



Graphical Illustration - Not To Scale
 Member Cut Length - 21'- 5"
 MemberPitch - 0/12

Design Information:

Building Code: IRC2015	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'- 3"	

Design Results:

	Location	Design	Control	Result	LDF	Load Combination
Critical Moment (Pos)	10'- 2 1/2"	1984.06 lb ft	24469.72 lb ft	Passed - 8%	1.15	D + 0.75(L + Lr)
Critical Moment (Neg)	18'- 11 1/2"	-2927.22 lb ft	24469.72 lb ft	Passed - 12%	1.15	D + 0.75(L + Lr)
Critical Shear	3'- 6 7/8"	1007.77 lb	9240.73 lb	Passed - 11%	1.15	D + 0.75(L + Lr)
Live Load Deflection	10'- 9 1/8"	0'- 1/16"	0'- 3/4" (L/360)	Passed - L/999	-	0.75(L + Lr + 0.6W)
Total Load Deflection	10'- 8 13/16"	0'- 1/16"	0'- 1" (L/240)	Passed - L/999	-	D + 0.75(L + Lr + 0.6W)
Max. Reaction			Supported Mt Supporting Mt			
	0'- 1 1/2"	12.95 lb	25565.22 lb 17762.50 lb	Passed - 0%	1.60	0.6D + 0.6W
	0'- 1 1/2"	-1157.28 lb	18375.00 lb -	Passed - 7%	1.15	D + 0.75(L + Lr)
	2'- 5 1/2"	2413.58 lb	18375.00 lb 17762.50 lb	Passed - 14%	1.15	D + 0.75(L + Lr)
	2'- 5 1/2"	-220.06 lb	25565.22 lb -	Passed - 1%	1.60	0.6D + 0.6W
	18'- 11 1/2"	2411.30 lb	18375.00 lb 17762.50 lb	Passed - 14%	1.15	D + 0.75(L + Lr)
	18'- 11 1/2"	-216.15 lb	25565.22 lb -	Passed - 1%	1.60	0.6D + 0.6W
	21'- 3 1/2"	8.67 lb	25565.22 lb 17762.50 lb	Passed - 0%	1.60	0.6D + 0.6W
	21'- 3 1/2"	-1157.56 lb	18375.00 lb -	Passed - 7%	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'	21'- 5"	Self Weight	11 lb/ft	-	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	C4(c01)	66.00 lb	-	89.00 lb	25.00 lb
Point	2'- 2 1/2"	2'- 2 1/2"	C4(c01)	79.00 lb	-5.00 lb	93.00 lb	23.00 lb
Point	4'- 2 1/2"	4'- 2 1/2"	C4(c01)	93.00 lb	28.00/-7.00 lb	95.00 lb	24.00 lb
Point	6'- 2 1/2"	6'- 2 1/2"	C4(c01)	132.00 lb	90.00 lb	93.00 lb	25.00 lb
Point	8'- 2 1/2"	8'- 2 1/2"	C4(c01)	121.00 lb	92.00 lb	77.00 lb	20.00 lb
Point	10'- 2 1/2"	10'- 2 1/2"	C4(c01)	140.00 lb	94.00 lb	132.00/-13.00 lb	31.00 lb
Point	12'- 2 1/2"	12'- 2 1/2"	C4(c01)	127.00 lb	92.00 lb	91.00/-5.00 lb	22.00 lb
Point	14'- 2 1/2"	14'- 2 1/2"	C4(c01)	130.00 lb	92.00 lb	92.00 lb	23.00 lb
Point	16'- 2 1/2"	16'- 2 1/2"	C4(c01)	113.00 lb	66.00 lb	93.00 lb	24.00 lb
Point	18'- 2 1/2"	18'- 2 1/2"	C4(c01)	84.00 lb	-7.00 lb	94.00 lb	25.00 lb
Point	20'- 2 1/2"	20'- 2 1/2"	C4(c01)	50.00 lb	-2.00 lb	66.00 lb	13.00 lb
Point	21'- 3 1/4"	21'- 3 1/4"	C4(c01)	55.00 lb	-1.00 lb	83.00 lb	24.00 lb

Support Information:

Support	Start	End	Source	Maximum Analysis Reactions			
				Dead	Floor Live	Roof Live	Snow
1	0'	2'- 7"	E9(i22)	1276.00/-564.00 lb	652.00/-382.00 lb	971.00/-452.00 lb	220.00/-81.00 lb
==>	0'- 1 1/2"	0'- 1 1/2"	E9(i22)	-564.00 lb	4.00/-366.00 lb	95.00/-429.00 lb	-81.00 lb
==>	2'- 5 1/2"	2'- 5 1/2"	E9(i22)	1276.00 lb	648.00/-16.00 lb	876.00/-23.00 lb	220.00 lb
2	18'- 10"	21'- 5"	E8(i19)	1271.00/-557.00 lb	648.00/-376.00 lb	991.00/-458.00 lb	218.00/-78.00 lb
==>	18'- 11 1/2"	18'- 11 1/2"	E8(i19)	1271.00 lb	646.00/-11.00 lb	875.00/-24.00 lb	218.00 lb
==>	21'- 3 1/2"	21'- 3 1/2"	E8(i19)	-557.00 lb	2.00/-365.00 lb	116.00/-434.00 lb	-78.00 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 projected 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.