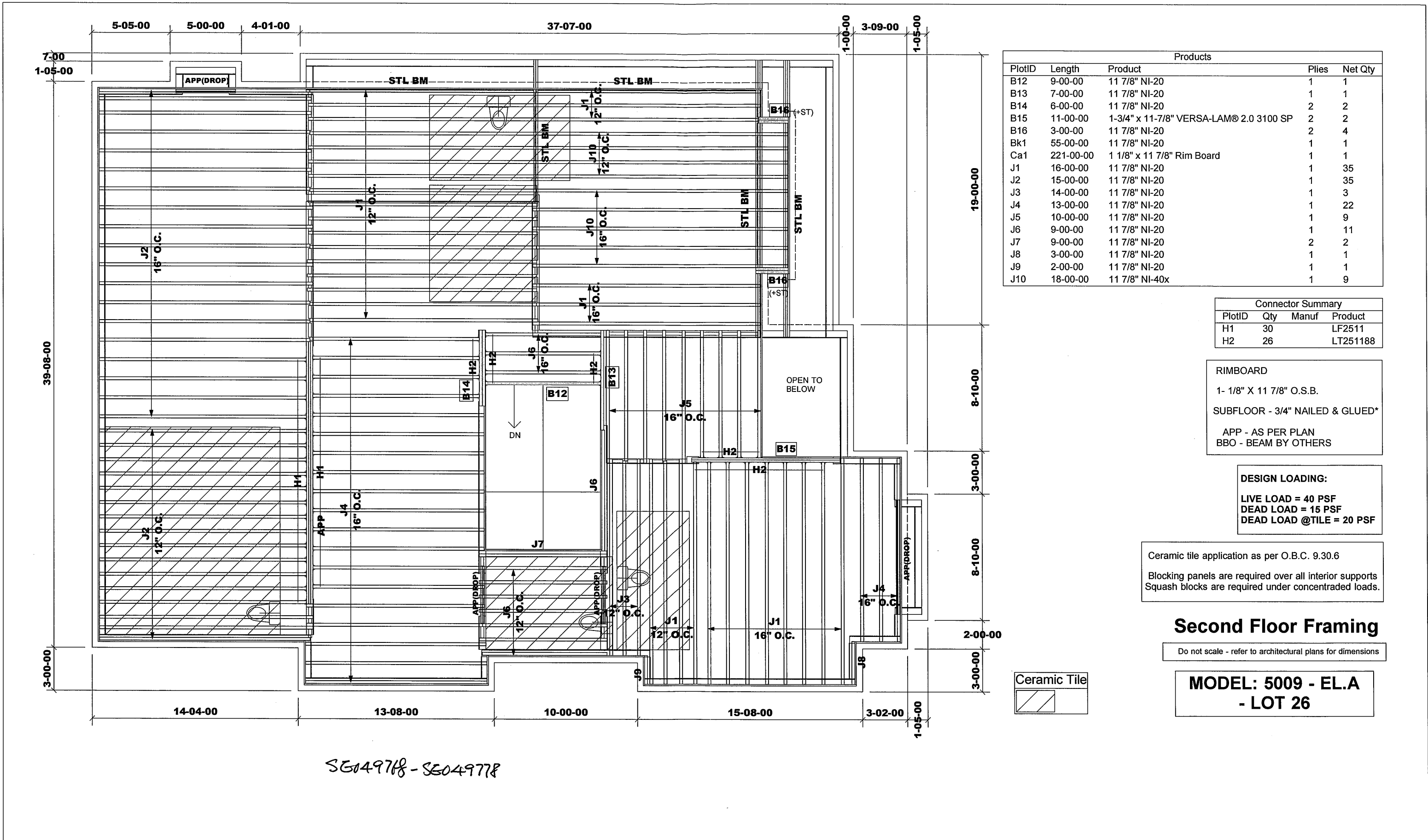




Products				
PlotID	Length	Product	Plies	Net Qty
B12	9-00-00	11 7/8" NI-20	1	1
B13	7-00-00	11 7/8" NI-20	1	1
B14	6-00-00	11 7/8" NI-20	2	2
B15	11-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B16	3-00-00	11 7/8" NI-20	2	4
Bk1	55-00-00	11 7/8" NI-20	1	1
Ca1	221-00-00	1 1/8" x 11 7/8" Rim Board	1	1
J1	16-00-00	11 7/8" NI-20	1	35
J2	15-00-00	11 7/8" NI-20	1	35
J3	14-00-00	11 7/8" NI-20	1	3
J4	13-00-00	11 7/8" NI-20	1	22
J5	10-00-00	11 7/8" NI-20	1	9
J6	9-00-00	11 7/8" NI-20	1	11
J7	9-00-00	11 7/8" NI-20	2	2
J8	3-00-00	11 7/8" NI-20	1	1
J9	2-00-00	11 7/8" NI-20	1	1
J10	18-00-00	11 7/8" NI-40x	1	9

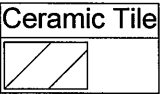
Connector Summary			
PlotID	Qty	Manuf	Product
H1	30		LF2511
H2	26		LT251188

RIMBOARD
1- 1/8" X 11 7/8" O.S.B.
SUBFLOOR - 3/4" NAILED & GLUED*
APP - AS PER PLAN
BBO - BEAM BY OTHERS

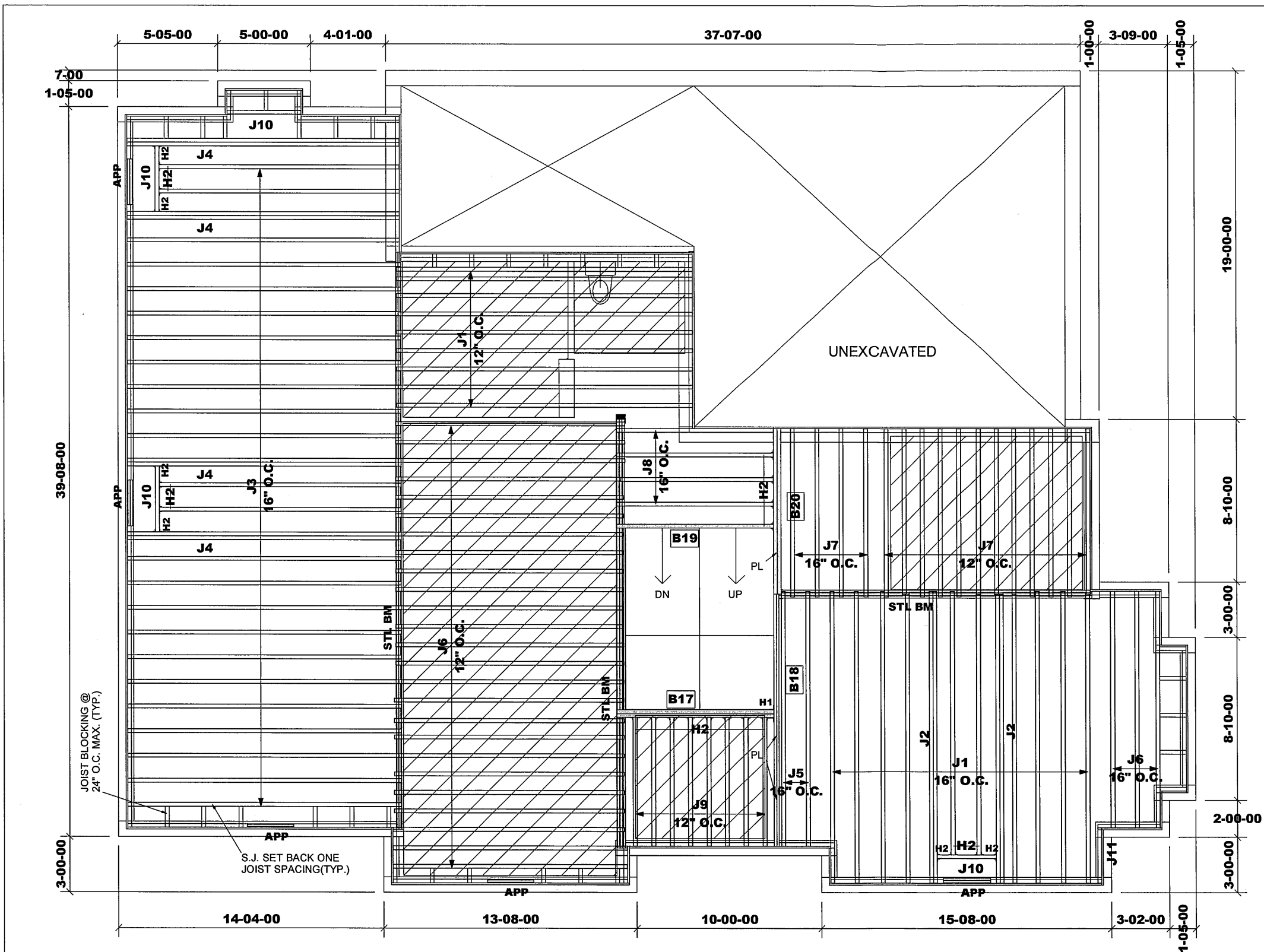
DESIGN LOADING:
LIVE LOAD = 40 PSF
DEAD LOAD = 15 PSF
DEAD LOAD @TILE = 20 PSF

Ceramic tile application as per O.B.C. 9.30.6
Blocking panels are required over all interior supports
Squash blocks are required under concentrated loads.

Second Floor Framing
Do not scale - refer to architectural plans for dimensions
MODEL: 5009 - EL.A
- LOT 26



	Job Track: 45147	Builder: Gold Park	Location: Vaughan	Sheet: 1 of 3	THESE DRAWINGS CONSTITUTE THE PROPERTY OF ALPA ROOF TRUSSES INC., SHALL NOT BE REPRODUCED, PUBLISHED, OR REDISTRIBUTED IN ANY MANNER OR UTILIZED BY ANY OTHER WITHOUT PERMISSION OF ALPA ROOF TRUSSES INC., AND WILL BE RETRACTED BY ALPA ROOF TRUSSES INC IF UTILIZED FOR ANY OTHER PURPOSE. Mitek V. 8.5.3.233
	Layout ID: 321531-346632*	Project: Pine Valley	SalesPerson: Derek	Date: 2022/07/23	
	Plan Log: 117907	Model: 5009A - LOT 26	Yard: Home Lumber	Designer: NL	



Products				
PlotID	Length	Product	Plies	Net Qty
B17	9-00-00	11 7/8" NI-20	2	2
B18	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B19	9-00-00	11 7/8" NI-20	1	1
B20	9-00-00	11 7/8" NI-20	2	2
Bk1	79-00-00	11 7/8" NI-20	1	1
Ca1	215-00-00	1 1/8" x 11 7/8" Rim Board	1	1
J1	16-00-00	11 7/8" NI-20	1	19
J2	16-00-00	11 7/8" NI-20	2	4
J3	15-00-00	11 7/8" NI-20	1	24
J4	15-00-00	11 7/8" NI-20	2	8
J5	14-00-00	11 7/8" NI-20	1	2
J6	13-00-00	11 7/8" NI-20	1	28
J7	10-00-00	11 7/8" NI-20	1	16
J8	9-00-00	11 7/8" NI-20	1	4
J9	7-00-00	11 7/8" NI-20	1	8
J10	4-00-00	11 7/8" NI-20	1	4
J11	3-00-00	11 7/8" NI-20	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	1		HU310-2
H2	24		LT251188

RIMBOARD
1- 1/8" X 9 1/2" O.S.B.
1- 1/8" X 11 7/8" O.S.B.
SUBFLOOR - 3/4" NAILED & GLUED*
APP - AS PER PLAN
BBO - BEAM BY OTHERS

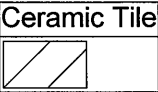
DESIGN LOADING:
LIVE LOAD = 40 PSF
DEAD LOAD = 15 PSF
DEAD LOAD @TILE = 20 PSF

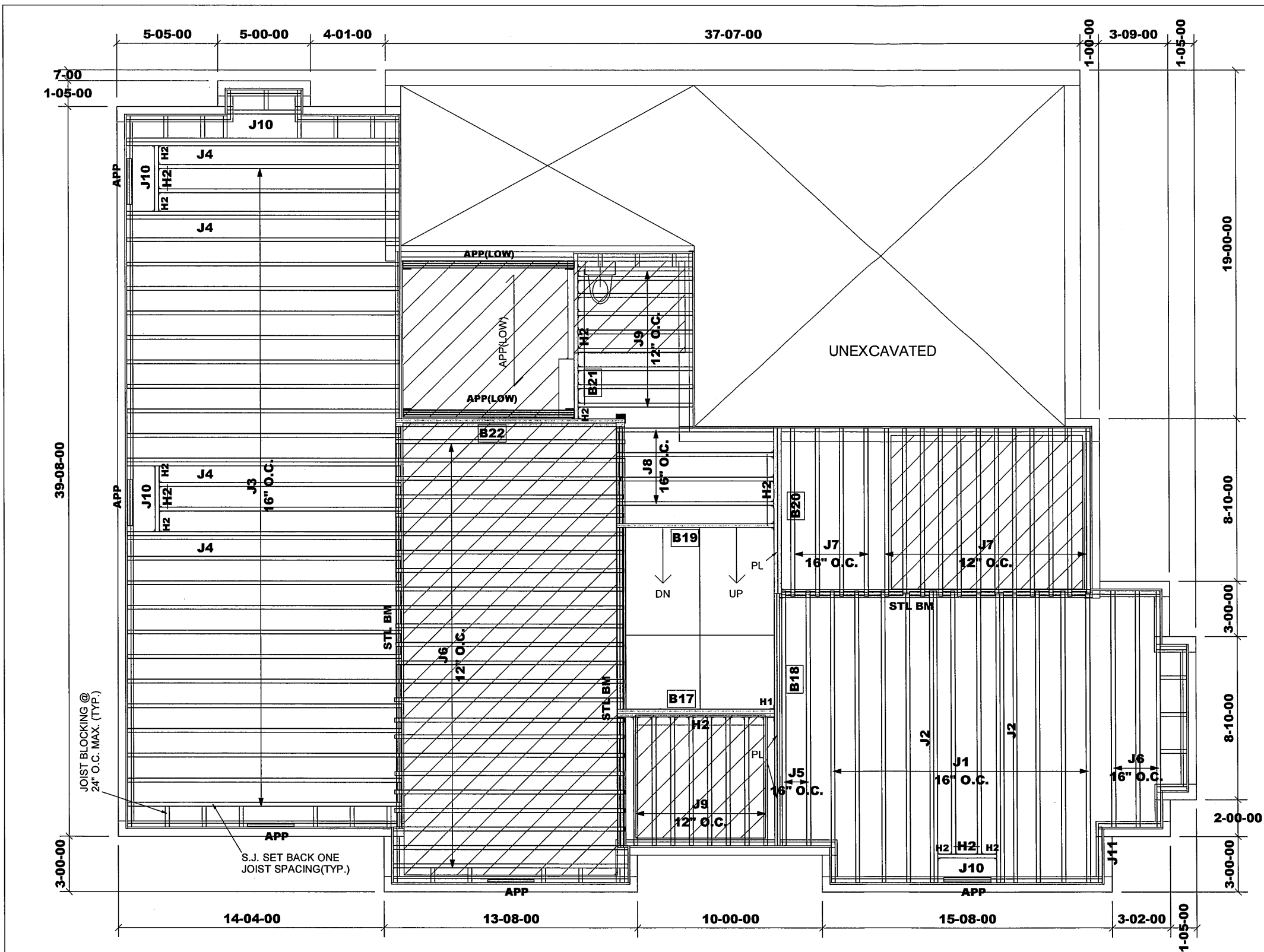
Ceramic tile application as per O.B.C. 9.30.6
Blocking panels are required over all interior supports
Squash blocks are required under concentrated loads.

First Floor Framing

Do not scale - refer to architectural plans for dimensions

MODEL: 5009 - EL.A
- LOT 26





Products				
PlotID	Length	Product	Plies	Net Qty
B17	9-00-00	11 7/8" NI-20	2	2
B18	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B19	9-00-00	11 7/8" NI-20	1	1
B20	9-00-00	11 7/8" NI-20	2	2
B21	9-00-00	11 7/8" NI-20	1	1
B22	13-00-00	11 7/8" NI-20	2	2
BK1	69-00-00	11 7/8" NI-20	1	1
Ca1	215-00-00	1 1/8" x 11 7/8" Rim Board	1	1
J1	16-00-00	11 7/8" NI-20	1	10
J2	16-00-00	11 7/8" NI-20	2	4
J3	15-00-00	11 7/8" NI-20	1	24
J4	15-00-00	11 7/8" NI-20	2	8
J5	14-00-00	11 7/8" NI-20	1	2
J6	13-00-00	11 7/8" NI-20	1	27
J7	10-00-00	11 7/8" NI-20	1	16
J8	9-00-00	11 7/8" NI-20	1	4
J9	7-00-00	11 7/8" NI-20	1	17
J10	4-00-00	11 7/8" NI-20	1	4
J11	3-00-00	11 7/8" NI-20	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	1		HU310-2
H2	34		LT251188

DESIGN LOADING:
LIVE LOAD = 40 PSF
DEAD LOAD = 15 PSF
DEAD LOAD @TILE = 20 PSF

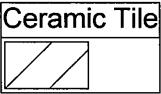
RIMBOARD
1- 1/8" X 9 1/2" O.S.B.
1- 1/8" X 11 7/8" O.S.B.
SUBFLOOR - 3/4" NAILED & GLUED*
APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic tile application as per O.B.C. 9.30.6
Blocking panels are required over all interior supports
Squash blocks are required under concentrated loads.

First Floor Framing

Do not scale - refer to architectural plans for dimensions

**MODEL: 5009 - EL.A- LOT 26
W/SUNKEN MUDROOM**





Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147(5009)**

Job Name: **346632-A-LOT 26**
Level: **2nd Level**
Label: **B12 - i25265**
Type: **Beam**

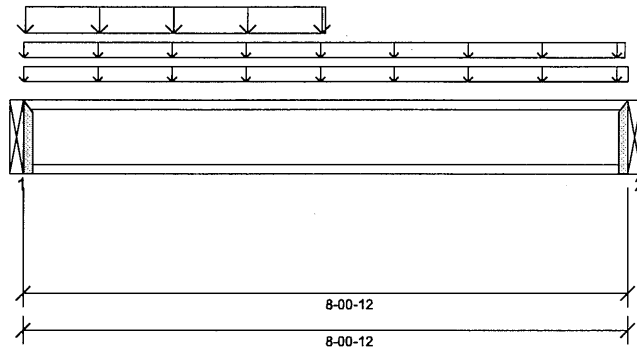
1 Ply Member
11 7/8" NI-20

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 07/23/2022 10:09



DESIGN INFORMATION

Building Code: NBCC 2015, Part 9, 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'- 3/4"

Factored Resistance of Support Material:

- 769 psi Beam @ 0'
- 769 psi Beam @ 8'- 3/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 2 5/16"	1.25D + 1.5L	1.00	2431 lb ft	5580 lb ft	Passed - 44%
Factored Shear:	0'- 1/16"	1.25D + 1.5L	1.00	1514 lb	2240 lb	Passed - 68%
Live Load (LL) Pos. Defl.:	3'- 9 1/2"	L		0.070"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 9 9/16"	D + L		0.100"	L/240	Passed - L/964

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	1514 lb		1970 lb	-	Passed - 77%
2	1-12	1.25D + 1.5L	1.00	731 lb		1970 lb	-	Passed - 37%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	LT251188	-	-	-	-	Connector manually specified by the user.
2	LT251188	-	-	-	-	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'	8'- 3/4"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	0'	8'- 3/4"	FC4 Floor Decking (Plan View Fill)	Top	9 lb/ft	17 lb/ft	-	-
Uniform	0'	8'- 1/4"	User Load	Top	10 lb/ft	20 lb/ft	-	-
Uniform	0'- 1/4"	4'- 1/4"	User Load	Top	75 lb/ft	200 lb/ft	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B14(i25637)	312 lb	751 lb	-	-
2	8'- 3/4"	8'- 3/4"	B13(i25208)	162 lb	351 lb	-	-

DESIGN NOTES

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



SG 049768



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147(5009)**

Job Name: **346632-A-LOT 26**
Level: **2nd Level**
Label: **B13 - i25208**
Type: **Beam**

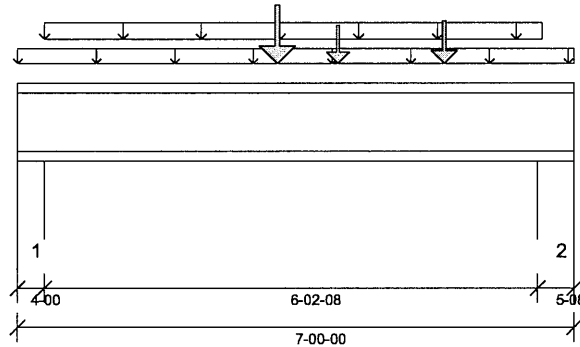
1 Ply Member
11 7/8" NI-20

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 07/23/2022 10:09



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: 3'- 2"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 3"
- 615 psi Wall @ 6'- 7 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 3 1/4"	1.25D + 1.5L	1.00	2224 lb ft	5580 lb ft	Passed - 40%
Factored Shear:	6'- 6 7/16"	1.25D + 1.5L	1.00	1141 lb	2240 lb	Passed - 51%
Live Load (LL) Pos. Defl.:	3'- 6 1/8"	L		0.045"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 6 1/8"	D + L		0.066"	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	827 lb		2240 lb	6152 lb	Passed - 37%
2	5-08	1.25D + 1.5L	1.00	1148 lb		2240 lb	8459 lb	Passed - 51%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	7'	Self Weight	Top	3 lb/ft	-	-	-
Uniform	0'	7'	FC4 Floor Decking (Plan View Fill)	Top	1 lb/ft	2 lb/ft	-	-
Uniform	0'- 4"	6'- 7 1/8"	User Load	Top	10 lb/ft	27 lb/ft	-	-
Point	3'- 3 1/4"	3'- 3 1/4"	B12(i25265)	Back	162 lb	351 lb	-	-
Point	4'- 3/8"	4'- 3/8"	J6(i25179)	Back	91 lb	182 lb	-	-
Point	5'- 4 3/8"	5'- 4 3/8"	J6(i25409)	Back	110 lb	221 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4"	16(i22469)	189 lb	394 lb	-	-
2	6'- 6 1/2"	7'	4(i22443)	265 lb	544 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.



SE049769



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147(5009)**

Job Name: **346632-A-LOT 26**
Level: **2nd Level**
Label: **B14 - i25637**
Type: **Beam**

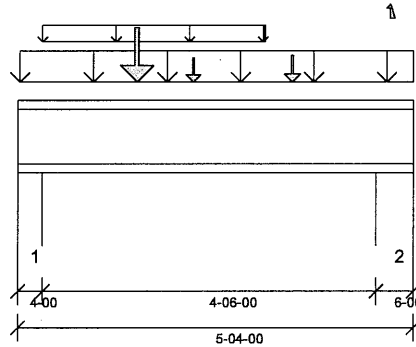
2 Ply Member
11 7/8" NI-20

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 07/23/2022 10:09



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"
- 615 psi Wall @ 4'- 11"

Reinforcement Accessories Required

- Critical Load Web Stiffener @ 1'- 7 1/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 3/8"	1.25D + 1.5L	1.00	3464 lb ft	11160 lb ft	Passed - 31%
Factored Shear:	0'- 4 1/16"	1.25D + 1.5L	1.00	2902 lb	4480 lb	Passed - 65%
Live Load (LL) Pos. Defl.:	2'- 6 1/16"	L		0.024"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 6 1/8"	D + L		0.037"	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	2905 lb		4480 lb	12304 lb	Passed - 65%
2	6-00	1.25D + 1.5L	1.00	2670 lb		4480 lb	18456 lb	Passed - 60%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	5'- 4"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'- 3/8"	5'- 4"	Smoothed Load	Top	127 lb/ft	258 lb/ft	-	-
Uniform	0'- 4"	3'- 4"	User Load	Top	60 lb/ft	-	-	-
Point	1'- 7 1/4"	1'- 7 1/4"	B12(i25265)	Front	312 lb	751 lb	-	-
Point	2'- 4 3/8"	2'- 4 3/8"	J6(i25179)	Front	91 lb	183 lb	-	-
Point	3'- 8 3/8"	3'- 8 3/8"	J6(i25409)	Front	113 lb	226 lb	-	-
Point	5'- 3/8"	5'- 3/8"	J6(i25255)	Front	-	-17 lb	-	-

UNFACTORED REACTIONS

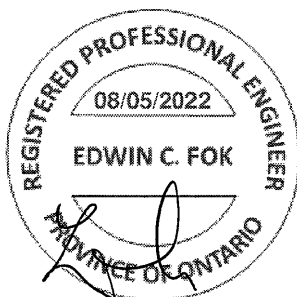
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4"	12(i22467)	746 lb	1319 lb	-	-
2	4'- 10"	5'- 4"	15(i22465)	662 lb	1224/-17 lb	-	-

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.



SG049770



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

PASSED

2nd Level\Flush Beams\B15(i25253) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

July 23, 2022 10:09:31

Build 8183

Job name: 45147(5009)

File name: 346632-A-LOT 26.mmdl

Address: Pine Valley

Description: 2nd Level\Flush Beams\B15(i25253)

City, Province, Postal Code: Vaughan, ON

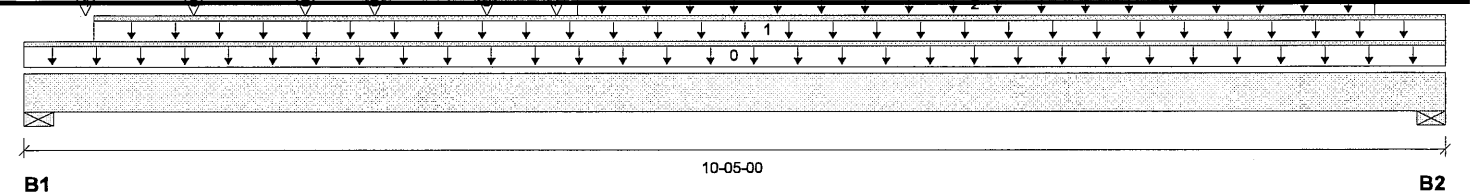
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpha Roof Trusses



Total Horizontal Product Length = 10-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6"	2397 / 0	1544 / 0		
B2, 6"	1681 / 0	1216 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-05-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-06-00	10-05-00	Top		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	04-00-10	09-10-12	Front	283	142			n/a
3	FC4 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	04-11-00	10-05-00	Top	9				n/a
4	-	Conc. Pt. (lbs)	L	00-05-04	00-05-04	Front	546	272			n/a
5	J1(i25128)	Conc. Pt. (lbs)	L	01-02-12	01-02-12	Front	362	181			n/a
6	J1(i25304)	Conc. Pt. (lbs)	L	02-06-12	02-06-12	Front	414	207			n/a
7	J1(i25102)	Conc. Pt. (lbs)	L	03-10-12	03-10-12	Front	414	207			n/a
8	J5(i25380)	Conc. Pt. (lbs)	L	02-00-10	02-00-10	Back	239	120			n/a
9	J5(i25097)	Conc. Pt. (lbs)	L	03-04-10	03-04-10	Back	239	120			n/a
10	J5(i25150)	Conc. Pt. (lbs)	L	04-08-10	04-08-10	Back	158	79			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	10697 ft-lbs	35392 ft-lbs	30.2%	1	05-02-12
End Shear	4177 lbs	14464 lbs	28.9%	1	01-05-14
Total Load Deflection	L/898 (0.128")	n/a	26.7%	4	05-00-14
Live Load Deflection	L/999 (0.076")	n/a	n/a	5	05-00-14
Max Defl.	0.128"	n/a	n/a	4	05-00-14
Span / Depth	9.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 6" x 3-1/2"	5525 lbs	42.8%	21.6%	Spruce-Pine-Fir
B2	Wall/Plate 6" x 3-1/2"	4042 lbs	31.3%	15.8%	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 9
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-01-08.

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



SC049771



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147(5009)**

Job Name: **346632-A-LOT 26**
Level: **2nd Level**
Label: **B16 - i25459**
Type: **Beam**

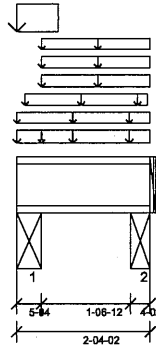
2 Ply Member
11 7/8" NI-20

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 07/23/2022 10:09



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'- 6 3/4"

Factored Resistance of Support Material:

- 769 psi Beam @ 0'- 4 1/4"
- 769 psi Beam @ 2'- 1"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 2 5/8"	1.25D + 1.5L	0.65	92 lb ft	7254 lb ft	Passed - 1%
Factored Neg. Moment:	0'- 4 1/4"	1.25D + 1.5S	0.94	77 lb ft	10437 lb ft	Passed - 1%
Factored Shear:	0'- 5 5/16"	1.25D + 1.5S + L	0.96	542 lb	4296 lb	Passed - 13%

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	5-04	1.25D + 1.5S + L	0.96	1081 lb		4296 lb	19356 lb	Passed - 25%
2	4-02	1.25D + 1.5L	0.65	304 lb		2912 lb	10309 lb	Passed - 10%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	2'- 4 1/8"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	2'- 4 1/8"	E69(i22441)	Top	101 lb/ft	-	-	-
Uniform	0'	2'- 4 1/8"	FC4 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Uniform	0'	0'- 8 3/4"	E69(i22441)	Top	276 lb/ft	-	413 lb/ft	-
Uniform	0'- 1 3/4"	2'- 3 1/2"	User Load	Top	10 lb/ft	27 lb/ft	-	-
Uniform	0'- 5 1/4"	2'- 4 1/8"	E69(i22441)	Top	28 lb/ft	-	42 lb/ft	-
Uniform	0'- 5 1/4"	2'- 4 1/8"	User Load	Top	14 lb/ft	-	21 lb/ft	-
Uniform	0'- 5 1/4"	2'- 4 1/8"	FC4 Floor Decking (Plan View Fill)	Top	4 lb/ft	8 lb/ft	-	-
Point	0'- 5 1/4"	0'- 5 1/4"	FC4 Floor Decking (Plan View Fill)	Top	-	9 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/4"	STL BM(i22449)	394 lb	53 lb	359 lb	-
2	2'	2'- 4 1/8"	STL BM(i22450)	186 lb	47 lb	72 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.



36049772



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147(5009)**

Job Name: **346632-A-LOT 26**
Level: **1st Level**
Label: **B17 - i26874**
Type: **Beam**

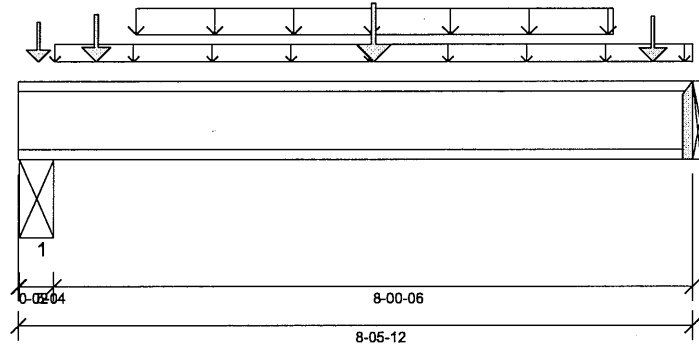
2 Ply Member
11 7/8" NI-20

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 07/23/2022 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:

- 769 psi Beam @ 0'- 4 3/8"
- 769 psi Beam @ 8'- 5 3/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 5 5/8"	1.25D + 1.5L	0.99	5058 lb ft	11016 lb ft	Passed - 46%
Factored Shear:	8'- 5 11/16"	1.25D + 1.5L	0.99	2245 lb	4422 lb	Passed - 51%
Live Load (LL) Pos. Defl.:	4'- 5 1/8"	L		0.061"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 5 1/8"	D + L		0.109"	L/240	Passed - L/886

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	5-04	1.25D + 1.5L	0.99	2677 lb		4422 lb	19926 lb	Passed - 61%
2	1-12	1.25D + 1.5L	0.99	2245 lb		3940 lb	-	Passed - 57%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories		
			Top	Face	Member			
2	HU310-2		-	-	-	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'	8'- 5 3/4"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'- 5 1/2"	8'- 5 3/4"	User Load	Top	60 lb/ft	-	-	-
Uniform	1'- 5 3/4"	7'- 5 3/4"	Smoothed Load	Front	77 lb/ft	154 lb/ft	-	-
Point	0'- 11 3/4"	0'- 11 3/4"	J9(I26957)	Front	269 lb	144 lb	-	-
Point	7'- 11 3/4"	7'- 11 3/4"	J9(I27038)	Front	260 lb	126 lb	-	-
Point	0'- 3"	0'- 3"	12(I22467)	Top	175 lb	143 lb	-	-
Point	4'- 5 5/8"	4'- 5 5/8"	User Load	Top	150 lb	400 lb	-	-

UNFACTORED REACTIONS

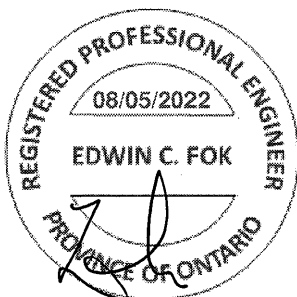
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'- 1/8"	0'- 5 3/8"	STL BM(I23251)	1015 lb	948 lb	-	-
2	8'- 5 3/4"	8'- 5 3/4"	B18(I26942)	833 lb	794 lb	-	-

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.
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- 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.



SG049773



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

PASSED

1st Level Flush Beams B18(i26942) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

July 23, 2022 10:07:36

Build 8183

Job name: 45147(5009)

File name: 346632-A-LOT 26.mmdl

Address: Pine Valley

Description: 1st Level Flush Beams B18(i26942)

City, Province, Postal Code: Vaughan, ON

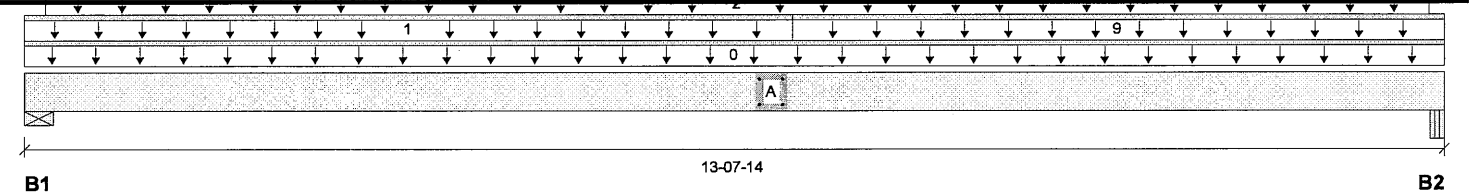
Specifier:

Customer: 4 Gold Park

Designer: NL

Code reports: 3 CCMC 12472-R

Company: Alpha Roof Trusses



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	1659 / 0	1514 / 0		
B2, 2-5/8"	1609 / 0	1590 / 0		

Load Summary

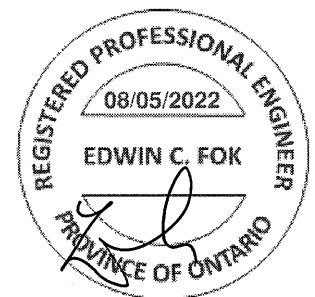
Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	13-07-14	Top		12			00-00-00
1	FC5 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	07-04-10	Top	21	10			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-02-06	13-06-02	Top	27	10			n/a
3	5(i22447)	Unf. Lin. (lb/ft)	L	00-04-14	02-08-14	Top		68			n/a
4	5(i22447)	Unf. Lin. (lb/ft)	L	00-05-04	01-09-04	Top	129	65			n/a
5	5(i22447)	Unf. Lin. (lb/ft)	L	01-05-04	02-08-14	Top	127	63			n/a
6	16(i22469)	Unf. Lin. (lb/ft)	L	05-08-14	13-07-14	Top		68			n/a
7	16(i22469)	Unf. Lin. (lb/ft)	L	06-05-00	07-09-00	Top	80	220			n/a
8	16(i22469)	Unf. Lin. (lb/ft)	L	07-03-08	13-07-14	Top	23	14			n/a
9	FC5 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	07-04-10	13-07-14	Top	11	5			n/a
10	16(i22469)	Unf. Lin. (lb/ft)	L	07-04-10	13-07-14	Top	8				n/a
11	B17(i26874)	Conc. Pt. (lbs)	L	07-02-02	07-02-02	Back	794	833			n/a
12	5(i22447)	Conc. Pt. (lbs)	L	02-07-14	02-07-14	Top	291	155			n/a
13	16(i22469)	Conc. Pt. (lbs)	L	05-09-14	05-09-14	Top	420	220			n/a
14	User Load	Conc. Pt. (lbs)	L	11-04-13	11-04-13	Top	480	180			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	18443 ft-lbs	35392 ft-lbs	52.1%	1	07-02-02
End Shear	4258 lbs	14464 lbs	29.4%	1	01-02-04
Total Load Deflection	L/397 (0.404")	n/a	60.5%	4	06-10-08
Live Load Deflection	L/793 (0.202")	n/a	45.4%	5	06-10-08
Max Defl.	0.404"	n/a	n/a	4	06-10-08
Span / Depth	13.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 3-1/2"	4381 lbs	85.7%	43.2%	Spruce-Pine-Fir
B2	Beam 2-5/8" x 3-1/2"	4400 lbs	77.9%	39.3%	Unspecified


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

SGO49774



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147(5009)**

Job Name: **346632-A-LOT 26**
Level: **1st Level**
Label: **B19 - i26987**
Type: **Beam**

1 Ply Member

11 7/8" NI-20

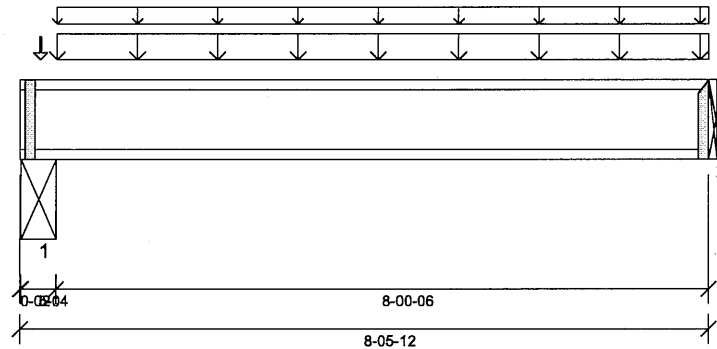
Status:

**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 07/23/2022 10:08



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: 8'- 1/4"

Factored Resistance of Support Material:

- 769 psi Beam @ 0'- 4 3/8"
- 769 psi Beam @ 8'- 5 3/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 5 1/8"	1.25D + 1.5L	1.00	3069 lb ft	5580 lb ft	Passed - 55%
Factored Shear:	8'- 5 11/16"	1.25D + 1.5L	1.00	1513 lb	2240 lb	Passed - 68%
Live Load (LL) Pos. Defl.:	4'- 5 1/16"	L		0.095"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 5 1/16"	D + L		0.134"	L/240	Passed - L/718

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	5-04	1.25D + 1.5L	1.00	1614 lb		2240 lb	10093 lb	Passed - 72%
2	1-12	1.25D + 1.5L	1.00	1515 lb		1970 lb	-	Passed - 77%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
2	LT251188		-	-	-	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

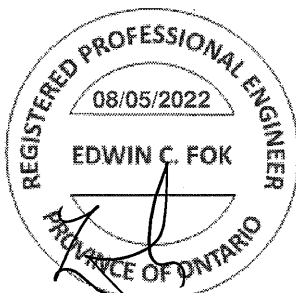
Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 5 3/4"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	0'- 5 1/2"	8'- 5 3/4"	User Load	Top	60 lb/ft	160 lb/ft	-	-
Uniform	0'- 5 1/2"	8'- 5 3/4"	FC5 Floor Decking (Plan View Fill)	Top	13 lb/ft	26 lb/ft	-	-
Point	0'- 3"	0'- 3"	12(122467)	Top	40 lb	52 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'- 1/8"	0'- 5 3/8"	STL BM(123251)	347 lb	800 lb	-	-
2	8'- 5 3/4"	8'- 5 3/4"	B20(127007)	303 lb	744 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.



36049775



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147(5009)**

Job Name: **346632-A-LOT 26**
Level: **1st Level**
Label: **B20 - i27007**
Type: **Beam**

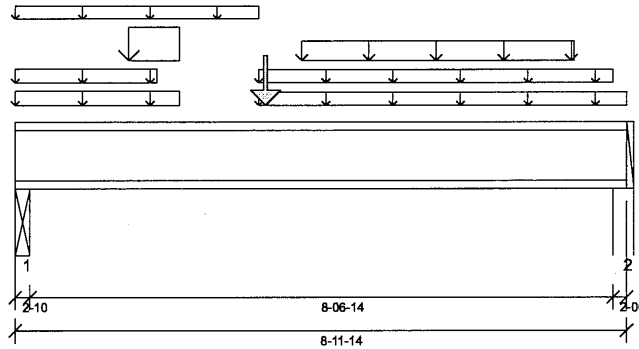
2 Ply Member
11 7/8" NI-20

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 07/23/2022 10:08



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: 3'- 4 3/8"

Factored Resistance of Support Material:

- 769 psi Beam @ 0'- 1 5/8"
- 615 psi Wall @ 8'- 10 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 8 1/4"	1.25D + 1.5L	1.00	6484 lb ft	11160 lb ft	Passed - 58%
Factored Shear:	0'- 2 11/16"	1.25D + 1.5L	1.00	2548 lb	4480 lb	Passed - 57%
Live Load (LL) Pos. Defl.:	4'- 5 1/16"	L		0.102"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 5"	D + L		0.153"	L/240	Passed - L/672

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	2-10	1.25D + 1.5L	1.00	2607 lb		4150 lb	10093 lb	Passed - 63%
2	2-06	1.25D + 1.5L	1.00	2179 lb		4090 lb	7305 lb	Passed - 53%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 11 7/8"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	2'- 5"	16(i22469)	Top	68 lb/ft	-	-	-
Uniform	0'	2'- 1"	16(i22469)	Top	18 lb/ft	31 lb/ft	-	-
Uniform	1'- 8"	2'- 5"	16(i22469)	Top	252 lb/ft	525 lb/ft	-	-
Uniform	3'- 7"	8'- 11 7/8"	FC5 Floor Decking (Plan View Fill)	Top	8 lb/ft	17 lb/ft	-	-
Uniform	3'- 7"	8'- 9 1/2"	FC5 Floor Decking (Plan View Fill)	Top	7 lb/ft	20 lb/ft	-	-
Uniform	4'- 2 5/8"	8'- 2 5/8"	Smoothed Load	Back	85 lb/ft	170 lb/ft	-	-
Tapered	0'	3'- 7"	FC5 Floor Decking (Plan View Fill)	Top	11 To 4 lb/ft	21 To 8 lb/ft	-	-
Point	3'- 8 1/4"	3'- 8 1/4"	B19(i26987)	Back	303 lb	744 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 2 5/8"	STL BM(i20087)	702 lb	1164 lb	-	-
2	8'- 9 1/2"	8'- 11 7/8"	W30(i23246)	515 lb	1012 lb	-	-

DESIGN NOTES

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



SG049776



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147(5009)**

Job Name: **346632-A-LOT 26-sunken**
Level: **1st Level**
Label: **B21 - i27582**
Type: **Beam**

1 Ply Member

11 7/8" NI-20

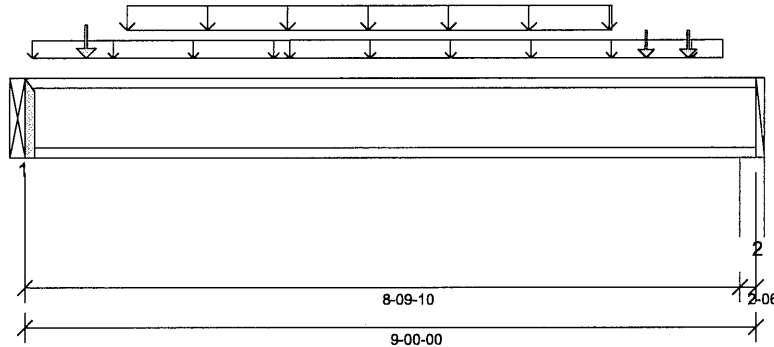
Status:

**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 07/23/2022 10:35



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:

- 769 psi Beam @ 0'
- 615 psi Wall @ 8'- 10 5/8"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 8 3/4"	1.25D + 1.5L	1.00	3522 lb ft	5580 lb ft	Passed - 63%
Factored Shear:	0'- 1/16"	1.25D + 1.5L	1.00	1521 lb	2240 lb	Passed - 68%
Live Load (LL) Pos. Defl.:	4'- 4 13/16"	L		0.100"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 5 5/16"	D + L		0.182"	L/240	Passed - L/581

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	1521 lb		1970 lb	-	Passed - 77%
2	2-06	1.25D + 1.5L	1.00	1488 lb		2045 lb	3653 lb	Passed - 73%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	LT251188		-	-	-	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'	9'	Self Weight	Top	3 lb/ft	-	-	-
Uniform	0'- 1 1/8"	3'- 3 1/8"	User Load	Top	15 lb/ft	40 lb/ft	-	-
Uniform	1'- 3 1/16"	7'- 2 11/16"	Smoothed Load	Front	64 lb/ft	130 lb/ft	-	-
Uniform	3'- 3 1/8"	8'- 7 1/8"	User Load	Top	60 lb/ft	-	-	-
Point	0'- 9"	0'- 9"	J9(i27567)	Front	68 lb	136 lb	-	-
Point	7'- 7 3/4"	7'- 7 3/4"	J9(i27573)	Front	47 lb	93 lb	-	-
Point	8'- 2"	8'- 2"	J9(i27574)	Front	47 lb	94 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B22(i27581)	432 lb	654 lb	-	-
2	8'- 9 5/8"	9'	W28(i23243)	508 lb	569 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.



SG4977



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147(5009)**

Job Name: **346632-A-LOT 26-sunken**
Level: **1st Level**
Label: **B22 - i27581**
Type: **Beam**

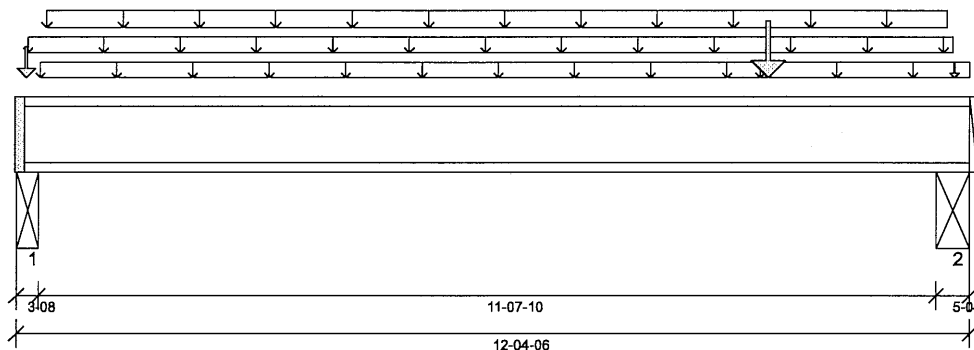
2 Ply Member
11 7/8" NI-20

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 07/23/2022 10:35



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: 9'- 4"

Factored Resistance of Support Material:

- 769 psi Beam @ 0'- 2 1/2"
- 769 psi Beam @ 12'- 1/8"

Reinforcement Accessories Required

- Critical Load Web Stiffener @ 9'- 9"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	8'- 13/16"	1.25D + 1.5L	0.97	4647 lb ft	10790 lb ft	Passed - 43%
Factored Shear:	11'- 11 1/16"	1.25D + 1.5L	0.97	2141 lb	4331 lb	Passed - 49%
Live Load (LL) Pos. Defl.:	6'- 7"	L		0.083"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	6'- 5 3/16"	D + L		0.195"	L/240	Passed - L/714

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	3-08	1.25D + 1.5L	0.97	1783 lb		4215 lb	13011 lb	Passed - 42%
2	5-04	1.25D + 1.5L	0.97	2245 lb		4331 lb	19517 lb	Passed - 52%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 4 3/8"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'- 1 3/4"	12'- 1 3/4"	FCS Floor Decking (Plan View Fill)	Top	10 lb/ft	21 lb/ft	-	-
Uniform	0'- 3 3/4"	9'- 7 3/4"	FCS Floor Decking (Plan View Fill)	Top	6 lb/ft	12 lb/ft	-	-
Uniform	0'- 4 3/4"	12'- 7/8"	User Load	Top	60 lb/ft	-	-	-
Uniform	9'- 7 3/4"	12'- 4 3/8"	FCS Floor Decking (Plan View Fill)	Top	10 lb/ft	19 lb/ft	-	-
Point	9'- 9"	9'- 9"	B21(i27582)	Back	432 lb	654 lb	-	-
Point	0'- 1 1/2"	0'- 1 1/2"	9(i22455)	Top	161 lb	266 lb	-	-
Point	12'- 2"	12'- 2"	15(i22465)	Top	-	26 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	STL BM(i20089)	731 lb	598 lb	-	-
2	11'- 11 1/8"	12'- 4 3/8"	STL BM(i23251)	857 lb	765 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.



SC049778

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'-6"
	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'-8"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
14"	NI-90	21'-6"	19'-10"	18'-11"	17'-11"	22'-0"	20'-4"	19'-6"	18'-4"
	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"
16"	NI-90	23'-10"	22'-1"	21'-0"	19'-10"	24'-5"	22'-7"	21'-6"	20'-4"
	NI-60	23'-9"	22'-0"	21'-0"	19'-10"	24'-6"	22'-9"	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'-6"	14'-6"	13'-5"
	NI-40x	18'-8"	17'-6"	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"
14"	NI-90	24'-1"	22'-5"	21'-4"	20'-2"	24'-7"	22'-11"	21'-10"	20'-8"
	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'-8"	24'-8"	23'-6"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"
16"	NI-90	27'-0"	25'-1"	23'-11"	22'-7"	27'-6"	25'-8"	24'-6"	23'-2"
	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.

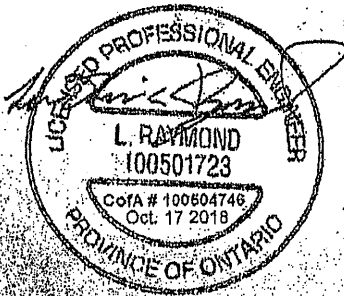
The construction details for residential designs are prone to changes.

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/>

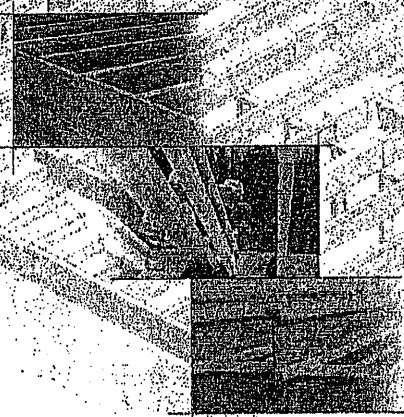
This document does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of its component based on the design criteria and loadings shown on the calculation sheets.

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



NORDIC ENGINEERED WOOD

INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



Distributed by:



SAFETY AND CONSTRUCTION PRECAUTIONS



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



Never stack building materials over unbraced I-joists. Once sheathed, do not draw down 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 installed end-to-end, temporary bracing and a load-bearing wall is required 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-joist. 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 in a lateral restraint at the end of each bay. Top ends of adjoining bracing must be at least 1x4 inch.
 - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joist 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, stack 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 minimum hole size and location, 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 liquids.
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 stacked by the supplier.
 - Orient the bundles so that the webs of the I-joists are vertical.
 - Pick the bundles at the 3rd 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.

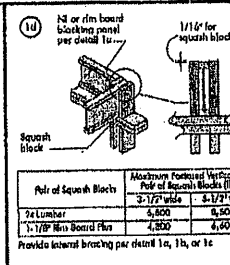
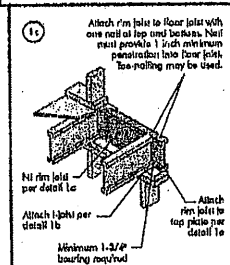
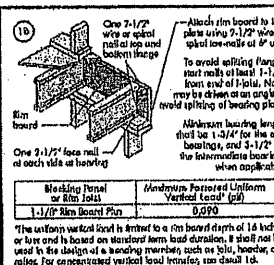
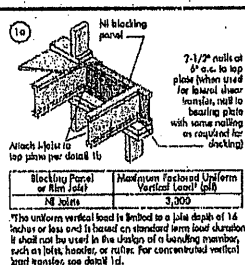
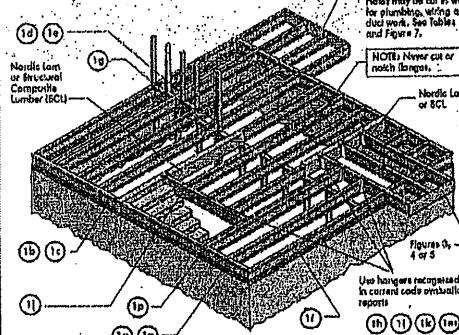


INSTALLING NORDIC I-JOISTS

1. Before laying out floor system components, verify that I-joist spans within each hanger width. 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 installed, 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 maintain uniformity.
7. Leave a 1/16 inch gap between the I-joist end and a hanger.
8. Concentrated loads greater than those that can normally be supported by residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include roof 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 joist 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 (ripple members) to transfer gravity loads through the floor system to the wall or foundation below.
12. Due to shrinkage, common framing lumber set on edge may never be used as blocking or rim board. 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 composite depth selected.
13. Provide permanent lateral support of the bottom flange of all I-joists at lateral 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 gypsum wallboard 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, edge nails must be supported between I-joists with 2x4 blocking. (Use panels to blocking to minimize 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 to the flange's top face in accordance with the applicable building code requirements or approved building plans.

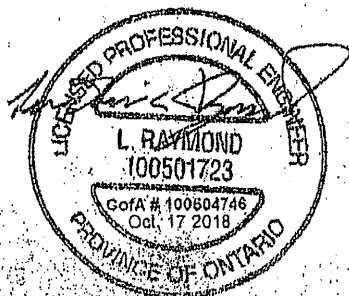
FIGURE 1 TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

Some framing requirements such as air/gas blocking and blocking panels have been omitted for clarity.



2 of 4

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



CONSTRUCTION DETAILS FOR RESIDENTIAL FLOORS

N-C303 / September 2013

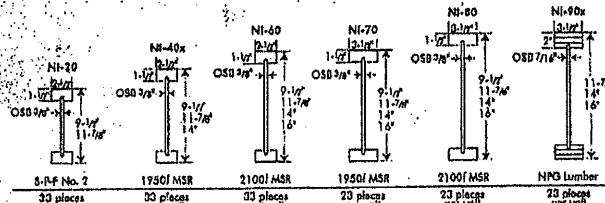


Refer to the Installation Guide for Residential Floors for additional information.
CCMC EVALUATION REPORT 13032-R

WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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. I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
3. Whenever possible, field-cut holes should be centred on the middle of the web.
4. The minimum size hole of the minimum 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.



5. 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.
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 size of the largest square hole (or twice 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 Table 1 and 2, respectively.
7. 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.
8. Holes measuring 1-1/2 inches or smaller are permitted anywhere in a conditioned section of a joist. Holes of greater size may be permitted subject to ventilation.

9. 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.
10. 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.
11. Limit three maximum size 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 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	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-40x	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-60	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-70	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-80	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
11-7/8"	NI-20	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-40x	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-60	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-70	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-80	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
14"	NI-20	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-40x	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-60	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-70	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-80	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
16"	NI-20	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-40x	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-60	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-70	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
	NI-80	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4

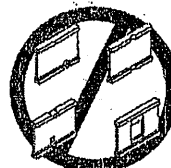
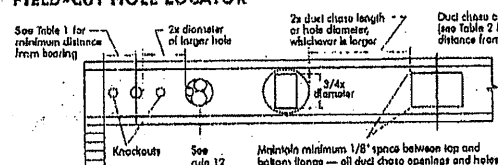
1. Above table may be used for I-joist spacing of 24 inches on centre or less.
2. Hole location distance is measured from inside face of support to centre of hole.
3. Distances in this chart are based on uniformly loaded joists.
4. The above table is based on the I-joist being used at their maximum spans. 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 Supports to Centre of Opening (ft. - in.)											
		Duct Chase Length (in.)											
9-1/2"	NI-20	8	10	12	14	16	18	20	22	24	26	28	30
	NI-40x	8	10	12	14	16	18	20	22	24	26	28	30
	NI-60	8	10	12	14	16	18	20	22	24	26	28	30
	NI-70	8	10	12	14	16	18	20	22	24	26	28	30
	NI-80	8	10	12	14	16	18	20	22	24	26	28	30
11-7/8"	NI-20	8	10	12	14	16	18	20	22	24	26	28	30
	NI-40x	8	10	12	14	16	18	20	22	24	26	28	30
	NI-60	8	10	12	14	16	18	20	22	24	26	28	30
	NI-70	8	10	12	14	16	18	20	22	24	26	28	30
	NI-80	8	10	12	14	16	18	20	22	24	26	28	30
14"	NI-20	8	10	12	14	16	18	20	22	24	26	28	30
	NI-40x	8	10	12	14	16	18	20	22	24	26	28	30
	NI-60	8	10	12	14	16	18	20	22	24	26	28	30
	NI-70	8	10	12	14	16	18	20	22	24	26	28	30
	NI-80	8	10	12	14	16	18	20	22	24	26	28	30
16"	NI-20	8	10	12	14	16	18	20	22	24	26	28	30
	NI-40x	8	10	12	14	16	18	20	22	24	26	28	30
	NI-60	8	10	12	14	16	18	20	22	24	26	28	30
	NI-70	8	10	12	14	16	18	20	22	24	26	28	30
	NI-80	8	10	12	14	16	18	20	22	24	26	28	30

1. Above table may be used for I-joist spacing of 24 inches on centre 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 simple-span joists only. For other applications, contact your local distributor.
4. 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.
5. The above table is based on the I-joist 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 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 18 inches on centre along the length of the joist. Where possible, it is preferable to use knockouts instead of field-cut holes.

Never drill, cut or notch the flange, or over-cut 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. 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



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



Never stack building materials over unheated I-joists. Once installed, do not over-stress I-joists 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. Brace 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 continuously 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 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 6 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2 inch nails (assured to the top surface of each I-joist). Nail the bracing to a lateral restraint at the end of each bay. 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.
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, stack 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 hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.



PRODUCT WARRANTY

Chambers Construction guarantees that, in accordance with our specifications, Nordic products are free from manufacturing defects in material and workmanship.

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

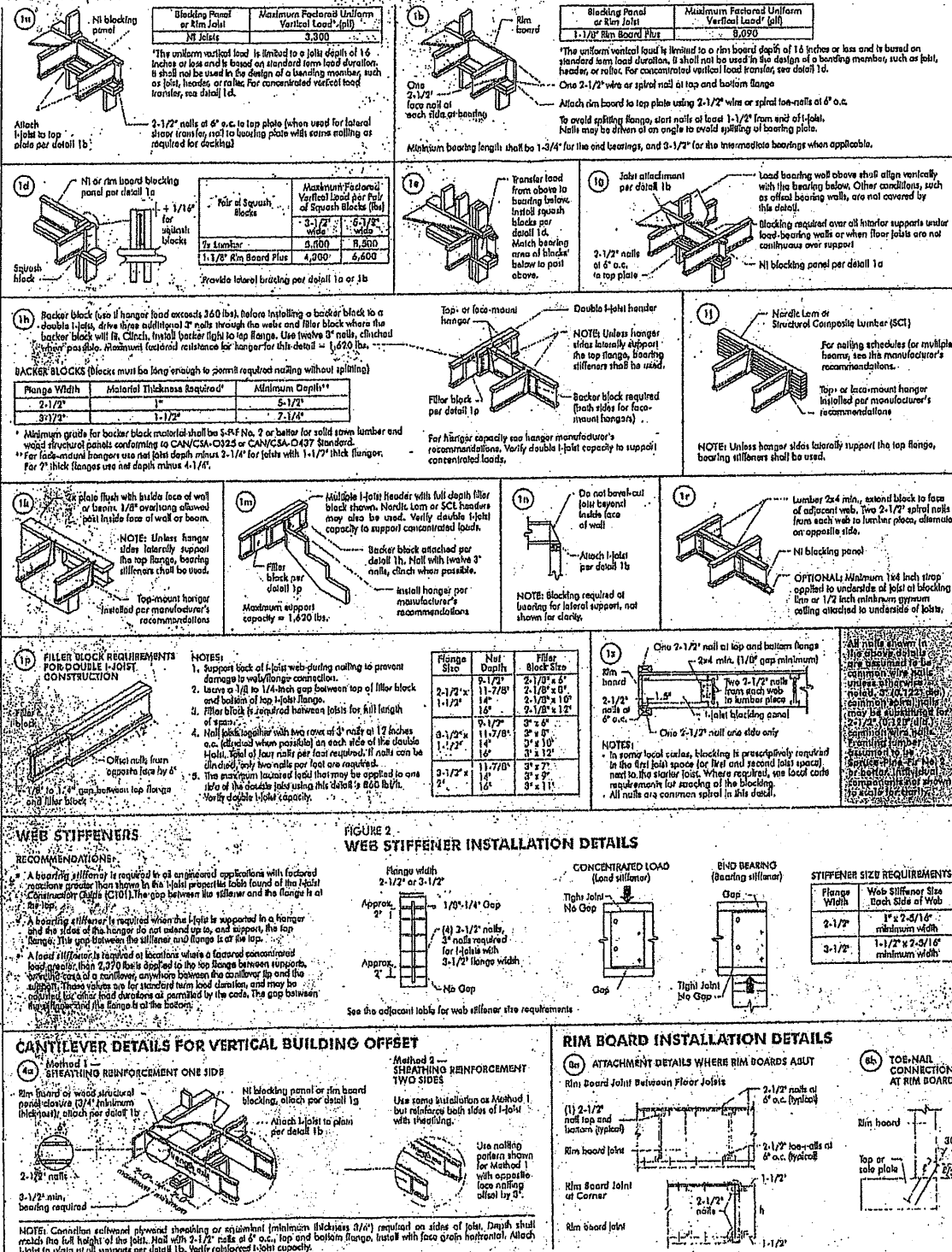
The construction details for residential designs are prone to changes.

Details released after September 2013 supersedes N-303

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)



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