



Customer:
Street 1:
City:
Customer Ph...

Job Name: **Hughes**
Level: **1st Floor**
Label: **FBM1 - i41**
Type: **Beam**

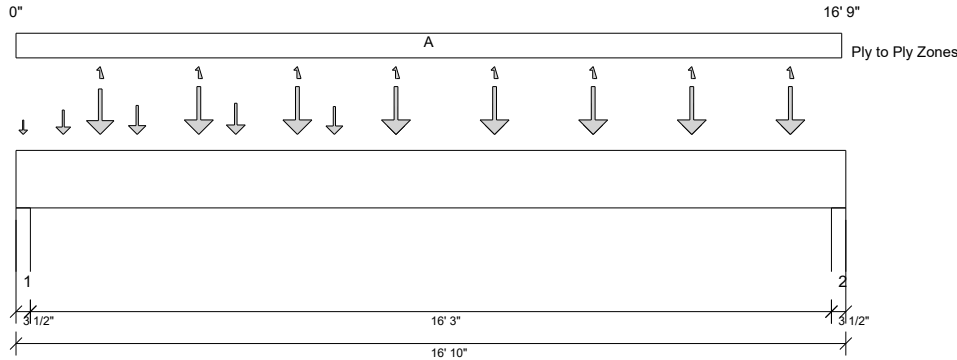
3 Ply Member
1 3/4" x 14" 2.0E
Microllam® LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.6.2.271.Update3.22

Report Version: 2021.03.26 01/02/2024 09:44



DESIGN INFORMATION

Building Code: IRC 2018
Design Methodology: ASD
Risk Category: II (General Construction)
Residential
Service Condition: Dry
LL Deflection Limit: L/360, 0.75" (absolute)
TL Deflection Limit: L/240, 1.00" (absolute)

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 1'- 8 1/2"

Bearing Stress of Support Material:

- 425 psi Wall @ 0'- 2 1/2"
- 425 psi Wall @ 16'- 7 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	7'- 8 1/2"	D + L	1.00	24777 lb ft	36378 lb ft	Passed - 68%
Max Shear:	1'- 5 1/2"	D + L	1.00	5671 lb	13965 lb	Passed - 41%
Live Load (LL) Pos. Defl.:	8'- 5 1/16"	L		0.364"	L/360	Passed - L/536
Total Load (TL) Pos. Defl.:	8'- 5"	D + L		0.515"	L/240	Passed - L/378

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	3 1/2"	D + L	1.00	5728 lb		13781 lb	7809 lb	Passed - 73%
2	3 1/2"	D + L	1.00	6059 lb		13781 lb	7809 lb	Passed - 78%

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	16'- 10"	Self Weight	Top	21 lb/ft	-	-	-	-
Point	0'- 11 1/2"	0'- 11 1/2"	F1021(c01)	Front	98 lb	224 lb	-	-	-
Point	2'- 5 1/2"	2'- 5 1/2"	F1021(c01)	Front	122 lb	319 lb	-	-	-
Point	4'- 5 1/2"	4'- 5 1/2"	F1021(c01)	Front	133 lb	364 lb	-	-	-
Point	6'- 5 1/2"	6'- 5 1/2"	F1021(c01)	Front	116 lb	296 lb	-	-	-
Point	7'- 8 1/2"	7'- 8 1/2"	F1021(c01)	Front	116 lb	296 lb	-	-	-
Point	9'- 8 1/2"	9'- 8 1/2"	F1021(c01)	Front	133 lb	364 lb	-	-	-
Point	11'- 8 1/2"	11'- 8 1/2"	F1021(c01)	Front	133 lb	364 lb	-	-	-
Point	13'- 8 1/2"	13'- 8 1/2"	F1021(c01)	Front	133 lb	364 lb	-	-	-
Point	15'- 8 1/2"	15'- 8 1/2"	F1021(c01)	Front	131 lb	355 lb	-	-	-
Point	1'- 8 1/2"	1'- 8 1/2"	F1019(c01)	Back	239 lb	625 lb	-	2 lb	0/-1 lb
Point	3'- 8 1/2"	3'- 8 1/2"	F1019(c01)	Back	251 lb	674 lb	-	2 lb	0/-2 lb
Point	5'- 8 1/2"	5'- 8 1/2"	F1019(c01)	Back	251 lb	674 lb	-	2 lb	0/-2 lb
Point	7'- 8 1/2"	7'- 8 1/2"	F1019(c01)	Back	251 lb	674 lb	-	2 lb	0/-2 lb
Point	9'- 8 1/2"	9'- 8 1/2"	F1019(c01)	Back	251 lb	674 lb	-	2 lb	0/-1 lb
Point	11'- 8 1/2"	11'- 8 1/2"	F1019(c01)	Back	251 lb	674 lb	-	2 lb	0/-2 lb
Point	13'- 8 1/2"	13'- 8 1/2"	F1019(c01)	Back	251 lb	674 lb	-	2 lb	0/-1 lb
Point	15'- 8 1/2"	15'- 8 1/2"	F1019(c01)	Back	252 lb	674 lb	-	2 lb	0/-2 lb
Point	0'- 1 3/4"	0'- 1 3/4"	E10(i40)	Top	26 lb	-	-	30 lb	7 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	0'- 3 1/2"	E1(i5)	1723 lb	4005 lb	-	38 lb	12 lb/- 7 lb
2	16'- 6 1/2"	16'- 10"	5(i12)	1776 lb	4284 lb	-	8 lb	12 lb/- 7 lb

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- 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. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (CL) = 1.00

PLY TO PLY CONNECTION



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PLY TO PLY CONNECTION

- Zone A: Factored load = 761 plf. Use 12d (0.131"x3.25") nails. LDF = 1.00. Qty = 204. Row = 3, Spacing = 6"
12d (0.131"x3.25") nails properties: D = 0.131" , L = 3.25". Fastener capacity = 96 lbs. X1 = 2" , Y1 = 0.75" , Y2 = 1.5"
Install fasteners from both faces.
X1 = Minimum end distance, X2 = Minimum edge distance, Y2 = Minimum row spacing.

FASTENER INSTALLATION – 3 ROWS (FROM BOTH FACES)

