MiTek	Customer: Job Name: City: Customer Ph...	Job Name: **A** Level: **2nd floor** Label: **BM1 - i139** Type: **Beam**	**2 Ply Member** **2.1 RigidLam SP LVL 1-3/4 x 11-7/8**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update13.26

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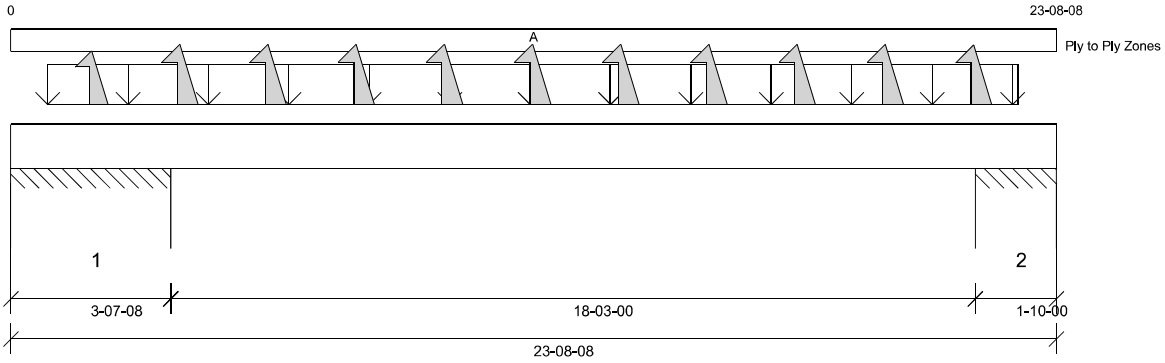

DESIGN INFORMATION a

Building Code:	IRC 2021
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
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: 1'- 10 1/2" Bottom: 23'- 6 1/2"

Bearing Stress of Support Material:

- 875 psi Wall @ 0'- 1 1/2"
- 875 psi Wall @ 3'- 6"
- 875 psi Wall @ 22'
- 875 psi Wall @ 23'- 7"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	11'- 10"	D + Lr	1.15	8950 lb ft	24315 lb ft	Passed - 37%
Max Neg. Moment:	22'	D + Lr	1.15	15119 lb ft	15840 lb ft	Passed - 95%
Max Shear:	20'- 10 5/8"	D + Lr	1.15	4517 lb	9241 lb	Passed - 49%
Live Load (LL) Pos. Defl.:	12'- 6 3/4"	0.75(L + Lr + 0.6W)		0.206"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	12'- 6 13/16"	D + 0.75(L + Lr + 0.6W)		0.388"	L/240	Passed - L/564

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	11-12	0.6D + 0.6W	1.60	733 lb		42913 lb	35984 lb	Passed - 2%
1	11-12	D + Lr	1.15		-3614 lb	-	-	
1	1-06-00	D + 0.75(L + Lr + 0.6W)	1.60	9702 lb		47250 lb	55125 lb	Passed - 21%
1	1-06-00	0.6D + 0.6W	1.60		-1970 lb	-	-	
2	1-01-08	D + 0.75(L + Lr + 0.6W)	1.60	15111 lb		35438 lb	41344 lb	Passed - 43%
2	1-01-08	0.6D + 0.6W	1.60		-3115 lb	-	-	
2	8-08	0.6D + 0.6W	1.60	1979 lb		22313 lb	26031 lb	Passed - 9%
2	8-08	D + 0.75(L + Lr + 0.6W)	1.60		-9552 lb	-	-	

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	23'- 8 1/2"	Self Weight	Top	11 lb/ft	-	-	-	-
Uniform	0'- 10"	22'- 10"	Smoothed Load	Top	258 lb/ft	-	134 lb/ft	268 lb/ft	83 lb/ft
Point	1'- 10"	1'- 10"	B2(Cond11)	Top	-	-	-	-	-635 lb
Point	3'- 10"	3'- 10"	B2(Cond10)	Top	-	-	-	-	-746 lb
Point	5'- 10"	5'- 10"	B2(Cond09)	Top	-	-	-	-	-746 lb
Point	7'- 10"	7'- 10"	B2(Cond08)	Top	-	-	-	-	-746 lb
Point	9'- 10"	9'- 10"	B2(Cond07)	Top	-	-	-	-	-746 lb
Point	11'- 10"	11'- 10"	B2(Cond06)	Top	-	-	-	-	-746 lb
Point	13'- 10"	13'- 10"	B2(Cond05)	Top	-	-	-	-	-746 lb
Point	15'- 10"	15'- 10"	B2(Cond04)	Top	-	-	-	-	-746 lb
Point	17'- 10"	17'- 10"	B2(Cond03)	Top	-	-	-	-	-746 lb
Point	19'- 10"	19'- 10"	B2(Cond02)	Top	-	-	-	-	-746 lb
Point	21'- 10"	21'- 10"	B2(Cond01)	Top	-	-	-	-	-735 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	3'- 7 1/2"	W26(i45)	3262 lb	-	1622 lb	3478 lb	1773 lb/ -5227 lb
==>	0'- 1 1/2"	0'- 1 1/2"	W26(i45)	-	-	-	240 lb	-
==>	3'- 6"	3'- 6"	W26(i45)	3262 lb	-	1622 lb	3238 lb	-
2	21'- 10 1/2"	23'- 8 1/2"	-	2685 lb	-	1337 lb	2735/-24 lb	-
++>	22'	22'	W45(i79)	2685 lb	-	1337 lb	2716/-24 lb	-
++>	23'- 7"	23'- 7"	W27(i60)	-	-	-	19 lb	-

DESIGN 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.
- 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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DESIGN NOTES

- 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) = 0.99
- Beam Stability Factor used in the calculation for Allowable Max Neg Moment (CL) = 0.48

PLY TO PLY CONNECTION

- Zone A: Factored load = 0 plf. Use 12d (0.148"x3.25") nails. LDF = 1.00. Qty = 48. Row = 2, Spacing = 12"
  12d (0.148"x3.25") nails properties: D = 0.148" , L = 3.25". Fastener capacity = 128 lbs. X1 = 2.25" , Y1 = 0.75", Y2 = 1.5"
  Install fasteners from one face.
  X1 = Minimum end distance, X2 = Minimum edge distance, Y2 = Minimum row spacing.

FASTENER INSTALLATION – 2 ROWS (FROM ONE FACE)