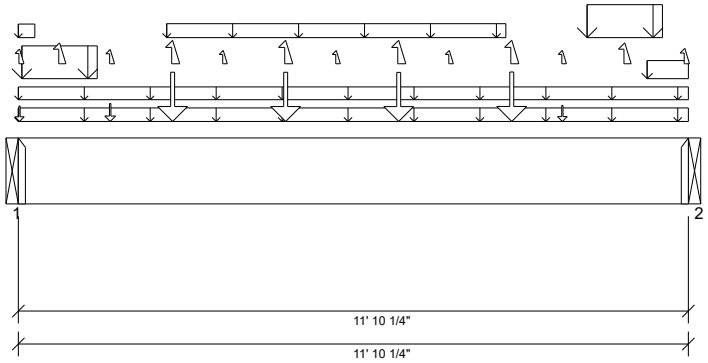
MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM15 - i577** Type: **Beam**	**3 Ply Member** **1 3/4" x 14" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update14.15

Report Version: 2023.09.18 08/08/2024 12:30



DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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: 2'- 2"

Bearing Stress of Support Material:

- 405 psi Beam @ 0'
- 405 psi Beam @ 11'- 10 1/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	6'- 8 3/4"	D + Lr	1.15	17517 lb ft	41835 lb ft	Passed - 42%
Max Shear:	1'- 2"	D + Lr	1.15	4670 lb	16060 lb	Passed - 29%
Live Load (LL) Pos. Defl.:	5'- 11 1/16"	0.75(L + Lr + 0.6W)		0.133"	L/480	Passed - L/999
Total Load (TL) Pos. Defl.:	5'- 11 1/16"	D + 0.75(L + Lr + 0.6W)		0.234"	L/360	Passed - L/607

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	1 9/16"	D + Lr	1.15	6137 lb		6137 lb	-	Passed - 100%
2	1 1/2"	D + Lr	1.15	5711 lb		5906 lb	-	Passed - 97%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	N/A	N/A	N/A	N/A	N/A	Connector has not been designed. Connector to be specified by others.
2	N/A	N/A	N/A	N/A	N/A	Connector has not been designed. Connector to be specified by others.

* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	11'- 10 1/4"	Self Weight	Top	21 lb/ft	-	-	-	-
Uniform	-0'	11'- 10 1/4"	W38(i42)	Top	74 lb/ft	-	-	-	-
Uniform	0'	11'- 10 1/4"	FC1 Floor Decking (Plan View Fill)	Top	9 lb/ft	18 lb/ft	-	-	-
Uniform	-0'	0'- 3 1/2"	W38(i42)	Top	-	-	-	-	77 lb/ft
Uniform	0'- 3/4"	1'- 4 3/4"	W38(i42)	Top	532 lb/ft	72 lb/ft	-	480 lb/ft	196 lb/ft
Uniform	2'- 7 1/2"	8'- 7 1/2"	Smoothed Load	Back	40 lb/ft	-	-	42 lb/ft	18 lb/ft
Uniform	10'- 3/4"	11'- 4 3/4"	W38(i42)	Top	536 lb/ft	72 lb/ft	-	490 lb/ft	194 lb/ft
Uniform	11'- 1 1/2"	11'- 10 1/4"	W38(i42)	Top	121 lb/ft	-	-	158 lb/ft	81 lb/ft
Point	1'- 7 1/2"	1'- 7 1/2"	J5(c03)	Back	112 lb	-	-	145/-8 lb	71/-107 lb
Point	3'- 7 1/2"	3'- 7 1/2"	J5(c04)	Back	-	-	-	-11 lb	-46 lb
Point	5'- 7 1/2"	5'- 7 1/2"	J5(c02)	Back	-	-	-	-11 lb	-46 lb
Point	7'- 7 1/2"	7'- 7 1/2"	J5(c01)	Back	-	-	-	-11 lb	-46 lb
Point	9'- 7 1/2"	9'- 7 1/2"	J5(c05)	Back	82 lb	-	-	93/-12 lb	41/-51 lb
Point	0'- 1/4"	0'- 1/4"	W38(i42)	Top	83 lb	-	-	65 lb	34/-140 lb
Point	0'- 8 3/4"	0'- 8 3/4"	W38(i42)	Top	-	-	-	-46 lb	-455 lb
Point	2'- 8 3/4"	2'- 8 3/4"	W38(i42)	Top	798 lb	189 lb	-	837/-61 lb	337/-590 lb
Point	4'- 8 3/4"	4'- 8 3/4"	W38(i42)	Top	798 lb	186 lb	-	837/-61 lb	337/-590 lb
Point	6'- 8 3/4"	6'- 8 3/4"	W38(i42)	Top	796 lb	186 lb	-	832/-61 lb	337/-589 lb
Point	8'- 8 3/4"	8'- 8 3/4"	W38(i42)	Top	802 lb	189 lb	-	846/-61 lb	337/-594 lb
Point	10'- 8 3/4"	10'- 8 3/4"	W38(i42)	Top	-	-	-	-47 lb	-456 lb
Point	11'- 9 1/2"	11'- 9 1/2"	W38(i42)	Top	-	-	-	-	-180 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	0'	BM17(i579)	3362 lb	603 lb	-	2781/-200 lb	1842 lb/ -2694 lb
2	11'- 10 1/4"	11'- 10 1/4"	H1(c01)	3127 lb	563 lb	-	2577/-190 lb	1842 lb/ -2694 lb

DESIGN NOTES

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

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM15 - i577** Type: **Beam**	**3 Ply Member** **1 3/4" x 14" 2.0E Microllam® LVL**	Status: **Design Passed**

DESIGN NOTES

- 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

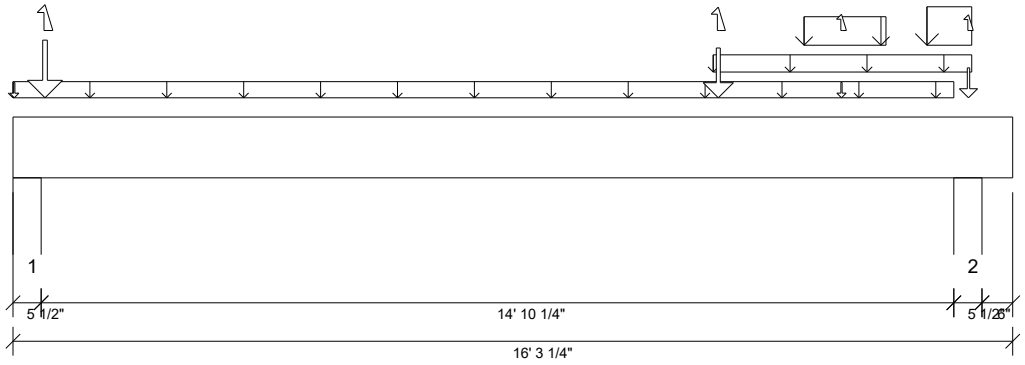
- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM12 - i574** Type: **Beam**	**3 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update14.15

Report Version: 2023.09.18 08/08/2024 12:30



DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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: 15'- 3 3/4"

Bearing Stress of Support Material:

- 875 psi Wall @ 0'- 4 1/2"
- 875 psi Wall @ 15'- 6 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	11'- 5 3/4"	D + Lr	1.15	12582 lb ft	30775 lb ft	Passed - 41%
Max Shear:	14'- 3 7/8"	D + Lr	1.15	3482 lb	13622 lb	Passed - 26%
Live Load (LL) Pos. Defl.:	8'- 7 9/16"	0.75(L + Lr + 0.6W)		0.164"	L/480	Passed - L/999
Total Load (TL) Pos. Defl.:	8'- 7 5/8"	D + 0.75(L + Lr + 0.6W)		0.332"	L/360	Passed - L/537

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	5 1/2"	D + Lr	1.15	5455 lb		21656 lb	25265 lb	Passed - 25%
2	5 1/2"	D + 0.75(L + Lr)	1.15	5392 lb		23133 lb	25266 lb	Passed - 23%

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	16'- 3 1/4"	Self Weight	Top	18 lb/ft	-	-	-	-
Uniform	0'	15'- 3 3/4"	FC1 Floor Decking (Plan View Fill)	Top	19 lb/ft	38 lb/ft	-	-	-
Uniform	11'- 4 3/4"	15'- 7 1/4"	W35(i36)	Top	91 lb/ft	-	-	-	-
Uniform	12'- 10 1/2"	14'- 2 1/2"	W35(i36)	Top	205 lb/ft	-	-	182 lb/ft	71 lb/ft
Uniform	14'- 10 1/2"	15'- 7 1/4"	W35(i36)	Top	358 lb/ft	-	-	299 lb/ft	123 lb/ft
Point	15'- 6 5/8"	15'- 6 5/8"	-	Front	740 lb	956 lb	-	-	-146 lb
Point	0'- 1/4"	0'- 1/4"	W111(i501)	Top	85 lb	-	-	-	-
Point	0'- 6 1/4"	0'- 6 1/4"	W111(i501)	Top	2064 lb	-3 lb	-	1937/-16 lb	724/-1231 lb
Point	11'- 5 3/4"	11'- 5 3/4"	W35(i36)	Top	1727 lb	-5 lb	-	1633/-20 lb	506/-958 lb
Point	13'- 5 13/16"	13'- 5 13/16"	-	Top	-	-	-	75 lb	36/-199 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	0'- 5 1/2"	W56(i57)	3074 lb	310/-4 lb	-	2440/-21 lb	1525 lb/ -2165 lb
2	15'- 3 3/4"	15'- 9 1/4"	W117(i541)	3144 lb	1253/-4 lb	-	1675/-15 lb	1525 lb/ -2165 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
- 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.

PLY TO PLY CONNECTION

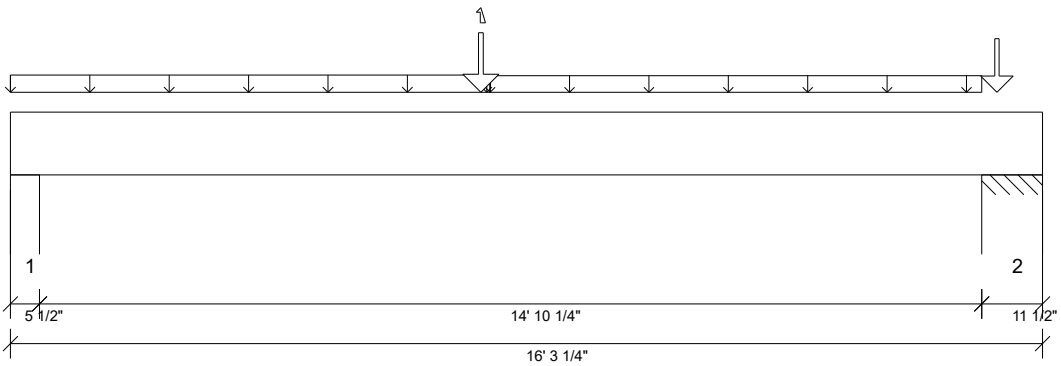
- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM11 - i575** Type: **Beam**	**2 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update14.15

Report Version: 2023.09.18 08/08/2024 12:30



DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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: 7'- 9"

Bearing Stress of Support Material:

- 875 psi Wall @ 0'- 4 1/2"
- 875 psi Wall @ 15'- 4 3/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	7'- 5"	D + L	1.00	8564 lb ft	17841 lb ft	Passed - 48%
Max Neg. Moment:	15'- 4 3/4"	D + L	1.00	262 lb ft	17320 lb ft	Passed - 2%
Max Shear:	1'- 5 3/8"	D + L	1.00	1364 lb	7897 lb	Passed - 17%
Live Load (LL) Pos. Defl.:	7'- 8 15/16"	L		0.183"	L/480	Passed - L/971
Total Load (TL) Pos. Defl.:	7'- 8 7/8"	D + L		0.319"	L/360	Passed - L/559

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	5 1/2"	D + L	1.00	1451 lb		14438 lb	16844 lb	Passed - 10%
2	11 1/2"	D + L	1.00	2943 lb		30188 lb	35219 lb	Passed - 10%

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	16'- 3 1/4"	Self Weight	Top	12 lb/ft	-	-	-	-
Uniform	0'	7'- 6 3/4"	FC1 Floor Decking (Plan View Fill)	Top	16 lb/ft	32 lb/ft	-	-	-
Uniform	7'- 6 3/4"	15'- 3 3/4"	FC1 Floor Decking (Plan View Fill)	Top	12 lb/ft	24 lb/ft	-	-	-
Point	7'- 5"	7'- 5"	BM8(i584)	Front	869 lb	1033/-12 lb	-	0 lb	0/0 lb
Point	15'- 6 5/8"	15'- 6 5/8"	BM13(i587)	Back	705 lb	944 lb	-	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	0'- 5 1/2"	W64(i65)	666 lb	773/-6 lb	-	-	0 lb/ 0 lb
2	15'- 3 3/4"	16'- 3 1/4"	W75(i76)	1317 lb	1628/-6 lb	-	-	0 lb/ 0 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

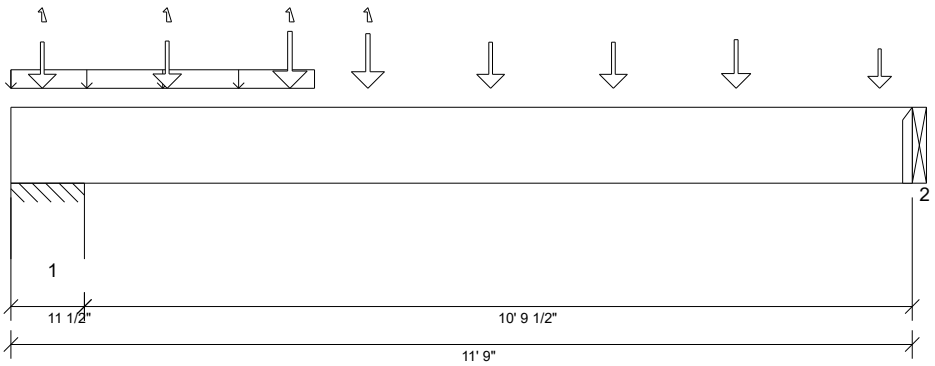
- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM8 - i584** Type: **Beam**	**2 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update14.15

Report Version: 2023.09.18 08/08/2024 12:30



DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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'- 6 15/16"

Bearing Stress of Support Material:

- 875 psi Wall @ 0'- 10 1/2"
- 405 psi Beam @ 11'- 9"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	6'- 3 1/16"	D + L	1.00	5772 lb ft	17841 lb ft	Passed - 32%
Max Neg. Moment:	0'- 10 1/2"	D + L	1.00	278 lb ft	17763 lb ft	Passed - 2%
Max Shear:	1'- 11 3/8"	D + L	1.00	2153 lb	7897 lb	Passed - 27%
Live Load (LL) Pos. Defl.:	6'- 3 1/2"	L		0.079"	L/480	Passed - L/999
Total Load (TL) Pos. Defl.:	6'- 2 1/2"	D + L		0.141"	L/360	Passed - L/916

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 1/2"	D + L	1.00	2878 lb		30187 lb	35219 lb	Passed - 10%
2	1 1/2"	D + L	1.00	1901 lb		3937 lb	-	Passed - 48%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
2	N/A	N/A	N/A	N/A	N/A	Connector has not been designed. Connector to be specified by others.

* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	11'- 9"	Self Weight	Top	12 lb/ft	-	-	-	-
Uniform	-0'	3'- 11 1/2"	W85(i86)	Top	91 lb/ft	-	-	-	-
Point	0'- 4 15/16"	0'- 4 15/16"	-	Back	214 lb	285 lb	-	1 lb	0/-1 lb
Point	2'- 7/16"	2'- 7/16"	2F4(c04)	Back	197 lb	316 lb	-	1 lb	0/-1 lb
Point	3'- 7 5/8"	3'- 7 5/8"	2F4(c01)	Back	401 lb	263 lb	-	0 lb	0/0 lb
Point	4'- 7 7/8"	4'- 7 7/8"	2F4(c03)	Back	365 lb	263 lb	-	0 lb	0/-1 lb
Point	6'- 3 1/16"	6'- 3 1/16"	2F5(c04)	Back	189 lb	307 lb	-	-	-
Point	7'- 10 1/4"	7'- 10 1/4"	2F5(c01)	Back	189 lb	307 lb	-	-	-
Point	9'- 5 7/16"	9'- 5 7/16"	2F5(c02)	Back	202 lb	333 lb	-	-	-
Point	11'- 3 7/8"	11'- 3 7/8"	2F5(c03)	Back	154 lb	238 lb	-	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	0'- 11 1/2"	-	1570 lb	1309 lb	-	2 lb	-
++>	0'- 3"	0'- 3"	W71(i72)	819 lb	683 lb	-	1 lb	-
++>	0'- 8 3/4"	0'- 8 3/4"	W72(i74)	751 lb	626 lb	-	1 lb	-
2	11'- 9"	11'- 9"	BM11(i575)	869 lb	1033/-12 lb	-	-	1 lb/ -1 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

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM8 - i584** Type: **Beam**	**2 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

PLY TO PLY CONNECTION

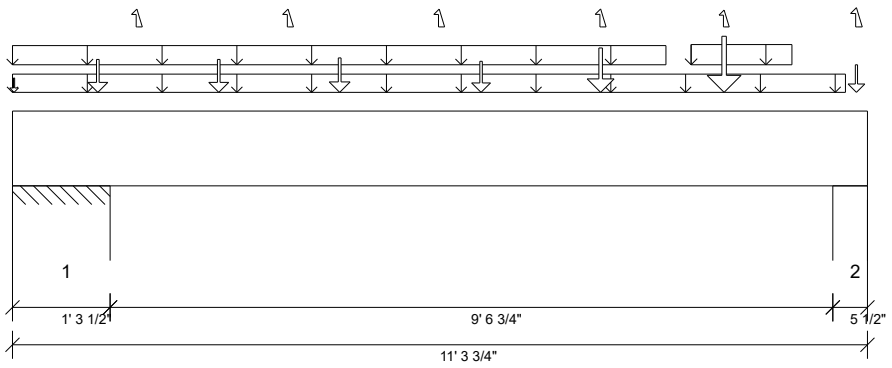
- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM10 - i578** Type: **Beam**	**3 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update14.15

Report Version: 2023.09.18 08/08/2024 12:30



DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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'- 6 15/16"

Bearing Stress of Support Material:

- 875 psi Wall @ 1'- 2 1/2"
- 875 psi Wall @ 10'- 11 1/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	6'- 2 3/8"	D + L	1.00	6236 lb ft	26761 lb ft	Passed - 23%
Max Neg. Moment:	1'- 2 1/2"	D + 0.75(L + Lr)	1.15	204 lb ft	30709 lb ft	Passed - 1%
Max Shear:	9'- 10 3/8"	D + L	1.00	2566 lb	11845 lb	Passed - 22%
Live Load (LL) Pos. Defl.:	6'- 2 7/16"	L		0.044"	L/480	Passed - L/999
Total Load (TL) Pos. Defl.:	6'- 2 1/8"	D + L		0.084"	L/360	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	1' 3 1/2"	D + L	1.00	2936 lb		61031 lb	71203 lb	Passed - 5%
2	5 1/2"	D + L	1.00	2911 lb		21656 lb	25266 lb	Passed - 13%

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	11'- 3 3/4"	Self Weight	Top	18 lb/ft	-	-	-	-
Uniform	0'	11'- 1/4"	W34(i41)	Top	91 lb/ft	-	-	-	-
Uniform	0'	8'- 7 3/4"	W34(i41)	Top	42 lb/ft	-	-	47 lb/ft	22 lb/ft
Uniform	8'- 11 3/4"	10'- 3 3/4"	W34(i41)	Top	56 lb/ft	-	-	61 lb/ft	16 lb/ft
Point	1'- 1 9/16"	1'- 1 9/16"	2F5(c04)	Front	193 lb	317 lb	-	-	-
Point	2'- 8 3/4"	2'- 8 3/4"	2F5(c01)	Front	193 lb	317 lb	-	-	-
Point	4'- 3 15/16"	4'- 3 15/16"	2F5(c02)	Front	207 lb	344 lb	-	-	-
Point	6'- 2 3/8"	6'- 2 3/8"	2F5(c03)	Front	177 lb	283 lb	-	-	-
Point	7'- 9 3/8"	7'- 9 3/8"	-	Front	318 lb	501 lb	-	-	-108 lb
Point	9'- 5"	9'- 5"	-	Front	423 lb	711 lb	-	-	-78 lb
Point	0'- 1/4"	0'- 1/4"	W34(i41)	Top	-	-	-	8 lb	3 lb
Point	1'- 7 3/4"	1'- 7 3/4"	W34(i41)	Top	-	-	-	-	-104 lb
Point	3'- 7 3/4"	3'- 7 3/4"	W34(i41)	Top	-	-	-	-	-104 lb
Point	5'- 7 3/4"	5'- 7 3/4"	W34(i41)	Top	-	-	-	-	-104 lb
Point	11'- 2"	11'- 2"	W111(i501)	Top	188 lb	-	-	118/-3 lb	60/-139 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	1'- 3 1/2"	W53(i53)	4918/-2908 lb	3866/-2385 lb	-	827/-482 lb	239 lb/ -409 lb
==>	0'- 1 1/2"	0'- 1 1/2"	W53(i53)	-2908 lb	-2385 lb	-	40/-482 lb	-
==>	1'- 2"	1'- 2"	W53(i53)	4918 lb	3866 lb	-	787 lb	-
2	10'- 10 1/4"	11'- 3 3/4"	W56(i57)	1361 lb	993 lb	-	272/-3 lb	239 lb/ -409 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.
- 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

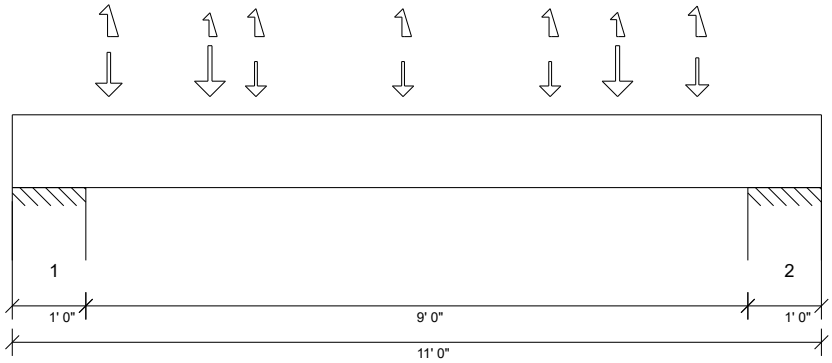
- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM1 - i582** Type: **Beam**	**3 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update14.15

Report Version: 2023.09.18 08/08/2024 12:30



DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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: 11'

Bearing Stress of Support Material:

- 875 psi Wall @ 0'- 11"
- 875 psi Wall @ 10'- 1"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	5'- 3 3/4"	D + Lr	1.15	2003 lb ft	30696 lb ft	Passed - 7%
Max Shear:	9'- 1/8"	D + Lr	1.15	892 lb	13622 lb	Passed - 7%
Live Load (LL) Pos. Defl.:	5'- 6"	0.75(L + Lr + 0.6W)		0.015"	L/480	Passed - L/999
Total Load (TL) Pos. Defl.:	5'- 6 1/16"	D + 0.75(L + Lr + 0.6W)		0.026"	L/360	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	1' 0"	D + Lr	1.15	1096 lb		47250 lb	55125 lb	Passed - 2%
1	1' 0"	0.6D + 0.6W	1.60		-93 lb	-	-	
2	1' 0"	D + Lr	1.15	1000 lb		47250 lb	55125 lb	Passed - 2%
2	1' 0"	0.6D + 0.6W	1.60		-75 lb	-	-	

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	11'	Self Weight	Top	18 lb/ft	-	-	-	-
Point	1'- 3 3/4"	1'- 3 3/4"	J3(c01)	Top	113 lb	-	-	173 lb	88/-224 lb
Point	2'- 8 1/4"	2'- 8 1/4"	BM6(i576)	Top	254 lb	22 lb	-	133/-14 lb	46/-111 lb
Point	3'- 3 3/4"	3'- 3 3/4"	J4(c02)	Top	78 lb	-	-	122 lb	62/-175 lb
Point	5'- 3 3/4"	5'- 3 3/4"	J4(c03)	Top	78 lb	-	-	122 lb	62/-175 lb
Point	7'- 3 3/4"	7'- 3 3/4"	J4(c01)	Top	78 lb	-	-	122 lb	62/-175 lb
Point	8'- 2 3/4"	8'- 2 3/4"	BM7(i583)	Top	256 lb	22 lb	-	131/-13 lb	46/-118 lb
Point	9'- 3 3/4"	9'- 3 3/4"	J3(c02)	Top	97 lb	-	-	139 lb	71/-207 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	1'	W102(i451)	595 lb	22 lb	-	502/-14 lb	365 lb/ -750 lb
2	10'	11'	W23(i30)	559 lb	22 lb	-	440/-13 lb	365 lb/ -750 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

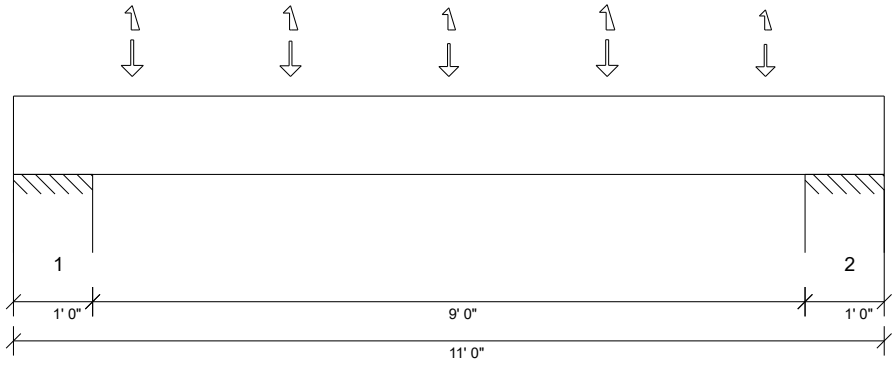
- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM2 - i564** Type: **Beam**	**3 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update14.15

Report Version: 2023.09.18 08/08/2024 12:30



DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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: 11' Bottom: 11'

Bearing Stress of Support Material:

- 875 psi Wall @ 0'- 11"
- 875 psi Wall @ 10'- 1"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	5'- 6"	D + Lr	1.15	1133 lb ft	30243 lb ft	Passed - 4%
Max Shear:	1'- 11 7/8"	D + Lr	1.15	418 lb	13622 lb	Passed - 3%
Total Load (TL) Pos. Defl.:	5'- 6 1/4"	D + 0.75(L + Lr + 0.6W)		0.014"	L/360	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	1' 0"	D + Lr	1.15	548 lb		47250 lb	55125 lb	Passed - 1%
2	1' 0"	D + Lr	1.15	525 lb		47250 lb	55125 lb	Passed - 1%

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	11'	Self Weight	Top	18 lb/ft	-	-	-	-
Point	1'- 6"	1'- 6"	G1(c01)	Top	87 lb	-	-	102 lb	60/-110 lb
Point	3'- 6"	3'- 6"	G1(c01)	Top	80 lb	-	-	93 lb	62/-109 lb
Point	5'- 6"	5'- 6"	G1(c01)	Top	79 lb	-	-	90 lb	38/-85 lb
Point	7'- 6"	7'- 6"	G1(c01)	Top	84 lb	-	-	100 lb	67/-121 lb
Point	9'- 6"	9'- 6"	G1(c01)	Top	67 lb	-	-	91 lb	40/-62 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	1'	W104(i453)	306 lb	-	-	241 lb	169 lb/ -257 lb
2	10'	11'	W21(i11)	291 lb	-	-	235 lb	169 lb/ -257 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) = 0.97

PLY TO PLY CONNECTION

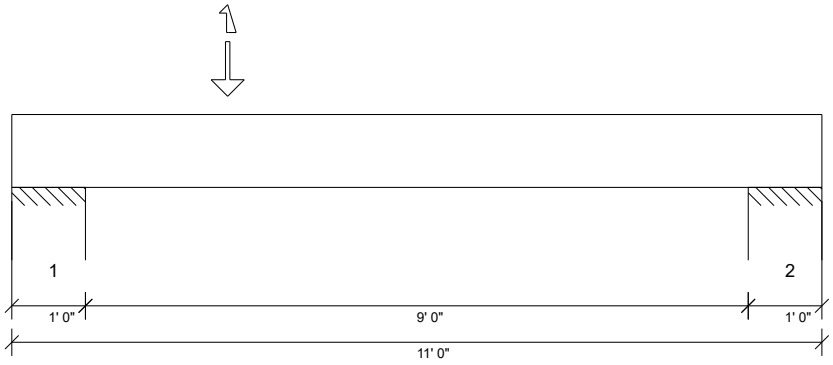
- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM3 - i573** Type: **Beam**	**3 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update14.15

Report Version: 2023.09.18 08/08/2024 12:30



DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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: 11' Bottom: 11'

Bearing Stress of Support Material:

- 875 psi Wall @ 0'- 11"
- 875 psi Wall @ 10'- 1"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	2'- 11 3/16"	D + Lr	1.15	1521 lb ft	30243 lb ft	Passed - 5%
Max Shear:	1'- 11 7/8"	D + Lr	1.15	757 lb	13622 lb	Passed - 6%
Total Load (TL) Pos. Defl.:	5'- 1/8"	D + 0.75(L + Lr + 0.6W)		0.015"	L/360	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	1' 0"	D + Lr	1.15	794 lb		47250 lb	55125 lb	Passed - 2%
2	1' 0"	D + Lr	1.15	295 lb		47250 lb	55125 lb	Passed - 1%

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	11'	Self Weight	Top	18 lb/ft	-	-	-	-
Point	2'- 11 3/16"	2'- 11 3/16"	G3(c01)	Top	441 lb	-	-	448/-27 lb	168/-340 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	1'	W106(i457)	444 lb	-	-	350/-21 lb	217 lb/ -351 lb
2	10'	11'	W19(i26)	197 lb	-	-	98/-6 lb	217 lb/ -351 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) = 0.97

PLY TO PLY CONNECTION

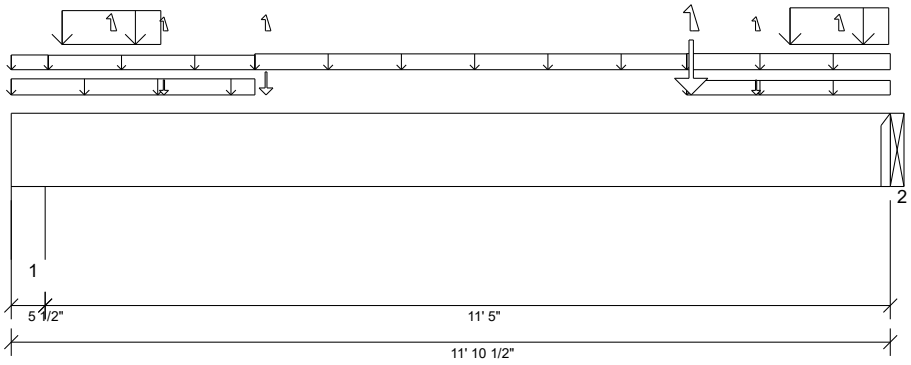
- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM5 - i580** Type: **Beam**	**2 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update14.15

Report Version: 2023.09.18 08/08/2024 12:30



DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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: 5'- 3"

Bearing Stress of Support Material:

- 875 psi Wall @ 0'- 4 1/2"
- 405 psi Beam @ 11'- 10 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	8'- 11 3/4"	D + Lr	1.15	9425 lb ft	20517 lb ft	Passed - 46%
Max Shear:	10'- 10 5/8"	D + Lr	1.15	3629 lb	9081 lb	Passed - 40%
Live Load (LL) Pos. Defl.:	6'- 6 1/16"	0.75(L + Lr + 0.6W)		0.131"	L/480	Passed - L/999
Total Load (TL) Pos. Defl.:	6'- 5 3/8"	D + 0.75(L + Lr + 0.6W)		0.259"	L/360	Passed - L/529

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	5 1/2"	D + Lr	1.15	2690 lb		14437 lb	16844 lb	Passed - 19%
2	1 5/8"	D + Lr	1.15	4297 lb		4297 lb	-	Passed - 100%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
2	N/A	N/A	N/A	N/A	N/A	Connector has not been designed. Connector to be specified by others.

* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	11'- 10 1/2"	Self Weight	Top	12 lb/ft	-	-	-	-
Uniform	-0'	3'- 3 1/2"	W48(i40)	Top	75 lb/ft	-	-	-	-
Uniform	0'	0'- 6"	FC1 Floor Decking (Plan View Fill)	Top	-	32 lb/ft	-	-	-
Uniform	0'- 6"	3'- 3 1/2"	FC1 Floor Decking (Plan View Fill)	Top	-	24 lb/ft	-	-	-
Uniform	0'- 8 1/4"	2'- 1/4"	W48(i40)	Top	257 lb/ft	-	-	248 lb/ft	127 lb/ft
Uniform	3'- 3 1/2"	9'- 1 1/2"	FC1 Floor Decking (Plan View Fill)	Top	22 lb/ft	44 lb/ft	-	-	-
Uniform	9'- 1 1/2"	11'- 10 1/2"	W115(i535)	Top	75 lb/ft	-	-	-	-
Uniform	9'- 1 1/2"	11'- 10 1/2"	FC1 Floor Decking (Plan View Fill)	Top	-	24 lb/ft	-	-	-
Uniform	10'- 6 1/4"	11'- 10 1/4"	W115(i535)	Top	313 lb/ft	-	-	269 lb/ft	136 lb/ft
Point	2'- 3/4"	2'- 3/4"	J3(c01)	Front	53 lb	-	-	74/-22 lb	26 lb
Point	3'- 5 5/16"	3'- 5 5/16"	-	Front	581 lb	45 lb	-	279/-28 lb	98/-234 lb
Point	10'- 3/4"	10'- 3/4"	J3(c02)	Front	50 lb	-	-	60/-15 lb	23/-35 lb
Point	1'- 4 1/4"	1'- 4 1/4"	W48(i40)	Top	-	-	-	-	-387 lb
Point	9'- 2 1/4"	9'- 2 1/4"	-	Top	1955 lb	292/-24 lb	-	1682/-195 lb	534/-1130 lb
Point	11'- 2 1/4"	11'- 2 1/4"	W115(i535)	Top	-	-	-	-	-324 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	0'- 5 1/2"	W73(i73)	1713 lb	314/-6 lb	-	1006/-89 lb	635 lb/ -1082 lb
2	11'- 10 1/2"	11'- 10 1/2"	BM16(i594)	2490 lb	446/-18 lb	-	1778/-171 lb	635 lb/ -1082 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.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM5 - i580** Type: **Beam**	**2 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

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) = 1.00

PLY TO PLY CONNECTION

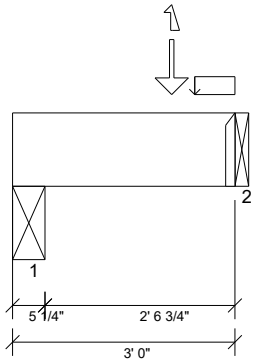
- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM6 - i576** Type: **Beam**	**2 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update14.15

Report Version: 2023.09.18 08/08/2024 12:30



DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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: 2' Bottom: 1'- 6 3/4"

Bearing Stress of Support Material:

- 750 psi Beam @ 0'- 4 1/4"
- 405 psi Beam @ 3'

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	2'- 1 3/4"	D + Lr	1.15	656 lb ft	20382 lb ft	Passed - 3%
Max Shear:	1'- 5 1/8"	D + Lr	1.15	365 lb	9081 lb	Passed - 4%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	5 1/4"	D + Lr	1.15	382 lb		13781 lb	13781 lb	Passed - 3%
2	1 1/2"	D + Lr	1.15	823 lb		3937 lb	-	Passed - 21%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
2	N/A	N/A	N/A	N/A	N/A	Connector has not been designed. Connector to be specified by others.

* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	3'	Self Weight	Top	12 lb/ft	-	-	-	-
Uniform	2'- 5 1/2"	3'	W47(i49)	Top	91 lb/ft	-	-	-	-
Point	2'- 1 3/4"	2'- 1 3/4"	-	Front	707 lb	67 lb	-	412/-42 lb	144/-345 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	0'- 5 1/4"	BM1(i582)	254 lb	22 lb	-	133/-14 lb	78 lb/ -143 lb
2	3'	3'	BM5(i580)	539 lb	45 lb	-	279/-28 lb	78 lb/ -143 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) = 0.99

PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM7 - i583** Type: **Beam**	**2 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update14.15

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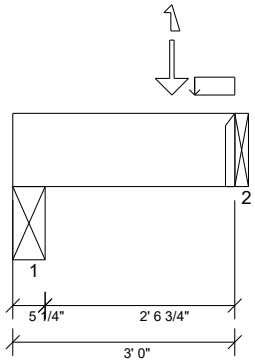

DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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: 2' Bottom: 1'- 6 3/4"

Bearing Stress of Support Material:

- 750 psi Beam @ 0'- 4 1/4"
- 405 psi Beam @ 3'

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	2'- 1 3/4"	D + Lr	1.15	657 lb ft	20382 lb ft	Passed - 3%
Max Shear:	1'- 5 1/8"	D + Lr	1.15	365 lb	9081 lb	Passed - 4%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	5 1/4"	D + Lr	1.15	383 lb		13781 lb	13781 lb	Passed - 3%
2	1 1/2"	D + Lr	1.15	821 lb		3937 lb	-	Passed - 21%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
2	N/A	N/A	N/A	N/A	N/A	Connector has not been designed. Connector to be specified by others.

* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	3'	Self Weight	Top	12 lb/ft	-	-	-	-
Uniform	2'- 5 1/2"	3'	W45(i43)	Top	91 lb/ft	-	-	-	-
Point	2'- 1 13/16"	2'- 1 13/16"	-	Back	712 lb	67 lb	-	406/-39 lb	143/-367 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	0'- 5 1/4"	BM1(i582)	256 lb	22 lb	-	131/-13 lb	78 lb/ -151 lb
2	3'	3'	BM5(i580)	542 lb	45 lb	-	275/-26 lb	78 lb/ -151 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) = 0.99

PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM4 - i581** Type: **Beam**	**2 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

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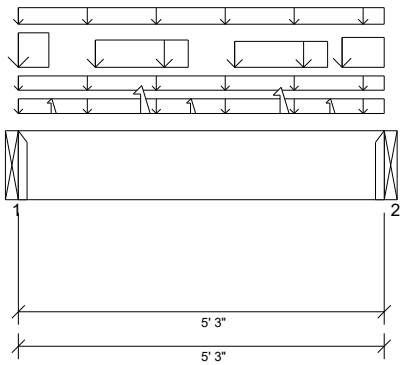

DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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'- 10 1/2"

Bearing Stress of Support Material:

- 405 psi Beam @ 0'
- 405 psi Beam @ 5'- 3"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	2'- 5 3/4"	D + Lr	1.15	1179 lb ft	20517 lb ft	Passed - 6%
Max Shear:	0'- 11 7/8"	D + Lr	1.15	590 lb	9081 lb	Passed - 6%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	1 1/2"	D + Lr	1.15	959 lb		3937 lb	-	Passed - 24%
2	1 1/2"	D + Lr	1.15	988 lb		3937 lb	-	Passed - 25%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	N/A	N/A	N/A	N/A	N/A	Connector has not been designed. Connector to be specified by others.
2	N/A	N/A	N/A	N/A	N/A	Connector has not been designed. Connector to be specified by others.

* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	5'- 3"	Self Weight	Top	12 lb/ft	-	-	-	-
Uniform	-0'	5'- 3"	W46(i46)	Top	91 lb/ft	-	-	-	-
Uniform	0'	5'- 3"	Smoothed Load	Front	12 lb/ft	-	-	19 lb/ft	13 lb/ft
Uniform	0'	5'- 3"	FC1 Floor Decking (Plan View Fill)	Top	11 lb/ft	23 lb/ft	-	-	-
Uniform	-0'	0'- 5 1/4"	W46(i46)	Top	226 lb/ft	-	-	225 lb/ft	86 lb/ft
Uniform	1'- 1 1/4"	2'- 5 1/4"	W46(i46)	Top	142 lb/ft	-	-	157 lb/ft	60 lb/ft
Uniform	3'- 1 1/4"	4'- 5 1/4"	W46(i46)	Top	133 lb/ft	-	-	139 lb/ft	53 lb/ft
Uniform	4'- 7 3/4"	5'- 3"	W46(i46)	Top	181 lb/ft	-	-	175 lb/ft	67 lb/ft
Point	0'- 5 3/4"	0'- 5 3/4"	J4(c02)	Front	-	-	-	-27 lb	-
Point	2'- 5 3/4"	2'- 5 3/4"	J4(c03)	Front	-	-	-	-27 lb	-
Point	4'- 5 3/4"	4'- 5 3/4"	J4(c01)	Front	-	-	-	-27 lb	-
Point	1'- 9 1/4"	1'- 9 1/4"	W46(i46)	Top	-	-	-	-	-194 lb
Point	3'- 9 1/4"	3'- 9 1/4"	W46(i46)	Top	-	-	-	-	-172 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	0'	BM6(i576)	614 lb	67 lb	-	346/-42 lb	201 lb/ -200 lb
2	5'- 3"	5'- 3"	BM7(i583)	633 lb	67 lb	-	355/-39 lb	201 lb/ -200 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

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM4 - i581** Type: **Beam**	**2 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM17 - i579** Type: **Beam**	**3 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update14.15

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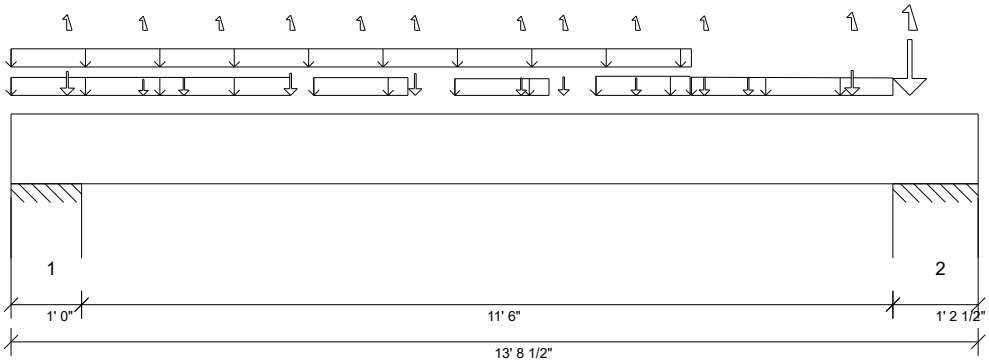

DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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'- 9" Bottom: 1'- 3 11/16"

Bearing Stress of Support Material:

- 875 psi Wall @ 0'- 11"
- 875 psi Wall @ 12'- 7"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	7'- 1 7/16"	D + L	1.00	12782 lb ft	26738 lb ft	Passed - 48%
Max Neg. Moment:	12'- 7"	D + Lr	1.15	971 lb ft	30721 lb ft	Passed - 3%
Max Shear:	11'- 6 1/8"	D + L	1.00	4546 lb	11845 lb	Passed - 38%
Live Load (LL) Pos. Defl.:	6'- 9 5/16"	0.75(L + Lr + 0.6W)		0.132"	L/480	Passed - L/999
Total Load (TL) Pos. Defl.:	6'- 9"	D + 0.75(L + Lr + 0.6W)		0.273"	L/360	Passed - L/505

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	1' 0"	D + L	1.00	5638 lb		47250 lb	55125 lb	Passed - 12%
2	1' 2 1/2"	D + 0.75(L + Lr)	1.15	11238 lb		57088 lb	66603 lb	Passed - 20%

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	13'- 8 1/2"	Self Weight	Top	18 lb/ft	-	-	-	-
Uniform	0'	9'- 7 3/4"	W80(i81)	Top	91 lb/ft	-	-	-	-
Uniform	0'	3'- 11 1/2"	W80(i81)	Top	35 lb/ft	-	-	36 lb/ft	16 lb/ft
Uniform	4'- 3 1/2"	5'- 7 1/2"	W80(i81)	Top	-	-	-	57 lb/ft	26 lb/ft
Uniform	6'- 3 1/2"	7'- 7 1/2"	W80(i81)	Top	-	-	-	41 lb/ft	18 lb/ft
Uniform	8'- 3 1/2"	9'- 7 1/2"	W80(i81)	Top	-	-	-	74 lb/ft	38 lb/ft
Tapered	9'- 7 3/4"	12'- 6"	W80(i81)	Top	91 To 76 lb/ft	-	-	-	-
Point	2'- 5 3/8"	2'- 5 3/8"	2F14(c01)	Front	251 lb	407 lb	-	-	-
Point	3'- 11 9/16"	3'- 11 9/16"	-	Front	704 lb	407 lb	-	287 lb	146/-237 lb
Point	5'- 8 3/4"	5'- 8 3/4"	-	Front	735 lb	407 lb	-	236/-4 lb	113/-196 lb
Point	7'- 2 13/16"	7'- 2 13/16"	-	Front	251 lb	407 lb	-	-	-42 lb
Point	8'- 10 5/16"	8'- 10 5/16"	-	Front	251 lb	407 lb	-	-	-73 lb
Point	10'- 5 3/8"	10'- 5 3/8"	2F14(c03)	Front	251 lb	407 lb	-	-	-
Point	11'- 11 1/16"	11'- 11 1/16"	-	Front	825 lb	319 lb	-	676/-16 lb	252/-784 lb
Point	12'- 8 7/8"	12'- 8 7/8"	BM15(i577)	Front	3362 lb	603 lb	-	2781/-200 lb	1152/-2005 lb
Point	1'- 10 1/2"	1'- 10 1/2"	E10(c03)	Back	323 lb	-	-	73/-48 lb	-
Point	7'- 10"	7'- 10"	E7(c03)	Back	433 lb	-	-	289 lb	143/-259 lb
Point	9'- 9 15/16"	9'- 9 15/16"	-	Back	364 lb	-	-	284/-120 lb	95 lb
Point	0'- 9 9/16"	0'- 9 9/16"	-	Top	933 lb	407 lb	-	369 lb	188/-343 lb
Point	2'- 11 1/2"	2'- 11 1/2"	W80(i81)	Top	-	-	-	-	-48 lb
Point	4'- 11 1/2"	4'- 11 1/2"	W80(i81)	Top	-	-	-	-	-49 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	1'	W117(i541)	3975 lb	1707 lb	-	1267/-57 lb	726 lb/ -1000 lb
2	12'- 6"	13'- 8 1/2"	-	6518 lb	2064 lb	-	4399/-595 lb	-
++>	12'- 7 1/2"	12'- 7 1/2"	W12(i28)	6518 lb	2064 lb	-	4136/-595 lb	-
++>	13'- 7"	13'- 7"	W13(i1)	-	-	-	263 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.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM17 - i579** Type: **Beam**	**3 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

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) = 1.00

PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM9 - i585** Type: **Beam**	**2 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

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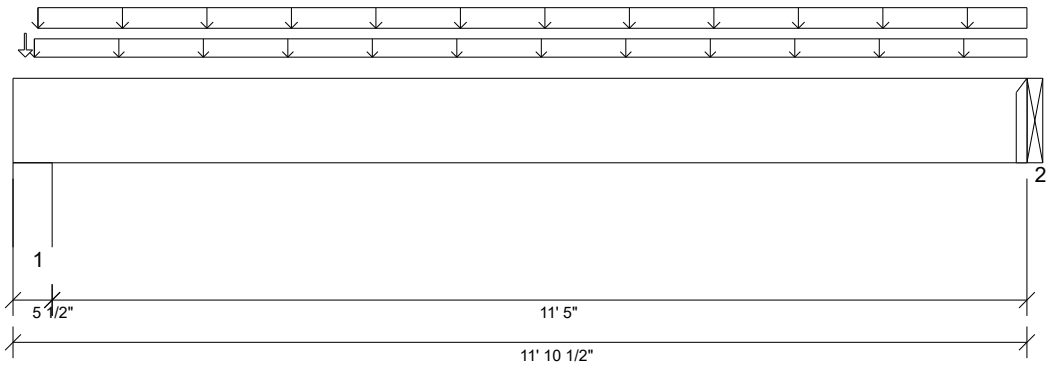


DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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: 11'- 5"

Bearing Stress of Support Material:

- 875 psi Wall @ 0'- 4 1/2"
- 405 psi Beam @ 11'- 10 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	6'- 1 5/8"	D + L	1.00	2491 lb ft	17841 lb ft	Passed - 14%
Max Shear:	10'- 10 5/8"	D + L	1.00	718 lb	7897 lb	Passed - 9%
Live Load (LL) Pos. Defl.:	6'- 1 1/2"	L		0.020"	L/480	Passed - L/999
Total Load (TL) Pos. Defl.:	6'- 1 9/16"	D + L		0.068"	L/360	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	5 1/2"	D + L	1.00	979 lb		14437 lb	16844 lb	Passed - 7%
2	1 1/2"	D + L	1.00	896 lb		3937 lb	-	Passed - 23%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
2	N/A	N/A	N/A	N/A	N/A	Connector has not been designed. Connector to be specified by others.

* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	11'- 10 1/2"	Self Weight	Top	12 lb/ft	-	-	-	-
Uniform	0'- 3"	11'- 10 1/2"	FC1 Floor Decking (Plan View Fill)	Top	16 lb/ft	32 lb/ft	-	-	-
Uniform	0'- 3 1/2"	11'- 10 1/2"	W89(i91)	Top	91 lb/ft	-	-	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	-	Top	77 lb	8 lb	-	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	0'- 5 1/2"	W98(i446)	779 lb	194 lb	-	-	-
2	11'- 10 1/2"	11'- 10 1/2"	BM16(i594)	698 lb	204 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

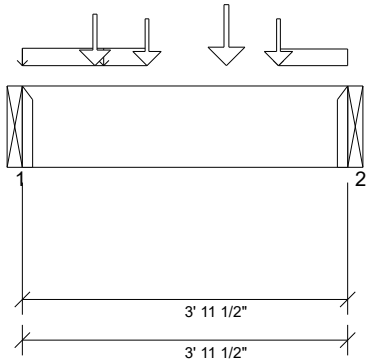
- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM13 - i587** Type: **Beam**	**3 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update14.15

Report Version: 2023.09.18 08/08/2024 12:30



DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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: 0'- 8 3/8"

Bearing Stress of Support Material:

- 405 psi Beam @ 0'
- 405 psi Beam @ 3'- 11 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	2'- 5 13/16"	D + L	1.00	1979 lb ft	26761 lb ft	Passed - 7%
Max Shear:	2'- 11 5/8"	D + L	1.00	936 lb	11845 lb	Passed - 8%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	1 1/2"	D + L	1.00	1649 lb		5906 lb	-	Passed - 28%
2	1 1/2"	D + L	1.00	1696 lb		5906 lb	-	Passed - 29%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	N/A	N/A	N/A	N/A	N/A	Connector has not been designed. Connector to be specified by others.
2	N/A	N/A	N/A	N/A	N/A	Connector has not been designed. Connector to be specified by others.

* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	3'- 11 1/2"	Self Weight	Top	18 lb/ft	-	-	-	-
Uniform	0'	1'- 6 3/16"	FC1 Floor Decking (Plan View Fill)	Top	14 lb/ft	29 lb/ft	-	-	-
Uniform	3'- 1 3/8"	3'- 11 1/2"	FC1 Floor Decking (Plan View Fill)	Top	-	29 lb/ft	-	-	-
Point	1'- 6 3/16"	1'- 6 3/16"	2F11(c01)	Front	322 lb	356 lb	-	-	-
Point	3'- 1 3/8"	3'- 1 3/8"	2F11(c02)	Front	322 lb	356 lb	-	-	-
Point	0'- 10 5/8"	0'- 10 5/8"	2F6(c02)	Back	304 lb	474 lb	-	-	-
Point	2'- 5 13/16"	2'- 5 13/16"	2F6(c01)	Back	372 lb	610 lb	-	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	0'	BM11(i575)	705 lb	944 lb	-	-	-
2	3'- 11 1/2"	3'- 11 1/2"	BM12(i574)	740 lb	956 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

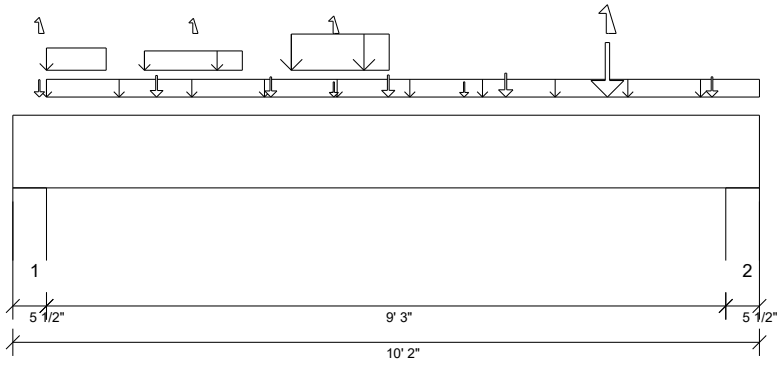
- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM14 - i586** Type: **Beam**	**3 Ply Member** **1 3/4" x 11 7/8" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update14.15

Report Version: 2023.09.18 08/08/2024 12:30



DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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'- 3 11/16"

Bearing Stress of Support Material:

- 875 psi Wall @ 0'- 4 1/2"
- 875 psi Wall @ 9'- 9 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	5'- 1 3/8"	D + L	1.00	9594 lb ft	26761 lb ft	Passed - 36%
Max Shear:	8'- 8 5/8"	D + L	1.00	4585 lb	11845 lb	Passed - 39%
Live Load (LL) Pos. Defl.:	5'- 3 5/16"	0.75(L + Lr + 0.6W)		0.069"	L/480	Passed - L/999
Total Load (TL) Pos. Defl.:	5'- 3 1/16"	D + 0.75(L + Lr + 0.6W)		0.140"	L/360	Passed - L/791

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	5 1/2"	D + L	1.00	3396 lb		21656 lb	25265 lb	Passed - 16%
2	5 1/2"	D + L	1.00	4778 lb		21656 lb	25265 lb	Passed - 22%

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	10'- 2"	Self Weight	Top	18 lb/ft	-	-	-	-
Uniform	0'- 5 1/2"	10'- 2"	-	Top	91 lb/ft	-	-	-	-
Uniform	0'- 5 1/2"	1'- 3 1/4"	W41(i47)	Top	81 lb/ft	-	-	78 lb/ft	32 lb/ft
Uniform	1'- 9 1/2"	3'- 1 1/2"	W41(i47)	Top	-	-	-	57 lb/ft	69 lb/ft
Uniform	3'- 9 1/2"	5'- 1 1/2"	W41(i47)	Top	208 lb/ft	-	-	202 lb/ft	87 lb/ft
Point	1'- 11 1/2"	1'- 11 1/2"	-	Front	404 lb	423 lb	-	-	-
Point	4'- 4 7/16"	4'- 4 7/16"	-	Front	119 lb	41 lb	-	-71 lb	-337 lb
Point	6'- 1 3/4"	6'- 1 3/4"	G6(c03)	Front	121 lb	42 lb	-	-	-
Point	8'- 1 3/16"	8'- 1 3/16"	-	Front	1714 lb	357 lb	-	1442/-4 lb	747/-1578 lb
Point	3'- 6 1/8"	3'- 6 1/8"	2F11(c02)	Back	287 lb	392 lb	-	-	-
Point	5'- 1 3/8"	5'- 1 3/8"	2F12(c04)	Back	473 lb	407 lb	-	-	-
Point	6'- 8 9/16"	6'- 8 9/16"	2F12(c02)	Back	659 lb	407 lb	-	-	-
Point	9'- 6 1/4"	9'- 6 1/4"	2F12(c01)	Back	334 lb	353 lb	-	-	-
Point	0'- 4 5/16"	0'- 4 5/16"	-	Top	207 lb	-	-	118/-55 lb	60/-210 lb
Point	2'- 5 1/2"	2'- 5 1/2"	W41(i47)	Top	-62 lb	-	-	-66 lb	-37 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	0'- 5 1/2"	W75(i76)	2257 lb	1060 lb	-	645/-149 lb	296 lb/ -646 lb
2	9'- 8 1/2"	10'- 2"	W119(i546)	3456 lb	1415 lb	-	1365/-50 lb	296 lb/ -646 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

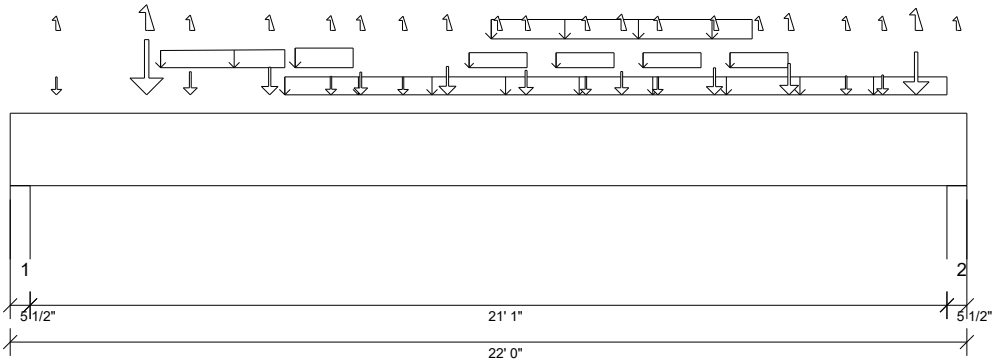
- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM16 - i594** Type: **Beam**	**4 Ply Member** **1 3/4" x 20" 2.0E Microllam® LVL**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update14.15

Report Version: 2023.09.18 08/08/2024 12:30



DESIGN INFORMATION a

Building Code:	IRC2015
Design Methodology:	ASD
Risk Category:	II (General Construction) Residential
Service Condition:	Dry
System Spacing:	-
LL Deflection Limit:	L/480,
TL Deflection Limit:	L/360,

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: 3' Bottom: 1'- 10 1/2"

Bearing Stress of Support Material:

- 875 psi Wall @ 0'- 4 1/2"
- 875 psi Wall @ 21'- 7 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	10'- 8 1/16"	D + 0.75(L + Lr)	1.15	66407 lb ft	108488 lb ft	Passed - 61%
Max Shear:	2'- 1 1/2"	D + 0.75(L + Lr)	1.15	12423 lb	30590 lb	Passed - 41%
Live Load (LL) Pos. Defl.:	10'- 11 13/16"	0.75(L + Lr + 0.6W)		0.339"	L/480	Passed - L/746
Total Load (TL) Pos. Defl.:	10'- 11 7/8"	D + 0.75(L + Lr + 0.6W)		0.667"	L/360	Passed - L/379

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	5 1/2"	D + 0.75(L + Lr)	1.15	12769 lb		28875 lb	33687 lb	Passed - 44%
2	5 1/2"	D + 0.75(L + Lr)	1.15	14578 lb		28875 lb	33687 lb	Passed - 50%

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	22'	Self Weight	Top	41 lb/ft	-	-	-	-
Uniform	6'- 3 13/16"	21'- 6 1/2"	-	Top	91 lb/ft	-	-	-	-
Uniform	6'- 6 5/8"	7'- 10 5/8"	W113(i507)	Top	-	-	-	84 lb/ft	43 lb/ft
Uniform	10'- 6 5/8"	11'- 10 5/8"	W113(i507)	Top	-	-	-	-	27 lb/ft
Uniform	11'- 3/4"	17'- 3/4"	Smoothed Load	Front	-	122 lb/ft	-	-	-
Uniform	12'- 6 5/8"	13'- 10 5/8"	W113(i507)	Top	-	-	-	-	26 lb/ft
Uniform	14'- 6 5/8"	15'- 10 5/8"	W113(i507)	Top	-	-	-	-	26 lb/ft
Uniform	16'- 6 5/8"	17'- 10 5/8"	W43(i34)	Top	-	-	-	-	27 lb/ft
Tapered	3'- 5 1/2"	6'- 3 13/16"	W113(i507)	Top	75 To 91 lb/ft	-	-	-	-
Point	1'- 3/4"	1'- 3/4"	G2(c01)	Front	230 lb	-	-	235/-4 lb	130/-101 lb
Point	4'- 1 11/16"	4'- 1 11/16"	-	Front	519 lb	359 lb	-	299/-13 lb	165/-222 lb
Point	8'- 3/4"	8'- 3/4"	G4(c02)	Front	440 lb	248 lb	-	432/-8 lb	167/-167 lb
Point	10'- 11/16"	10'- 11/16"	-	Front	750 lb	587 lb	-	611/-8 lb	159/-322 lb
Point	11'- 10 3/8"	11'- 10 3/8"	-	Front	653 lb	409 lb	-	354/-8 lb	120/-137 lb
Point	14'- 3/4"	14'- 3/4"	G4(c04)	Front	554 lb	-	-	654/-8 lb	171/-381 lb
Point	17'- 10 15/16"	17'- 10 15/16"	-	Front	943 lb	615 lb	-	770/-9 lb	203/-490 lb
Point	20'- 3/4"	20'- 3/4"	G4(c05)	Front	329 lb	241 lb	-	216/-29 lb	88/-72 lb
Point	7'- 4 1/2"	7'- 4 1/2"	-	Back	258 lb	418 lb	-	-	-155 lb
Point	9'- 7/16"	9'- 7/16"	-	Back	221 lb	344 lb	-	-	-67 lb
Point	13'- 2 7/8"	13'- 2 7/8"	-	Back	250 lb	409 lb	-	-	-91 lb
Point	14'- 10 3/4"	14'- 10 3/4"	-	Back	223 lb	356 lb	-	-	-92 lb
Point	16'- 2 3/8"	16'- 2 3/8"	-	Back	1083 lb	395 lb	-	350/-9 lb	80/-129 lb
Point	19'- 2 11/16"	19'- 2 11/16"	-	Back	332 lb	409 lb	-	-	-79 lb
Point	20'- 10"	20'- 10"	-	Back	1899 lb	565/-13 lb	-	1386/-96 lb	351/-1120 lb
Point	3'- 1 11/16"	3'- 1 11/16"	-	Top	2688 lb	446/-18 lb	-	2071/-175 lb	782/-1540 lb
Point	5'- 11 5/8"	5'- 11 5/8"	-	Top	753 lb	544 lb	-	536/-22 lb	163/-243 lb
Point	11'- 2 5/8"	11'- 2 5/8"	W113(i507)	Top	-	-	-	-	-98 lb
Point	17'- 2 5/8"	17'- 2 5/8"	W43(i34)	Top	-	-	-	-	-93 lb
Point	21'- 9 1/4"	21'- 9 1/4"	W116(i536)	Top	-	-	-	-11 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	0'- 5 1/2"	W23(i30)	7343 lb	3091/-17 lb	-	4212/-209 lb	1387 lb/ -3734 lb
2	21'- 6 1/2"	22'	W75(i76)	8275 lb	3989/-15 lb	-	4346/-191 lb	1387 lb/ -3734 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.

MiTek	CUSTOMER: Checked by:: Drawing Nu... Scale:: **NTS**	Job Name: **24071715 BEAMS** Level: **1st Floor** Label: **BM16 - i594** Type: **Beam**	**4 Ply Member** **1 3/4" x 20" 2.0E Microllam® LVL**	Status: **Design Passed**

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

PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.