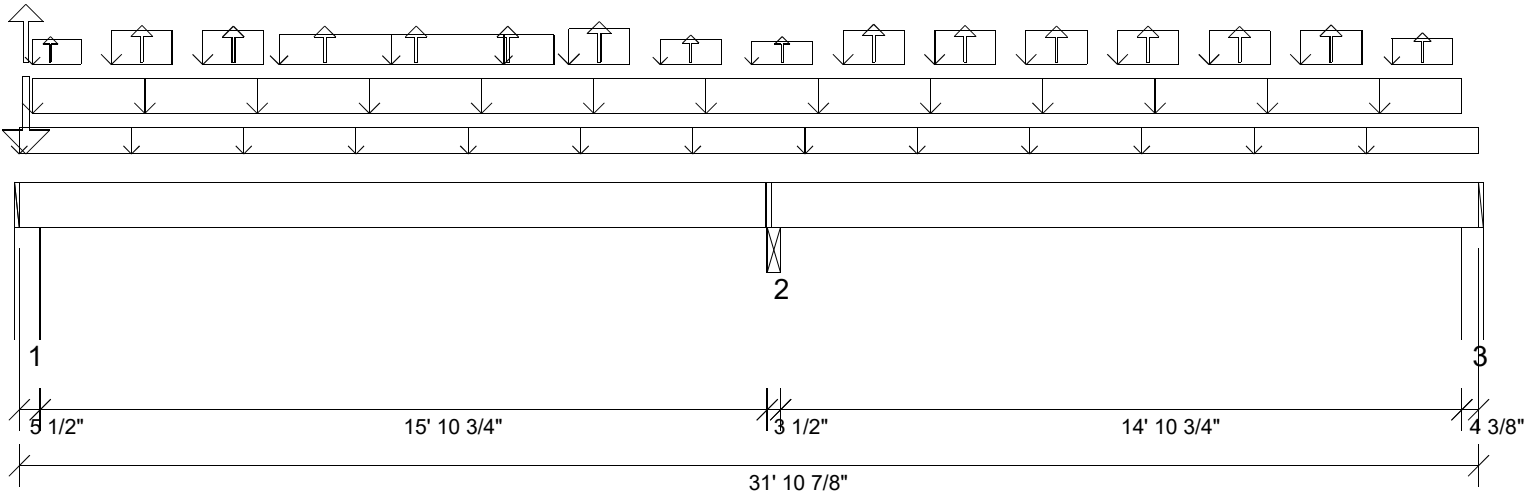
Job: 19100095
 Member Type: Beam | Level: CRAWL
 MiTek SAPPiRE™ Structure Version 8.3.1.215.Update6
 Designed by Single Member Design Engine

Label: FB9-2-i5652

Page: 7 of 15
 Date: 11/15/2019 07:40:02

Member: 2 - 2.0 RigidLam LVL 1-3/4 x 11-7/8

Status: Design Passed



Graphical Illustration - Not To Scale
 Member Cut Length - 31'- 10 7/8"
 MemberPitch - 0/12

Design Information:

Building Code:	IRC 2009	Floor Dead Load:	10.0 lb/ft ²	Roof Dead Load:	10.0 lb/ft ²	Ground Snow Load:	20.0 lb/ft ²
Design Methodology:	ASD	Floor Live Load:	40.0 lb/ft ²	Roof Live Load:	20.0 lb/ft ²		
		Unbraced Length Top:	0'	Bottom:	15'- 10 3/4"		

Design Results:

	Location	Design	Control	Result	LDF	Load Combination
Critical Moment (Pos)	6'- 8 5/8"	6601.82 lb ft	21278.02 lb ft	Passed - 31%	1.00	D + L
Critical Moment (Neg)	16'- 6"	-10098.14 lb ft	21278.02 lb ft	Passed - 47%	1.00	D + L
Critical Shear	15'- 4 3/8"	2909.04 lb	8035.42 lb	Passed - 36%	1.00	D + L
Live Load Deflection	7'- 11 5/16"	0'- 1/8"	0'- 3/4" (L/360)	Passed - L/999	-	0.75(L + Lr + W)
Total Load Deflection	7'- 6 1/8"	0'- 5/16"	0'- 1" (L/240)	Passed - L/638	-	D + 0.75(L + Lr + W)
Max. Reaction			Supported Mt Supporting Mt			
	0'- 4 1/2"	2339.46 lb	14437.48 lb 10876.23 lb	Passed - 22%	1.00	D + L
	16'- 6"	6400.94 lb	10171.55 lb 9187.18 lb	Passed - 70%	1.00	D + L
	31'- 7 1/2"	1905.07 lb	11484.27 lb 8651.49 lb	Passed - 22%	1.00	D + L

Design Notes:

* Member design assumed proper ply to ply connection. Verify connection between plies according to code specification

Loading:

Type	Start	End	Source	Maximum Load Magnitudes			
				Dead	Floor Live	Roof Live	Snow
Self Weight	0'	31'- 10 7/8"	Self Weight	11 lb/ft	-	-	-
Uniform	0'	31'- 10 7/8"	FC1 Floor Material	16 lb/ft	64 lb/ft	-	-
Uniform	0'- 3 1/2"	31'- 6 1/2"	4(i125)	195 lb/ft	-	-	-
Uniform	0'- 3 1/2"	1'- 4 3/16"	4(i125)	-	-	52 lb/ft	-
Uniform	2'- 3/16"	3'- 4 3/16"	4(i125)	71 lb/ft	-	68 lb/ft	22 lb/ft
Uniform	4'- 3/16"	5'- 4 3/16"	4(i125)	68 lb/ft	-	68 lb/ft	21 lb/ft
Uniform	5'- 8 3/16"	11'- 8 3/16"	4(i125)	46 lb/ft	-	46 lb/ft	14 lb/ft
Uniform	12'- 3/16"	13'- 4 3/16"	4(i125)	75 lb/ft	-	82 lb/ft	24 lb/ft
Uniform	14'- 3/16"	15'- 4 3/16"	4(i125)	-	-	30 lb/ft	8 lb/ft
Uniform	16'- 3/16"	17'- 4 3/16"	4(i125)	-	-	22 lb/ft	4 lb/ft
Uniform	18'- 3/16"	19'- 4 3/16"	4(i125)	68 lb/ft	-	72 lb/ft	21 lb/ft
Uniform	20'- 3/16"	21'- 4 3/16"	4(i125)	68 lb/ft	-	68 lb/ft	21 lb/ft
Uniform	22'- 3/16"	23'- 4 3/16"	4(i125)	69 lb/ft	-	68 lb/ft	21 lb/ft
Uniform	24'- 3/16"	25'- 4 3/16"	4(i125)	69 lb/ft	-	69 lb/ft	21 lb/ft
Uniform	26'- 3/16"	27'- 4 3/16"	4(i125)	68 lb/ft	-	68 lb/ft	21 lb/ft
Uniform	28'- 3/16"	29'- 4 3/16"	4(i125)	72 lb/ft	-	70 lb/ft	22 lb/ft
Uniform	30'- 3/16"	31'- 4 3/16"	4(i125)	-	-	50 lb/ft	11 lb/ft
Point	0'- 1 3/4"	0'- 1 3/4"	E5(i106)	204.00 lb	-	142.00/-10.00 lb	76.00 lb
Point	0'- 8 3/16"	0'- 8 3/16"	4(i125)	-	-	-36.00 lb	-
Point	2'- 8 3/16"	2'- 8 3/16"	4(i125)	-	-	-	-
Point	4'- 8 3/16"	4'- 8 3/16"	4(i125)	-	-	-	-
Point	6'- 8 3/16"	6'- 8 3/16"	4(i125)	-	-	-	-
Point	8'- 8 3/16"	8'- 8 3/16"	4(i125)	-	-	-	-
Point	10'- 8 3/16"	10'- 8 3/16"	4(i125)	-	-	-	-
Point	12'- 8 3/16"	12'- 8 3/16"	4(i125)	-	-	-18.00 lb	-
Point	14'- 8 3/16"	14'- 8 3/16"	4(i125)	-	-	-6.00 lb	-
Point	16'- 8 3/16"	16'- 8 3/16"	4(i125)	-	-	-15.00 lb	-
Point	18'- 8 3/16"	18'- 8 3/16"	4(i125)	-	-	-15.00 lb	-
Point	20'- 8 3/16"	20'- 8 3/16"	4(i125)	-	-	-6.00 lb	-
Point	22'- 8 3/16"	22'- 8 3/16"	4(i125)	-	-	-	-
Point	24'- 8 3/16"	24'- 8 3/16"	4(i125)	-	-	-	-
Point	26'- 8 3/16"	26'- 8 3/16"	4(i125)	-	-	-	-
Point	28'- 8 3/16"	28'- 8 3/16"	4(i125)	-	-	-	-

- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.

- This report is based on modeled conditions input by the user. Actual field conditions may differ from those shown. These results should be reviewed by a qualified design professional.



Job: 19100095
 Member Type: Beam | Level: CRAWL
 MiTek SAPPHIRE™ Structure Version 8.3.1.215.Update6
 Designed by Single Member Design Engine

Label: FB9-2-i5652

Page: 8 of 15
 Date: 11/15/2019 07:40:02

Member: 2 - 2.0 RigidLam LVL 1-3/4 x 11-7/8

Status: Design Passed

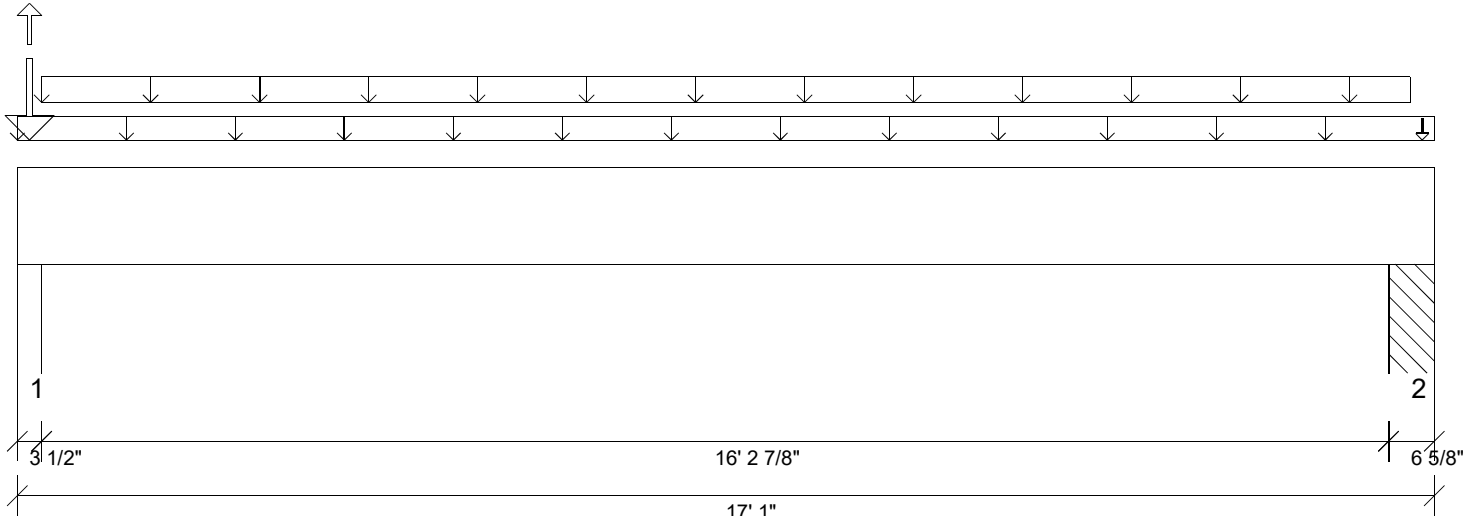
Point 30'- 8 3/16" 30'- 8 3/16" 4(i125) - - -7.00 lb -

Support Information:

Support	Start	End	Source	Maximum Analysis Reactions			
				Dead	Floor Live	Roof Live	Snow
1	0'	0'- 5 1/2"	W6(i9)	1868.00 lb	474.00/-55.00 lb	462.00/-49.00 lb	151.00 lb
2	16'- 4 1/4"	16'- 7 3/4"	DB15-2(i5621)	5147.00 lb	1250.00 lb	793.00/-60.00 lb	233.00 lb
3	31'- 6 1/2"	31'- 10 7/8"	W9(i5)	1457.00 lb	450.00/-71.00 lb	284.00/-48.00 lb	69.00 lb

Errors, Warnings & Notes:

- * The dead loads used in the design of this member were applied to the structure as sloped dead loads.
- * The member graphic, dimensions, and locations shown on this report are based on the centerline of the member.
- * Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.



17' 1"
 Graphical Illustration - Not To Scale
 Member Cut Length - 17'- 1"
 MemberPitch - 0/12

Design Information:

Building Code:	IRC 2009	Floor Dead Load:	10.0 lb/ft ²	Roof Dead Load:	10.0 lb/ft ²	Ground Snow Load:	20.0 lb/ft ²
Design Methodology:	ASD	Floor Live Load:	40.0 lb/ft ²	Roof Live Load:	20.0 lb/ft ²		
		Unbraced Length Top:	0'	Bottom:	16'- 6"		

Design Results:

	Location	Design	Control	Result	LDF	Load Combination
Critical Moment (Pos)	8'- 5"	4674.51 lb ft	28972.14 lb ft	Passed - 16%	1.00	D + L
Critical Moment (Neg)	0'- 2 1/2"	-48.46 lb ft	33317.95 lb ft	Passed - 0%	1.15	D + Lr
Critical Shear	1'- 5 1/2"	971.34 lb	9473.33 lb	Passed - 10%	1.00	D + L
Live Load Deflection	8'- 4 15/16"	0'- 1/16"	0'- 3/4" (L/360)	Passed - L/999	-	L
Total Load Deflection	8'- 4 15/16"	0'- 1/8"	0'- 1" (L/240)	Passed - L/999	-	D + L
Max. Reaction			<u>Supported Mt</u> <u>Supporting Mt</u>			
	0'- 2 1/2"	1581.60 lb	9187.42 lb 5206.20 lb	Passed - 30%	1.00	D + L
	16'- 7 3/8"	1209.34 lb	17390.40 lb 16810.72 lb	Passed - 7%	1.00	D + L

Design Notes:

* Member design assumed proper ply to ply connection. Verify connection between plies according to code specification

Loading:

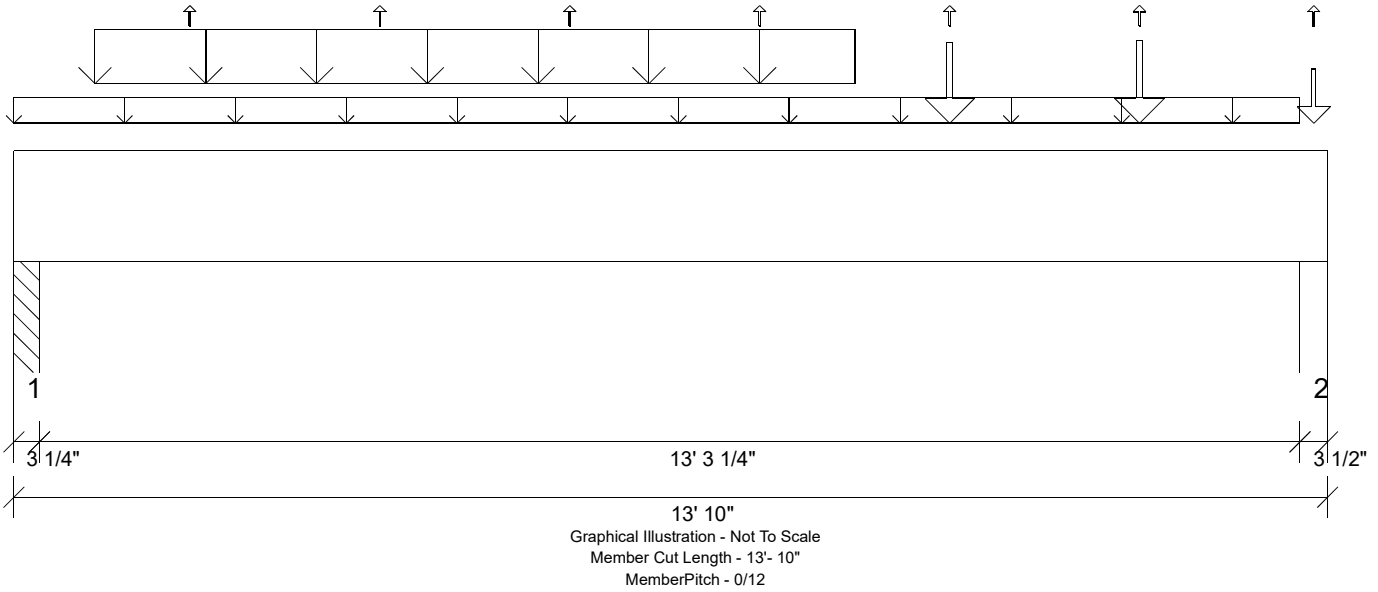
Type	Start	End	Source	Maximum Load Magnitudes			
				Dead	Floor Live	Roof Live	Snow
Self Weight	0'	17'- 1"	Self Weight	13 lb/ft	-	-	-
Uniform	0'	17'- 1"	FC2 Floor Material	11 lb/ft	43 lb/ft	-	-
Uniform	0'- 3 1/2"	16'- 9 1/2"	30(i1213)	73 lb/ft	-	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	E21(i1210)	428.00 lb	-	339.00/-23.00 lb	118.00 lb
Point	16'- 11 1/4"	16'- 11 1/4"	31(i1215)	21.00 lb	-	-	-

Support Information:

Support	Start	End	Source	Maximum Analysis Reactions			
				Dead	Floor Live	Roof Live	Snow
1	0'	0'- 3 1/2"	E5(i106)	1234.00 lb	361.00 lb	343.00/-23.00 lb	119.00 lb
2	16'- 6 3/8"	17'- 1"	PBO11(i120)	824.00 lb	372.00 lb	-4.00 lb	-1.00 lb

Errors, Warnings & Notes:

- * The dead loads used in the design of this member were applied to the structure as sloped dead loads.
- * The member graphic, dimensions, and locations shown on this report are based on the centerline of the member.
- * Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.



Design Information:

Building Code:	IRC 2009	Floor Dead Load:	10.0 lb/ft ²	Roof Dead Load:	10.0 lb/ft ²	Ground Snow Load:	20.0 lb/ft ²
Design Methodology:	ASD	Floor Live Load:	40.0 lb/ft ²	Roof Live Load:	20.0 lb/ft ²		
		Unbraced Length Top:	0'	Bottom:	1'- 8 1/2"		

Design Results:

	Location	Design	Control	Result	LDF	Load Combination
Critical Moment (Pos)	7'- 1 11/16"	12611.39 lb ft	28972.14 lb ft	Passed - 44%	1.00	D + L
Critical Moment (Neg)	13'- 7 1/2"	-34.98 lb ft	28972.14 lb ft	Passed - 0%	1.00	D + L
Critical Shear	1'- 5 1/4"	3380.98 lb	9473.33 lb	Passed - 36%	1.00	D + L
Live Load Deflection	6'- 10 13/16"	0'- 3/16"	0'- 3/4" (L/360)	Passed - L/976	-	L
Total Load Deflection	6'- 10 7/8"	0'- 1/4"	0'- 1" (L/240)	Passed - L/600	-	D + L
Max. Reaction	0'- 2 1/4"	3504.52 lb	<u>Supported Mt</u> 8531.33 lb	Passed - 42%	1.00	D + L
	13'- 7 1/2"	4013.17 lb	<u>Supporting Mt</u> 8246.95 lb	Passed - 77%	1.00	D + L
			9187.36 lb	5206.17 lb		

Design Notes:

* Member design assumed proper ply to ply connection. Verify connection between plies according to code specification

Loading:

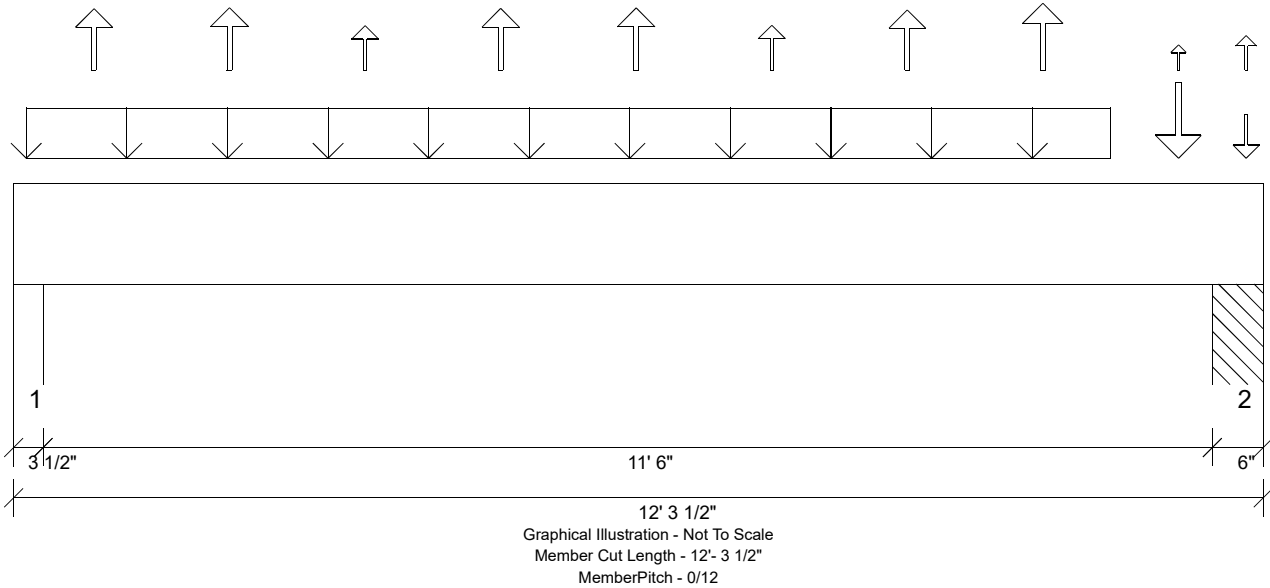
Type	Start	End	Source	Maximum Load Magnitudes			
				Dead	Floor Live	Roof Live	Snow
Self Weight	0'	13'- 10"	Self Weight	13 lb/ft	-	-	-
Uniform	0'	13'- 6 1/2"	31(i1215)	73 lb/ft	-	-	-
Uniform	0'- 10 1/4"	8'- 10 1/4"	Smoothed Load	131 lb/ft	350 lb/ft	2 lb/ft	1 lb/ft
Point	1'- 10 1/4"	1'- 10 1/4"	F16(c02)	-	-	-	-
Point	3'- 10 1/4"	3'- 10 1/4"	F16(c04)	-	-	-	-
Point	5'- 10 1/4"	5'- 10 1/4"	F16(c06)	-	-	-	-
Point	7'- 10 1/4"	7'- 10 1/4"	F16(c01)	-	-	-	-
Point	9'- 10 1/4"	9'- 10 1/4"	F16(c05)	259.00 lb	693.00 lb	3.00 lb	1.00 lb
Point	11'- 10 1/4"	11'- 10 1/4"	F16(c03)	292.00 lb	687.00 lb	6.00 lb	2.00 lb
Point	13'- 8 1/4"	13'- 8 1/4"	F12(c01)	295.00 lb	239.00/-1.00 lb	-	-

Support Information:

Support	Start	End	Source	Maximum Analysis Reactions			
				Dead	Floor Live	Roof Live	Snow
1	0'	0'- 3 1/4"	PBO11(i120)	1389.00 lb	2118.00 lb	9.00/-1.00 lb	3.00 lb
2	13'- 6 1/2"	13'- 10"	54(i2841)	1696.00 lb	2315.00/-1.00 lb	12.00/-1.00 lb	4.00 lb

Errors, Warnings & Notes:

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- * The member graphic, dimensions, and locations shown on this report are based on the centerline of the member.
- * Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.



Design Information:

Building Code:	IRC 2009	Floor Dead Load:	10.0 lb/ft ²	Roof Dead Load:	10.0 lb/ft ²	Ground Snow Load:	20.0 lb/ft ²
Design Methodology:	ASD	Floor Live Load:	40.0 lb/ft ²	Roof Live Load:	20.0 lb/ft ²		
		Unbraced Length Top:	0'	Bottom:	11'- 8 1/2"		

Design Results:

	Location	Design	Control	Result	LDF	Load Combination
Critical Moment (Pos)	6'- 1 1/2"	13800.10 lb ft	24469.72 lb ft	Passed - 56%	1.15	D + Lr
Critical Moment (Neg)	6'- 1 1/2"	-2399.17 lb ft	34044.83 lb ft	Passed - 7%	1.60	0.6D + W
Critical Shear	1'- 3 3/8"	4236.54 lb	9240.73 lb	Passed - 46%	1.15	D + Lr
Live Load Deflection	6'- 5/16"	0'- 3/16"	0'- 3/4" (L/360)	Passed - L/704	-	0.75(L + Lr + W)
Total Load Deflection	6'- 3/8"	0'- 3/8"	0'- 1" (L/240)	Passed - L/361	-	D + 0.75(L + Lr + W)
Max. Reaction			<u>Supported Mt</u> <u>Supporting Mt</u>			
	0'- 2 1/2"	4780.95 lb	9187.42 lb 16206.61 lb	Passed - 52%	1.15	D + Lr
	0'- 2 1/2"	-883.97 lb	12782.50 lb -	Passed - 7%	1.60	0.6D + W
	11'- 10 1/2"	4651.92 lb	15749.85 lb 15224.86 lb	Passed - 31%	1.15	D + Lr
	11'- 10 1/2"	-740.41 lb	21912.83 lb -	Passed - 5%	1.60	0.6D + W

Design Notes:

* Member design assumed proper ply to ply connection. Verify connection between plies according to code specification

Loading:

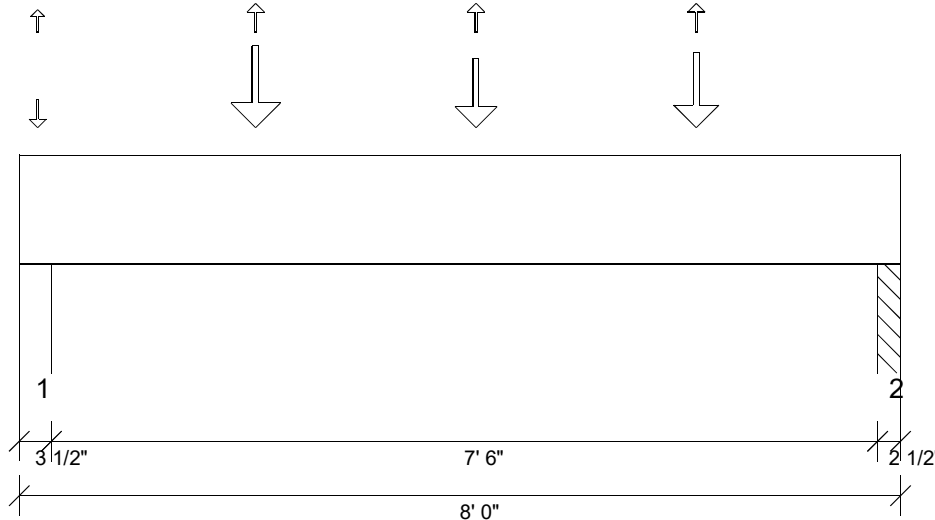
Type	Start	End	Source	Maximum Load Magnitudes			
				Dead	Floor Live	Roof Live	Snow
Self Weight	0'	12'- 3 1/2"	Self Weight	11 lb/ft	-	-	-
Uniform	0'- 1 1/2"	10'- 9 1/2"	Smoothed Load	417 lb/ft	50 lb/ft	381 lb/ft	104 lb/ft
Point	0'- 9 1/2"	0'- 9 1/2"	FW23(c01)	-	-	-43.00 lb	-
Point	2'- 1 1/2"	2'- 1 1/2"	FW23(c01)	-	-	-56.00 lb	-
Point	3'- 5 1/2"	3'- 5 1/2"	FW23(c01)	-	-	-26.00 lb	-
Point	4'- 9 1/2"	4'- 9 1/2"	FW23(c01)	-	-	-43.00 lb	-
Point	6'- 1 1/2"	6'- 1 1/2"	FW23(c01)	-	-	-56.00 lb	-
Point	7'- 5 1/2"	7'- 5 1/2"	FW23(c01)	-	-	-26.00 lb	-
Point	8'- 9 1/2"	8'- 9 1/2"	FW23(c01)	-	-	-42.00 lb	-
Point	10'- 1 1/2"	10'- 1 1/2"	FW23(c01)	-	-	-59.00 lb	-
Point	11'- 5 1/2"	11'- 5 1/2"	FW23(c01)	237.00 lb	56.00 lb	313.00/-84.00 lb	53.00 lb
Point	12'- 1 1/2"	12'- 1 1/2"	FW23(c01)	115.00 lb	19.00/-3.00 lb	123.00/-38.00 lb	28.00 lb

Support Information:

Support	Start	End	Source	Maximum Analysis Reactions			
				Dead	Floor Live	Roof Live	Snow
1	0'	0'- 3 1/2"	E12(i127)	2522.00 lb	293.00 lb	2264.00/-193.00 lb	610.00 lb
2	11'- 9 1/2"	12'- 3 1/2"	PBO13(i154)	2413.00 lb	310.00/-3.00 lb	2234.00/-280.00 lb	575.00 lb

Errors, Warnings & Notes:

- * The dead loads used in the design of this member were applied to the structure as sloped dead loads.
- * The member graphic, dimensions, and locations shown on this report are based on the centerline of the member.
- * Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.



Graphical Illustration - Not To Scale
 Member Cut Length - 8'
 MemberPitch - 0/12

Design Information:

Building Code:	IRC 2009	Floor Dead Load:	10.0 lb/ft ²	Roof Dead Load:	10.0 lb/ft ²	Ground Snow Load:	20.0 lb/ft ²
Design Methodology:	ASD	Floor Live Load:	40.0 lb/ft ²	Roof Live Load:	20.0 lb/ft ²		
		Unbraced Length Top:	1'- 9"	Bottom:	7'- 8 1/2"		

Design Results:

	Location	Design	Control	Result	LDF	Load Combination	
Critical Moment (Pos)	4'- 1 3/4"	3291.31 lb ft	21278.02 lb ft	Passed - 15%	1.00	D + L	
Critical Moment (Neg)	0'- 2 1/2"	-5.78 lb ft	24469.72 lb ft	Passed - 0%	1.15	D + Lr	
Critical Shear	1'- 3 3/8"	1363.99 lb	8035.42 lb	Passed - 17%	1.00	D + L	
Live Load Deflection	4'- 5/16"	0'	0'- 3/4" (L/360)	Passed - L/999	-	0.75(L + Lr + W)	
Total Load Deflection	4'- 7/16"	0'- 1/16"	0'- 1" (L/240)	Passed - L/999	-	D + 0.75(L + Lr + W)	
Max. Reaction			<u>Supported Mt</u>	<u>Supporting Mt</u>			
	0'- 2 1/2"	1486.04 lb	9187.54 lb	16206.82 lb	Passed - 16%	1.00	D + L
	7'- 10 1/2"	1366.74 lb	6562.46 lb	6343.71 lb	Passed - 22%	1.00	D + L

Design Notes:

* Member design assumed proper ply to ply connection. Verify connection between plies according to code specification

Loading:

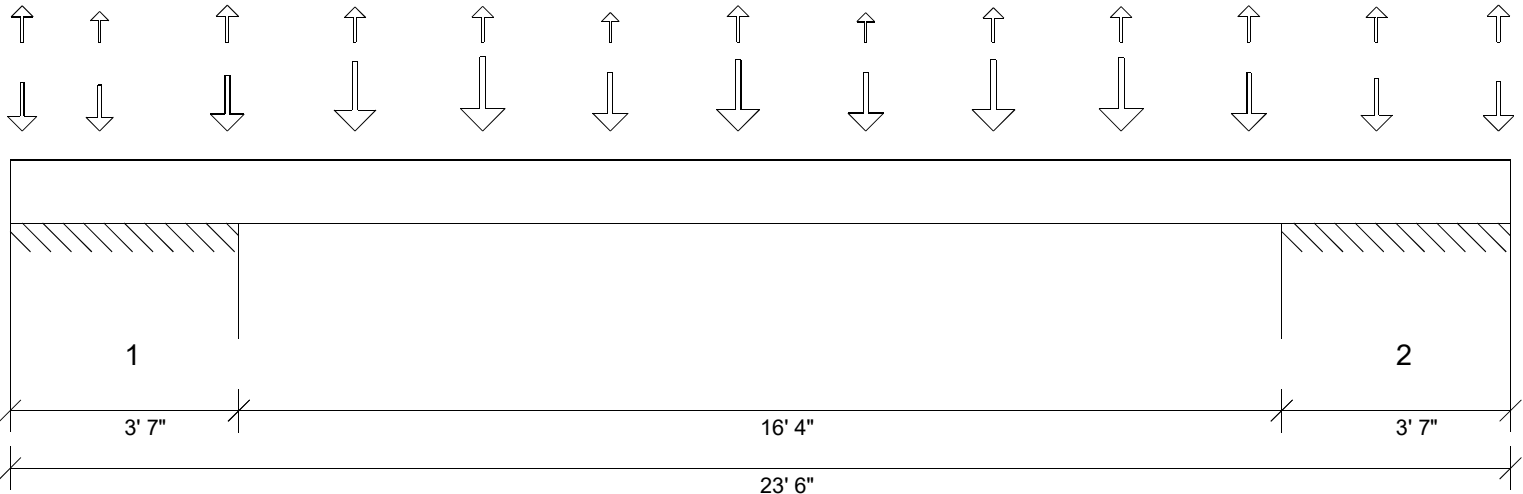
Type	Start	End	Source	Maximum Load Magnitudes			
				Dead	Floor Live	Roof Live	Snow
Self Weight	0'	8'	Self Weight	11 lb/ft	-	-	-
Point	0'- 2"	0'- 2"	FW20(c01)	97.00 lb	-2.00 lb	37.00/-2.00 lb	11.00 lb
Point	2'- 1 3/4"	2'- 1 3/4"	F23(c02)	422.00 lb	596.00/-51.00 lb	105.00 lb	33.00 lb
Point	4'- 1 3/4"	4'- 1 3/4"	F23(c01)	363.00 lb	414.00/-49.00 lb	109.00 lb	34.00 lb
Point	6'- 1 3/4"	6'- 1 3/4"	F23(c03)	432.00 lb	430.00/-51.00 lb	128.00/-5.00 lb	30.00 lb

Support Information:

Support	Start	End	Source	Maximum Analysis Reactions			
				Dead	Floor Live	Roof Live	Snow
1	0'	0'- 3 1/2"	E14(i107)	733.00 lb	755.00/-75.00 lb	198.00/-3.00 lb	59.00 lb
2	7'- 9 1/2"	8'	PBO13(i154)	668.00 lb	696.00/-78.00 lb	181.00/-4.00 lb	49.00 lb

Errors, Warnings & Notes:

- * The dead loads used in the design of this member were applied to the structure as sloped dead loads.
- * The member graphic, dimensions, and locations shown on this report are based on the centerline of the member.
- * Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.



Graphical Illustration - Not To Scale
 Member Cut Length - 23'- 6"
 MemberPitch - 0/12

Design Information:

Building Code: IRC 2009	Floor Dead Load: 10.0 lb/ft ²	Roof Dead Load: 10.0 lb/ft ²	Ground Snow Load: 20.0 lb/ft ²
Design Methodology: ASD	Floor Live Load: 40.0 lb/ft ²	Roof Live Load: 20.0 lb/ft ²	
	Unbraced Length Top: 0'	Bottom: 16'- 4"	

Design Results:

	Location	Design	Control	Result	LDF	Load Combination
Critical Moment (Pos)	11'- 4 13/16"	1795.83 lb ft	21278.02 lb ft	Passed - 8%	1.00	D + L
Critical Moment (Neg)	20'- 1/2"	-2918.76 lb ft	24469.72 lb ft	Passed - 12%	1.15	D + 0.75(L + Lr)
Critical Shear	4'- 6 7/8"	1064.15 lb	9240.73 lb	Passed - 12%	1.15	D + 0.75(L + Lr)
Live Load Deflection	11'- 8 1/4"	0'- 1/16"	0'- 3/4" (L/360)	Passed - L/999	-	0.75(L + Lr + W)
Total Load Deflection	11'- 8 9/16"	0'- 1/16"	0'- 1" (L/240)	Passed - L/999	-	D + 0.75(L + Lr + W)
Max. Reaction			Supported Mt/ Supporting Mt/			
	0'- 1 1/2"	-733.12 lb	18375.00 lb -	Passed - 4%	1.15	D + 0.75(L + Lr)
	3'- 5 1/2"	2186.51 lb	18375.00 lb 17762.50 lb	Passed - 12%	1.15	D + 0.75(L + Lr)
	3'- 5 1/2"	-120.64 lb	25565.22 lb -	Passed - 1%	1.60	0.6D + W
	20'- 1/2"	2185.04 lb	18375.00 lb 17762.50 lb	Passed - 12%	1.15	D + 0.75(L + Lr)
	20'- 1/2"	-126.28 lb	25565.22 lb -	Passed - 1%	1.60	0.6D + W
	23'- 4 1/2"	-740.74 lb	18375.00 lb -	Passed - 4%	1.15	D + 0.75(L + Lr)

Design Notes:

* Member design assumed proper ply to ply connection. Verify connection between plies according to code specification

Loading:

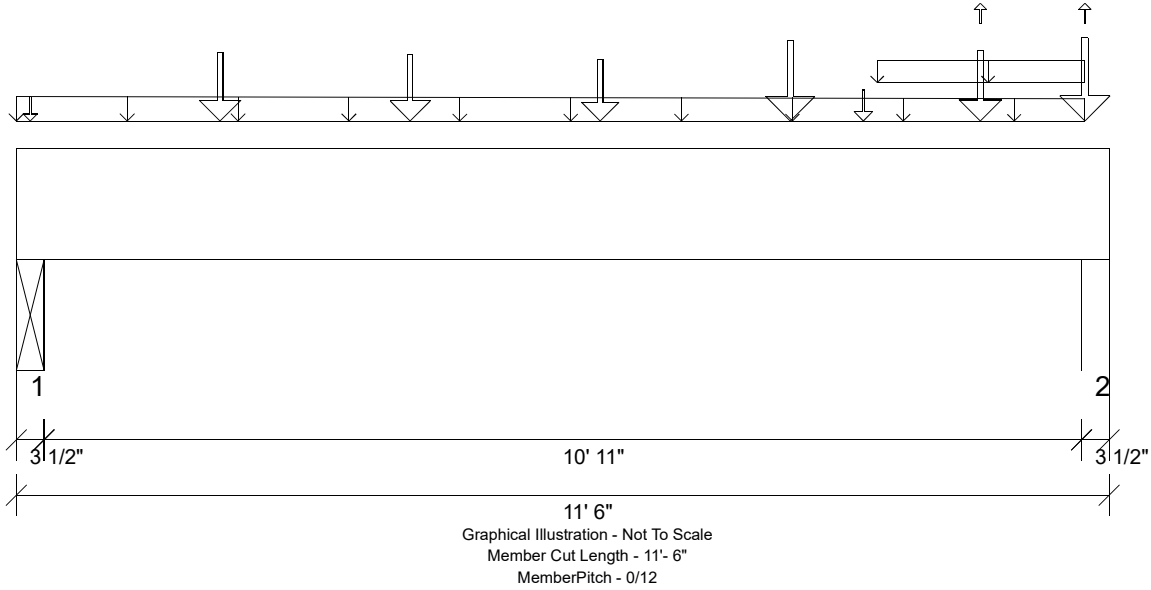
Type	Start	End	Source	Maximum Load Magnitudes			
				Dead	Floor Live	Roof Live	Snow
Self Weight	0'	23'- 6"	Self Weight	11 lb/ft	-	-	-
Point	0'- 2 1/4"	0'- 2 1/4"	D4(c01)	70.00 lb	-	82.00 lb	22.00 lb
Point	1'- 4 13/16"	1'- 4 13/16"	D4(c01)	66.00 lb	-2.00 lb	85.00 lb	15.00 lb
Point	3'- 4 13/16"	3'- 4 13/16"	D4(c01)	102.00 lb	7.00/-7.00 lb	94.00 lb	25.00 lb
Point	5'- 4 13/16"	5'- 4 13/16"	D4(c01)	148.00 lb	72.00 lb	90.00 lb	23.00 lb
Point	7'- 4 13/16"	7'- 4 13/16"	D4(c01)	165.00 lb	92.00 lb	90.00 lb	24.00 lb
Point	9'- 4 13/16"	9'- 4 13/16"	D4(c01)	117.00 lb	93.00 lb	47.00/-5.00 lb	12.00 lb
Point	11'- 4 13/16"	11'- 4 13/16"	D4(c01)	144.00 lb	94.00 lb	103.00/-14.00 lb	23.00 lb
Point	13'- 4 13/16"	13'- 4 13/16"	D4(c01)	117.00 lb	93.00 lb	52.00/-4.00 lb	13.00 lb
Point	15'- 4 13/16"	15'- 4 13/16"	D4(c01)	151.00 lb	92.00 lb	84.00 lb	22.00 lb
Point	17'- 4 13/16"	17'- 4 13/16"	D4(c01)	162.00 lb	87.00 lb	91.00 lb	24.00 lb
Point	19'- 4 13/16"	19'- 4 13/16"	D4(c01)	109.00 lb	22.00/-7.00 lb	94.00 lb	24.00 lb
Point	21'- 4 13/16"	21'- 4 13/16"	D4(c01)	90.00 lb	-5.00 lb	95.00 lb	22.00 lb
Point	23'- 3 3/4"	23'- 3 3/4"	D4(c01)	77.00 lb	-	82.00 lb	23.00 lb

Support Information:

Support	Start	End	Source	Maximum Analysis Reactions			
				Dead	Floor Live	Roof Live	Snow
1	0'	3'- 7"	E2(i1204)	1246.00/-355.00 lb	599.00/-277.00 lb	789.00/-257.00 lb	162.00/-26.00 lb
==>	0'- 1 1/2"	0'- 1 1/2"	E2(i1204)	-355.00 lb	2.00/-269.00 lb	137.00/-232.00 lb	-26.00 lb
==>	3'- 5 1/2"	3'- 5 1/2"	E2(i1204)	1246.00 lb	597.00/-8.00 lb	652.00/-25.00 lb	162.00 lb
2	19'- 11"	23'- 6"	E1(i109)	1244.00/-360.00 lb	596.00/-279.00 lb	775.00/-261.00 lb	165.00/-29.00 lb
==>	20'- 1/2"	20'- 1/2"	E1(i109)	1244.00 lb	594.00/-11.00 lb	657.00/-23.00 lb	165.00 lb
==>	23'- 4 1/2"	23'- 4 1/2"	E1(i109)	-360.00 lb	2.00/-268.00 lb	118.00/-238.00 lb	-29.00 lb

Errors, Warnings & Notes:

- * The dead loads used in the design of this member were applied to the structure as sloped dead loads.
- * The member graphic, dimensions, and locations shown on this report are based on the centerline of the member.
- * Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.



Design Information:

Building Code:	IRC 2009	Floor Dead Load:	10.0 lb/ft ²	Roof Dead Load:	10.0 lb/ft ²	Ground Snow Load:	20.0 lb/ft ²
Design Methodology:	ASD	Floor Live Load:	40.0 lb/ft ²	Roof Live Load:	20.0 lb/ft ²		
		Unbraced Length	Top: 0'	Bottom:	1'- 8 1/2"		

Design Results:

	Location	Design	Control	Result	LDF	Load Combination	
Critical Moment (Pos)	6'- 1 3/4"	8508.25 lb ft	28972.14 lb ft	Passed - 29%	1.00	D + L	
Critical Moment (Neg)	0'- 2 1/2"	-6.01 lb ft	28972.14 lb ft	Passed - 0%	1.00	D + L	
Critical Shear	1'- 5 1/2"	2487.99 lb	9473.33 lb	Passed - 26%	1.00	D + L	
Live Load Deflection	5'- 10 1/16"	0'- 1/16"	0'- 3/4" (L/360)	Passed - L/999	-	L	
Total Load Deflection	5'- 9 13/16"	0'- 1/8"	0'- 1" (L/240)	Passed - L/999	-	D + L	
Max. Reaction			<u>Supported Mt/</u> <u>Supporting Mt/</u>				
	0'- 2 1/2"	2655.37 lb	9187.47 lb	9187.47 lb	Passed - 29%	1.00	D + L
	11'- 3 1/2"	4379.34 lb	9187.42 lb	5206.20 lb	Passed - 84%	1.00	D + L

Design Notes:

* Member design assumed proper ply to ply connection. Verify connection between plies according to code specification

Loading:

Type	Start	End	Source	Maximum Load Magnitudes			
				Dead	Floor Live	Roof Live	Snow
Self Weight	0'	11'- 6"	Self Weight	13 lb/ft	-	-	-
Uniform	9'- 11/16"	11'- 2 15/16"	FC2 Floor Material	17 lb/ft	-	-	-
Tapered	0'	11'- 2 15/16"	FC2 Floor Material	11 To 5 lb/ft	43 To 19 lb/ft	-	-
Point	2'- 1 3/4"	2'- 1 3/4"	F11A(c01)	482.00 lb	-	-	-
Point	4'- 1 3/4"	4'- 1 3/4"	F11A(c02)	438.00 lb	-	-	-
Point	6'- 1 3/4"	6'- 1 3/4"	F11B(c01)	342.00 lb	-	-	-
Point	8'- 1 3/4"	8'- 1 3/4"	F20(c03)	426.00 lb	-	1.00 lb	-
Point	10'- 1 3/4"	10'- 1 3/4"	F20(c01)	362.00 lb	-	2.00 lb	-
Point	11'- 2 15/16"	11'- 2 15/16"	F20(c02)	833.00 lb	-	1.00 lb	-
Point	0'- 1 3/4"	0'- 1 3/4"	56(i3858)	73.00 lb	-	-	-
Point	8'- 10 15/16"	8'- 10 15/16"	45(i1283)	212.00 lb	-	-	-

Support Information:

Support	Start	End	Source	Maximum Analysis Reactions			
				Dead	Floor Live	Roof Live	Snow
1	0'	0'- 3 1/2"	DB8-2(i5663)	1243.00 lb	-	-	-
2	11'- 2 1/2"	11'- 6"	E13(i99)	2198.00 lb	2188.00 lb	4.00 lb	1.00 lb

Errors, Warnings & Notes:

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- * Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.