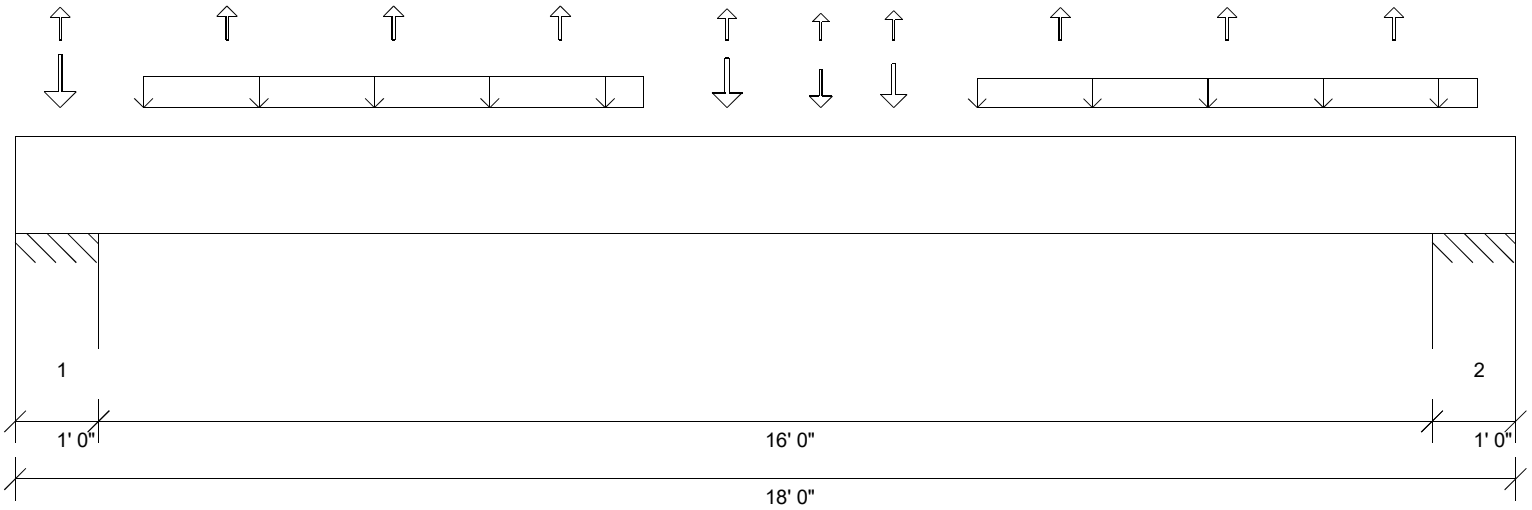
Member: 2 - 2.0 RigidLam LVL 1-3/4 x 14

Status: Design Passed



Graphical Illustration - Not To Scale
Member Cut Length - 18'
MemberPitch - 0/12

Design Information:

Building Code:	IRC 2012	Floor Dead Load:	10.0 lb/ft²	Roof Dead Load:	10.0 lb/ft²	Ground Snow Load:	0.0 lb/ft²
Design Methodology:	ASD	Floor Live Load:	40.0 lb/ft²	Roof Live Load:	20.0 lb/ft²		
		Unbraced Length	Top: 1'- 10 1/2"	Bottom: 16'			

Design Results:

	Location	Design	Control		Result	LDF	Load Combination
Critical Moment (Pos)	8'- 6 1/2"	4030.63 lb ft	36215.18 lb ft		Passed - 11%	1.25	D + Lr
Critical Moment (Neg)		0.00 lb ft	0.00 lb ft				
Critical Moment (Neg)		0.00 lb ft	0.00 lb ft				
Critical Shear	2'- 2"	925.58 lb	11841.67 lb		Passed - 8%	1.25	D + Lr
Live Load Deflection	8'- 11 3/8"	0'- 1/16"	N/A (L/480)		Passed - L/999	-	Lr
Total Load Deflection	8'- 11 11/16"	0'- 1/8"	N/A (L/240)		Passed - L/999	-	D + Lr
Max. Reaction			Supported Mtl	Supporting Mtl			
	0'- 11"	1163.61 lb	31500.01 lb	30450.00 lb	Passed - 4%	1.25	D + Lr
	17'- 1"	1000.81 lb	31500.06 lb	30450.05 lb	Passed - 3%	1.25	D + Lr

Design Notes:

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

Loading:

				Maximum Load Magnitudes			
Type	Start	End	Source	Dead	Floor Live	Roof Live	Snow
Self Weight	0'	18'	Self Weight	13 lb/ft	-	-	-
Uniform	1'- 6 1/2"	7'- 6 1/2"	Smoothed Load	52 lb/ft	-	60 lb/ft	-
Uniform	11'- 6 1/2"	17'- 6 1/2"	Smoothed Load	46 lb/ft	-	51 lb/ft	-
Point	0'- 6 1/2"	0'- 6 1/2"	H1(Cond05)	99.00 lb	-	111.00 lb	-
Point	2'- 6 1/2"	2'- 6 1/2"	H1(Cond04)	-	-	-	-
Point	4'- 6 1/2"	4'- 6 1/2"	H1(Cond03)	-	-	-	-
Point	6'- 6 1/2"	6'- 6 1/2"	H1(Cond02)	-	-	-	-
Point	8'- 6 1/2"	8'- 6 1/2"	H1(Cond01)	92.00 lb	-	99.00 lb	-
Point	9'- 8"	9'- 8"	H3(Cond01)	65.00 lb	-	50.00 lb	-
Point	10'- 6 1/2"	10'- 6 1/2"	H2(Cond01)	77.00 lb	-	73.00 lb	-
Point	12'- 6 1/2"	12'- 6 1/2"	H2(Cond02)	-	-	-	-
Point	14'- 6 1/2"	14'- 6 1/2"	H2(Cond03)	-	-	-	-
Point	16'- 6 1/2"	16'- 6 1/2"	H2(Cond04)	-	-	-	-

Support Information:

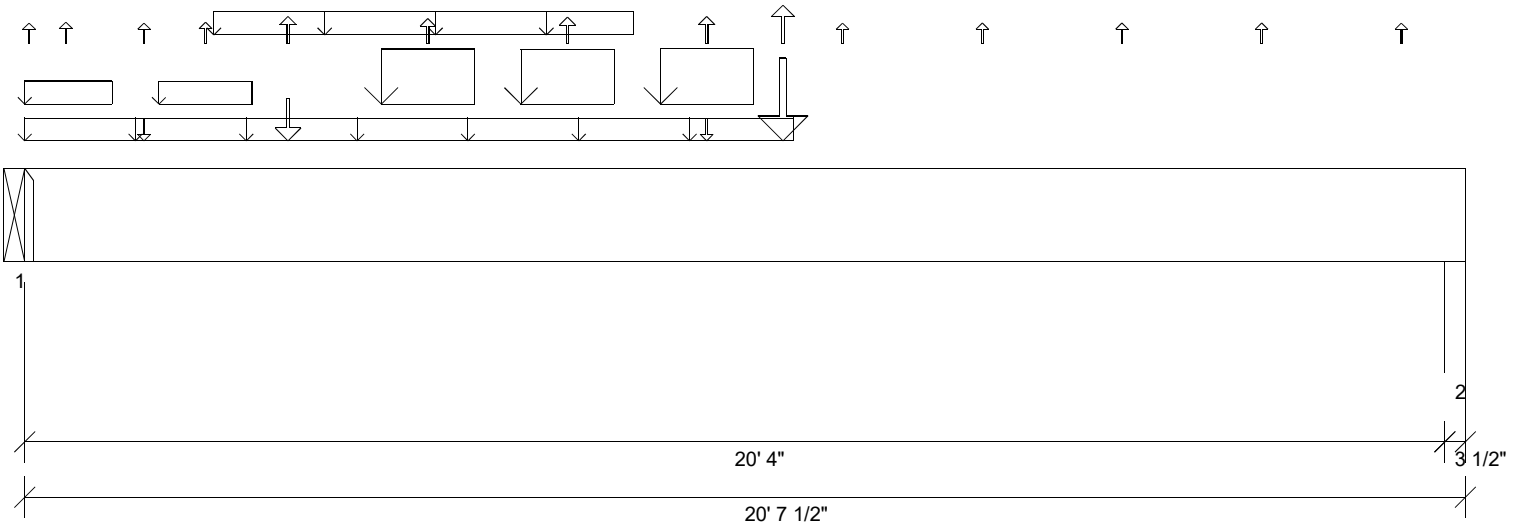
				Maximum Analysis Reactions			
Support	Start	End	Source	Dead	Floor Live	Roof Live	Snow
1	0'	1'	E13(i22)	616.00 lb	-	548.00 lb	-
2	17'	18'	E12(i1)	544.00 lb	-	457.00/-3.00 lb	-

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.

Member: 4 - 2.0 RigidLam LVL 1-3/4 x 16

Status: Design Passed



Graphical Illustration - Not To Scale
Member Cut Length - 20'- 7 1/2"
MemberPitch - 0/12

Design Information:

Building Code:	IRC 2012	Floor Dead Load:	10.0 lb/ft²	Roof Dead Load:	10.0 lb/ft²	Ground Snow Load:	0.0 lb/ft²
Design Methodology:	ASD	Floor Live Load:	40.0 lb/ft²	Roof Live Load:	20.0 lb/ft²		
		Unbraced Length Top:	0'	Bottom:	1'- 10 1/2"		

Design Results:

	Location	Design	Control		Result	LDF	Load Combination
Critical Moment (Pos)	10'- 10 1/4"	52921.98 lb ft	93040.51 lb ft		Passed - 57%	1.25	D + Lr
Critical Moment (Neg)		0.00 lb ft	0.00 lb ft				
Critical Moment (Neg)		0.00 lb ft	0.00 lb ft				
Critical Shear	1'- 4"	8109.25 lb	27066.67 lb		Passed - 30%	1.25	D + Lr
Live Load Deflection	9'- 11 15/16"	0'- 5/16"	N/A (L/480)		Passed - L/714	-	Lr
Total Load Deflection	9'- 11 15/16"	0'- 3/4"	N/A (L/240)		Passed - L/313	-	D + Lr
Max. Reaction			Supported Mtl	Supporting Mtl			
	0'	8454.13 lb	8454.13 lb	0.00 lb	Passed - 100%	1.25	D + Lr
	20'- 5"	5841.42 lb	20343.71 lb	17762.46 lb	Passed - 33%	1.25	D + Lr

Design Notes:

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

Loading:

				Maximum Load Magnitudes			
Type	Start	End	Source	Dead	Floor Live	Roof Live	Snow
Self Weight	0'	20'- 7 1/2"	Self Weight	30 lb/ft	-	-	-
Uniform	-0'	11'	E29(i17)	65 lb/ft	-	-	-
Uniform	-0'	1'- 3 1/16"	E29(i17)	-	-	52 lb/ft	-
Uniform	1'- 11 1/16"	3'- 3 1/16"	E29(i17)	-	-	51 lb/ft	-
Uniform	2'- 8 1/2"	8'- 8 1/2"	Smoothed Load	38 lb/ft	-	38 lb/ft	-
Uniform	5'- 1 1/4"	6'- 5 1/4"	E29(i17)	503 lb/ft	-	482 lb/ft	-
Uniform	7'- 1 1/4"	8'- 5 1/4"	E29(i17)	487 lb/ft	-	472 lb/ft	-
Uniform	9'- 1 1/4"	10'- 5 1/4"	E29(i17)	494 lb/ft	-	486 lb/ft	-
Point	0'- 3/4"	0'- 3/4"	H1(Cond06)	-	-	-3.00 lb	-
Point	0'- 7 1/16"	0'- 7 1/16"	E29(i17)	-	-	-	-
Point	1'- 8 1/2"	1'- 8 1/2"	H1(Cond05)	-	-	70.00/-5.00 lb	-
Point	2'- 7 1/16"	2'- 7 1/16"	E29(i17)	-	-	-	-
Point	3'- 9 1/4"	3'- 9 1/4"	-	1092.00 lb	-	886.00/-56.00 lb	-
Point	5'- 9 1/4"	5'- 9 1/4"	-	-	-	-6.00 lb	-
Point	7'- 9 1/4"	7'- 9 1/4"	-	-	-	-6.00 lb	-
Point	9'- 9 3/16"	9'- 9 3/16"	-	-	-	72.00/-4.00 lb	-
Point	10'- 10 1/4"	10'- 10 1/4"	-	2984.00 lb	-	2656.00/-8.00 lb	-
Point	11'- 8 1/2"	11'- 8 1/2"	H2(Cond01)	-	-	-4.00 lb	-
Point	13'- 8 1/2"	13'- 8 1/2"	H2(Cond02)	-	-	-6.00 lb	-
Point	15'- 8 1/2"	15'- 8 1/2"	H2(Cond03)	-	-	-6.00 lb	-
Point	17'- 8 1/2"	17'- 8 1/2"	H2(Cond04)	-	-	-6.00 lb	-
Point	19'- 8 1/2"	19'- 8 1/2"	H2(Cond05)	-	-	-5.00 lb	-

Support Information:

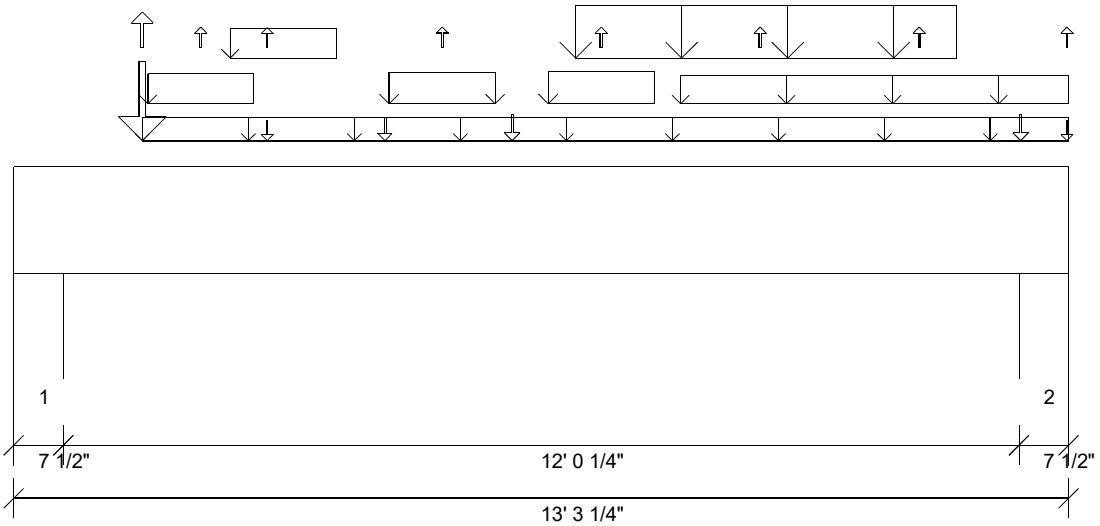
				Maximum Analysis Reactions			
Support	Start	End	Source	Dead	Floor Live	Roof Live	Snow
1	0'	0'	BM3(i227)	4841.00 lb	-	3611.00/-73.00 lb	-
2	20'- 4"	20'- 7 1/2"	-	3346.00 lb	-	2496.00/-42.00 lb	-
++>	20'- 6 5/8"	20'- 6 5/8"	3(i30)	1673.00 lb	-	1248.00/-21.00 lb	-
++>	20'- 6 5/8"	20'- 6 5/8"	E10(i2)	1673.00 lb	-	1248.00/-21.00 lb	-

Connector Information:

Support	Manufacturer	Model	Nailing Requirements			Min Seat Length	Other Information
			Top	Face	Member		
1		THDH7214	-	66- BM3	16- FB1	N/A	User Defined Hanger - Not Designed

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 - 13'- 3 1/4"
MemberPitch - 0/12

Design Information:

Building Code:	IRC 2012	Floor Dead Load:	10.0 lb/ft²	Roof Dead Load:	10.0 lb/ft²	Ground Snow Load:	0.0 lb/ft²
Design Methodology:	ASD	Floor Live Load:	40.0 lb/ft²	Roof Live Load:	20.0 lb/ft²		
		Unbraced Length	Top: 1'- 3 15/16"		Bottom: 1'- 3 11/16"		

Design Results:

	Location	Design	Control	Result	LDF	Load Combination
Critical Moment (Pos)	6'- 3 1/4"	13659.98 lb ft	37216.21 lb ft	Passed - 37%	1.00	D + L
Critical Moment (Neg)		0.00 lb ft	0.00 lb ft			
Critical Moment (Neg)		0.00 lb ft	0.00 lb ft			
Critical Shear	1'- 11 1/2"	7280.11 lb	13533.33 lb	Passed - 54%	1.25	D + 0.75(L + Lr)
Live Load Deflection	6'- 6 9/16"	0'- 1/16"	N/A (L/480)	Passed - L/999	-	0.75(L + Lr + 0.6W)
Total Load Deflection	6'- 5 5/16"	0'- 3/16"	N/A (L/240)	Passed - L/815	-	D + 0.75(L + Lr + 0.6W)
Max. Reaction			Supported Mtl / Supporting Mtl			
	0'- 6 1/2"	9370.81 lb	19687.50 lb / 19031.25 lb	Passed - 49%	1.25	D + Lr
	12'- 8 3/4"	5003.09 lb	19687.50 lb / 19031.25 lb	Passed - 26%	1.00	D + L

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

Loading:

				Maximum Load Magnitudes			
Type	Start	End	Source	Dead	Floor Live	Roof Live	Snow
Self Weight	0'	13'- 3 1/4"	Self Weight	15 lb/ft	-	-	-
Uniform	1'- 7 7/16"	13'- 3 1/4"	E30(i14)	65 lb/ft	-	-	-
Uniform	1'- 8 1/4"	3'- 1/4"	E30(i14)	65 lb/ft	-	92 lb/ft	-
Uniform	2'- 8 11/16"	4'- 11/16"	E30(i14)	80 lb/ft	-	80 lb/ft	-
Uniform	4'- 8 11/16"	6'- 11/16"	E30(i14)	89 lb/ft	-	94 lb/ft	-
Uniform	6'- 8 11/16"	8'- 11/16"	E30(i14)	90 lb/ft	-	94 lb/ft	-
Uniform	7'- 13/16"	11'- 10 3/8"	Smoothed Load	157 lb/ft	424 lb/ft	-	-
Uniform	8'- 4 11/16"	13'- 3 1/4"	E30(i14)	60 lb/ft	-	62 lb/ft	-
Point	1'- 7 7/16"	1'- 7 7/16"	FB1(i228)	4841.00 lb	-	3611.00/-73.00 lb	-
Point	2'- 4 1/4"	2'- 4 1/4"	E30(i14)	-	-	-	-
Point	3'- 2 1/4"	3'- 2 1/4"	-	81.00 lb	-	-47.00 lb	-
Point	4'- 8 1/16"	4'- 8 1/16"	F20(Cond02)	166.00 lb	339.00 lb	-	-
Point	5'- 4 11/16"	5'- 4 11/16"	E30(i14)	-	-	-	-
Point	6'- 3 1/4"	6'- 3 1/4"	F20(Cond03)	251.00 lb	678.00 lb	-	-
Point	7'- 4 11/16"	7'- 4 11/16"	E30(i14)	-	-	-	-
Point	9'- 4 11/16"	9'- 4 11/16"	E30(i14)	-	-	-	-
Point	11'- 4 11/16"	11'- 4 11/16"	E30(i14)	-	-	-	-
Point	12'- 8"	12'- 8"	F20(Cond07)	251.00 lb	678.00 lb	-	-
Point	13'- 3"	13'- 3"	E30(i14)	-	-	-	-

Support Information:

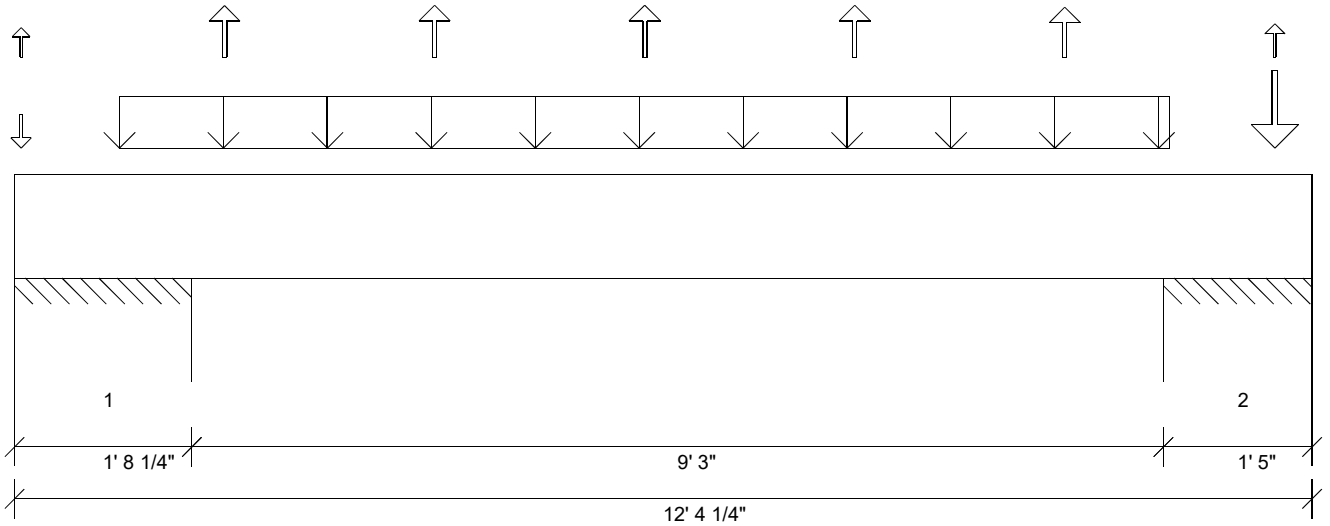
				Maximum Analysis Reactions			
Support	Start	End	Source	Dead	Floor Live	Roof Live	Snow
1	0'	0'- 7 1/2"	E19(i185)	5699.00 lb	1126.00 lb	3670.00/-103.00 lb	-
2	12'- 7 3/4"	13'- 3 1/4"	E20(i186)	2407.00 lb	2603.00 lb	771.00/-17.00 lb	-

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.

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

Status: Design Passed



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

Design Information:

Building Code:	IRC 2012	Floor Dead Load:	10.0 lb/ft²	Roof Dead Load:	10.0 lb/ft²	Ground Snow Load:	0.0 lb/ft²
Design Methodology:	ASD	Floor Live Load:	40.0 lb/ft²	Roof Live Load:	20.0 lb/ft²		
		Unbraced Length	Top: 1'- 10 1/2"	Bottom: 9'- 3"			

Design Results:

	Location	Design	Control		Result	LDF	Load Combination
Critical Moment (Pos)	11'- 3/4"	3334.52 lb ft	24762.46 lb ft		Passed - 13%	1.25	D + Lr
Critical Moment (Neg)		0.00 lb ft	0.00 lb ft				
Critical Moment (Neg)		0.00 lb ft	0.00 lb ft				
Critical Shear	2'- 8 1/8"	1808.86 lb	10044.27 lb		Passed - 18%	1.25	D + Lr
Live Load Deflection	6'- 3 3/8"	0'	N/A (L/480)		Passed - L/999	-	Lr
Total Load Deflection	6'- 3 5/16"	0'	N/A (L/240)		Passed - L/999	-	D + Lr
Max. Reaction			Supported Mtl	Supporting Mtl			
	0'- 1 1/2"	-2100.80 lb	18375.00 lb	-	Passed - 12%	1.25	D + Lr
	1'- 6 3/4"	4619.66 lb	18375.00 lb	17762.50 lb	Passed - 26%	1.25	D + Lr
	1'- 6 3/4"	-64.42 lb	18375.00 lb	-	Passed - 0%	1.60	0.6D + 0.6W
	11'- 3/4"	5183.77 lb	18375.00 lb	17762.50 lb	Passed - 29%	1.25	D + Lr
	11'- 3/4"	-33.23 lb	18375.00 lb	-	Passed - 0%	1.60	0.6D + 0.6W
	12'- 2 3/4"	103.59 lb	18375.00 lb	17762.50 lb	Passed - 1%	1.60	0.6D + 0.6W
	12'- 2 3/4"	-2313.33 lb	18375.00 lb	-	Passed - 13%	1.25	D + Lr

Design Notes:

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

Loading:

				Maximum Load Magnitudes			
Type	Start	End	Source	Dead	Floor Live	Roof Live	Snow
Self Weight	0'	12'- 4 1/4"	Self Weight	11 lb/ft	-	-	-
Uniform	1'	11'	Smoothed Load	227 lb/ft	-	225 lb/ft	-
Point	0'- 3/4"	0'- 3/4"	D2(Cond01)	68.00 lb	-	90.00 lb	-
Point	2'	2'	D1(Cond01)	-	-	-	-
Point	4'	4'	D1(Cond02)	-	-	-	-
Point	6'	6'	D1(Cond03)	-	-	-	-
Point	8'	8'	D1(Cond04)	-	-	-	-
Point	10'	10'	D1(Cond05)	-	-	-	-
Point	12'	12'	D1(Cond06)	370.00 lb	-	300.00 lb	-

Support Information:

				Maximum Analysis Reactions			
Support	Start	End	Source	Dead	Floor Live	Roof Live	Snow
1	0'	1'- 8 1/4"	E16(i224)	2372.00/-1037.00 lb	-	2345.00/-1070.00 lb	-
==>	0'- 1 1/2"	0'- 1 1/2"	E16(i224)	-1037.00 lb	-	98.00/-1061.00 lb	-
==>	1'- 6 3/4"	1'- 6 3/4"	E16(i224)	2372.00 lb	-	2247.00/-9.00 lb	-
2	10'- 11 1/4"	12'- 4 1/4"	E14(i79)	2592.00/-1086.00 lb	-	2751.00/-1388.00 lb	-
==>	11'- 3/4"	11'- 3/4"	E14(i79)	2592.00 lb	-	2451.00 lb	-
==>	12'- 2 3/4"	12'- 2 3/4"	E14(i79)	-1086.00 lb	-	300.00/-1388.00 lb	-

Errors, Warnings & Notes:

* CAUTION: The maximum net analysis reaction exceeds the user-defined maximum uplift value at one or more supports.
* 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.