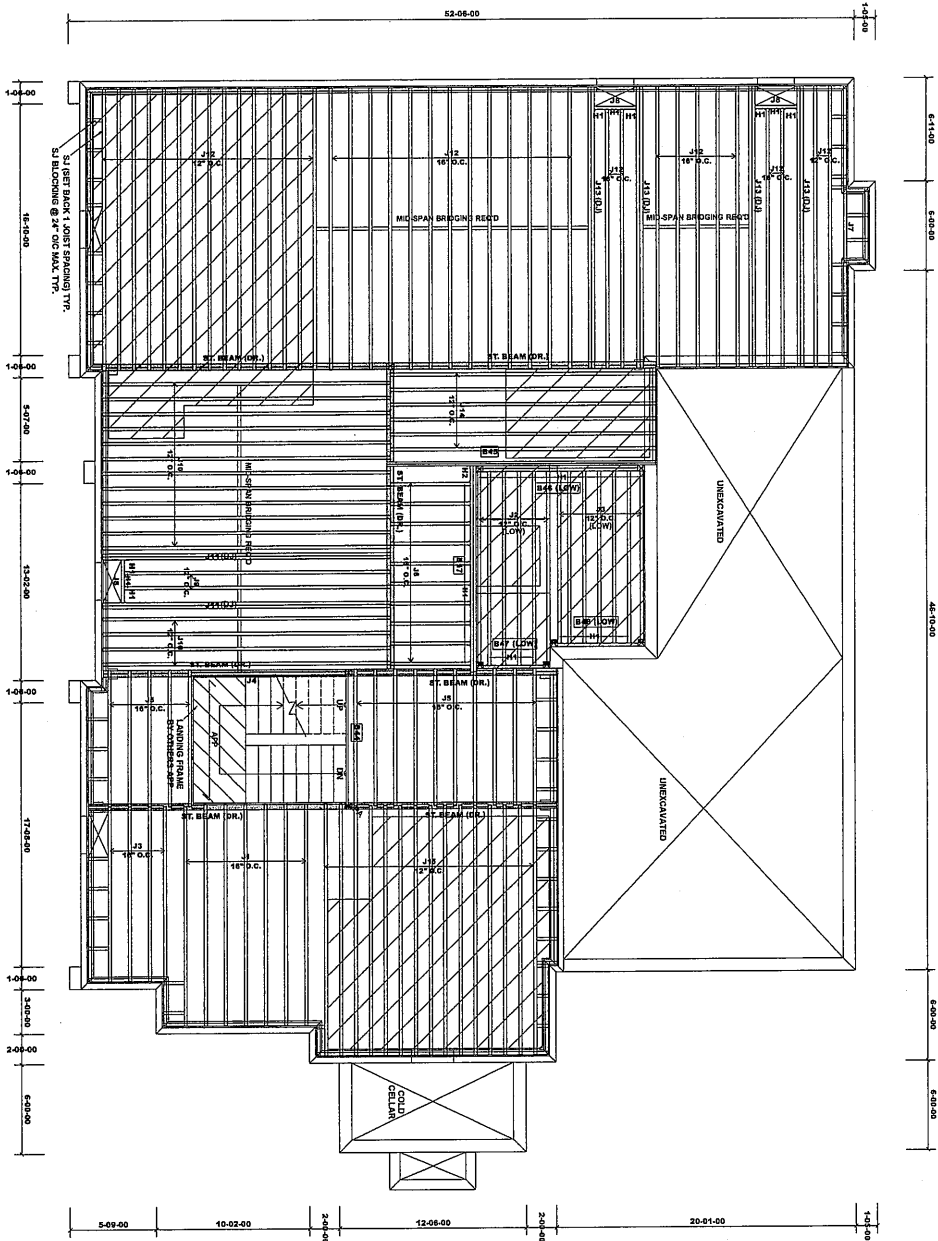




ITEM	DESCRIPTION	QUANTITY	UNIT
1	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
2	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
3	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
4	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
5	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
6	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
7	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
8	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
9	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
10	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
11	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
12	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
13	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
14	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
15	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
16	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
17	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
18	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
19	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
20	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
21	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
22	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
23	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
24	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
25	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
26	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
27	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
28	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
29	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
30	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
31	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
32	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
33	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
34	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
35	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
36	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
37	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
38	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
39	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
40	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
41	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
42	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
43	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
44	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
45	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
46	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
47	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
48	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
49	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
50	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
51	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
52	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
53	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
54	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
55	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
56	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
57	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
58	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
59	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
60	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
61	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
62	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
63	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
64	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
65	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
66	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
67	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
68	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
69	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
70	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
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72	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
73	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
74	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
75	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
76	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
77	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
78	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
79	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
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82	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
83	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
84	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
85	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
86	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
87	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
88	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
89	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
90	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
91	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
92	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
93	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
94	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
95	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
96	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
97	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
98	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
99	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
100	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

SE047007 - SE047041
SE047043 - SE047045

HATCH LEGEND
Ceramic Tile
Conv Framed

FLOOR LOADS
DEAD LOAD: 40 PSF
LIVE LOAD: 40 PSF
DEAD LOAD (TILE): 20 PSF

GROUND FLOOR FRAMING
UNIT 6001 - THE QUEENSLAND
ELEVATION A
LOT 104

Blocking panels are required over all timber supports.
Squash blocks are required under concentrated loads.
Ceramic Tile Application as per O.C. 9.20.6
Provide 1x6" blocking between cantilevered joists (along bearing) and inboard closure at ends.
Do not scale - refer to architectural plans for dimensions.

APP - AS PER PLAN
BBO - BEAM BY OTHERS
PA - POST ABOVE
GTR - GROUND TRUSS
RT - ROOF TRUSS
RIMBOARD
1-1/8" X 11-7/8" O.S.B
SURFLOOR: 3/4" NAILED & GLUED



Job Title: 45147
Project ID: 343075-346383*
Plan Log: 117907

Builder: Gold Park Homes
Project: Pine Valley Ph2
Model: 6001 A - Lot 104

Location: Vaughan ON
Salesperson: Derek F.
Vend: Home Lumber Inc.

Sheet: 1 of 2
Date: Jul 19, 2022
Designer: TL

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MARK V. 8.5.233





Customer: **Gold Park Homes**
Job Address: **Pine Valley Ph2**
City: **Vaughan**
Job Track: **45147**

Job Name: **343075 Ground A + Second A (1**
Level: **Second Floor**
Label: **B1 - I51328**
Type: **Beam**

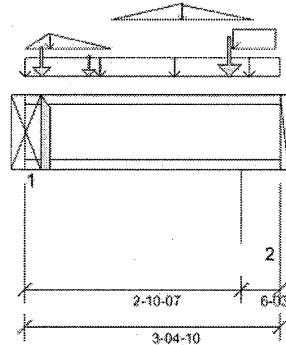
1 Ply Member
11 7/8" NI-20

Status:
Design Passed

Illustration Not to Scale, Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15

Report Version: 2021.03.26 04/09/2022 14:00



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

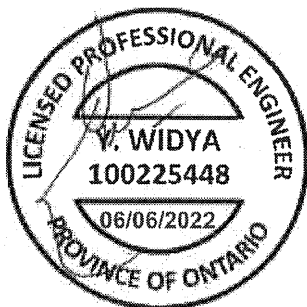
Lateral Restraint Requirements:

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'- 2 1/2" Bottom: 1'- 7 1/16"

Factored Resistance of Support Material:

- 769 psi Beam @ 0'
- 615 psi Wall @ 2'- 11 7/16"



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 4 7/16"	1.25D + 1.5L	0.77	262 lb ft	4299 lb ft	Passed - 6%
Factored Neg. Moment:	2'- 11 7/16"	1.25D + 1.5S	0.81	23 lb ft	4534 lb ft	Passed - 1%
Factored Shear:	2'- 10 3/8"	1.25D + 1.5L + S	0.87	641 lb	1956 lb	Passed - 33%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-12	1.25D + 1.5S + L	0.89	597 lb		1970 lb	-	Passed - 30%
2	6-03	1.25D + 1.5L + S	0.87	772 lb		1956 lb	8312 lb	Passed - 39%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories		
			Top	Face	Member			
1	LSSR2.56Z		-	-	-	Connector manually specified by the user.		

* 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.

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	3'- 4 5/8"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	0'	3'- 4 1/2"	E25(i41655)	Top	101 lb/ft	-	-	-
Uniform	2'- 9 1/16"	3'- 3 13/16"	E25(i41655)	Top	48 lb/ft	-	76 lb/ft	-
Tapered	0'	0'- 3 7/8"	FC2 Floor Decking (Plan View Fill)	Top	-	0 To 32 lb/ft	-	-
Tapered	0'- 3 7/8"	1'- 1 5/8"	FC2 Floor Decking (Plan View Fill)	Top	-	16 To 0 lb/ft	-	-
Tapered	1'- 1 5/8"	2'- 15/16"	FC2 Floor Decking (Plan View Fill)	Top	0 To 14 lb/ft	0 To 38 lb/ft	-	-
Tapered	2'- 15/16"	3'- 1/4"	FC2 Floor Decking (Plan View Fill)	Top	-	19 To 0 lb/ft	-	-
Point	0'- 10 1/16"	0'- 10 1/16"	J8(i51282)	Front	24 lb	65 lb	-	-
Point	2'- 8 1/2"	2'- 8 1/2"	-	Front	105 lb	101 lb	98 lb	-
Point	0'- 2 5/8"	0'- 2 5/8"	-	Top	75 lb	-	111 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 2 1/2"	B2 (CANT.)(i51251)	276 lb	72 lb	121 lb	-
2	2'- 10 7/16"	3'- 4 5/8"	E7(i41631)	340 lb	144 lb	139 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

SE047007



Customer: **Gold Park Homes**
Job Address: **Pine Valley Ph2**
City: **Vaughan**
Job Track: **45147**

Job Name: **343075 Ground A + Second A (1**
Level: **Second Floor**
Label: **B2 (CANT.) - i51251**
Type: **Beam**

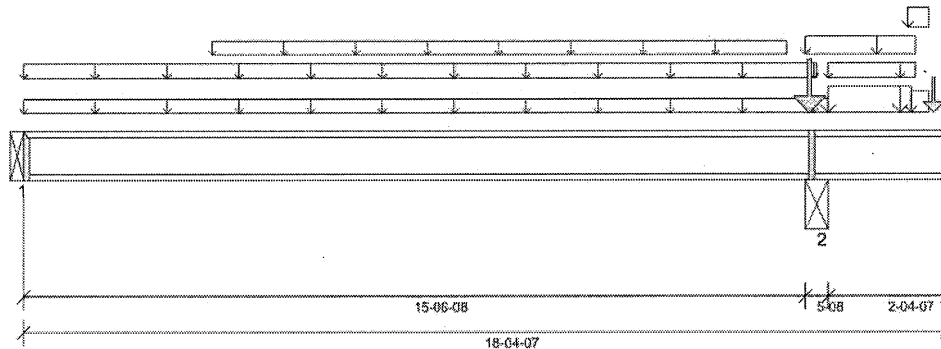
2 Ply Member
11 7/8" NI-20

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MITek® Structure Version
8.5.3.233.Update5.15

Report Version: 2021.03.26 04/09/2022 14:05



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

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'-5" Bottom: 15'-6 1/2"

Factored Resistance of Support Material:

- 769 psi Beam @ 0'
- 769 psi Beam @ 15'-9 1/4"



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'-6 11/16"	1.25D + 1.5L	0.76	1510 lb ft	8430 lb ft	Passed - 18%
Factored Neg. Moment:	15'-9 1/4"	1.25D + 1.5L + S	0.81	2519 lb ft	9031 lb ft	Passed - 28%
Factored Shear:	16'-1 1/16"	1.25D + 1.5L + S	0.81	1536 lb	3626 lb	Passed - 42%
Live Load (LL) Pos. Defl.:	7'-10 5/8"	L		0.089"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	7'-1 5/16"	D + L		0.085"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-12	1.25D + 1.5L	0.76	470 lb		3940 lb	-	Passed - 12%
2	5-08	1.25D + 1.5S + L	0.97	3606 lb		9836 lb	20513 lb	Passed - 37%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories		
			Top	Face	Member			
1	MIT311.88-2		-	-	-	Connector manually specified by the user.		

* 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.

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	18'-4 7/16"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	16'	FC2 Floor Decking (Plan View Fill)	Top	5 lb/ft	12 lb/ft	-	-
Uniform	0'	15'-9 1/4"	FC2 Floor Decking (Plan View Fill)	Top	7 lb/ft	18 lb/ft	-	-
Uniform	3'-9"	15'-2"	FC2 Floor Decking (Plan View Fill)	Top	4 lb/ft	-	-	-
Uniform	15'-6 1/2"	17'-8 15/16"	E24(41647)	Top	101 lb/ft	-	-	-
Uniform	16'	17'-8 15/16"	FC2 Floor Decking (Plan View Fill)	Top	9 lb/ft	23 lb/ft	-	-
Uniform	16'	17'-7 13/16"	E24(41647)	Top	109 lb/ft	-	171 lb/ft	-
Uniform	17'-7"	18'	E25(41655)	Top	143 lb/ft	-	-	-
Uniform	17'-7 13/16"	18'	E25(41655)	Top	68 lb/ft	-	107 lb/ft	-
Point	18'-1 1/4"	18'-1 1/4"	B1(51328)	Front	276 lb	72 lb	121 lb	-
Point	15'-7 1/2"	15'-7 1/2"	E24(41647)	Top	345 lb	-	537 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B4(51405)	88 lb	239/-12 lb	-39 lb	-
2	15'-6 1/2"	16'	ST. BEAM (DR.) (41725)	1374 lb	366 lb	1017 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.
- 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.

SE047008



Customer: **Gold Park Homes**
Job Address: **Pine Valley Ph2**
City: **Vaughan**
Job Track: **45147**

Job Name: **343075 Ground A + Second A (1**
Level: **Second Floor**
Label: **B3 (CANT.) - i51378**
Type: **Beam**

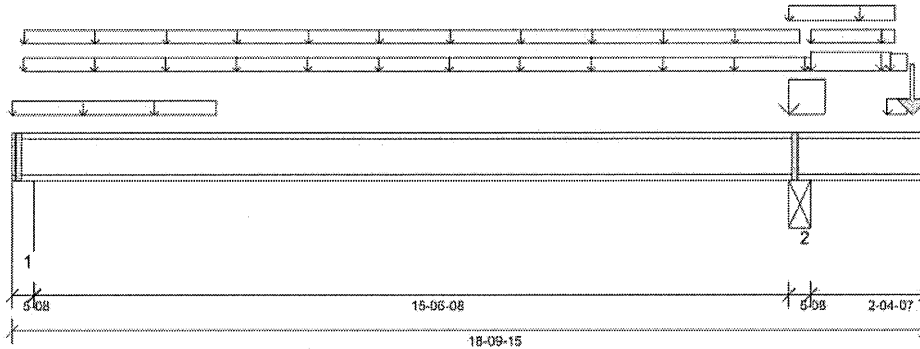
2 Ply Member
11 7/8" NI-20

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MITek® Structure Version
8.5.3.233.Update5.15

Report Version: 2021.03.26 04/09/2022 14:05



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

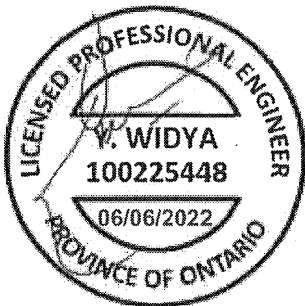
Lateral Restraint Requirements:

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'- 5" Bottom: 15'- 6 1/2"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 769 psi Beam @ 16'- 2 3/4"



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 4 3/4"	1.25D + 1.5L	0.75	1833 lb ft	8319 lb ft	Passed - 22%
Factored Neg. Moment:	16'- 2 3/4"	1.25D + 1.5L + S	0.78	2693 lb ft	8678 lb ft	Passed - 31%
Factored Shear:	16'- 5 9/16"	1.25D + 1.5L + S	0.78	1904 lb	3484 lb	Passed - 55%
Live Load (LL) Pos. Defl.:	8'- 3 5/8"	L		0.099"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	7'- 4 5/8"	D + L		0.107"	L/240	Passed - L/999
Total Load (TL) Neg. Defl.:	16'	D + L		0.010"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5L	0.75	755 lb		3340 lb	12611 lb	Passed - 23%
2	5-08	1.25D + 1.5S + L	0.94	3656 lb		9568 lb	19954 lb	Passed - 38%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	18'- 9 15/16"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	4'- 2 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'- 2 3/4"	16'- 5 1/2"	FC2 Floor Decking (Plan View Fill)	Top	6 lb/ft	15 lb/ft	-	-
Uniform	0'- 2 15/16"	16'- 2 3/4"	FC2 Floor Decking (Plan View Fill)	Top	7 lb/ft	18 lb/ft	-	-
Uniform	16'	18'- 2 7/16"	E41(i41730)	Top	101 lb/ft	-	-	-
Uniform	16'	16'- 9"	E41(i41730)	Top	460 lb/ft	-	716 lb/ft	-
Uniform	16'- 5 1/2"	18'- 2 7/16"	FC2 Floor Decking (Plan View Fill)	Top	-	22 lb/ft	-	-
Uniform	16'- 5 1/2"	18'- 1 5/16"	E41(i41730)	Top	109 lb/ft	-	171 lb/ft	-
Uniform	18'- 1/2"	18'- 5 1/2"	E27(i41644)	Top	143 lb/ft	-	-	-
Uniform	18'- 1 5/16"	18'- 5 1/2"	E27(i41644)	Top	68 lb/ft	-	107 lb/ft	-
Point	18'- 6 3/4"	18'- 6 3/4"	B1(i51386)	Back	277 lb	72 lb	121 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	3(i41638)	291 lb	262/-12 lb	-49 lb	-
2	16'	16'- 5 1/2"	ST. BEAM (DR.)(i41725)	1388 lb	383 lb	1027 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.
- 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

SE047009



Customer: **Gold Park Homes**
Job Address: **Pine Valley Ph2**
City: **Vaughan**
Job Track: **45147**

Job Name: **343075 Ground A + Second A (1**
Level: **Second Floor**
Label: **B7 - I51464**
Type: **Beam**

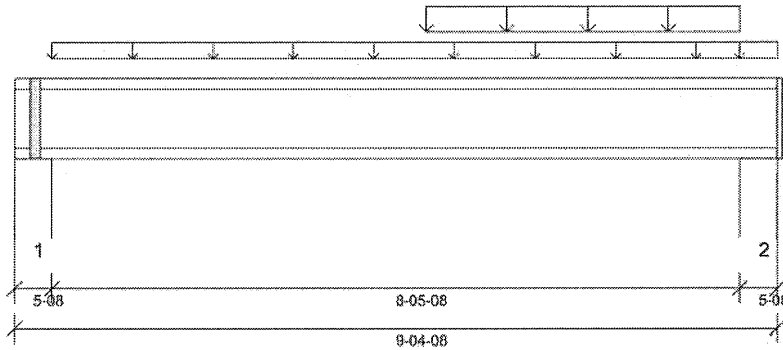
1 Ply Member
11 7/8" NI-20

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15

Report Version: 2021.03.26 04/09/2022 14:06



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

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: 8'- 5 1/2"

Factored Resistance of Support Material:

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

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 9 3/8"	1.25D + 1.5L	1.00	1783 lb ft	5580 lb ft	Passed - 32%
Factored Shear:	8'- 10 15/16"	1.25D + 1.5L	1.00	1080 lb	2240 lb	Passed - 48%
Live Load (LL) Pos. Defl.:	4'- 11 13/16"	L		0.057"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 11 3/4"	D + L		0.080"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5'-08"	1.25D + 1.5L	1.00	475 lb		2240 lb	8458 lb	Passed - 21%
2	5'-08"	1.25D + 1.5L	1.00	1108 lb		2240 lb	8459 lb	Passed - 49%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	9'- 4 1/2"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	0'- 5 1/2"	8'- 11"	FC2 Floor Decking (Plan View Fill)	Top	9 lb/ft	23 lb/ft	-	-
Uniform	5'- 3/4"	8'- 11"	User Load	Top	57 lb/ft	150 lb/ft	-	-
Uniform	8'- 11"	9'- 4 1/2"	FC2 Floor Decking (Plan View Fill)	Top	10 lb/ft	28 lb/ft	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	12(i41714)	100 lb	230 lb	-	-
2	8'- 11"	9'- 4 1/2"	11(i41713)	224 lb	556 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.



SE047013



Customer: **Gold Park Homes**
Job Address: **Pine Valley Ph2**
City: **Vaughan**
Job Track: **45147**

Job Name: **343075 Ground A + Second A (1**
Level: **Second Floor**
Label: **B8 - I51516**
Type: **Beam**

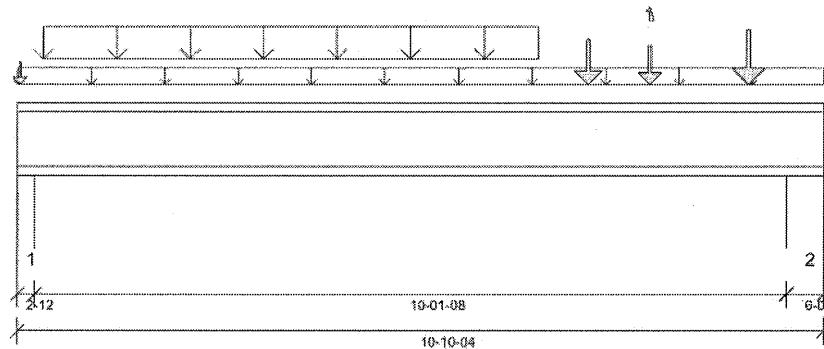
2 Ply Member
11 7/8" NI-20

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.5.3.233.Update5.15

Report Version: 2021.03.26 04/09/2022 14:07



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, CBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

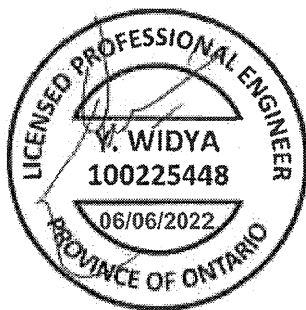
Lateral Restraint Requirements:

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'- 1 1/2"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 1 3/4"
- 615 psi Wall @ 10'- 5 1/4"



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 1/8"	1.25D + 1.5L	1.00	8886 lb ft	11160 lb ft	Passed - 80%
Factored Shear:	10'- 4 3/16"	1.25D + 1.5L	1.00	3434 lb	4480 lb	Passed - 77%
Live Load (LL) Pos. Defl.:	5'- 3 3/8"	L		0.179"	L/360	Passed - L/679
Total Load (TL) Pos. Defl.:	5'- 3 3/8"	D + L		0.285"	L/240	Passed - L/426

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	2-12	1.25D + 1.5L	1.00	3530 lb		4180 lb	8459 lb	Passed - 84%
2	6-00	1.25D + 1.5L	1.00	3476 lb		4480 lb	18457 lb	Passed - 78%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	10'- 10 1/4"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	10'- 10 1/4"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'- 4 1/8"	7'- 1/8"	Smoothed Load	Front	112 lb/ft	299 lb/ft	-	-
Point	7'- 8 1/8"	7'- 8 1/8"	J2(I51332)	Front	122 lb	325 lb	-	-
Point	8'- 6 1/8"	8'- 6 1/8"	J13(I51327)	Front	97 lb	259/0 lb	-	-
Point	9'- 10 1/8"	9'- 10 1/8"	J13(I51364)	Front	159 lb	424 lb	-	-
Point	0'- 3/8"	0'- 3/8"	J5(I42416)	Back	37 lb	86 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 2 3/4"	10(I41712)	941 lb	1570 lb	-	-
2	10'- 4 1/4"	10'- 10 1/4"	11(I41713)	941 lb	1533 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

SE047014



Customer: **Gold Park Homes**
Job Address: **Pine Valley Ph2**
City: **Vaughan**
Job Track: **45147**

Job Name: **343075 Ground A + Second A (1**
Level: **Second Floor**
Label: **B9 - i51829**
Type: **Beam**

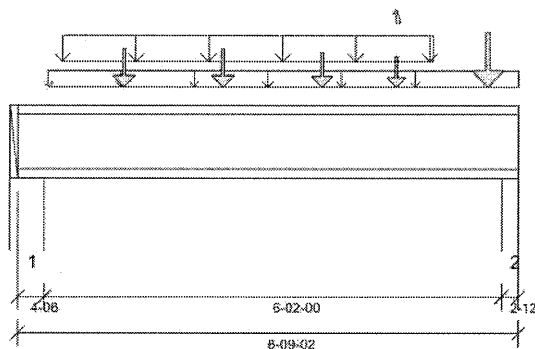
2 Ply Member
11 7/8" NI-20

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15

Report Version: 2021.03.26 04/09/2022 14:07



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

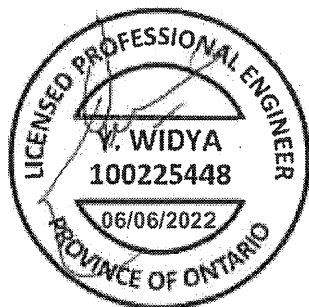
Lateral Restraint Requirements:

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'-9 1/2"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'-3 3/8"
- 615 psi Wall @ 6'-7 3/8"



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'-1 1/4"	1.25D + 1.5L	1.00	4555 lb ft	11160 lb ft	Passed - 41%
Factored Shear:	6'-6 5/16"	1.25D + 1.5L	1.00	3162 lb	4480 lb	Passed - 71%
Live Load (LL) Pos. Defl.:	3'-5 5/16"	L		0.045"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'-5 5/16"	D + L		0.071"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-06	1.25D + 1.5L	1.00	2571 lb		4480 lb	13458 lb	Passed - 57%
2	2-12	1.25D + 1.5L	1.00	3181 lb		4180 lb	8459 lb	Passed - 76%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	6'-9 1/8"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'-4 7/8"	6'-9 1/8"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'-7 1/4"	5'-7 1/4"	Smoothed Load	Back	88 lb/ft	177 lb/ft	-	-
Point	1'-5 1/4"	1'-5 1/4"	J4(i51452)	Front	121 lb	323 lb	-	-
Point	2'-9 1/4"	2'-9 1/4"	J4(i51452)	Front	121 lb	323 lb	-	-
Point	4'-1 1/4"	4'-1 1/4"	J4(i51351)	Front	106 lb	282 lb	-	-
Point	5'-1 1/4"	5'-1 1/4"	J2(i51432)	Front	85 lb	2270 lb	-	-
Point	6'-4 1/16"	6'-4 1/16"	-	Front	219 lb	536 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'-4 3/8"	E18(i41621)	686 lb	1128 lb	-	-
2	6'-6 3/8"	6'-9 1/8"	10(i41712)	825 lb	1448 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

SE047015



Customer: **Gold Park Homes**
Job Address: **Pine Valley Ph2**
City: **Vaughan**
Job Track: **45147**

Job Name: **343075 Ground A + Second A (1**
Level: **Second Floor**
Label: **B11 - i51448**
Type: **Beam**

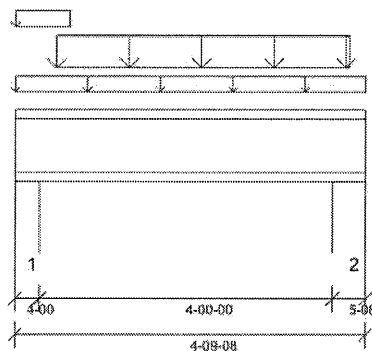
1 Ply Member
11 7/8" NI-20

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15

Report Version: 2021.03.26 04/09/2022 14:08



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

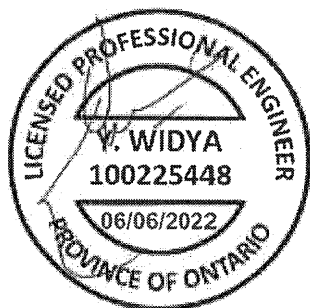
Lateral Restraint Requirements:

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'- 1 1/2"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 3"
- 615 psi Wall @ 4'- 5"



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 6 3/4"	1.25D + 1.5L	1.00	1486 lb ft	5580 lb ft	Passed - 27%
Factored Shear:	4'- 3 15/16"	1.25D + 1.5L	1.00	1411 lb	2240 lb	Passed - 63%
Live Load (LL) Pos. Defl.:	2'- 4 1/8"	L		0.020"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 4 1/8"	D + L		0.028"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4'-00	1.25D + 1.5L	1.00	1230 lb		2240 lb	6151 lb	Passed - 55%
2	5'-08	1.25D + 1.5L	1.00	1437 lb		2240 lb	8459 lb	Passed - 64%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 9 1/2"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	0'	4'- 9 1/2"	FC2 Floor Decking (Plan View Fill)	Top	10 lb/ft	26 lb/ft	-	-
Uniform	0'	0'- 9"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'- 6 3/4"	4'- 6 3/4"	Smoothed Load	Front	112 lb/ft	297 lb/ft	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4"	12(i41714)	273 lb	593 lb	-	-
2	4'- 4"	4'- 9 1/2"	13(i41715)	281 lb	724 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

SE047017



Customer: **Gold Park Homes**
Job Address: **Pine Valley Ph2**
City: **Vaughan**
Job Track: **45147**

Job Name: **343075 Ground A W Sunken M...**
Level: **Ground Floor**
Label: **B17 - i60744**
Type: **Beam**

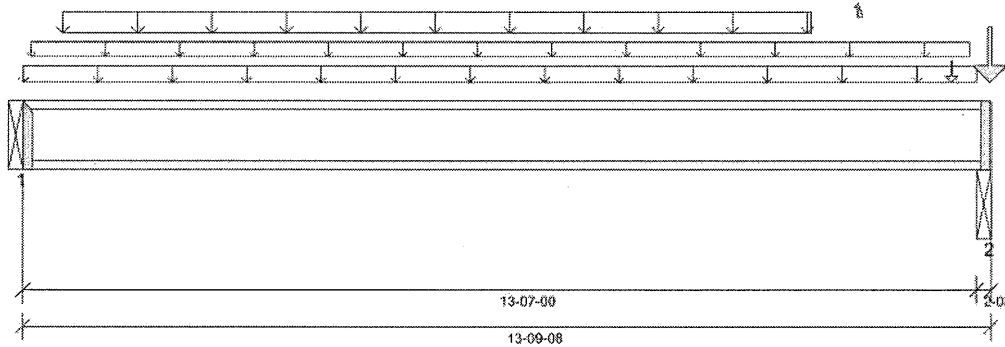
2 Ply Member
11 7/8" NI-20

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.5.3.233.Update5.15

Report Version: 2021.03.26 04/11/2022 14:45



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

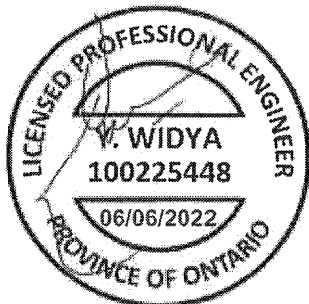
Lateral Restraint Requirements:

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'- 1 1/2"

Factored Resistance of Support Material:

- 769 psi Beam @ 0'
- 769 psi Beam @ 13'- 8"



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 6 3/4"	1.25D + 1.5L	1.00	7099 lb ft	11160 lb ft	Passed - 64%
Factored Neg. Moment:	13'- 8"	1.25D + 1.5L	1.00	116 lb ft	11160 lb ft	Passed - 1%
Factored Shear:	0'- 1/16"	1.25D + 1.5L	1.00	1996 lb	4480 lb	Passed - 45%
Live Load (LL) Pos. Defl.:	6'- 9 1/4"	L		0.193"	L/360	Passed - L/842
Total Load (TL) Pos. Defl.:	6'- 9 7/16"	D + L		0.378"	L/240	Passed - L/431
Permanent Deflection:	6'- 9 5/8"			-	L/360	Passed - L/988

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-12	1.25D + 1.5L	1.00	1997 lb		3940 lb	-	Passed - 51%
2	2-08	1.25D + 1.5L	1.00	2997 lb		4120 lb	9613 lb	Passed - 73%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	MIT311.88-2		-	-	-	Connector manually specified by the user.

* 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.

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	13'- 9 1/2"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	13'- 7"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'- 1 1/4"	13'- 5 3/4"	FC1 Floor Decking (Plan View Fill)	Top	2 lb/ft	6 lb/ft	-	-
Uniform	0'- 6 3/4"	11'- 2 3/4"	Smoothed Load	Front	42 lb/ft	113 lb/ft	-	-
Point	11'- 10 3/4"	11'- 10 3/4"	J8(i60486)	Front	-10 lb	-	-	-
Point	13'- 2 3/4"	13'- 2 3/4"	J6(i60418)	Front	38 lb	101 lb	-	-
Point	13'- 9 1/4"	13'- 9 1/4"	13(i41715)	Top	238 lb	544 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B18(i60749)	720 lb	734 lb	-	-
2	13'- 7"	13'- 9 1/2"	ST. BEAM (DR.)(i41695)	923 lb	1226 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

SE047023



Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

PASSED

Second Floor\Flush Beams\B36(i637) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

July 20, 2022 10:02:33

Build 8183

Job name: 6001 A - Lot 104

File name: 346383.mmdl

Address: Pine Valley Ph2

Description: Second Floor\Flush Beams\B36(i637)

City, Province, Postal Code: Vaughan, ON

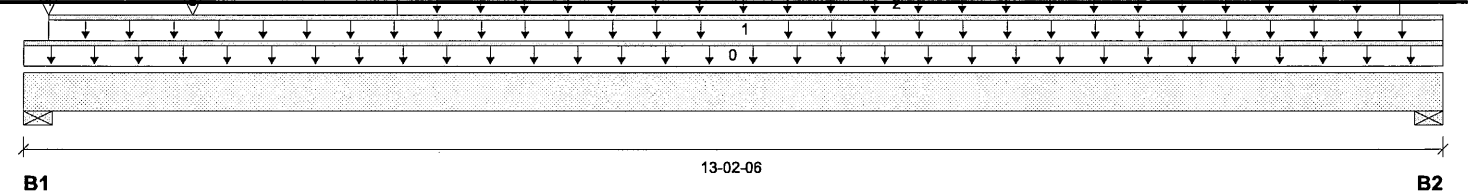
Specifier:

Customer: Gold Park Homes

Designer: TL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses Inc.



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	2366 / 2	1018 / 0	0 / 7	
B2, 4-3/8"	2012 / 10	964 / 0	0 / 32	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	13-02-06	Top		6			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-02-12	13-02-06	Top	21	8			n/a
2	TILE	Unf. Lin. (lb/ft)	L	03-05-08	12-09-08	Top		3			n/a
3	Smoothed Load	Trapezoidal (lb/ft)	L	02-00-10	07-01-06	Front	314	120			n/a
							314	140			
4	J1(i630)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Front	421	158			n/a
5	J1(i656)	Conc. Pt. (lbs)	L	01-06-12	01-06-12	Front	368	138			n/a
6	J1(i686)	Conc. Pt. (lbs)	L	07-07-04	07-07-04	Front	315	154			n/a
7	J1(i720)	Conc. Pt. (lbs)	L	08-07-04	08-07-04	Front	315	156			n/a
8	J1(i755)	Conc. Pt. (lbs)	L	09-07-04	09-07-04	Front	299	148			n/a
9	B2 (CANT.)(i699)	Conc. Pt. (lbs)	L	10-06-00	10-06-00	Front	237	87			n/a
10	B2 (CANT.)(i699)	Conc. Pt. (lbs)	L	10-06-00	10-06-00	Front	-12		-39		n/a
11	J1(i642)	Conc. Pt. (lbs)	L	11-01-02	11-01-02	Front	251	125			n/a
12	J1(i644)	Conc. Pt. (lbs)	L	12-01-02	12-01-02	Front	315	155			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	13701 ft-lbs	17696 ft-lbs	77.4%	21	06-07-04
End Shear	3989 lbs	7232 lbs	55.2%	21	11-10-02
Total Load Deflection	L/271 (0.553")	n/a	88.5%	56	06-07-04
Live Load Deflection	L/397 (0.378")	n/a	90.7%	83	06-07-04
Max Defl.	0.553"	n/a	n/a	56	06-07-04
Span / Depth	12.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	4821 lbs	81.4%	41.1%	Spruce-Pine-Fir
B2	Wall/Plate 4-3/8" x 1-3/4"	4223 lbs	89.7%	45.2%	Spruce-Pine-Fir





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

PASSED

Second Floor\Flush Beams\B37(i882) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

July 20, 2022 10:05:58

Build 8183

Job name: 6001 A - Lot 104

File name: 346383.mmdl

Address: Pine Valley Ph2

Description: Second Floor\Flush Beams\B37(i882)

City, Province, Postal Code: Vaughan, ON

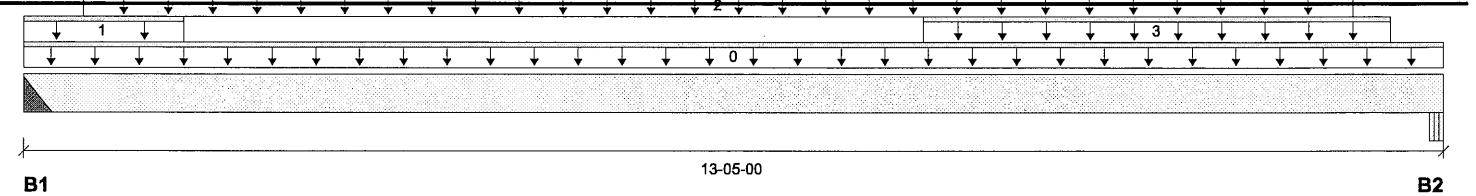
Specifier:

Customer: Gold Park Homes

Designer: TL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses Inc.



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	1830 / 0	913 / 0	21 / 0	
B2, 5-1/2"	1845 / 0	1772 / 0	1052 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	13-05-00	Top		12			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	01-06-00	Top		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-06-12	12-06-12	Back	306	115			n/a
3	WALL	Unf. Lin. (lb/ft)	L	08-06-00	12-11-00	Top		60			n/a
4	E28(i41651)	Unf. Lin. (lb/ft)	L	12-04-08	13-05-00	Top		101			n/a
5	E28(i41651)	Unf. Lin. (lb/ft)	L	12-04-08	13-02-04	Top		842	1321		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	13636 ft-lbs	35392 ft-lbs	38.5%	1	06-06-12
End Shear	5410 lbs	14464 lbs	37.4%	1	11-11-10
Total Load Deflection	L/521 (0.297")	n/a	46.1%	35	06-06-12
Live Load Deflection	L/771 (0.201")	n/a	46.7%	51	06-06-12
Max Defl.	0.297"	n/a	n/a	35	06-06-12
Span / Depth	13.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 3-1/2"	3907 lbs	n/a	45.8%	HGUS410
B2	Beam 5-1/2" x 3-1/2"	6034 lbs	51.0%	25.7%	Unspecified

 NAIL ONE PLY TO ANOTHER WITH
 3-1/2" SPIRAL NAILS @ 10" O/C
 STAGGERED IN 2 ROWS

Cautions

Hanger model HGUS410 and seat length were input by the user.

Header for the hanger HGUS410 is a Double 1-3/4" x 11-7/8" LVL beam.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

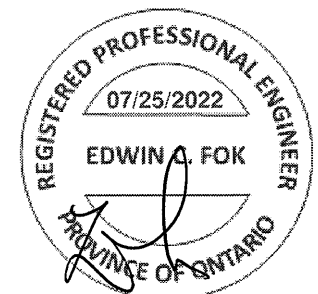
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-01-08.



85049444



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

PASSED

Second Floor\Flush Beams\B38(i877) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

July 20, 2022 10:07:18

Build 8183

Job name: 6001 A - Lot 104

File name: 346383.mmdl

Address: Pine Valley Ph2

Description: Second Floor\Flush Beams\B38(i877)

City, Province, Postal Code: Vaughan, ON

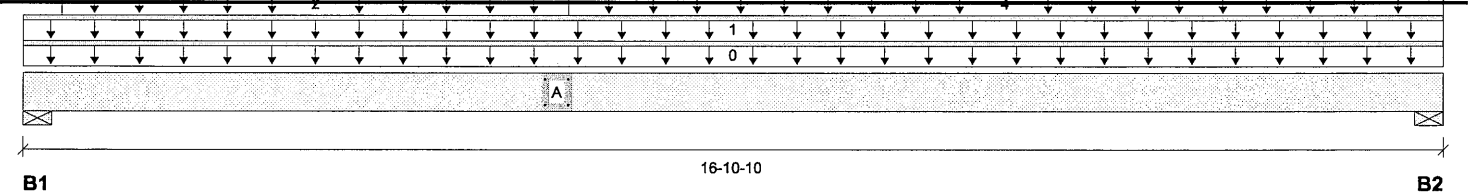
Specifier:

Customer: Gold Park Homes

Designer: TL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses Inc.



Total Horizontal Product Length = 16'-10"

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5'-1/2"	1504 / 0	1004 / 0	17 / 0	
B2, 4'-3/8"	935 / 0	949 / 0	10 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	16-10-10	Top		12			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	16-10-10	Top	23	9			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-05-08	06-05-12	Top	28	10			n/a
3	WALL	Unf. Lin. (lb/ft)	L	06-04-08	16-05-12	Top		60			n/a
4	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	06-05-12	16-10-10	Top	6	2			n/a
5	B37(i882)	Conc. Pt. (lbs)	L	06-04-00	06-04-00	Back	1819	911	27		n/a

Controls Summary

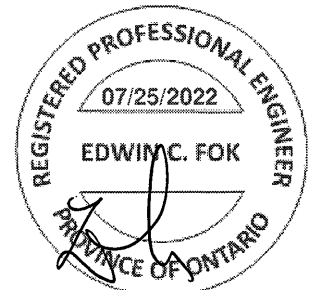
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	18767 ft-lbs	35392 ft-lbs	53.0%	1	06-04-00
End Shear	3380 lbs	14464 lbs	23.4%	1	01-05-06
Total Load Deflection	L/351 (0.554")	n/a	68.4%	35	08-02-02
Live Load Deflection	L/610 (0.319")	n/a	59.0%	51	07-10-12
Max Defl.	0.554"	n/a	n/a	35	08-02-02
Span / Depth	16.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5'-1/2" x 3'-1/2"	3528 lbs	29.8%	15.0%	Spruce-Pine-Fir
B2	Wall/Plate 4'-3/8" x 3'-1/2"	2599 lbs	27.6%	13.9%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Unbalanced snow loads determined from building geometry were used in selected product's verification.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 10-00-08.



NAIL ONE PLY TO ANOTHER WITH
 3-1/2" SPIRAL NAILS @ 12" O/C
 STAGGERED IN 2 ROWS

SE049445



Customer: **Gold Park Homes**
Job Address: **Pine Valley Ph2**
City: **Vaughan**
Job Track: **45147**

Job Name: **346383**
Level: **Second Floor**
Label: **B39 - i240**
Type: **Beam**

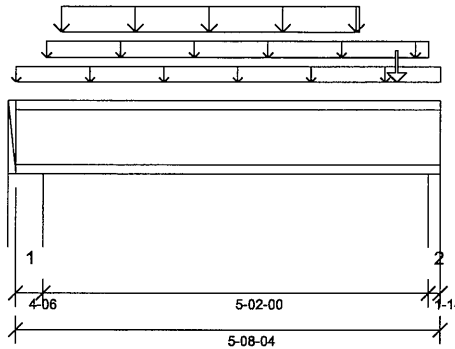
1 Ply Member
11 7/8" NI-20

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15

Report Version: 2021.03.26 07/20/2022 10:07



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

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'- 9 1/2"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 3 3/8"
- 615 psi Wall @ 5'- 7 3/8"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 1 1/4"	1.25D + 1.5L	1.00	1784 lb ft	5580 lb ft	Passed - 32%
Factored Shear:	5'- 6 5/16"	1.25D + 1.5L	1.00	1256 lb	2240 lb	Passed - 56%
Live Load (LL) Pos. Defl.:	2'- 11 3/8"	L		0.025"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 11 3/8"	D + L		0.046"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-06	1.25D + 1.5L	1.00	1220 lb		2240 lb	6729 lb	Passed - 54%
2	1-14	1.25D + 1.5L	1.00	1271 lb		1985 lb	2884 lb	Passed - 64%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	5'- 8 1/4"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	0'	5'- 8 1/4"	FC2 Floor Decking (Plan View Fill)	Top	10 lb/ft	27 lb/ft	-	-
Uniform	0'- 4 7/8"	5'- 6 3/8"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'- 7 1/4"	4'- 7 1/4"	Smoothed Load	Front	86 lb/ft	173 lb/ft	-	-
Point	5'- 1 1/4"	5'- 1 1/4"	J5(i65122)	Front	72 lb	146 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4 3/8"	E47(i62144)	390 lb	482 lb	-	-
2	5'- 6 3/8"	5'- 8 1/4"	9(i41711)	409 lb	513 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.



SE049446

BC Design Engine Member Report

Dry | 1 span | No cant.

July 20, 2022 10:16:11

Build 8183

Job name: 6001 A - Lot 104

File name: 346383.mmdl

Address: Pine Valley Ph2

Description: Second Floor\Flush Beams\B40(i1345)

City, Province, Postal Code: Vaughan, ON

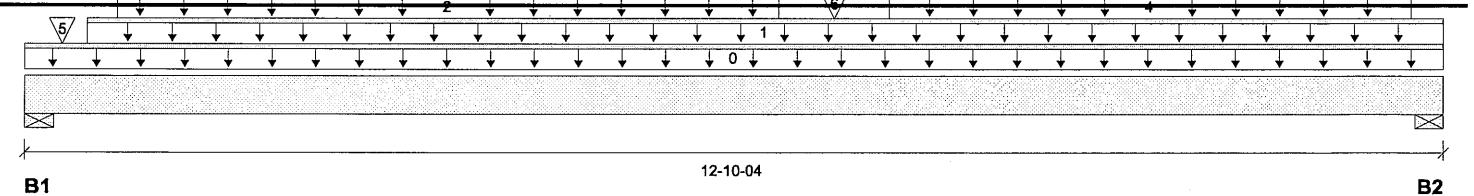
Specifier:

Customer: Gold Park Homes

Designer: TL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses Inc.


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6-3/4"	4643 / 0	2255 / 0		
B2, 5-1/2"	4543 / 0	2198 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-10-04	Top		12			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-06-12	12-10-04	Top		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-00	06-10-00	Front	423	158			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-00	06-10-00	Back	352	150			n/a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	07-10-00	12-06-12	Front	429	161			n/a
5	J11(i635)	Conc. Pt. (lbs)	L	00-04-00	00-04-00	Back	411	156			n/a
6	J11(i746)	Conc. Pt. (lbs)	L	07-04-00	07-04-00	Back	352	142			n/a
7	J11(i710)	Conc. Pt. (lbs)	L	08-04-00	08-04-00	Back	411	154			n/a
8	J11(i763)	Conc. Pt. (lbs)	L	09-08-00	09-08-00	Back	469	176			n/a
9	J11(i763)	Conc. Pt. (lbs)	L	11-00-00	11-00-00	Back	469	176			n/a
10	J11(i674)	Conc. Pt. (lbs)	L	12-04-00	12-04-00	Back	399	150			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	27718 ft-lbs	35392 ft-lbs	78.3%	1	06-06-12
End Shear	8392 lbs	14464 lbs	58.0%	1	01-06-10
Total Load Deflection	L/280 (0.513")	n/a	85.8%	4	06-06-12
Live Load Deflection	L/417 (0.344")	n/a	86.4%	5	06-06-12
Max Defl.	0.513"	n/a	n/a	4	06-06-12
Span / Depth	12.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 6-3/4" x 3-1/2"	9784 lbs	67.3%	33.9%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	9562 lbs	80.7%	40.7%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

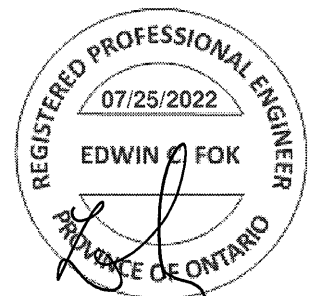
Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-09-08.


 NAIL ONE PLY TO ANOTHER WITH
 3-1/2" SPIRAL NAILS @ 8" O/C
 STAGGERED IN 2 ROWS



Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

PASSED

Second Floor\Flush Beams\B41(i669) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

July 20, 2022 10:16:33

Build 8183

Job name: 6001 A - Lot 104

File name: 346383.mmdl

Address: Pine Valley Ph2

Description: Second Floor\Flush Beams\B41(i669)

City, Province, Postal Code: Vaughan, ON

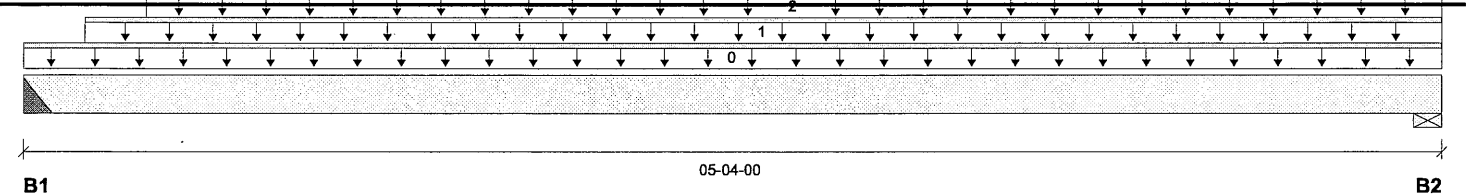
Specifier:

Customer: Gold Park Homes

Designer: TL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses Inc.



Total Horizontal Product Length = 05-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	1467 / 0	735 / 0		
B2, 5-1/2"	1816 / 0	906 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	05-04-00	Top		6			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-02-12	05-04-00	Top		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-05-08	05-04-00	Front	392	162			n/a
3	J11(i717)	Conc. Pt. (lbs)	L	01-01-12	01-01-12	Back	437	164			n/a
4	J11(i624)	Conc. Pt. (lbs)	L	02-05-12	02-05-12	Back	467	175			n/a
5	J11(i727)	Conc. Pt. (lbs)	L	03-09-12	03-09-12	Back	467	175			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4484 ft-lbs	17696 ft-lbs	25.3%	1	02-05-12
End Shear	2948 lbs	7232 lbs	40.8%	1	01-01-14
Total Load Deflection	L/999 (0.027")	n/a	n/a	4	02-06-08
Live Load Deflection	L/999 (0.018")	n/a	n/a	5	02-06-08
Max Defl.	0.027"	n/a	n/a	4	02-06-08
Span / Depth	4.9				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	3119 lbs	n/a	73.1%	HUS1.81/10
B2	Wall/Plate 5-1/2" x 1-3/4"	3856 lbs	65.1%	32.8%	Spruce-Pine-Fir

Cautions

Hanger model HUS1.81/10 and seat length were input by the user.

Header for the hanger HUS1.81/10 is a Single 1-3/4" x 11-7/8" LVL beam.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-10-04.

Disclosure

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BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

S3049448

Second Floor\Flush Beams\B42(i733) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

July 20, 2022 10:16:52

Build 8183

Job name: 6001 A - Lot 104

File name: 346383.mmdl

Address: Pine Valley Ph2

Description: Second Floor\Flush Beams\B42(i733)

City, Province, Postal Code: Vaughan, ON

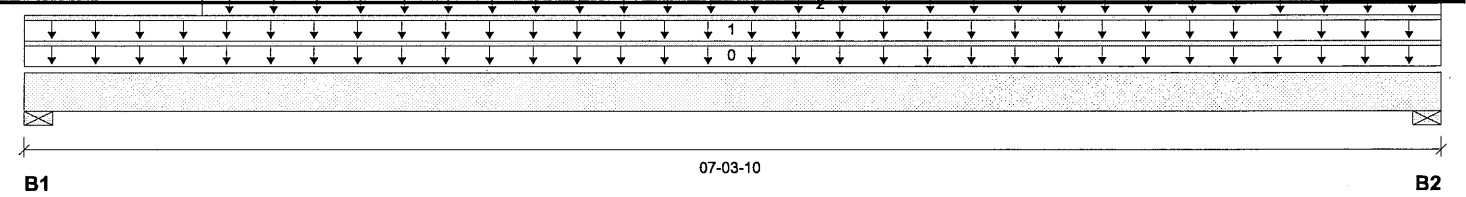
Specifier:

Customer: Gold Park Homes

Designer: TL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses Inc.



B1

Total Horizontal Product Length = 07-03-10

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6"	2881 / 0	1270 / 0		
B2, 5-5/8"	1616 / 0	641 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-03-10	Top		6			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	07-03-10	Back	401	150			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-11-00	07-03-10	Top	24	9			n/a
3	B41(i669)	Conc. Pt. (lbs)	L	00-11-00	00-11-00	Front	1414	711			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4746 ft-lbs	17696 ft-lbs	26.8%	1	02-10-06
End Shear	3195 lbs	7232 lbs	44.2%	1	01-05-14
Total Load Deflection	L/999 (0.052")	n/a	n/a	4	03-07-06
Live Load Deflection	L/999 (0.037")	n/a	n/a	5	03-07-06
Max Defl.	0.052"	n/a	n/a	4	03-07-06
Span / Depth	6.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 6" x 1-3/4"	5910 lbs	91.5%	46.1%	Spruce-Pine-Fir
B2	Wall/Plate 5-5/8" x 1-3/4"	3226 lbs	53.3%	26.9%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-01-08.

Disclosure

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 Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods.
 Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

BC CALC®, BC FRAMER®, AJST™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

Second Floor\Flush Beams\B43(i196) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

July 20, 2022 10:17:11

Build 8183

Job name: 6001 A - Lot 104

File name: 346383.mmdl

Address: Pine Valley Ph2

Description: Second Floor\Flush Beams\B43(i196)

City, Province, Postal Code: Vaughan, ON

Specifier:

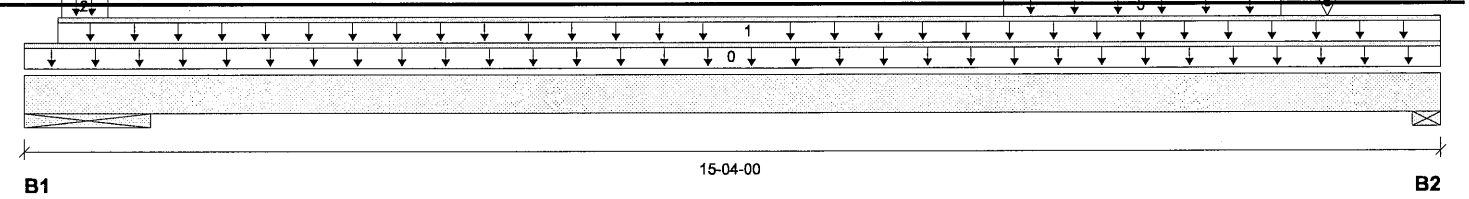
Customer: Gold Park Homes

Designer:

Code reports: CCMC 12472-R

Company:

Alpha Roof Trusses Inc.


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 16-3/8"	2943 / 0	2075 / 0		
B2, 4-1/8"	2567 / 0	1674 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	15-04-00	Top		12			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-04-06	15-04-00	Top		60			n/a
2	E52(i62150)	Unf. Lin. (lb/ft)	L	00-04-14	00-10-14	Top		101			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	00-07-04	10-07-04	Back	369	183			n/a
4	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-10-14	15-04-00	Top	19	7			n/a
5	Smoothed Load	Trapezoidal (lb/ft)	L	10-07-04	13-07-04	Back	369	178			n/a
6	J10(i65475)	Conc. Pt. (lbs)	L	14-01-04	14-01-04	Back	430	161			n/a

Controls Summary

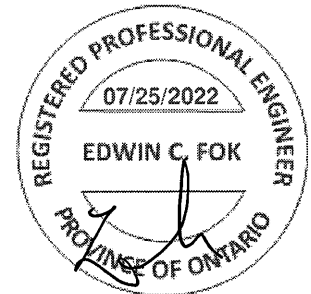
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	21494 ft-lbs	35392 ft-lbs	60.7%	1	08-01-04
End Shear	5682 lbs	14464 lbs	39.3%	1	02-04-04
Total Load Deflection	L/310 (0.533")	n/a	77.5%	4	08-01-04
Live Load Deflection	L/515 (0.32")	n/a	69.9%	5	08-01-04
Max Defl.	0.533"	n/a	n/a	4	08-01-04
Span / Depth	13.9				
Dist. Load (B1)	229.18 lb/ft	37469.32 lb/ft	0.6%		
Conc. Load (B1)	814 lbs	16813 lbs	4.8%		

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 16-3/8" x 3-1/2"	7008 lbs	19.9%	10.0%	Spruce-Pine-Fir
B2	Wall/Plate 4-1/8" x 3-1/2"	5942 lbs	66.9%	33.7%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 4
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-01-08.



NAIL ONE PLY TO ANOTHER WITH
 3-1/2" SPIRAL NAILS @ 4" O/C
 STAGGERED IN 2 ROWS

Ground Floor\Flush Beams\B44(i907) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

July 20, 2022 10:31:37

Build 8183

Job name: 6001 A - Lot 104

File name: 346383.mmdl

Address: Pine Valley Ph2

Description: Ground Floor\Flush Beams\B44(i907)

City, Province, Postal Code: Vaughan, ON

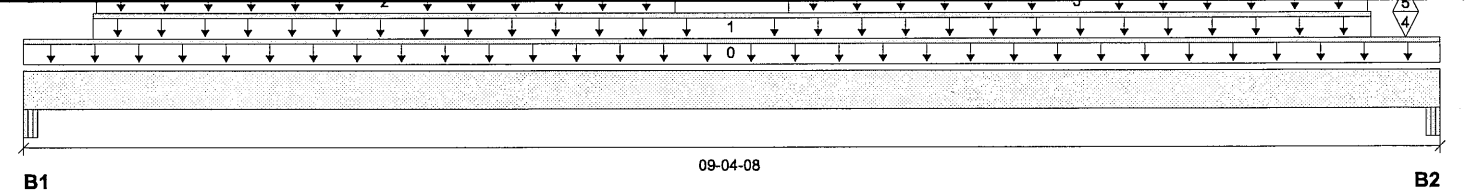
Specifier:

Customer: Gold Park Homes

Designer: TL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses Inc.



Total Horizontal Product Length = 09-04-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	568 / 0	240 / 0		
B2, 5-1/2"	2100 / 0	1190 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-04-08	Top		6			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-05-08	08-11-00	Top	13	5			n/a
2	STAIR	Unf. Lin. (lb/ft)	L	00-05-12	04-03-12	Top	134	50			n/a
3	STAIR	Unf. Lin. (lb/ft)	L	05-00-12	08-10-12	Top	134	50			n/a
4	11(i41713)	Conc. Pt. (lbs)	L	09-01-12	09-01-12	Top	1532	950			n/a
5	11(i41713)	Conc. Pt. (lbs)	L	09-01-12	09-01-12	Top	0				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2321 ft-lbs	17696 ft-lbs	13.1%	1	04-08-04
End Shear	1116 lbs	7232 lbs	15.4%	1	01-05-06
Total Load Deflection	L/999 (0.045")	n/a	n/a	4	04-08-04
Live Load Deflection	L/999 (0.032")	n/a	n/a	5	04-08-04
Max Defl.	0.045"	n/a	n/a	4	04-08-04
Span / Depth	8.7				


Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 5-1/2" x 1-3/4"	1152 lbs	19.5%	9.8%	Unspecified
B2	Beam 5-1/2" x 1-3/4"	4637 lbs	78.3%	39.5%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 08-05-08.

Disclosure

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Ground Floor\Flush Beams\B45(i1362) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

July 20, 2022 10:33:13

Build 8183

Job name: 6001 A - Lot 104

File name: 346383.mmdl

Address: Pine Valley Ph2

Description: Ground Floor\Flush Beams\B45(i1362)

City, Province, Postal Code: Vaughan, ON

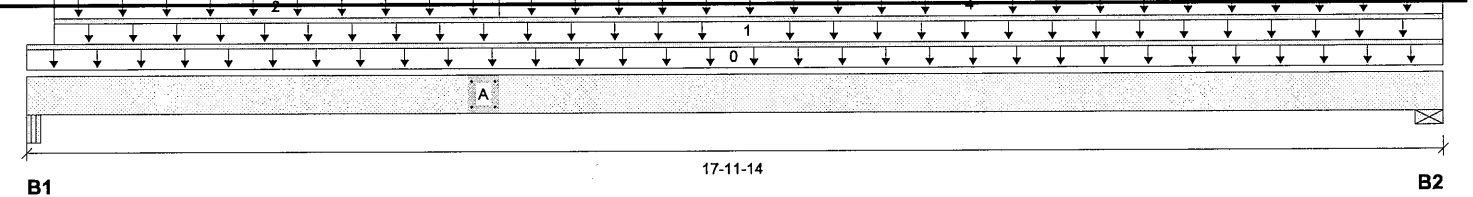
Specifier:

Customer: Gold Park Homes

Designer: TL

Code reports: CCMC 12472-R

Company: Alpha Roof Trusses Inc.



Total Horizontal Product Length = 17-11-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6"	5538 / 0	3548 / 0		
B2, 2-3/8"	469 / 0	933 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	17-11-14	Top		12			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-04-04	17-11-14	Top	19	7			n/a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-04-04	06-00-00	Top	28	10			n/a
3	WALL	Unf. Lin. (lb/ft)	L	00-05-12	17-07-00	Top		60			n/a
4	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	06-00-00	17-11-14	Top	6				n/a
5	B17(i1321)	Conc. Pt. (lbs)	L	05-09-08	05-09-08	Front	744	727			n/a
6	7(i41707)	Conc. Pt. (lbs)	L	00-03-00	00-03-00	Top	4700	2291			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	12478 ft-lbs	35392 ft-lbs	35.3%	1	05-09-08
End Shear	2626 lbs	14464 lbs	18.2%	1	01-05-14
Total Load Deflection	L/441 (0.473")	n/a	54.4%	4	08-08-04
Live Load Deflection	L/1153 (0.181")	n/a	31.2%	5	08-06-10
Max Defl.	0.473"	n/a	n/a	4	08-08-04
Span / Depth	17.6				

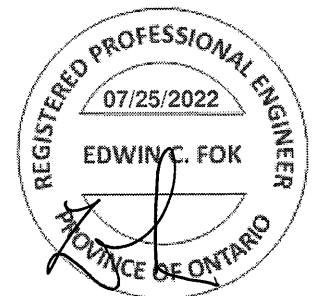
Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 6" x 3-1/2"	12742 lbs	98.6%	49.7%	Unspecified
B2	Wall/Plate 2-3/8" x 3-1/2"	1306 lbs	39.3%	19.8%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 4
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 11-09-08.

NAIL ONE PLY TO ANOTHER WITH
 3-1/2" SPIRAL NAILS @ 12" O/C
 STAGGERED IN 2 ROWS





Customer: **Gold Park Homes**
Job Address: **Pine Valley Ph2**
City: **Vaughan**
Job Track: **45147**

Job Name: **346383**
Level: **Ground Floor**
Label: **B46 (LOW) - i1272**
Type: **Beam**

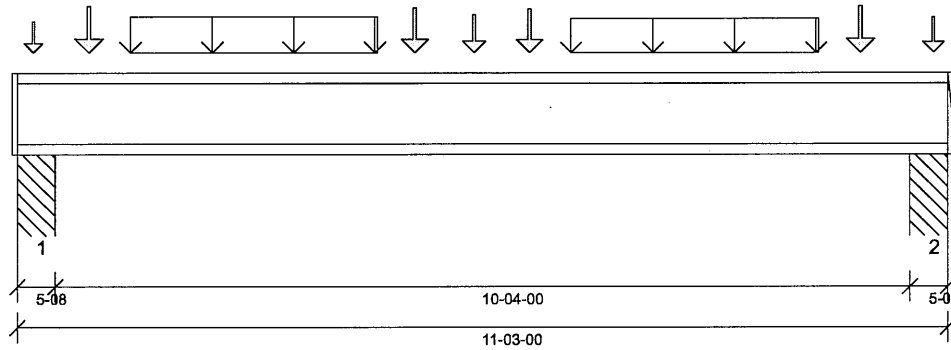
2 Ply Member
11 7/8" NI-20

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15

Report Version: 2021.03.26 07/20/2022 10:33



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

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'- 9 1/2"

Factored Resistance of Support Material:

- 1334 psi Column @ 0'- 4 1/2"
- 1334 psi Column @ 10'- 10 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 6 3/8"	1.25D + 1.5L	1.00	7549 lb ft	11160 lb ft	Passed - 68%
Factored Neg. Moment:	10'- 10 1/2"	1.25D + 1.5L	1.00	75 lb ft	11160 lb ft	Passed - 1%
Factored Shear:	0'- 5 9/16"	1.25D + 1.5L	1.00	2898 lb	4480 lb	Passed - 65%
Live Load (LL) Pos. Defl.:	5'- 7 3/16"	L		0.166"	L/360	Passed - L/747
Total Load (TL) Pos. Defl.:	5'- 7 1/4"	D + L		0.249"	L/240	Passed - L/497

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5L	1.00	3207 lb		4480 lb	36696 lb	Passed - 72%
2	5-08	1.25D + 1.5L	1.00	3062 lb		4480 lb	36696 lb	Passed - 68%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	11'- 3"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	1'- 4 3/8"	4'- 4 3/8"	Smoothed Load	Front	133 lb/ft	274 lb/ft	-	-
Uniform	6'- 8 3/8"	9'- 8 3/8"	Smoothed Load	Front	124 lb/ft	247 lb/ft	-	-
Point	0'- 2 3/8"	0'- 2 3/8"	J2(i1257)	Front	58 lb	118 lb	-	-
Point	0'- 10 3/8"	0'- 10 3/8"	J2(i1267)	Front	113 lb	230 lb	-	-
Point	4'- 9 3/4"	4'- 9 3/4"	J2(i1273)	Front	98 lb	227 lb	-	-
Point	5'- 6 3/8"	5'- 6 3/8"	J3(i1269)	Front	78 lb	171 lb	-	-
Point	6'- 2 3/8"	6'- 2 3/8"	J3(i1268)	Front	103 lb	206 lb	-	-
Point	10'- 2 3/8"	10'- 2 3/8"	J3(i1255)	Front	115 lb	229 lb	-	-
Point	11'- 15/16"	11'- 15/16"	-	Front	95 lb	128 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	Pt1(i1262)	762 lb	1509 lb	-	-
2	10'- 9 1/2"	11'- 3"	Pt1(i1259)	747 lb	1413 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



SG0A9453



Customer: **Gold Park Homes**
Job Address: **Pine Valley Ph2**
City: **Vaughan**
Job Track: **45147**

Job Name: **346383**
Level: **Ground Floor**
Label: **B47 (LOW) - i1253**
Type: **Beam**

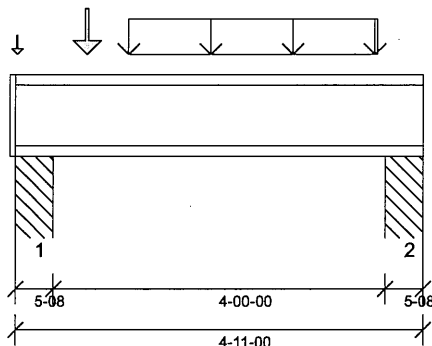
1 Ply Member
11 7/8" NI-20

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15

Report Version: 2021.03.26 07/20/2022 10:34



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

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'- 9 1/2"

Factored Resistance of Support Material:

- 1334 psi Column @ 0'- 4 1/2"
- 1334 psi Column @ 4'- 6 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 10 3/8"	1.25D + 1.5L	1.00	1222 lb ft	5580 lb ft	Passed - 22%
Factored Shear:	0'- 5 9/16"	1.25D + 1.5L	1.00	1110 lb	2240 lb	Passed - 50%
Live Load (LL) Pos. Defl.:	2'- 5 5/8"	L		0.016"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 5 5/8"	D + L		0.024"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5'-08"	1.25D + 1.5L	1.00	1168 lb		2240 lb	18350 lb	Passed - 52%
2	5'-08"	1.25D + 1.5L	1.00	1064 lb		2240 lb	18348 lb	Passed - 47%

SPECIFIED LOADS

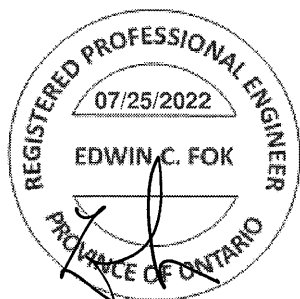
Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 11"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	1'- 4 3/8"	4'- 4 3/8"	Smoothed Load	Back	131 lb/ft	266 lb/ft	-	-
Point	0'- 10 3/8"	0'- 10 3/8"	J2(i1267)	Back	110 lb	223 lb	-	-
Point	0'- 1/4"	0'- 1/4"	FC3 Floor Decking (Plan View Fill)	Top	13 lb	27 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	Pt1(i1265)	277 lb	548 lb	-	-
2	4'- 5 1/2"	4'- 11"	Pt1(i1266)	252 lb	499 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.



SG04945P



Customer: **Gold Park Homes**
Job Address: **Pine Valley Ph2**
City: **Vaughan**
Job Track: **45147**

Job Name: **346383**
Level: **Ground Floor**
Label: **B48 (LOW) - i1263**
Type: **Beam**

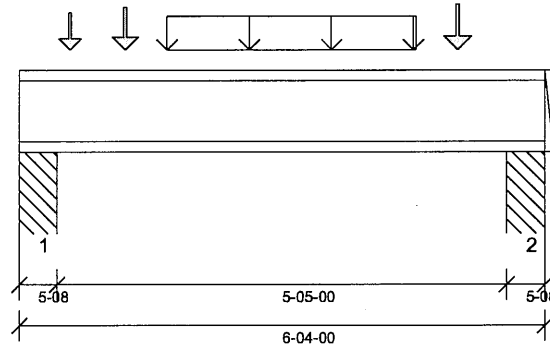
1 Ply Member
11 7/8" NI-20

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15

Report Version: 2021.03.26 07/20/2022 10:34



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

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'- 9 1/2"

Factored Resistance of Support Material:

- 1334 psi Column @ 0'- 4 1/2"
- 1334 psi Column @ 5'- 11 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 3 3/8"	1.25D + 1.5L	1.00	2015 lb ft	5580 lb ft	Passed - 36%
Factored Shear:	0'- 5 9/16"	1.25D + 1.5L	1.00	1477 lb	2240 lb	Passed - 66%
Live Load (LL) Pos. Defl.:	3'- 2"	L		0.035"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 2"	D + L		0.053"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5'-08	1.25D + 1.5L	1.00	1478 lb		2240 lb	18351 lb	Passed - 66%
2	5'-08	1.25D + 1.5L	1.00	1300 lb		2240 lb	18352 lb	Passed - 58%

SPECIFIED LOADS

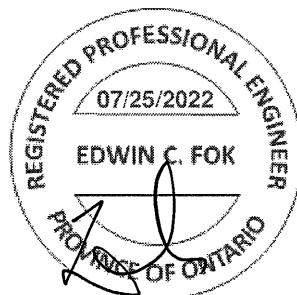
Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	6'- 4"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	1'- 9 3/8"	4'- 9 3/8"	Smoothed Load	Back	119 lb/ft	239 lb/ft	-	-
Point	0'- 7 3/8"	0'- 7 3/8"	J3(1269)	Back	75 lb	165 lb	-	-
Point	1'- 3 3/8"	1'- 3 3/8"	J3(1268)	Back	99 lb	199 lb	-	-
Point	5'- 3 3/8"	5'- 3 3/8"	J3(1255)	Back	111 lb	221 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	Pt1(i1260)	352 lb	702 lb	-	-
2	5'- 10 1/2"	6'- 4"	Pt1(i1256)	308 lb	600 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.



SE049455

Maximum Floor Spans – M4.1, L/360

Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/360 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued oriented strand board (OSB) sheathing



Maximum Floor Spans

Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-11"	15'-0"	14'-6"	13'-5"	16'-6"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-10"	17'-5"	16'-5"	15'-10"	14'-11"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-7"	16'-7"	16'-0"	15'-4"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"
11-7/8"	NI-20	17'-11"	16'-11"	16'-3"	15'-8"	18'-7"	17'-5"	16'-10"	16'-1"
	NI-40x	19'-4"	17'-11"	17'-3"	16'-7"	19'-11"	18'-6"	17'-8"	17'-0"
	NI-60	19'-7"	18'-2"	17'-6"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"
	NI-80	21'-1"	19'-6"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
	NI-90	21'-6"	19'-10"	18'-11"	17'-11"	22'-0"	20'-4"	19'-6"	18'-4"
14"	NI-40x	21'-5"	19'-11"	18'-11"	18'-0"	22'-1"	20'-7"	19'-7"	18'-7"
	NI-60	21'-10"	20'-2"	19'-3"	18'-3"	22'-6"	20'-10"	19'-11"	18'-10"
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"
	NI-90	23'-10"	22'-1"	21'-0"	19'-10"	24'-5"	22'-7"	21'-6"	20'-4"
16"	NI-60	23'-9"	22'-0"	21'-0"	19'-10"	24'-6"	22'-8"	21'-8"	20'-7"
	NI-80	25'-6"	23'-7"	22'-5"	21'-2"	26'-2"	24'-3"	23'-1"	21'-10"
	NI-90	26'-0"	24'-0"	22'-10"	21'-6"	26'-7"	24'-8"	23'-5"	22'-2"

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	17'-1"	15'-5"	14'-6"	13'-5"	17'-1"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-8"	17'-8"	16'-7"	14'-11"	19'-2"	17'-8"	16'-7"	14'-11"
	NI-60	18'-11"	17'-8"	16'-10"	15'-7"	19'-5"	18'-0"	16'-10"	15'-7"
	NI-80	20'-3"	18'-10"	17'-11"	17'-2"	20'-8"	19'-3"	18'-4"	17'-5"
11-7/8"	NI-20	20'-3"	18'-8"	17'-6"	16'-1"	20'-7"	18'-8"	17'-6"	16'-1"
	NI-40x	21'-10"	20'-4"	19'-0"	17'-0"	22'-5"	20'-10"	19'-0"	17'-0"
	NI-60	22'-1"	20'-7"	19'-8"	18'-7"	22'-8"	21'-2"	20'-3"	18'-8"
	NI-80	23'-8"	22'-0"	20'-11"	19'-10"	24'-1"	22'-6"	21'-6"	20'-4"
	NI-90	24'-1"	22'-5"	21'-4"	20'-2"	24'-7"	22'-11"	21'-10"	20'-8"
14"	NI-40x	24'-5"	22'-9"	20'-11"	18'-8"	25'-1"	22'-11"	20'-11"	18'-8"
	NI-60	24'-10"	23'-2"	22'-1"	20'-10"	25'-6"	23'-10"	22'-9"	21'-4"
	NI-80	26'-6"	24'-8"	23'-6"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"
	NI-90	27'-0"	25'-1"	23'-11"	22'-7"	27'-6"	25'-8"	24'-6"	23'-2"
16"	NI-60	27'-3"	25'-5"	24'-3"	22'-11"	28'-0"	26'-2"	25'-0"	23'-1"
	NI-80	29'-1"	27'-1"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
	NI-90	29'-7"	27'-6"	26'-2"	24'-9"	30'-2"	28'-2"	26'-10"	25'-5"

Notes:

- The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
- Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
- Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

The construction details for residential designs are prone to changes.

Details released after April 2014 supersede N-C301

Installation must comply with latest documentation on I-Joist and other Nordic products from the <http://nordic.ca/>

This document does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of its component based on the design criteria and loadings shown on the calculation sheets.

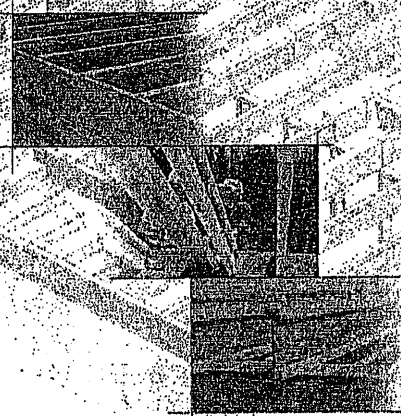
Document prepared for the use of Stephanie Gon from Alpa, Ontario. (Nordic Request 1810-095)



N-C301/April 2014



INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



Distributed by:



SAFETY AND CONSTRUCTION PRECAUTIONS



Do not walk on I-joists until fully fastened and braced, or serious injuries can result.



Never stack building materials over unbraced I-joists. Once installed, do not cross-walk I-joist with concentrated loads from building materials.

WARNING

I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed.

Avoid Accidents by Following these Important Guidelines:

1. Store and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bracing at joist ends. When I-joists are applied end-on over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral support for the top flange of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on center, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of bracing over at least two I-joists.
 - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of joists at the end of the bay.
3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bracing.
4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, erect building materials over beams or walls only.
5. Never install a damaged I-joist.

Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable loads and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.

STORAGE AND HANDLING GUIDELINES

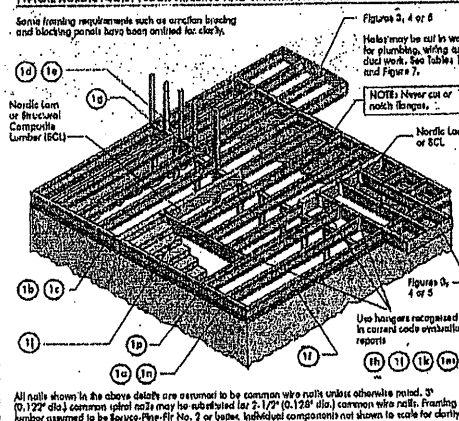
1. Bundle wrap can be slippery when wet. Avoid walking on wrapped bundles.
2. Store, stack, and handle I-joists vertically and level only.
3. Always stack and handle I-joists in the upright position only.
4. Do not store I-joists in direct contact with the ground and/or finish.
5. Protect I-joists from weather, and use spacers to separate bundles.
6. Bundled units should be kept intact until time of installation.
7. When handling I-joists with a crane on the job site, take a few simple precautions to prevent damage to the I-joist and injury to your work crew.
 - Pick I-joists in bundles or shipped by the supplier.
 - Orient the bundles so that the webs of the I-joists are vertical.
 - Pick the bundles at the 9th points, using a spreader bar if necessary.
8. Do not handle I-joists in a horizontal orientation.
9. NEVER USE OR TRY TO REPAIR A DAMAGED I-JOIST.



INSTALLING NORDIC I-JOISTS

1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact your supplier.
2. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple-span joists must be level.
5. Minimum blocking length: 1-3/4" inches for end bearings and 3-1/2" inches for intermediate bearings.
6. When using hangers, nail I-joists firmly to hanger bottoms to individual joist webs.
7. Leave a 1/16" inch gap between the I-joist end and a header.
8. Concentrated loads greater than those that can normally be supported in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting fixtures, audio equipment and security cameras. Never suspend unusual or heavy loads from the I-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist webs.
9. Never install I-joists where they will be permanently exposed to weather or where they will remain in direct contact with concrete or masonry.
10. Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
11. For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
12. Due to shrinkage, common framing lumber nail on edge may never be used as blocking or rim boards. I-joist blocking panels or other engineered wood products - such as rim board - must be cut to fit between the I-joists, and on I-joist-compatible depth selected.
13. Provide permanent lateral support of the bottom flange of all I-joists at interior supports of multiple-span joists. Similarly, support the bottom flange of all cantilevered I-joists at the end support next to the cantilever extension. In the completed structure, the apparent webhead ceiling provides this lateral support. Until the final finished ceiling is applied, temporary bracing or struts must be used.
14. If square-edge panels are used, edges must be supported between I-joists with 2x4 blocking. Use panels to blocking to restrain squeaks. Blocking is not required under structural finish flooring, such as wood strip flooring, or if a separate underlayment layer is installed.
15. Nail spacing: Space nails installed in the flange's top face in accordance with the applicable building code requirements or approved building plans.

FIGURE 1
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS



10

7-1/2" nails at 6" o.c. to top plate (when used for lateral shear transfer, nail to bearing plate with same nailing as required for blocking).

Blocking Panel or Rim Joist	Maximum Permitted Uniform Vertical Load (psi)
2x4 Joist	3,300

The uniform vertical load is limited to a joist depth of 14 inches or less and is based on standard term load duration. It shall not be used in the design of a leaning member, such as joist, header, or rafter. For concentrated vertical load formulas, see detail 1d.

1b

One 7-1/2" wire or spiral nail at top and bottom flange.

Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange.

To avoid splitting flange, start nails at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate.

Minimum bearing length shall be 1-3/4" for the end bearing, and 3-1/2" for the intermediate bearing when applicable.

Blocking Panel or Rim Joist	Maximum Permitted Uniform Vertical Load (psi)
1-1/2" Rim Board Plan	6,000

The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a leaning member, such as joist, header, or rafter. For concentrated vertical load formulas, see detail 1d.

1c

Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

Attach I-joist to top plate per detail 1b.

Minimum 1-3/4" bearing required.

1d

1-1/2" for squash blocks.

Pair of Squash Blocks	Maximum Permitted Vertical Load per Pair of Squash Blocks (psi)
2x4 Lumber	5,800
1-1/2" Rim Board Plan	6,400

Provide lateral bracing per detail 1a, 1b, or 1c.

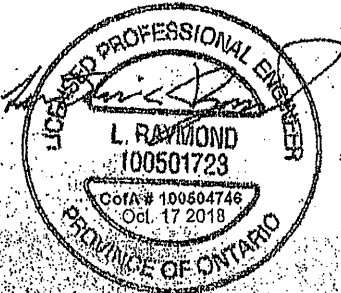
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Document prepared for the use of Stephanie Gon from Alpa, Ontario. (Nordic Request 1810-095)



N-C301/April 2014

MAXIMUM FLOOR SPANS

1. Maximum clear spans applicable to single-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.75D. The serviceability limit states include the combination for floor vibration and a live load deflection limit of 1/400. For multiple-span applications, the end spans shall be 40% or more of the adjacent spans.
2. Spans are based on a composite floor with glass-faced oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CCB-11.2.4 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of approved overlays or use of blocking or mid-spans.
3. Minimum bearing shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
5. This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
6. Tables are based on Limit States Design per CAN/CSA C08-09 Standard, and NRC 7010.
7. SI units conversion: 1 inch = 25.4 mm; 1 foot = 0.305 m

MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

Span	2-1/2"	3-1/2"	4-1/2"	5-1/2"	6-1/2"	7-1/2"	8-1/2"	9-1/2"	10-1/2"	11-1/2"	12-1/2"	13-1/2"	14-1/2"	15-1/2"	16-1/2"	17-1/2"	18-1/2"	19-1/2"	20-1/2"	21-1/2"	22-1/2"	23-1/2"	24-1/2"	25-1/2"	26-1/2"	27-1/2"	28-1/2"	29-1/2"	30-1/2"	31-1/2"	32-1/2"	33-1/2"	34-1/2"	35-1/2"	36-1/2"	37-1/2"	38-1/2"	39-1/2"	40-1/2"	41-1/2"	42-1/2"	43-1/2"	44-1/2"	45-1/2"	46-1/2"	47-1/2"	48-1/2"	49-1/2"	50-1/2"	51-1/2"	52-1/2"	53-1/2"	54-1/2"	55-1/2"	56-1/2"	57-1/2"	58-1/2"	59-1/2"	60-1/2"	61-1/2"	62-1/2"	63-1/2"	64-1/2"	65-1/2"	66-1/2"	67-1/2"	68-1/2"	69-1/2"	70-1/2"	71-1/2"	72-1/2"	73-1/2"	74-1/2"	75-1/2"	76-1/2"	77-1/2"	78-1/2"	79-1/2"	80-1/2"	81-1/2"	82-1/2"	83-1/2"	84-1/2"	85-1/2"	86-1/2"	87-1/2"	88-1/2"	89-1/2"	90-1/2"	91-1/2"	92-1/2"	93-1/2"	94-1/2"	95-1/2"	96-1/2"	97-1/2"	98-1/2"	99-1/2"	100-1/2"																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
1	1.1	1.4	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.3	3.5	3.7	3.9	4.1	4.3	4.5	4.7	4.9	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.7	6.9	7.1	7.3	7.5	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	9.5	9.7	9.9	10.1	10.3	10.5	10.7	10.9	11.1	11.3	11.5	11.7	11.9	12.1	12.3	12.5	12.7	12.9	13.1	13.3	13.5	13.7	13.9	14.1	14.3	14.5	14.7	14.9	15.1	15.3	15.5	15.7	15.9	16.1	16.3	16.5	16.7	16.9	17.1	17.3	17.5	17.7	17.9	18.1	18.3	18.5	18.7	18.9	19.1	19.3	19.5	19.7	19.9	20.1	20.3	20.5	20.7	20.9	21.1	21.3	21.5	21.7	21.9	22.1	22.3	22.5	22.7	22.9	23.1	23.3	23.5	23.7	23.9	24.1	24.3	24.5	24.7	24.9	25.1	25.3	25.5	25.7	25.9	26.1	26.3	26.5	26.7	26.9	27.1	27.3	27.5	27.7	27.9	28.1	28.3	28.5	28.7	28.9	29.1	29.3	29.5	29.7	29.9	30.1	30.3	30.5	30.7	30.9	31.1	31.3	31.5	31.7	31.9	32.1	32.3	32.5	32.7	32.9	33.1	33.3	33.5	33.7	33.9	34.1	34.3	34.5	34.7	34.9	35.1	35.3	35.5	35.7	35.9	36.1	36.3	36.5	36.7	36.9	37.1	37.3	37.5	37.7	37.9	38.1	38.3	38.5	38.7	38.9	39.1	39.3	39.5	39.7	39.9	40.1	40.3	40.5	40.7	40.9	41.1	41.3	41.5	41.7	41.9	42.1	42.3	42.5	42.7	42.9	43.1	43.3	43.5	43.7	43.9	44.1	44.3	44.5	44.7	44.9	45.1	45.3	45.5	45.7	45.9	46.1	46.3	46.5	46.7	46.9	47.1	47.3	47.5	47.7	47.9	48.1	48.3	48.5	48.7	48.9	49.1	49.3	49.5	49.7	49.9	50.1	50.3	50.5	50.7	50.9	51.1	51.3	51.5	51.7	51.9	52.1	52.3	52.5	52.7	52.9	53.1	53.3	53.5	53.7	53.9	54.1	54.3	54.5	54.7	54.9	55.1	55.3	55.5	55.7	55.9	56.1	56.3	56.5	56.7	56.9	57.1	57.3	57.5	57.7	57.9	58.1	58.3	58.5	58.7	58.9	59.1	59.3	59.5	59.7	59.9	60.1	60.3	60.5	60.7	60.9	61.1	61.3	61.5	61.7	61.9	62.1	62.3	62.5	62.7	62.9	63.1	63.3	63.5	63.7	63.9	64.1	64.3	64.5	64.7	64.9	65.1	65.3	65.5	65.7	65.9	66.1	66.3	66.5	66.7	66.9	67.1	67.3	67.5	67.7	67.9	68.1	68.3	68.5	68.7	68.9	69.1	69.3	69.5	69.7	69.9	70.1	70.3	70.5	70.7	70.9	71.1	71.3	71.5	71.7	71.9	72.1	72.3	72.5	72.7	72.9	73.1	73.3	73.5	73.7	73.9	74.1	74.3	74.5	74.7	74.9	75.1	75.3	75.5	75.7	75.9	76.1	76.3	76.5	76.7	76.9	77.1	77.3	77.5	77.7	77.9	78.1	78.3	78.5	78.7	78.9	79.1	79.3	79.5	79.7	79.9	80.1	80.3	80.5	80.7	80.9	81.1	81.3	81.5	81.7	81.9	82.1	82.3	82.5	82.7	82.9	83.1	83.3	83.5	83.7	83.9	84.1	84.3	84.5	84.7	84.9	85.1	85.3	85.5	85.7	85.9	86.1	86.3	86.5	86.7	86.9	87.1	87.3	87.5	87.7	87.9	88.1	88.3	88.5	88.7	88.9	89.1	89.3	89.5	89.7	89.9	90.1	90.3	90.5	90.7	90.9	91.1	91.3	91.5	91.7	91.9	92.1	92.3	92.5	92.7	92.9	93.1	93.3	93.5	93.7	93.9	94.1	94.3	94.5	94.7	94.9	95.1	95.3	95.5	95.7	95.9	96.1	96.3	96.5	96.7	96.9	97.1	97.3	97.5	97.7	97.9	98.1	98.3	98.5	98.7	98.9	99.1	99.3	99.5	99.7	99.9	100.1	100.3	100.5	100.7	100.9	101.1	101.3	101.5	101.7	101.9	102.1	102.3	102.5	102.7	102.9	103.1	103.3	103.5	103.7	103.9	104.1	104.3	104.5	104.7	104.9	105.1	105.3	105.5	105.7	105.9	106.1	106.3	106.5	106.7	106.9	107.1	107.3	107.5	107.7	107.9	108.1	108.3	108.5	108.7	108.9	109.1	109.3	109.5	109.7	109.9	110.1	110.3	110.5	110.7	110.9	111.1	111.3	111.5	111.7	111.9	112.1	112.3	112.5	112.7	112.9	113.1	113.3	113.5	113.7	113.9	114.1	114.3	114.5	114.7	114.9	115.1	115.3	115.5	115.7	115.9	116.1	116.3	116.5	116.7	116.9	117.1	117.3	117.5	117.7	117.9	118.1	118.3	118.5	118.7	118.9	119.1	119.3	119.5	119.7	119.9	120.1	120.3	120.5	120.7	120.9	121.1	121.3	121.5	121.7	121.9	122.1	122.3	122.5	122.7	122.9	123.1	123.3	123.5	123.7	123.9	124.1	124.3	124.5	124.7	124.9	125.1	125.3	125.5	125.7	125.9	126.1	126.3	126.5	126.7	126.9	127.1	127.3	127.5	127.7	127.9	128.1	128.3	128.5	128.7	128.9	129.1	129.3	129.5	129.7	129.9	130.1	130.3	130.5	130.7	130.9	131.1	131.3	131.5	131.7	131.9	132.1	132.3	132.5	132.7	132.9	133.1	133.3	133.5	133.7	133.9	134.1	134.3	134.5	134.7	134.9	135.1	135.3	135.5	135.7	135.9	136.1	136.3	136.5	136.7	136.9	137.1	137.3	137.5	137.7	137.9	138.1	138.3	138.5	138.7	138.9	139.1	139.3	139.5	139.7	139.9	140.1	140.3	140.5	140.7	140.9	141.1	141.3	141.5	141.7	141.9	142.1	142.3	142.5	142.7	142.9	143.1	143.3	143.5	143.7	143.9	144.1	144.3	144.5	144.7	144.9	145.1	145.3	145.5	145.7	145.9	146.1	146.3	146.5	146.7	146.9	147.1	147.3	147.5	147.7	147.9	148.1	148.3	148.5	148.7	148.9	149.1	149.3	149.5	149.7	149.9	150.1	150.3	150.5	150.7	150.9	151.1	151.3	151.5	151.7	151.9	152.1	152.3	152.5	152.7	152.9	153.1	153.3	153.5	153.7	153.9	154.1	154.3	154.5	154.7	154.9	155.1	155.3	155.5	155.7	155.9	156.1	156.3	156.5	156.7	156.9	157.1	157.3	157.5	157.7	157.9	158.1	158.3	158.5	158.7	158.9	159.1	159.3	159.5	159.7	159.9	160.1	160.3	160.5	160.7	160.9	161.1	161.3	161.5	161.7	161.9	162.1	162.3	162.5	162.7	162.9	163.1	163.3	163.5	163.7	163.9	164.1	164.3	164.5	164.7	164.9	165.1	165.3	165.5	165.7	165.9	166.1	166.3	166.5	166.7	166.9	167.1	167.3	167.5	167.7	167.9	168.1	168.3	168.5	168.7	168.9	169.1	169.3	169.5	169.7	169.9	170.1	170.3	170.5	170.7	170.9	171.1	171.3	171.5	171.7	171.9	172.1	172.3	172.5	172.7	172.9	173.1	173.3	173.5	173.7	173.9	174.1	174.3	174.5	174.7	174.9	175.1	175.3	175.5	175.7	175.9	176.1	176.3	176.5	176.7	176.9	177.1	177.3	177.5	177.7	177.9	178.1	178.3	178.5	178.7	178.9	179.1	179.3	179.5	179.7	179.9	180.1	180.3	180.5	180.7	180.9	181.1	181.3	181.5	181.7	181.9	182.1	182.3	182.5	182.7	182.9	183.1	183.3	183.5	183.7	183.9	184.1	184.3	184.5	184.7	184.9	185.1	185.3	185.5	185.7	185.9	186.1	186.3	186.5	186.7	186.9	187.1	187.3	187.5	187.7	187.9	188.1	188.3	188.5	188.7	188.9	189.1	189.3	189.5	189.7	189.9	190.1	190.3	190.5	190.7	190.9	191.1	191.3	191.5	191.7	191.9	192.1	192.3	192.5	192.7	192.9	193.1	193.3	193.5	193.7	193.9	194.1	194.3	194.5	194.7	194.9	195.1	195.3	195.5	195.7	195.9	196.1	196.3	196.5	196.7	196.9	197.1	197.3	197.5	197.7	197.9	198.1	198.3	198.5	198.7	198.9	199.1	199.3	199.5	199.7	199.9	200.1	200.3	200.5	200.7	200.9	201.1	201.3	201.5	201.7	201.9	202.1	202.3	202.5	202.7	202.9	203.1	203.3	203.5	203.7	203.9	204.1	204.3	204.5	204.7	204.9	205.1	205.3	205.5	205.7	205.9	206.1	206.3	206.5	206.7	206.9	207.1	207.3	207.5	207.7	207.9	208.1	208.3	208.5	208.7	208.9	209.1	209.3	209.5	209.7	209.9	210.1	210.3	210.5	210.7	210.9	211.1	211.3	211.5	211.7	211.9	212.1	212.3	212.5	212.7	212.9	213.1	213.3	213.5	213.7	213.9	214.1	214.3	214.5	214.7	214.9	215.1	215.3	215.5	215.7	215.9	216.1	216.3	216.5	216.7	216.9	217.1	217.3	217.5	217.7	217.9	218.1	218.3	218.5	218.7	218.9	219.1	219.3	219.5	219.7	219.9	220.1	220.3	220.5	220.7	220.9	221.1	221.3	221.5	221.7	221.9	222.1	222.3	222.5	222.7	222.9	223.1	223.3	223.5	223.7	223.9	224.1	224.3	224.5	224.7	224.9	225.1	225.3	225.5	225.7	225.9	226.1	226.3	226.5	226.7	226.9	227.1	227.3	227.5	227.7	227.9	228.1	228.3	228.5	228.7	228.9	229.1	229.3	229.5	229.7	229.9	230.1	230.3	230.5	230.7	230.9	231.1	231.3	231.5	231.7	231.9	232.1	232.3	232.5	232.7	232.9	233.1	233.3	233.5	233.7	233.9	234.1	234.3	234.5	234.7	234.9	235.1	235.3	235.5	235.7	235.9	236.1	236.3	236.5	236.7	236.9	237.1	237.3	237.5

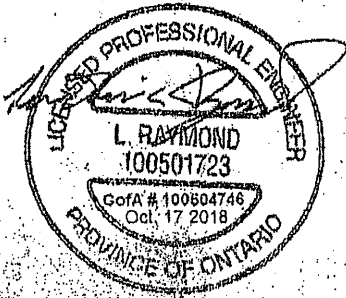
The construction details for residential designs are prone to changes.

Details released after April 2014
supersedes N-C301

Installation must comply with latest documentation on I-Joint and other Nordic products from the
<http://nordic.ca/>

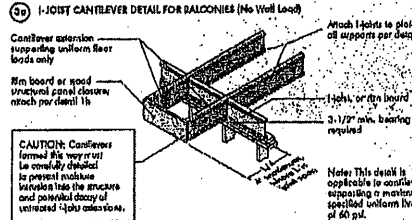
This document does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of its component based on the design criteria and loadings shown on the calculation sheets.

Document prepared for the use of
Stephanie Gon from Alpa, Ontario.
(Nordic Request 1810-095)

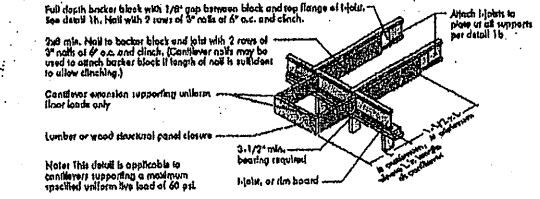


N-C301/April 2014

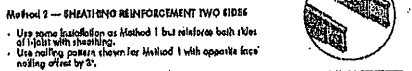
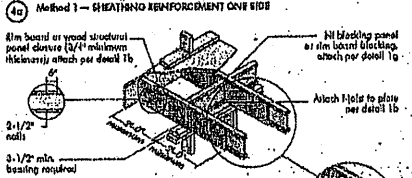
CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)



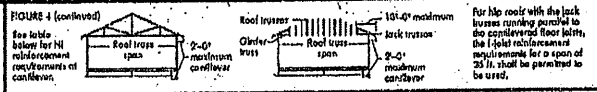
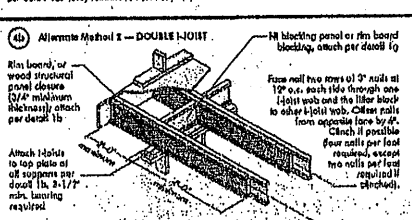
LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)



Notes: Canadian railroad plywood sheathing or equivalent (minimum thickness 5/8") required on sides of joint. Depth shall match the full height of the joint. Nail with 2-1/2" nails at 6" o.c., top and bottom flanges. Install with face grain horizontal. Attach I-Joints to plate on all supports per detail 1b. Verify reinforced I-Joint capacity.

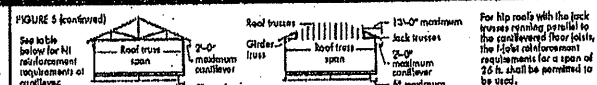
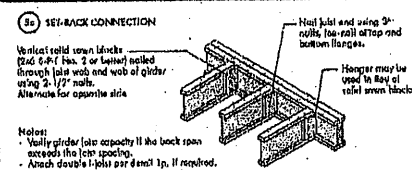
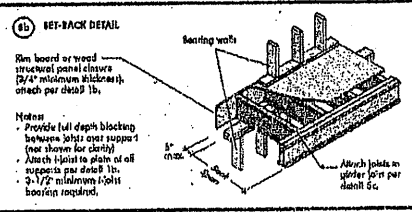
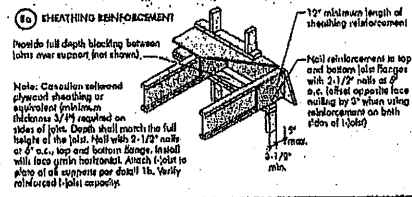


CANTILEVER REINFORCEMENT METHODS ALLOWED

Table 1. (continued)																								
Span (ft)	N		H		X		Z		N		H		X		Z		N		H		X		Z	
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
10																								
12																								
14																								
16																								
18																								
20																								
22																								
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- N = No reinforcement required.
- H = Reinforced with 3/4" wood structural panel on one side only.
- X = Reinforced with 3/4" wood structural panel on both sides, or double I-Joint.
- Z = Two deeper joists or double I-Joint.
- Minimum design load shall be 15 psf and dead load, 10 psf floor load, and 10 psf wall load. Wall load is based on 2-0" maximum width of door opening.
- For larger openings, or multiple 3-0" with openings spaced less than 6-0" o.c., additional joists beneath the opening's cripple shall be required.
- Table applies to joists 12" to 24" o.c. that meet the floor joist requirements for a design live load of 40 psf and dead load of 15 psf, and a 2x4 top flange block of 1/4" o.c. Use 12" o.c. requirements for better spacing.
- For cantilevered and connections using a ridge beam, the roof joist span column above it is equivalent to the distance between the supporting walls. The ridge beam, when the roof is framed using a ridge beam, the roof joist span is equivalent to the distance between the supporting walls. If a joist is used.
- Cantilevered joists supporting glider trusses or roof beams may require additional reinforcing.

BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)



BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED										CONCRETE CANTILEVER REINFORCEMENT METHODS ALLOWED									
Span (ft)		N		H		X		Z		N		H		X		Z			
10		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
12		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
14		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
16		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
18		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
20		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
22		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
24		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
26		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
28		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
30		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
32		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
34		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
36		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
38		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
40		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
42		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
44		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
46		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
48		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
50		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
52		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
54		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
56		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
58		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
60		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
62		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
64		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
66		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
68		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
70		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
72		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
74		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
76		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
78		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
80		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
82		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
84		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
86		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
88		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
90		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
92		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
94		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
96		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
98		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		
100		1	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X		

- N = No reinforcement required.
- H = Reinforced with 3/4" wood structural panel on one side only.
- X = Reinforced with 3/4" wood structural panel on both sides, or double I-Joint.
- Z = Two deeper joists or double I-Joint.
- Minimum design load shall be 15 psf and dead load, 10 psf floor load, and 10 psf wall load. Wall load is based on 2-0" maximum width of door opening.
- For larger openings, or multiple 3-0" with openings spaced less than 6-0" o.c., additional joists beneath the opening's cripple shall be required.
- Table applies to joists 12" to 24" o.c. that meet the floor joist requirements for a design live load of 40 psf and dead load of 15 psf, and a 2x4 top flange block of 1/4" o.c. Use 12" o.c. requirements for better spacing.
- For cantilevered and connections using a ridge beam, the roof joist span column above it is equivalent to the distance between the supporting walls. The ridge beam, when the roof is framed using a ridge beam, the roof joist span is equivalent to the distance between the supporting walls. If a joist is used.
- Cantilevered joists supporting glider trusses or roof beams may require additional reinforcing.

The construction details for residential designs are prone to changes.

Details released after April 2014 supersedes N-C301

Installation must comply with latest documentation on I-Joist and other Nordic products from the <http://nordic.ca/>

This document does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of its component based on the design criteria and loadings shown on the calculation sheets.

Document prepared for the use of Stephanie Gon from Alpa, Ontario. (Nordic Request 1810-095)



WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS

1. The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
2. If a top and bottom flange must NEVER be cut, notched, or otherwise modified.
3. Whenever possible, field-cut holes should be drilled on the inside of the web.
4. The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch shall always be maintained between the top or bottom of the hole or opening and the adjacent flange.
5. The sides of square holes or longer sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the side of the largest square hole (or twice the length of the longest side of the longest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
7. A knockout is not considered a hole, may be drilled anywhere it occurs, and may be ignored for purposes of calculating minimum distances between I-joists and/or duct chase openings.
8. Holes may not be 1-1/2 inches or smaller shall be permitted anywhere in a continuous section of a joist. Holes of greater size may be permitted subject to verification.
9. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that holes meet the requirements of rule number 8 above.
10. All holes and duct chase openings shall be cut in a workman-like manner in accordance with the residential load above and as illustrated in Figure 7.
11. Limit three maximum r/o holes per span, of which one may be a duct chase opening.
12. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS
Simple or Multiple Span for Dead Loads up to 18 psf and Live Loads up to 40 psf

Span Type	Minimum Distance from Support (in)	Maximum Hole Diameter (in)
Simple Span	12	12
Multiple Span	12	12

1. Above table may be used for light spacing of 24 inches on center or less.
2. Hole location distance is measured from inside face of support to centre of hole.
3. Distances in this table are based on uniformly loaded joists.

OPTIONALS

The above table is based on the hole size of 1 1/2 inches span. If the hole is placed at less than 12 inches from the maximum span (see Maximum Floor Span), the minimum distance from the centreline of the hole to the face of any support (S) at given above may be reduced as follows:

$$D_{reduced} = S_{actual} \times 0$$

Where:

Reduced =

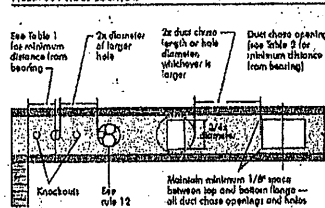
Actual =

S =

D =

If larger than 1, use 1 in the above calculation for S.

FIGURE 7
FIELD-CUT HOLE LOCATOR



A knockout is NOT considered a hole, may be drilled anywhere it occurs and may be ignored for purposes of calculating minimum distances between holes.

Knockouts are predrilled holes provided for the contractor's convenience to install electrical or small plumbing lines. They are 1-1/2 inches in diameter and are spaced 16 inches on center along the length of the joist. Where possible, it is preferable to use knockouts instead of field-cut holes.

Never drill out of notch the flange, or around the web.

Holes in webs should be cut with a sharp saw.

For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. During the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cut between the holes in a smooth, rounded line to minimize damage to the I-joist.

TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS — Simple Span Only

Span Type	Minimum Distance from Support (in)	Maximum Hole Diameter (in)
Simple Span	12	12

1. Above table may be used for light spacing of 24 inches on center or less.
2. Duct chase opening location distance is measured from inside face of support to centre of opening.
3. The above table is based on uniformly loaded joists and may be used for a design live load of 40 psf and dead load of 18 psf and a live load deflection limit of L/160. For other applications, contact your local distributor.

INSTALLING THE GLUED FLOOR SYSTEM

1. Wipe any mud, dirt, wax, or oil from joist flanges before gluing.
2. Snap a chalk line across the joist face just in from the wall to panel edge alignment and as a boundary for spreading glue.
3. Spread only enough glue to lay one or two panels at a time, or follow the manufacturer's recommendations for glue application.
4. Lay the first panel with tongue side to the wall and butt in place. This protects the tongue of the next panel from damage when tapped into place with a block and mallet.
5. Apply a continuous line of glue (about 1/4 inch diameter) to the top flange of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists.
6. Apply two lines of glue on I-joists where panel ends butt to ensure proper gluing of each end.
7. Allow the first row of panels to be placed, spread glue in the groove of one or two panels at a time before laying the next row. This line may be continuous or spaced, but small squares must be applied a slower line (1/8 inch) than used on I-joist flanges.
8. Tap the second row of panels into place, using a block to protect groove edges.
9. Stagger and joints in each preceding row of panels. A 1/8 inch space between all end joints and 1/8 inch at all edges, including T&G edges, is recommended. Use a spacer tool or an 1/2 inch common nail to assure accurate and consistent spacing.
10. Complete all nailing of each panel before glue sets. Check the manufacturer's recommendations for cure time. (When weather conditions give wetting) Use 2" ring or screw-down nails for panels 3/4 inch thick or less, and 3-1/2" ring or screw-down nails for thicker panels. Space nails per the table below. Close nail spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the glue bond.

TASTENERS FOR SHEATHING AND SUBFLOORING (1)

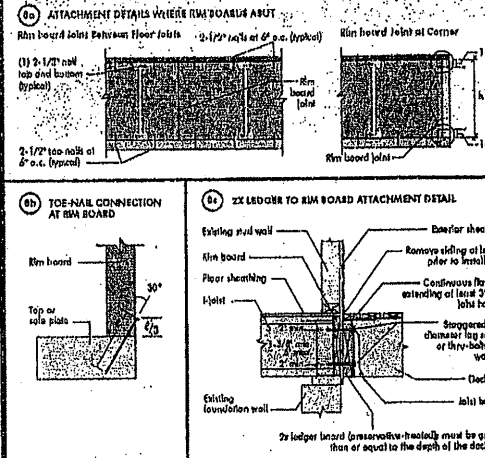
Joist Spacing (in)	2" Ring or Screw-Down Nails	3-1/2" Ring or Screw-Down Nails
16	12"	12"
20	12"	12"
24	12"	12"

1. Fasteners of sheathing and subflooring shall conform to the above table.
2. Studs shall not be less than 1/4 inch in diameter or thickness, with not less than a 2/8 inch crown driven with the crown parallel to framing.
3. Flooring screws shall not be less than 1/8 inch in diameter.
4. Special conditions may require heavy trusses and concentrated loads that require construction in excess of the minimum shown.
5. Use only adhesives conforming to CAN/CGSB-11.26 Standard, Adhesive for Field-Gluing Plywood in Lumber Flooring for Floor Systems, applied in accordance with the manufacturer's recommendations. If OSB panels with treated surfaces and edge glue are used, use only solvent-based glue; clear with panel manufacturer's instructions.

Ref: NRC/CNRC, National Building Code of Canada 2010, Table 9.23.3.5.

IMPORTANT NOTE:
(Floor sheathing must be field-glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.)

RIM BOARD INSTALLATION DETAILS

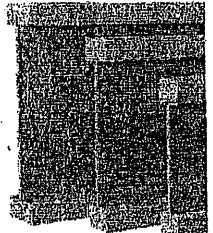


PRODUCT WARRANTY

Canadian Lumber products are made in accordance with the highest standards of quality and safety.

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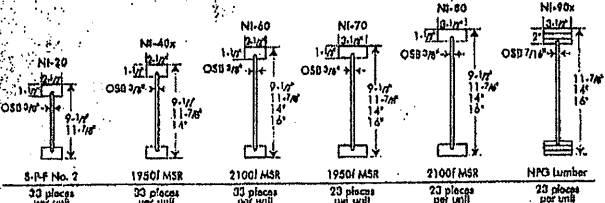


CONSTRUCTION DETAILS FOR RESIDENTIAL FLOORS

N-C303 / September 2013



Refer to the Installation Guide for Residential Floors for additional information.
CCMC EVALUATION REPORT 13032-R



WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
- Whenever possible, field-cut holes should be centred on the middle of the web.
- The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joist flange.

- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole for joists the length of the longest side of the largest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.

- A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
- All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
- Limit three maximum size holes per span, of which one may be a duct chase opening.
- A group of round holes of approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS

Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

Joist Depth	Joist Series	Minimum Distance from Inside Face of Any Support to Centre of Hole (ft. - in.)											
		Round Hole Diameter (in.)											
9-1/2"	Ni-20	0-7"	1-4"	2-10"	4-3"	5-8"	6-0"	...	...	...	...	...	...
	Ni-40x	0-7"	1-4"	3-0"	4-4"	5-0"	6-4"	...	...	...	...	...	...
	Ni-60	1-3"	2-0"	4-0"	5-4"	7-0"	7-5"	...	...	...	...	...	...
	Ni-80	2-0"	3-4"	4-9"	6-3"	8-0"	8-4"	...	...	...	...	...	...
11-7/8"	Ni-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	...	...	...	...	...	...
	Ni-40x	0-7"	0-8"	1-0"	2-0"	4-0"	4-4"	...	...	...	...	...	...
	Ni-60	0-7"	1-0"	2-0"	4-0"	5-0"	7-3"	...	...	...	...	...	...
	Ni-80	1-3"	2-4"	4-0"	5-4"	7-0"	7-5"	...	...	...	...	...	...
14"	Ni-20	1-6"	2-10"	4-2"	5-6"	7-0"	7-5"	...	...	...	...	...	...
	Ni-40x	0-7"	0-8"	0-9"	1-3"	4-2"	4-3"	...	...	...	...	...	...
	Ni-60	0-7"	0-8"	1-0"	2-4"	4-0"	4-4"	...	...	...	...	...	...
	Ni-80	0-7"	0-8"	1-0"	2-0"	4-0"	4-4"	...	...	...	...	...	...
16"	Ni-20	0-7"	0-8"	0-9"	1-3"	4-2"	4-3"	...	...	...	...	...	...
	Ni-40x	0-7"	0-8"	0-9"	1-3"	4-2"	4-3"	...	...	...	...	...	...
	Ni-60	0-7"	0-8"	0-9"	1-3"	4-2"	4-3"	...	...	...	...	...	...
	Ni-80	0-7"	0-8"	0-9"	1-3"	4-2"	4-3"	...	...	...	...	...	...

- Above table may be used for I-joist spacing of 24 inches on centre or less.
- Hole location distance is measured from inside face of support to centre of hole.
- Distances in this chart are based on uniformly loaded joists.
- The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

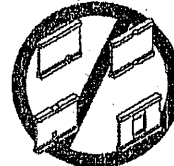
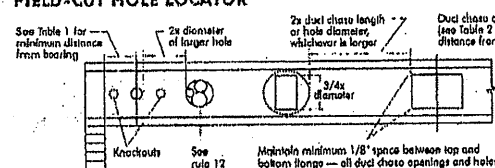
TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS

Simple Span Only

Joist Depth	Joist Series	Minimum Distance from Inside Face of Support to Centre of Opening (ft. - in.)											
		Duct Chase Length (in.)											
9-1/2"	Ni-20	4-1"	4-5"	4-10"	5-4"	6-8"	6-1"	6-6"	7-1"	7-5"	7-1"	7-5"	7-1"
	Ni-40x	5-3"	5-8"	6-3"	6-10"	7-5"	7-1"	7-5"	8-0"	8-4"	8-0"	8-4"	8-0"
	Ni-60	6-1"	6-5"	7-0"	7-5"	8-0"	8-4"	8-8"	9-3"	9-7"	9-3"	9-7"	9-3"
	Ni-80	7-1"	7-5"	8-0"	8-4"	8-8"	9-3"	9-7"	10-2"	10-6"	10-2"	10-6"	10-2"
11-7/8"	Ni-20	5-9"	6-3"	6-8"	7-3"	7-8"	8-3"	8-7"	9-2"	9-6"	10-1"	10-5"	10-9"
	Ni-40x	6-3"	6-8"	7-3"	7-8"	8-3"	8-7"	9-2"	9-6"	10-1"	10-5"	10-9"	11-3"
	Ni-60	7-1"	7-5"	7-9"	8-3"	8-7"	9-1"	9-5"	9-9"	10-3"	10-7"	11-1"	11-5"
	Ni-80	7-5"	7-9"	8-3"	8-7"	9-1"	9-5"	9-9"	10-3"	10-7"	11-1"	11-5"	11-9"
14"	Ni-40x	8-1"	8-5"	8-9"	9-3"	9-7"	10-1"	10-5"	10-9"	11-3"	11-7"	12-1"	12-5"
	Ni-60	8-5"	8-9"	9-3"	9-7"	10-1"	10-5"	10-9"	11-3"	11-7"	12-1"	12-5"	12-9"
	Ni-80	8-9"	9-3"	9-7"	10-1"	10-5"	10-9"	11-3"	11-7"	12-1"	12-5"	12-9"	13-3"
	Ni-90x	9-3"	9-7"	10-1"	10-5"	10-9"	11-3"	11-7"	12-1"	12-5"	12-9"	13-3"	13-7"
16"	Ni-60	10-3"	10-7"	11-1"	11-5"	11-9"	12-3"	12-7"	13-1"	13-5"	13-9"	14-3"	14-7"
	Ni-80	10-7"	11-1"	11-5"	11-9"	12-3"	12-7"	13-1"	13-5"	13-9"	14-3"	14-7"	15-1"
	Ni-90x	11-1"	11-5"	11-9"	12-3"	12-7"	13-1"	13-5"	13-9"	14-3"	14-7"	15-1"	15-5"
	Ni-90x	11-5"	11-9"	12-3"	12-7"	13-1"	13-5"	13-9"	14-3"	14-7"	15-1"	15-5"	15-9"

- Above table may be used for I-joist spacing of 24 inches on centre or less.
- Duct chase opening location distance is measured from inside face of support to centre of opening.
- The above table is based on simple-span joist only. For other applications, contact your local distributor.
- Distances are based on uniformly loaded floor joists that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480.
- The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

FIGURE 7
FIELD-CUT HOLE LOCATOR

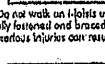


Knockouts are pre-cut holes provided for the contractor's convenience to install electrical or small plumbing lines. They are 1-1/2 inches in diameter, and are spaced 15 inches on centre along the length of the I-joist. Where possible, it is preferable to use knockouts instead of field-cut holes.

Holes in webs should be cut with a sharp saw.

For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cut between the holes is another good method to minimize damage to the I-joist.

SAFETY AND CONSTRUCTION PRECAUTIONS



WARNING: I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed.

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

- Brace and nail with I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-briding at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
- When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 1 foot long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint of the end of each joist. Top ends of adjoining bracing over at least two I-joists.
 - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
- For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-briding.
- Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
- Never install a damaged I-joist.

Improper storage at installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web blockers when required can result in serious accidents. Follow these installation guidelines carefully.



PRODUCT WARRANTY

Chandler Challenging guarantees that, in accordance with our specifications, Nordic products are free from manufacturing defects in materials and workmanship.

Furthermore, Chandler Challenging warrants that our products, when utilized in accordance with our handling and installation instructions, will meet or exceed our specifications for the lifetime of the structure.

The construction details for residential designs are prone to changes.

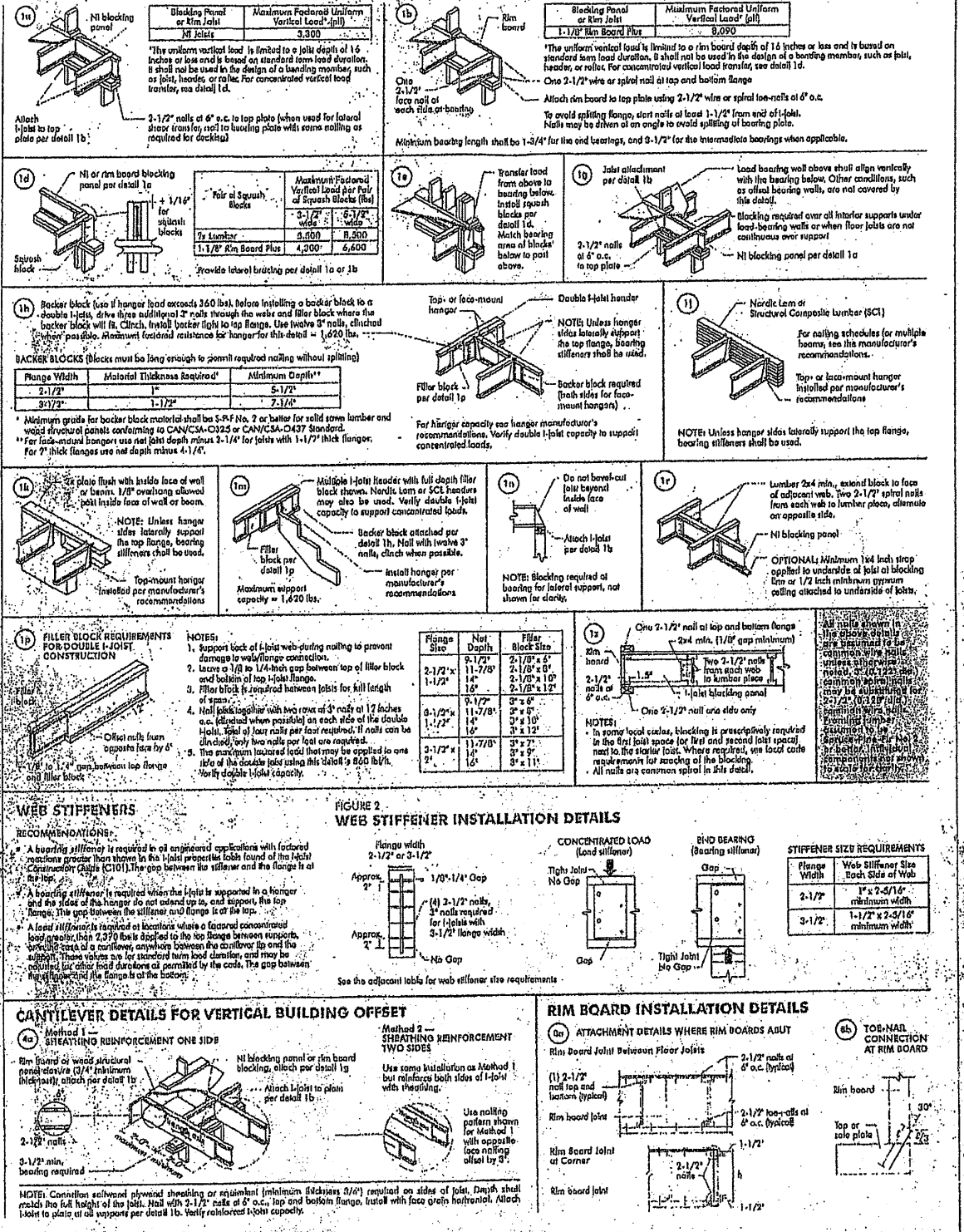
Details released after September 2013 supersede N-303

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Document prepared for the use of Stephanie Gon from Alpa, Ontario. (Nordic Request 1810-095)





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