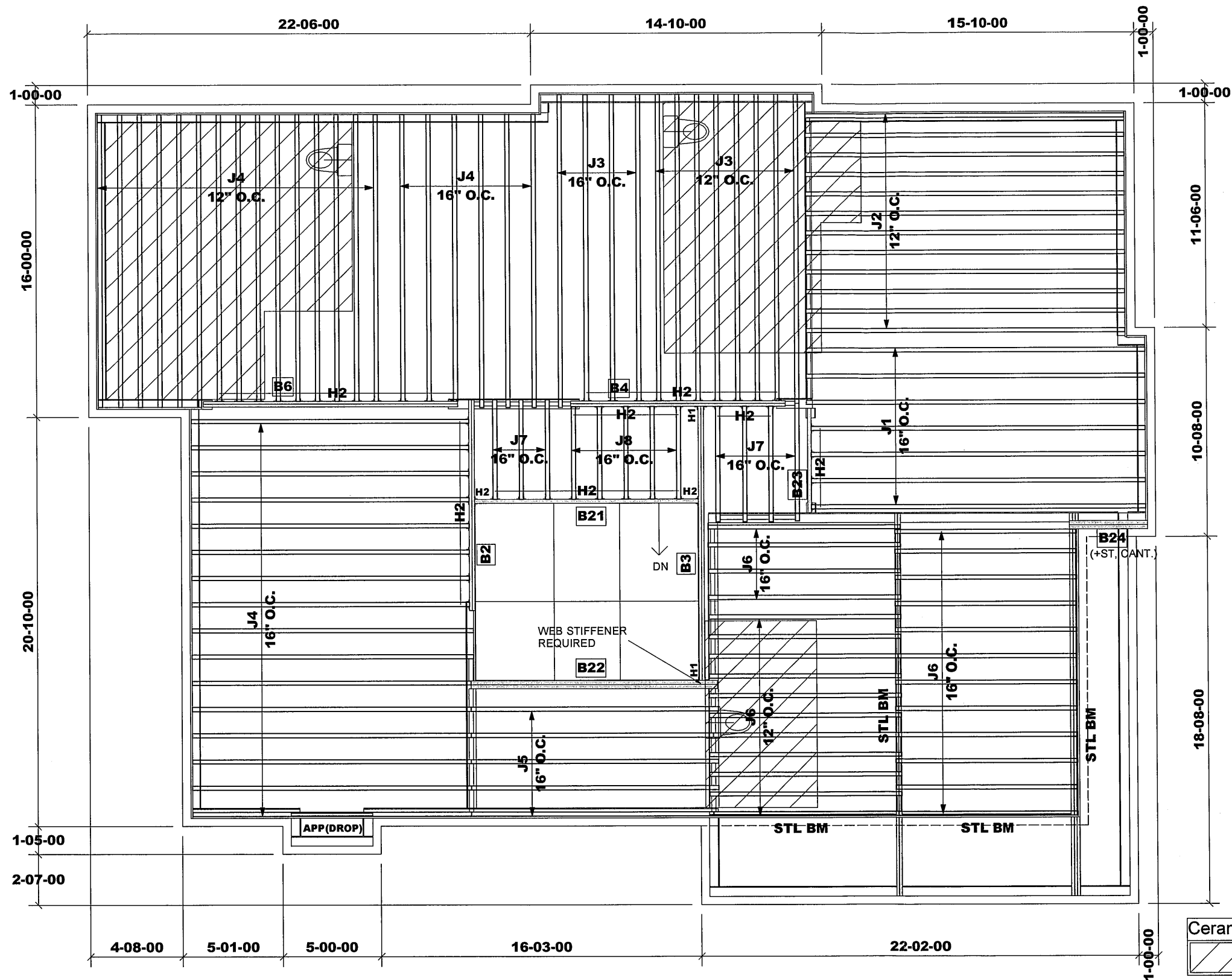




Products				
PlotID	Length	Product	Plies	Net Qty
B2	11-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B3	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B4	11-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B6	13-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B21	12-00-00	11 7/8" NI-40x	1	1
B22	13-00-00	11 7/8" NI-20	2	2
B23	6-00-00	11 7/8" NI-40x	1	1
B24	4-00-00	11 7/8" NI-20	2	2
Bk1	45-00-00	11 7/8" NI-20	1	1
Ca1	181-00-00	1 1/8" x 11 7/8" Rim Board	1	1
J1	18-00-00	11 7/8" NI-20	1	7
J2	17-00-00	11 7/8" NI-20	1	12
J3	16-00-00	11 7/8" NI-20	1	12
J4	15-00-00	11 7/8" NI-20	1	37
J5	13-00-00	11 7/8" NI-20	1	5
J6	10-00-00	11 7/8" NI-20	1	27
J7	6-00-00	11 7/8" NI-20	1	7
J8	5-00-00	11 7/8" NI-20	1	5

Connector Summary			
PlotID	Qty	Manuf	Product
H1	2		HU410
H2	55		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

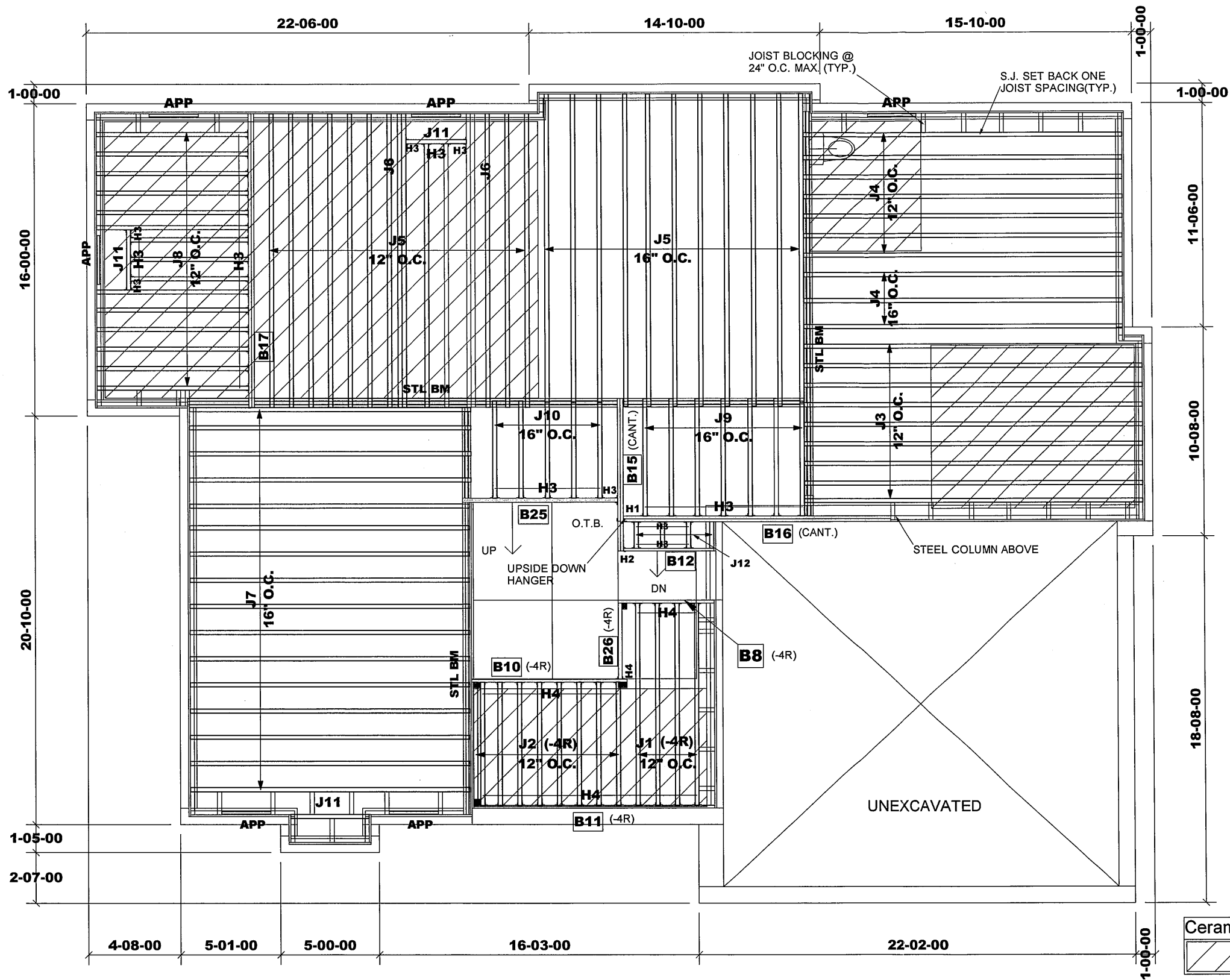
MODEL: 5008 - EL.A
- LOT 59 & 85

SE020614 - SE020634

SG049805 - SG049810



Job Track: 45147	Builder: Gold Park	Location: Vaughan	Sheet: 1 of 2	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: 321529-346631*	Project: Pine Valley	SalesPerson: Derek	Date: 7/22/2022	
Plan Log: 117907	Model: 5008A - LOT 59 & 85	Yard: Home Lumber	Designer: NL	



Products				
PlotID	Length	Product	Plies	Net Qty
B8	5-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B10	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B11	13-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12	5-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B15	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B16	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B17	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B25	8-00-00	11 7/8" NI-20	1	1
B26	4-00-00	9 1/2" NI-20	1	1
Bk1	5-00-00	9 1/2" NI-20	1	1
Bk2	78-00-00	11 7/8" NI-20	1	1
Ca1	17-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Ca2	165-00-00	1 1/8" x 11 7/8" Rim Board	1	1
J1	11-00-00	9 1/2" NI-20	1	4
J2	7-00-00	9 1/2" NI-20	1	9
J3	18-00-00	11 7/8" NI-20	1	9
J4	17-00-00	11 7/8" NI-20	1	10
J5	16-00-00	11 7/8" NI-20	1	23
J6	16-00-00	11 7/8" NI-20	2	4
J7	15-00-00	11 7/8" NI-20	1	16
J8	8-00-00	11 7/8" NI-20	1	15
J9	6-00-00	11 7/8" NI-20	1	7
J10	5-00-00	11 7/8" NI-20	1	5
J11	4-00-00	11 7/8" NI-20	1	3
J12	2-00-00	11 7/8" NI-20	1	4

Connector Summary			
PlotID	Qty	Manuf	Product
H1	1		HGUS410
H2	1		HUCQ1.81/9-SDS
H3	45		LT251188
H4	25		LT259

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: 5008 - EL.A
- LOT 59 & 85





Boise Cascade



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

2nd Floor - Supply/BOM\Flush Beams\B2(i46740) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

June 25, 2020 08:59:20

Build 7493

Job name:

File name: 5008 EL. A.mmdl

Address:

Description: 2nd Floor - Supply/BOM\Flush Beams\B2(i46740)

City, Province, Postal Code:

Specifier:

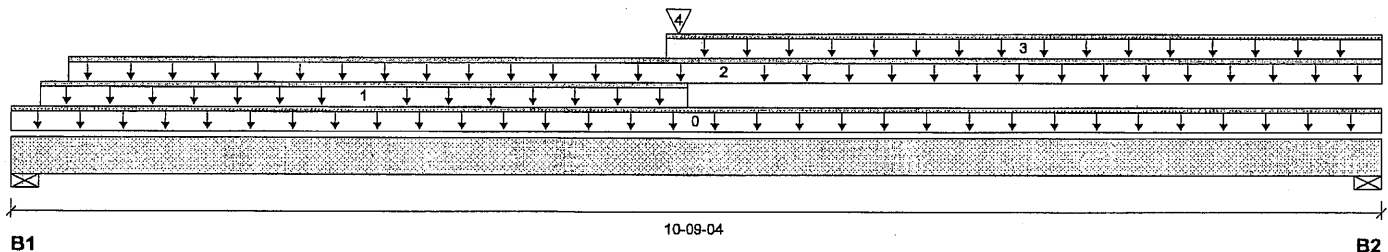
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 10-09-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1835 / 0	1142 / 0		
B2, 5-1/2"	2011 / 0	1401 / 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	10-09-04	Top		12			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	05-03-12	Top	24	12			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-05-06	10-09-04	Top	293	146			n/a
3	11(i37137)	Unf. Lin. (lb/ft)	L	05-01-12	10-09-04	Top		61			n/a
4	B1(i46686)	Conc. Pt. (lbs)	L	05-02-14	05-02-14	Top	691	494			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	12688 ft-lbs	35392 ft-lbs	35.8%	1	05-02-14
End Shear	3833 lbs	14464 lbs	26.5%	1	01-05-06
Total Load Deflection	L/773 (0.155")	n/a	31.0%	4	05-03-12
Live Load Deflection	L/999 (0.093")	n/a	n/a	5	05-03-12
Max Defl.	0.155"	n/a	n/a	4	05-03-12
Span / Depth	10.1				



Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	4179 lbs	35.3%	17.8%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	4767 lbs	40.3%	20.3%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

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

Nail one ply to another with

3 1/2" spiral nails @ 12"

o.c., staggered in 2 rows



Boise Cascade



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

2nd Floor - Supply/BOM\Flush Beams\B3(i46531) (Flush Beam)

PASSED

BC CALC® Member Report
Build 7493

Dry | 1 span | No cant.

June 25, 2020 08:59:20

Job name:

File name: 5008 EL. A.mmdl

Address:

Description: 2nd Floor - Supply/BOM\Flush Beams\B3(i46531)

City, Province, Postal Code:

Specifier:

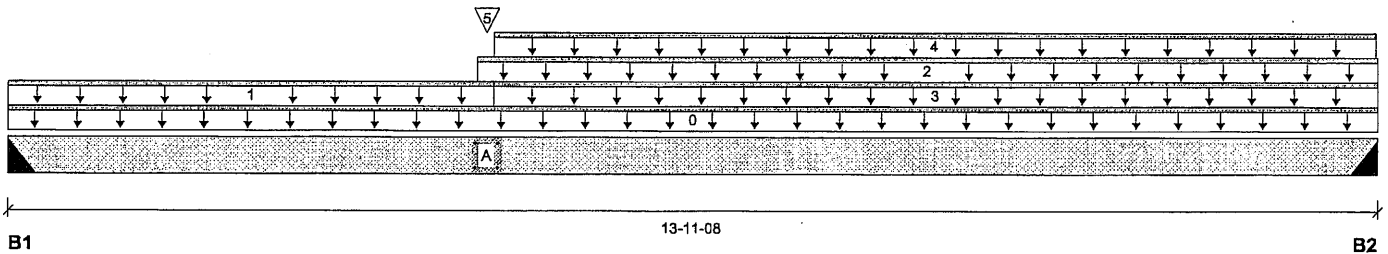
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:

**Reaction Summary (Down / Uplift) (lbs)**

Bearing	Live	Dead	Snow	Wind
B1, 2"	1078 / 0	794 / 0		
B2, 2"	751 / 0	806 / 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	13-11-08	Top		12			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-11-04	Top	23	11			n/a
2	14(i37144)	Unf. Lin. (lb/ft)	L	04-09-04	13-11-08	Top		61			n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	04-11-04	13-11-08	Top	6	3			n/a
4	User Load	Unf. Lin. (lb/ft)	L	04-11-04	13-11-04	Top	40	15			n/a
5	B1(i46686)	Conc. Pt. (lbs)	L	04-10-06	04-10-06	Top	1302	657			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	11667 ft-lbs	35392 ft-lbs	33.0%	1	04-10-06
End Shear	2536 lbs	14464 lbs	17.5%	1	01-01-14
Total Load Deflection	L/641 (0.258")	n/a	37.5%	4	06-07-14
Live Load Deflection	L/1161 (0.142")	n/a	31.0%	5	06-06-07
Max Defl.	0.258"	n/a	n/a	4	06-07-14
Span / Depth	13.9				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Hanger	2" x 3-1/2"	2609 lbs	n/a	30.6%	HGUS410
B2 Hanger	2" x 3-1/2"	2134 lbs	n/a	25.0%	HGUS410

Cautions

Header for the hanger HGUS410 is a Double 1-3/4" x 11-7/8" LVL Beam.
Hanger model HGUS410 and seat length were input by the user.

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

Nail one ply to another with
3 1/2" spiral nails @ 12"
o.c. staggered in 2 rows



36020616



Boise Cascade

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2nd Floor - Supply/BOM\Flush Beams\B4(i46773) (Flush Beam)**

BC CALC® Member Report

Dry | 1 span | No cant.

June 25, 2020 08:59:19

Build 7493

Job name:

File name: 5008 EL. A.mmdl

Address:

Description: 2nd Floor - Supply/BOM\Flush Beams\B4(i46773)

City, Province, Postal Code:

Specifier:

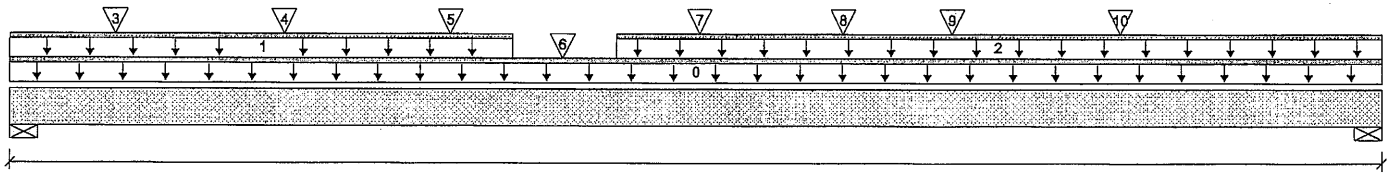
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



B1

10-11-00

B2

Total Horizontal Product Length = 10-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	2628 / 0	1477 / 0		
B2, 5-1/2"	2909 / 0	1675 / 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	10-11-00	Top		12			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	03-11-14	Top	118	59			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	04-09-12	10-11-00	Top	320	160			n/a
3	J3(i46553)	Conc. Pt. (lbs)	L	00-09-14	00-09-14	Top	414	207			n/a
4	J3(i46498)	Conc. Pt. (lbs)	L	02-01-14	02-01-14	Top	414	207			n/a
5	J3(i46560)	Conc. Pt. (lbs)	L	03-05-14	03-05-14	Top	362	181			n/a
6	-	Conc. Pt. (lbs)	L	04-04-10	04-04-10	Top	446	223			n/a
7	J8(i46697)	Conc. Pt. (lbs)	L	05-05-12	05-05-12	Top	126	63			n/a
8	B3(i46531)	Conc. Pt. (lbs)	L	06-07-08	06-07-08	Top	1071	789			n/a
9	J7(i46694)	Conc. Pt. (lbs)	L	07-05-14	07-05-14	Top	118	59			n/a
10	J7(i46593)	Conc. Pt. (lbs)	L	08-09-14	08-09-14	Top	159	79			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	16653 ft-lbs	35392 ft-lbs	47.1%	1	06-05-14
End Shear	5530 lbs	14464 lbs	38.2%	1	09-05-10
Total Load Deflection	L/567 (0.214")	n/a	42.3%	4	05-07-06
Live Load Deflection	L/901 (0.135")	n/a	39.9%	5	05-05-14
Max Defl.	0.214"	n/a	n/a	4	05-07-06
Span / Depth	10.2				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	5788 lbs	48.9%	24.6%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	6458 lbs	54.5%	27.5%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

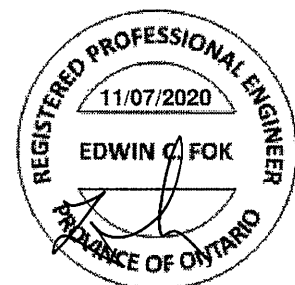
Resistance Factor phi has been applied to all presented results per CSA O86.

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

Nail one ply to another with
3 1/2" spiral nails @ 10"
o.c, staggered in 2 rows



SG020617



Boise Cascade



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

2nd Floor - Supply/BOM\Flush Beams\B6(i46524) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

June 25, 2020 08:59:19

Build 7493

Job name:

File name: 5008 EL. A.mmdl

Address:

Description: 2nd Floor - Supply/BOM\Flush Beams\B6(i46524)

City, Province, Postal Code:

Specifier:

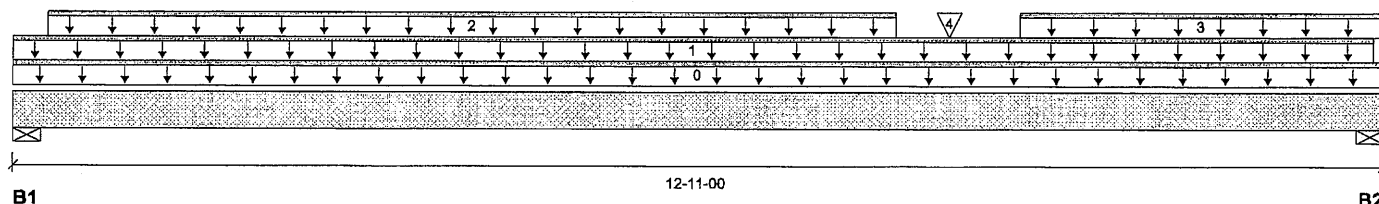
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 12-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1960 / 0	1058 / 0		
B2, 5-1/2"	2237 / 0	1196 / 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	12-11-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-09-14	Top	9	4			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-03-14	08-03-14	Top	310	155			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	09-05-14	12-11-00	Top	362	181			n/a
4	J3(i46769)	Conc. Pt. (lbs)	L	08-09-14	08-09-14	Top	362	181			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	12774 ft-lbs	35392 ft-lbs	36.1%	1	06-09-14
End Shear	3905 lbs	14464 lbs	27.0%	1	11-05-10
Total Load Deflection	L/595 (0.245")	n/a	40.4%	4	06-06-14
Live Load Deflection	L/914 (0.159")	n/a	39.4%	5	06-06-14
Max Defl.	0.245"	n/a	n/a	4	06-06-14
Span / Depth	12.3				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	4261 lbs	36.0%	18.1%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	4850 lbs	41.0%	20.7%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

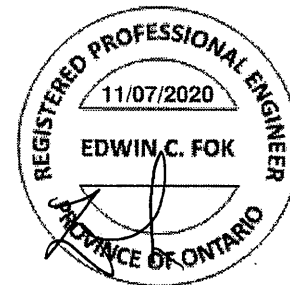
Resistance Factor phi has been applied to all presented results per CSA O86.

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

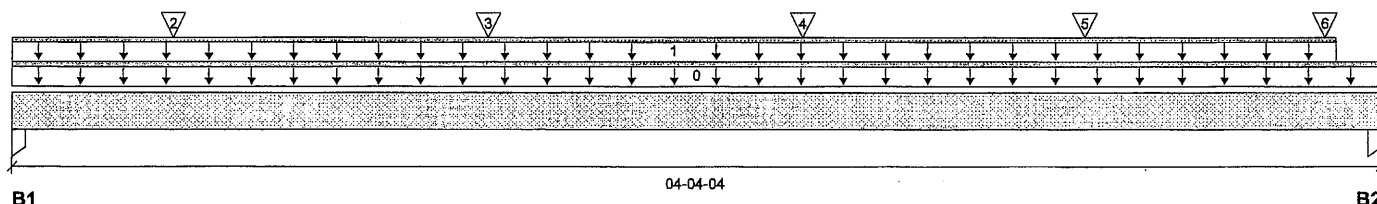
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Nail one ply to another with
3 1/2" spiral nails @ 10'
o.c, staggered in 2 rows



SE020619



Total Horizontal Product Length = 04-04-04

Reaction Summary (Down / Uplift) (lbs)

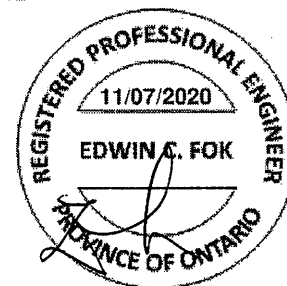
Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	581 / 0	280 / 0		
B2, 3-1/2"	716 / 0	375 / 0		

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	04-04-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	04-02-08	Top	80	30			n/a
2	J1(i48269)	Conc. Pt. (lbs)	L	00-06-02	00-06-02	Top	187	94			n/a
3	J1(i48165)	Conc. Pt. (lbs)	L	01-06-02	01-06-02	Top	210	105			n/a
4	J1(i48256)	Conc. Pt. (lbs)	L	02-06-02	02-06-02	Top	199	99			n/a
5	J1(i48167)	Conc. Pt. (lbs)	L	03-04-14	03-04-14	Top	172	86			n/a
6	-	Conc. Pt. (lbs)	L	04-02-01	04-02-01	Top	193	124			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1213 ft-lbs	11610 ft-lbs	10.4%	1	02-03-14
End Shear	882 lbs	5785 lbs	15.2%	1	03-03-04
Total Load Deflection	L/999 (0.01")	n/a	n/a	4	02-00-14
Live Load Deflection	L/999 (0.007")	n/a	n/a	5	02-00-14
Max Defl.	0.01"	n/a	n/a	4	02-00-14
Span / Depth	5.1				



Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 1-3/4" x 1-3/4"	1222 lbs	38.2%	32.7%	Unspecified
B2	Column 3-1/2" x 1-3/4"	1543 lbs	24.1%	20.7%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). 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®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,



Boise Cascade

**Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****Ground Floor - Supply/BOM\Flush Beams\B10(i48150) (Flush Beam)**

BC CALC® Member Report

Dry | 1 span | No cant.

June 25, 2020 09:22:31

Build 7493

Job name:

File name: 5008 EL. A.mmdl

Address:

Description: Ground Floor - Supply/BOM\Flush Beams\B10(i48150)

City, Province, Postal Code:

Specifier:

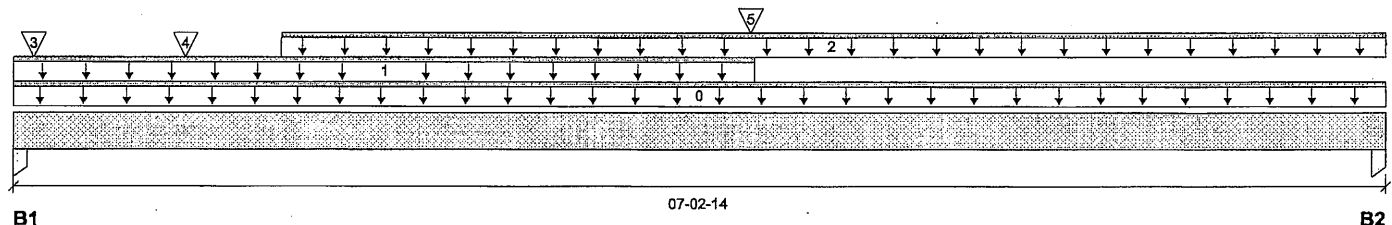
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 07-02-14

Reaction Summary (Down / Uplift) (lbs)

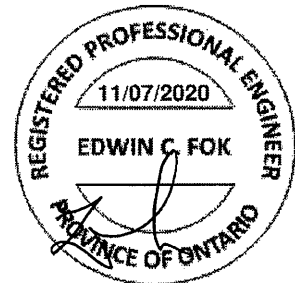
Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	807 / 0	382 / 0		
B2, 1-3/4"	706 / 0	344 / 0		

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	07-02-14	Top		5			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-10-14	Top	70	27			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-12	07-02-14	Top	133	67			n/a
3	J2(i48299)	Conc. Pt. (lbs)	L	00-01-04	00-01-04	Top	64	32			n/a
4	J2(i48212)	Conc. Pt. (lbs)	L	00-10-12	00-10-12	Top	116	58			n/a
5	User Load	Conc. Pt. (lbs)	L	03-10-10	03-10-10	Top	280	105			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3167 ft-lbs	11610 ft-lbs	27.3%	1	03-10-09
End Shear	1379 lbs	5785 lbs	23.8%	1	00-11-14
Total Load Deflection	L/999 (0.074")	n/a	n/a	4	03-07-10
Live Load Deflection	L/999 (0.051")	n/a	n/a	5	03-07-10
Max Defl.	0.074"	n/a	n/a	4	03-07-10
Span / Depth	8.9				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column 2-3/8" x 1-3/4"	1688 lbs	38.9%	33.3%	Unspecified
B2	Column 1-3/4" x 1-3/4"	1489 lbs	46.6%	39.8%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA).

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®, AJS™, ALLJOIST®, BC RIM BOARD™, BCi®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

56020623



Boise Cascade

**Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****Ground Floor - Supply/BOM/Flush Beams\B11(i47858) (Flush Beam)**

BC CALC® Member Report

Dry | 1 span | No cant.

June 25, 2020 09:22:31

Build 7493

Job name:

File name: 5008 EL. A.mmdl

Address:

Description: Ground Floor - Supply/BOM/Flush Beams\B11(i47858)

City, Province, Postal Code:

Specifier:

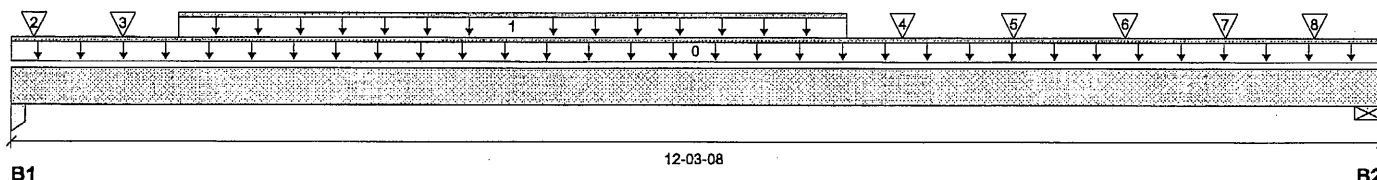
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 12-03-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	838 / 0	448 / 0		
B2, 5-1/2"	1028 / 0	557 / 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	12-03-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-05-14	07-05-14	Top	130	65			n/a
2	J2(i48299)	Conc. Pt. (lbs)	L	00-02-06	00-02-06	Top	64	32			n/a
3	J2(i48212)	Conc. Pt. (lbs)	L	00-11-14	00-11-14	Top	116	58			n/a
4	J1(i48269)	Conc. Pt. (lbs)	L	07-11-14	07-11-14	Top	205	102			n/a
5	J1(i48165)	Conc. Pt. (lbs)	L	08-11-14	08-11-14	Top	210	105			n/a
6	J1(i48256)	Conc. Pt. (lbs)	L	09-11-14	09-11-14	Top	199	99			n/a
7	J1(i48167)	Conc. Pt. (lbs)	L	10-10-10	10-10-10	Top	172	86			n/a
8	-	Conc. Pt. (lbs)	L	11-08-03	11-08-03	Top	120	74			n/a

Controls Summary

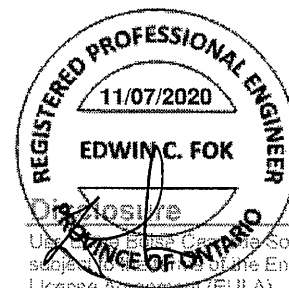
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5597 ft-lbs	11610 ft-lbs	48.2%	1	06-11-14
End Shear	2011 lbs	5785 lbs	34.8%	1	11-00-08
Total Load Deflection	L/358 (0.391")	n/a	67.0%	4	06-02-14
Live Load Deflection	L/548 (0.255")	n/a	65.6%	5	06-02-14
Max Defl.	0.391"	n/a	n/a	4	06-02-14
Span / Depth	14.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	1817 lbs	28.4%	24.3%	Unspecified
B2	Wall/Plate 5-1/2" x 1-3/4"	2238 lbs	22.3%	19.1%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-00-00.
 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



Boise Cascade Engineering Software is
 subject to the End User
 License Agreement (EULA).

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

36020624



Boise Cascade

**Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****Ground Floor - Supply/BOMFlush Beams\B12(i47851) (Flush Beam)**

BC CALC® Member Report

Dry | 1 span | No cant.

June 25, 2020 09:22:31

Build 7493

Job name:

File name: 5008 EL. A.mmdl

Address:

Description: Ground Floor - Supply/BOMFlush Beams\B12(i47851)

City, Province, Postal Code:

Specifier:

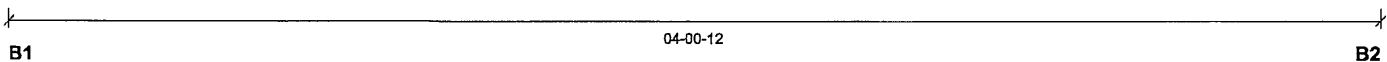
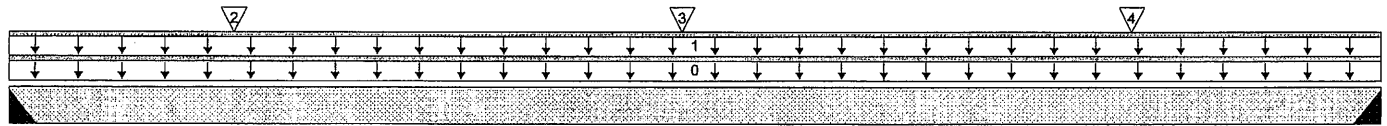
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 04-00-12

Reaction Summary (Down / Uplift) (lbs)

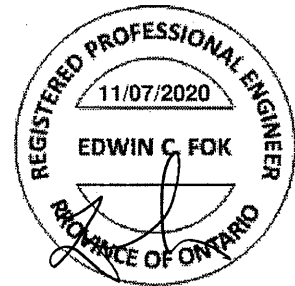
Bearing	Live	Dead	Snow	Wind
B1, 2"	223 / 0	104 / 0		
B2, 2"	219 / 0	102 / 0		

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	04-00-12	Top		6			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	04-00-12	Top	80	30			n/a
2	J13(i47905)	Conc. Pt. (lbs)	L	00-07-14	00-07-14	Top	38	19			n/a
3	J13(i47793)	Conc. Pt. (lbs)	L	01-11-14	01-11-14	Top	44	22			n/a
4	J13(i47874)	Conc. Pt. (lbs)	L	03-03-14	03-03-14	Top	35	18			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	442 ft-lbs	17696 ft-lbs	2.5%	1	01-11-14
End Shear	233 lbs	7232 lbs	3.2%	1	01-01-14
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	02-00-09
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	02-00-09
Max Defl.	0.002"	n/a	n/a	4	02-00-09
Span / Depth	3.9				



Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Hanger	2" x 1-3/4"	465 lbs	n/a	10.9%	HU9X (One flange concealed)
B2 Hanger	2" x 1-3/4"	455 lbs	n/a	10.7%	HUS1.81/10

Cautions

Header for the hanger HU9X (One flange concealed) is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HU9X (One flange concealed 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.

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

45020625



Boise Cascade

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****Ground Floor - Supply/BOM\Flush Beams\B15(i47910) (Flush Beam)**

BC CALC® Member Report

Dry | 2 spans | R cant.

June 25, 2020 09:22:31

Build 7493

Job name:

File name: 5008 EL. A.mmdl

Address:

Description: Ground Floor - Supply/BOM\Flush Beams\B15(i47910)

City, Province, Postal Code:

Specifier:

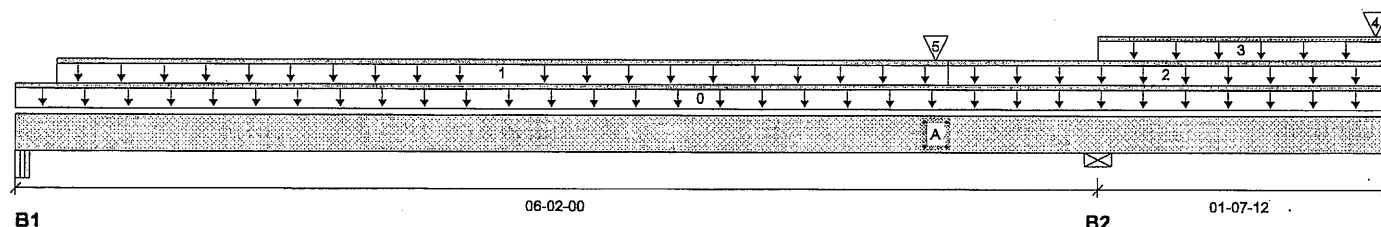
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 07-09-12

Reaction Summary (Down / Uplift) (lbs)

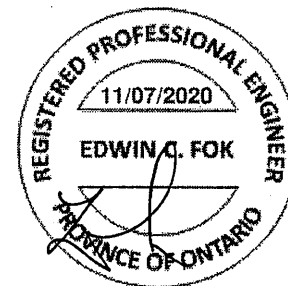
Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	198 / 65	81 / 0		
B2, 3-1/2"	855 / 0	633 / 0		

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	07-09-12	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	05-03-12	Top	37	18			n/a
2	W6(i37164)	Unf. Lin. (lb/ft)	L	05-03-12	07-09-12	Top		26			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	06-02-00	07-09-12	Top	19	9			n/a
4	-	Conc. Pt. (lbs)	L	07-09-00	07-09-00	Top	223	172			n/a
5	B14(i47908)	Conc. Pt. (lbs)	L	05-02-14	05-02-14	Top	547	274			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	773 ft-lbs	35392 ft-lbs	2.2%	2	04-05-10
Neg. Moment	-987 ft-lbs	-35392 ft-lbs	2.8%	1	06-02-00
End Shear	281 lbs	14464 lbs	1.9%	2	01-05-06
Cont. Shear	1113 lbs	14464 lbs	7.7%	1	05-00-06
Total Load Deflection	2xL/1998 (0.003")	n/a	n/a	10	07-09-12
Live Load Deflection	2xL/1998 (-0.003")	n/a	n/a	12	07-09-12
Total Neg. Defl.	2xL/1998 (-0.002")	n/a	n/a	9	07-09-12
Max Defl.	0.003"	n/a	n/a	9	03-05-09
Span / Depth	5.8				



Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 5-1/2" x 3-1/2"	398 lbs	3.4%	1.7%	Unspecified
B2	Wall/Plate 3-1/2" x 3-1/2"	2074 lbs	16.2%	13.9%	Unspecified

Notes

Design meets User specified (2xL/240) Total load deflection criteria.

Design meets User specified (2xL/360) Live load deflection criteria.

Calculations assume member is fully braced.

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

Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

Nail one ply to another with

3 1/2" spiral nails @ 12"

o.c, staggered in 2 rows.

SG020628



Boise Cascade

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****Ground Floor - Supply/BOM\Flush Beams\B16(i47718) (Flush Beam)**

BC CALC® Member Report

Dry | 1 span | L cant.

June 25, 2020 09:22:31

Build 7493

Job name:

File name: 5008 EL. A.mmdl

Address:

Description: Ground Floor - Supply/BOM\Flush Beams\B16(i47718)

City, Province, Postal Code:

Specifier:

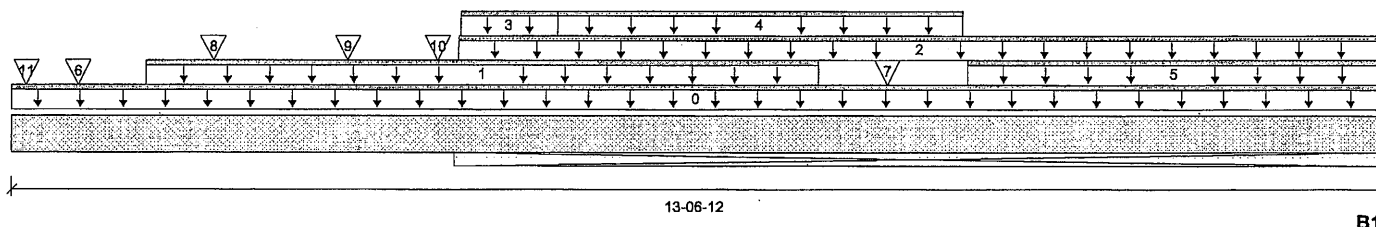
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 13-06-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 110-1/4"	2974 / 0	2510 / 0		

Load Summary

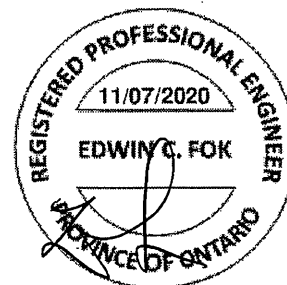
Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	13-06-12	Top		12			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-03-14	07-11-14	Top	120	60			n/a
2	15(i37165)	Unf. Lin. (lb/ft)	L	04-05-00	13-06-12	Top		68			n/a
3	15(i37165)	Unf. Lin. (lb/ft)	L	04-05-04	05-04-14	Top	116	58			n/a
4	-	Unf. Lin. (lb/ft)	L	05-04-14	09-04-14	Top	113	57			n/a
5	FC2 Floor Material	Unf. Lin. (lb/ft)	L	09-05-08	13-06-12	Top	19	9			n/a
6	-	Conc. Pt. (lbs)	L	00-07-14	00-07-14	Top	152	57			n/a
7	J9(i47833)	Conc. Pt. (lbs)	L	08-07-14	08-07-14	Top	126	63			n/a
8	J13(i47793)	Conc. Pt. (lbs)	L	01-11-14	01-11-14	Top	44				n/a
9	J13(i47874)	Conc. Pt. (lbs)	L	03-03-14	03-03-14	Top	35				n/a
10	-	Conc. Pt. (lbs)	L	04-02-08	04-02-08	Top	229	142			n/a
11	User Load	Conc. Pt. (lbs)	L	00-01-12	00-01-12	Top	855	633			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	0 ft-lbs	35392 ft-lbs	n/a	1	00-00-00
Neg. Moment	-11336 ft-lbs	-35392 ft-lbs	32.0%	1	04-04-08
End Shear	2928 lbs	14464 lbs	20.2%	1	03-04-10
Total Load Deflection	2xL/1998 (0.087")	n/a	n/a	4	00-00-00
Live Load Deflection	2xL/1998 (0.051")	n/a	n/a	5	00-00-00
Span / Depth	4.4				
Dist. Load (B1)	388.10 lb/ft	57645.00 lb/ft	0.7%		
Conc. Load (B1)	460 lbs	16813 lbs	2.7%		

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 110-1/4" x 3-1/2"	7599 lbs	3.2%	1.6%	Spruce-Pine-Fir



Nail one ply to another with
3 1/2" spiral nails @ 12"
o.c, staggered in 2 rows

SG020629



Boise Cascade

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****Ground Floor - Supply/BOM\Flush Beams\B17(i47738) (Flush Beam)**

BC CALC® Member Report

Dry | 1 span | No cant.

June 25, 2020 09:22:31

Build 7493

Job name:

File name: 5008 EL. A.mmdl

Address:

Description: Ground Floor - Supply/BOM\Flush Beams\B17(i47738)

City, Province, Postal Code:

Specifier:

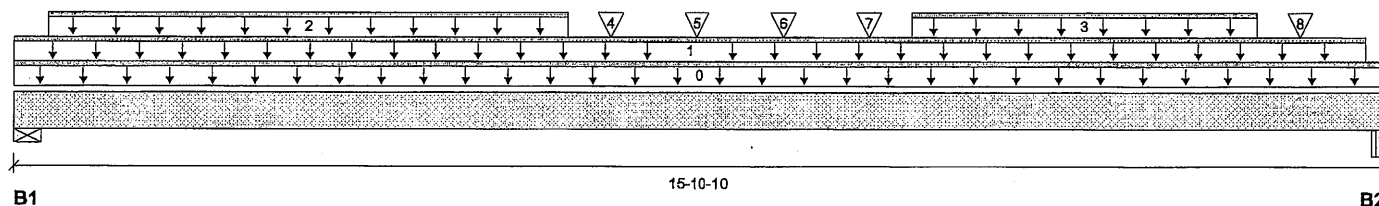
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 15'-10"

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	1314 / 0	750 / 0		
B2, 5-1/2"	1327 / 0	759 / 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	15-10-10	Top		12			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	15-07-14	Top	21	10			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-04-12	06-04-12	Top	156	78			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	10-04-12	14-04-12	Top	157	78			n/a
4	J8(i47762)	Conc. Pt. (lbs)	L	06-10-12	06-10-12	Top	178	89			n/a
5	J8(i47731)	Conc. Pt. (lbs)	L	07-10-12	07-10-12	Top	125	63			n/a
6	J8(i47759)	Conc. Pt. (lbs)	L	08-10-12	08-10-12	Top	125	63			n/a
7	J8(i47728)	Conc. Pt. (lbs)	L	09-10-12	09-10-12	Top	178	89			n/a
8	J8(i47733)	Conc. Pt. (lbs)	L	14-10-12	14-10-12	Top	143	71			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	11380 ft-lbs	35392 ft-lbs	32.2%	1	07-10-12
End Shear	2741 lbs	14464 lbs	19.0%	1	01-02-04
Total Load Deflection	L/524 (0.352")	n/a	45.8%	4	07-10-12
Live Load Deflection	L/822 (0.224")	n/a	43.8%	5	07-10-12
Max Defl.	0.352"	n/a	n/a	4	07-10-12
Span / Depth	15.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 2-3/8" x 3-1/2"	2909 lbs	56.9%	28.7%	Spruce-Pine-Fir
B2	Beam 5-1/2" x 3-1/2"	2939 lbs	24.8%	12.5%	Unspecified

Notes

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

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

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

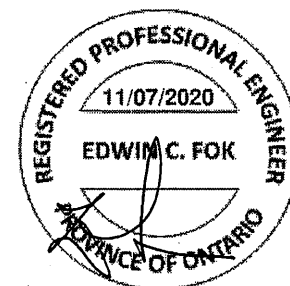
Resistance Factor phi has been applied to all presented results per CSA O86.

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

Nail one ply to another with
3 1/2" spiral nails @ 12"
o.c, staggered in 2 rows





Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147(5008)**

Job Name: **346631-A-LOT 59+85**
Level: **2nd Level**
Label: **B21 - i22189**
Type: **Beam**

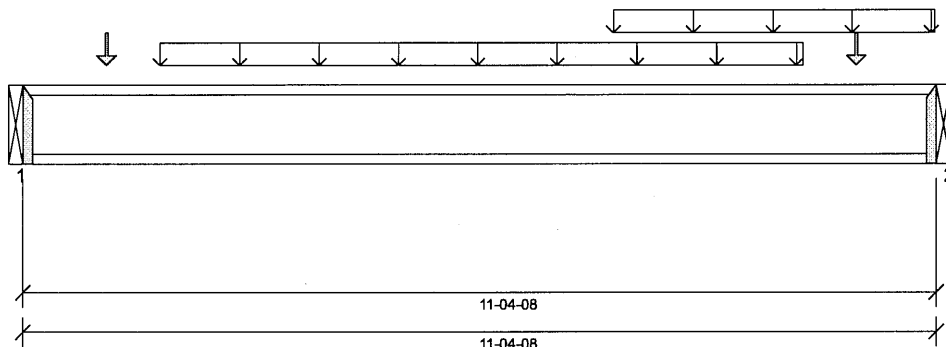
1 Ply Member
11 7/8" NI-40x

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 11:06



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: 1'- 1 1/2"

Factored Resistance of Support Material:

- 769 psi Beam @ 0'
- 769 psi Beam @ 11'- 4 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 4 1/2"	1.25D + 1.5L	1.00	4657 lb ft	6255 lb ft	Passed - 74%
Factored Shear:	11'- 4 7/16"	1.25D + 1.5L	1.00	1954 lb	2340 lb	Passed - 84%
Live Load (LL) Pos. Defl.:	5'- 10 1/8"	L		0.173"	L/360	Passed - L/791
Live Load (LL) Neg. Defl.:	11'- 4 1/2"	L		0.034"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	5'- 9 15/16"	D + L		0.258"	L/240	Passed - L/529
Total Load (TL) Neg. Defl.:	11'- 4 1/2"	D + L		0.051"	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	1.00	1354 lb		2010 lb	-	Passed - 67%
2	1-12	1.25D + 1.5L	1.00	1954 lb		2010 lb	-	Passed - 97%

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

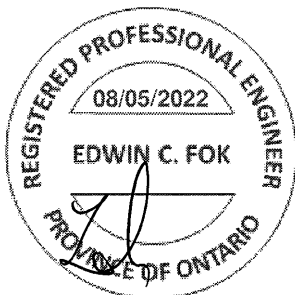
Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	11'- 4 1/2"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	1'- 8 1/2"	9'- 8 1/2"	Smoothed Load	Back	52 lb/ft	104 lb/ft	-	-
Uniform	7'- 4 1/4"	11'- 4 1/4"	User Load	Top	45 lb/ft	120 lb/ft	-	-
Point	1'- 1/2"	1'- 1/2"	J7(I22121)	Back	67 lb	133 lb	-	-
Point	10'- 4 1/2"	10'- 4 1/2"	J8(I21919)	Back	64 lb	128 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B2(I22187)	324 lb	633 lb	-	-
2	11'- 4 1/2"	11'- 4 1/2"	B3(I22203)	438 lb	938 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.



SE049805



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147(5008)**

Job Name: **346631-A-LOT 59+85**
Level: **2nd Level**
Label: **B22 - i22229**
Type: **Beam**

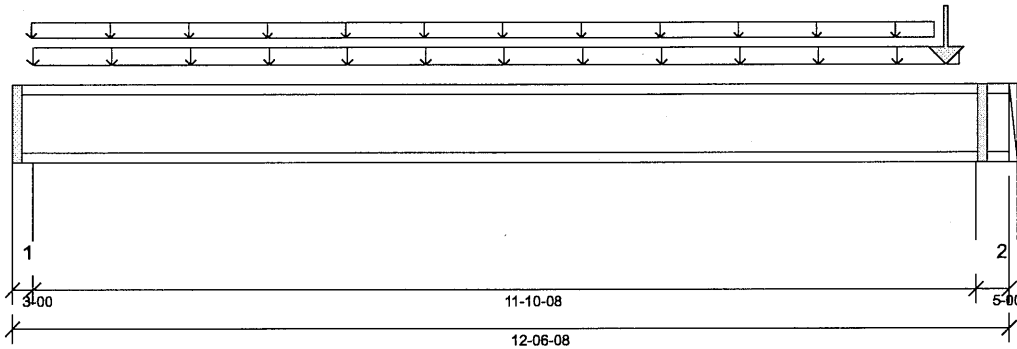
2 Ply Member
11 7/8" NI-20

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 11:06



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: 11'- 4 1/4"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2"
- 615 psi Wall @ 12'- 2 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 6 11/16"	1.4D	0.65	1997 lb ft	7254 lb ft	Passed - 28%
Factored Shear:	12'- 1 7/16"	1.25D + 1.5L	0.75	1959 lb	3379 lb	Passed - 58%
Live Load (LL) Pos. Defl.:	6'- 6 5/8"	L		0.015"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	6'- 4"	D + L		0.101"	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	3-00	1.4D	0.65	619 lb		2756 lb	5998 lb	Passed - 22%
2	5-00	1.25D + 1.5L	0.75	1962 lb		3379 lb	11602 lb	Passed - 58%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 6 1/2"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'- 2 3/4"	11'- 7 1/4"	FC1 Floor Decking (Plan View Fill)	Top	4 lb/ft	8 lb/ft	-	-
Uniform	0'- 3"	11'- 11"	User Load	Top	60 lb/ft	-	-	-
Point	11'- 9"	11'- 9"	B3(22203)	Back	687 lb	391 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3"	3(19521)	449 lb	64 lb	-	-
2	12'- 1 1/2"	12'- 6 1/2"	1(19516)	1057 lb	422 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.



SB0492.6



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147(5008)**

Job Name: **346631-A-LOT 59+85**
Level: **2nd Level**
Label: **B23 - i22247**
Type: **Beam**

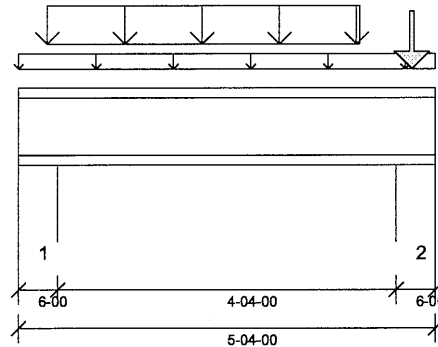
1 Ply Member
11 7/8" NI-40x

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 11:06



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: 1'- 1 1/2"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 5"
- 615 psi Wall @ 4'- 11"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 4 3/8"	1.25D + 1.5L	1.00	1924 lb ft	6255 lb ft	Passed - 31%
Factored Neg. Moment:	4'- 11"	1.25D + 1.5L	1.00	104 lb ft	6255 lb ft	Passed - 2%
Factored Shear:	0'- 6 1/16"	1.25D + 1.5L	1.00	1671 lb	2340 lb	Passed - 71%
Live Load (LL) Pos. Defl.:	2'- 7 5/8"	L		0.022"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 7 5/8"	D + L		0.034"	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	6'-00	1.25D + 1.5L	1.00	1686 lb		2340 lb	9228 lb	Passed - 72%
2	6'-00	1.25D + 1.5L	1.00	2224 lb		2340 lb	9228 lb	Passed - 95%

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	3 lb/ft	-	-	-
Uniform	0'	5'- 4"	FC1 Floor Decking (Plan View Fill)	Top	6 lb/ft	13 lb/ft	-	-
Uniform	0'- 4 3/8"	4'- 4 3/8"	Smoothed Load	Back	169 lb/ft	338 lb/ft	-	-
Point	5'- 3/8"	5'- 3/8"	J1(i22240)	Back	206 lb	413 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 6"	13(i19534)	407 lb	800 lb	-	-
2	4'- 10"	5'- 4"	11(i19536)	523 lb	1032 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.



SE049807



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147(5008)**

Job Name: **346631-A-LOT 59+85**
Level: **2nd Level**
Label: **B24 - i22176**
Type: **Beam**

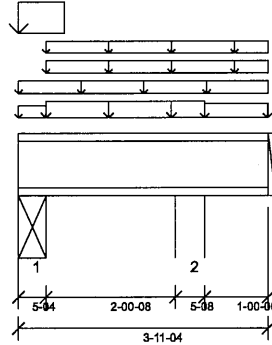
2 Ply Member
11 7/8" NI-20

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 11:07



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: 2'- 1/2"

Factored Resistance of Support Material:

- 769 psi Beam @ 0'- 4 1/4"
- 615 psi Wall @ 2'- 8 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 3 15/16"	1.25D + 1.5S + L	1.00	371 lb ft	11160 lb ft	Passed - 3%
Factored Neg. Moment:	2'- 8 1/2"	1.25D + 1.5L + S	0.87	361 lb ft	9676 lb ft	Passed - 4%
Factored Shear:	0'- 5 5/16"	1.25D + 1.5S + L	1.00	1419 lb	4480 lb	Passed - 32%

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	1.00	2639 lb		4480 lb	20186 lb	Passed - 59%
2	5-08	1.25D + 1.5S + L	1.00	1843 lb		10140 lb	16918 lb	Passed - 18%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	3'- 11 1/4"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	3'- 11 1/4"	E32(i19489)	Top	101 lb/ft	-	-	-
Uniform	0'	0'- 8 3/4"	E32(i19489)	Top	700 lb/ft	-	1051 lb/ft	-
Uniform	0'	0'- 5 1/4"	FC1 Floor Decking (Plan View Fill)	Top	-	25 lb/ft	-	-
Uniform	0'- 5 1/4"	3'- 11 1/4"	User Load	Top	14 lb/ft	-	21 lb/ft	-
Uniform	0'- 5 1/4"	3'- 11 1/4"	FC1 Floor Decking (Plan View Fill)	Top	11 lb/ft	23 lb/ft	-	-
Uniform	0'- 5 1/4"	2'- 11 1/4"	E32(i19489)	Top	168 lb/ft	-	252 lb/ft	-
Uniform	2'- 11 1/4"	3'- 11 1/4"	E32(i19489)	Top	91 lb/ft	-	137 lb/ft	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/4"	STL BM(i19513)	863 lb	38/-7 lb	1070 lb	-
2	2'- 5 3/4"	2'- 11 1/4"	E13(i19466)	691 lb	60 lb	558 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.



32049804



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147(5008)**

Job Name: **346631-A-LOT 59+85**
Level: **1st Level**
Label: **B25 - i22232**
Type: **Beam**

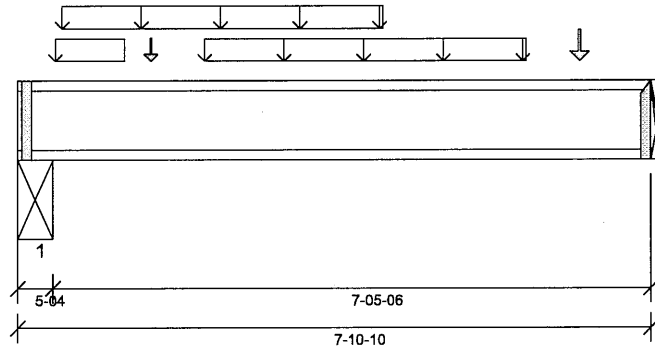
1 Ply Member
11 7/8" NI-20

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 11:07



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: 1'- 1 1/2"

Factored Resistance of Support Material:

- 769 psi Beam @ 0'- 4 1/4"
- 769 psi Beam @ 7'- 10 5/8"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 10 9/16"	1.25D + 1.5L	1.00	2502 lb ft	5580 lb ft	Passed - 45%
Factored Shear:	0'- 5 5/16"	1.25D + 1.5L	1.00	1400 lb	2240 lb	Passed - 63%
Live Load (LL) Pos. Defl.:	4'- 3/8"	L		0.066"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 7/16"	D + L		0.097"	L/240	Passed - L/921

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	1402 lb		2240 lb	10093 lb	Passed - 63%
2	1-12	1.25D + 1.5L	1.00	1009 lb		1970 lb	-	Passed - 51%

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

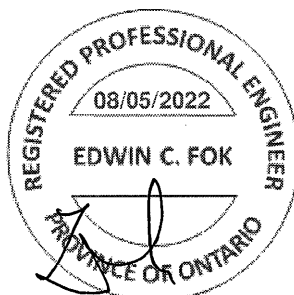
Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	7'- 10 5/8"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	0'- 5 5/8"	1'- 4"	FC2 Floor Decking (Plan View Fill)	Top	51 lb/ft	102 lb/ft	-	-
Uniform	0'- 6 5/8"	4'- 6 5/8"	User Load	Top	45 lb/ft	120 lb/ft	-	-
Uniform	2'- 4"	6'- 4"	Smoothed Load	Back	50 lb/ft	101 lb/ft	-	-
Point	1'- 8"	1'- 8"	J10(i22186)	Back	31 lb	63 lb	-	-
Point	7'	7'	J10(i20311)	Back	61 lb	122 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(i20089)	309 lb	683 lb	-	-
2	7'- 10 5/8"	7'- 10 5/8"	B15(i22179)	230 lb	475 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.



56049809



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147(5008)**

Job Name: **346631-A-LOT 59+85**
Level: **1st Level**
Label: **B26 - i22264**
Type: **Beam**

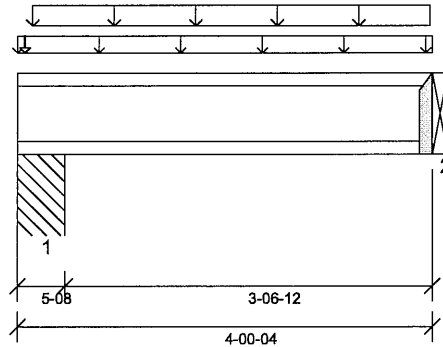
1 Ply Member
9 1/2" NI-20

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 11:09



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'- 10 1/2"

Factored Resistance of Support Material:

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

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 2 5/8"	1.25D + 1.5L	1.00	329 lb ft	4310 lb ft	Passed - 8%
Factored Shear:	4'- 3/16"	1.25D + 1.5L	1.00	364 lb	1770 lb	Passed - 21%

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	461 lb		1770 lb	18348 lb	Passed - 26%
2	1-12	1.25D + 1.5L	1.00	364 lb		1630 lb	-	Passed - 22%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
2	LT259		-	-	-	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'	4'- 1/4"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	-0'	4'- 1/4"	FC3 Floor Decking (Plan View Fill)	Top	10 lb/ft	20 lb/ft	-	-
Uniform	0'- 1 3/4"	4'	User Load	Top	30 lb/ft	80 lb/ft	-	-
Point	0'- 7/8"	0'- 7/8"	User Load	Top	6 lb	17 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	PT1(22250)	96 lb	227 lb	-	-
2	4'- 1/4"	4'- 1/4"	B10(22254)	76 lb	179 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.



SE049810

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"
	NI-90	21'-6"	19'-10"	18'-11"	17'-11"	22'-0"	20'-4"	19'-5"	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'-9"	21'-8"	20'-7"
	NI-80	25'-6"	23'-7"	22'-5"	21'-5"	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'-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'-8"	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'-8"	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'-8"	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.

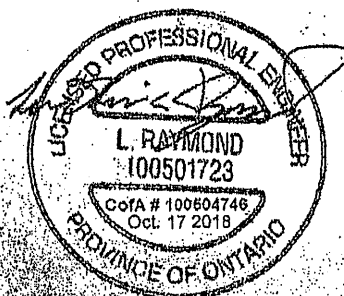
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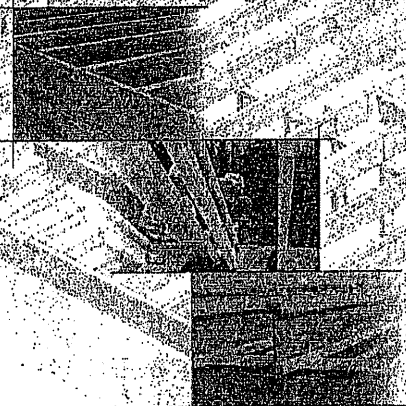
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Document prepared for the use of Stephanie Gon from Alpa, Ontario. (Nordic Request 1810-095)



N-C301/April 2014

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 trips can result.



Never stack building materials over unbraced I-joists. Once installed, do not cross-brace 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. 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 blocking 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 truss, or temporary sheathing must be applied to prevent I-joist rotation or buckling.
 - Temporary bracing or struts must be installed continuously, 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 located in the top flange 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 loads and dimensions, or failure to use nail patterns 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 debris.
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 as shipped by the supplier.
 - Orient the bundles so that the webs of the I-joists are vertical.
 - Pick the bundles at the 3rd point, 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.

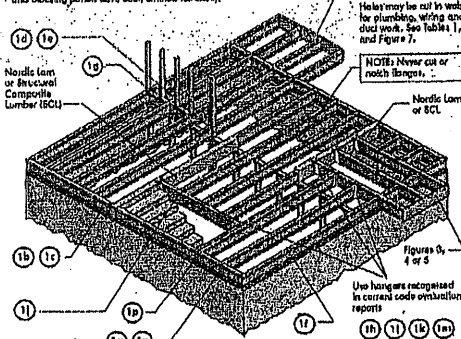


INSTALLING NORDIC I-JOISTS

1. Before laying out floor system components, verify that I-joist flange width matches 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 attached, and supports for multiple-span joists must be level.
5. Minimum blocking length is 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 minimize settlement.
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 expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include book lighting fixtures, studio 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. Fasten ends of floor joists to prevent rotation. 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 (cripple 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-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 opposite wallboard ceiling provides this lateral support. Until the final finished ceiling is completed, temporary bracing or struts must be used.
14. If square-edge panels are used, edges must be supported between I-joists with 2nd blocking. Glue 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: Square 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 erection bracing and blocking panels have been omitted for clarity.



All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Species-Pine-Fir No. 2 or better. Subsequent components not shown to scale for clarity.

1a

7-1/2" nails at 9" o.c. to top plate below used for lateral shear transfer, nail to bearing plate with some nailing as required for blocking.

Blocking Panel or Rim Joist	Maximum Fastened Uniform Vertical Load ¹ (psi)
Nil joists	3,300

¹The 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 blocking member such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

1b

Attach rim board to top plate using 7-1/2" wide or spiral nails at 9" o.c. 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.

Blocking Panel or Rim Joist	Maximum Fastened Uniform Vertical Load ¹ (psi)
1-1/2" Rim Board Plan	9,000

¹The uniform vertical load is limited to a rim board depth of 18 inches or less and is based on standard term load duration. It shall not be used in the design of a blocking member such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

1c

Attach rim joist to floor joist with one nail at top and bottom. Nail must penetrate into floor joist. See nailing may be used.

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

Minimum 1-3/4" bearing required.

1d

1/16" for squash blocks.

Pair of Squash Blocks	Maximum Fastened Uniform Vertical Load ¹ (psi)
2x Lumber	6,500
1-1/2" Rim Board Plan	4,300

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

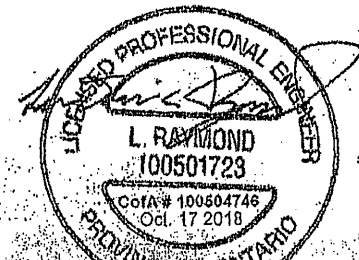
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Document prepared for the use of Stephanie Gon from Alpa, Ontario. (Nordic Request 1810-095)



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 live loads are based on the reduced loads of 1.50, 1.250. The applicability limits table includes the consideration for floor vibration and a live load deflection limit of $L/480$. 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 glued-nail oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a 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 CGSB-7.1.26 Standard. No concrete topping or blocking element was assumed. Increased spans may be achieved with the use of gypcrete and/or a row of blocking at mid-span.
3. Minimum bearing length shall be 1.5/4 inches for the end bearing, and 3.1/2 inches for the intermediate bearing.
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 Unit Stress Design per CAN/CSA C308-09 Standard, and NBC 7010.
7. SI units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

SINGLE AND MULTIPLE SPANS

Flange Width	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"	101-1/2"	102-1/2"	103-1/2"	104-1/2"	105-1/2"	106-1/2"	107-1/2"	108-1/2"	109-1/2"	110-1/2"	111-1/2"	112-1/2"	113-1/2"	114-1/2"	115-1/2"	116-1/2"	117-1/2"	118-1/2"	119-1/2"	120-1/2"	121-1/2"	122-1/2"	123-1/2"	124-1/2"	125-1/2"	126-1/2"	127-1/2"	128-1/2"	129-1/2"	130-1/2"	131-1/2"	132-1/2"	133-1/2"	134-1/2"	135-1/2"	136-1/2"	137-1/2"	138-1/2"	139-1/2"	140-1/2"	141-1/2"	142-1/2"	143-1/2"	144-1/2"	145-1/2"	146-1/2"	147-1/2"	148-1/2"	149-1/2"	150-1/2"	151-1/2"	152-1/2"	153-1/2"	154-1/2"	155-1/2"	156-1/2"	157-1/2"	158-1/2"	159-1/2"	160-1/2"	161-1/2"	162-1/2"	163-1/2"	164-1/2"	165-1/2"	166-1/2"	167-1/2"	168-1/2"	169-1/2"	170-1/2"	171-1/2"	172-1/2"	173-1/2"	174-1/2"	175-1/2"	176-1/2"	177-1/2"	178-1/2"	179-1/2"	180-1/2"	181-1/2"	182-1/2"	183-1/2"	184-1/2"	185-1/2"	186-1/2"	187-1/2"	188-1/2"	189-1/2"	190-1/2"	191-1/2"	192-1/2"	193-1/2"	194-1/2"	195-1/2"	196-1/2"	197-1/2"	198-1/2"	199-1/2"	200-1/2"	201-1/2"	202-1/2"	203-1/2"	204-1/2"	205-1/2"	206-1/2"	207-1/2"	208-1/2"	209-1/2"	210-1/2"	211-1/2"	212-1/2"	213-1/2"	214-1/2"	215-1/2"	216-1/2"	217-1/2"	218-1/2"	219-1/2"	220-1/2"	221-1/2"	222-1/2"	223-1/2"	224-1/2"	225-1/2"	226-1/2"	227-1/2"	228-1/2"	229-1/2"	230-1/2"	231-1/2"	232-1/2"	233-1/2"	234-1/2"	235-1/2"	236-1/2"	237-1/2"	238-1/2"	239-1/2"	240-1/2"	241-1/2"	242-1/2"	243-1/2"	244-1/2"	245-1/2"	246-1/2"	247-1/2"	248-1/2"	249-1/2"	250-1/2"	251-1/2"	252-1/2"	253-1/2"	254-1/2"	255-1/2"	256-1/2"	257-1/2"	258-1/2"	259-1/2"	260-1/2"	261-1/2"	262-1/2"	263-1/2"	264-1/2"	265-1/2"	266-1/2"	267-1/2"	268-1/2"	269-1/2"	270-1/2"	271-1/2"	272-1/2"	273-1/2"	274-1/2"	275-1/2"	276-1/2"	277-1/2"	278-1/2"	279-1/2"	280-1/2"	281-1/2"	282-1/2"	283-1/2"	284-1/2"	285-1/2"	286-1/2"	287-1/2"	288-1/2"	289-1/2"	290-1/2"	291-1/2"	292-1/2"	293-1/2"	294-1/2"	295-1/2"	296-1/2"	297-1/2"	298-1/2"	299-1/2"	300-1/2"	301-1/2"	302-1/2"	303-1/2"	304-1/2"	305-1/2"	306-1/2"	307-1/2"	308-1/2"	309-1/2"	310-1/2"	311-1/2"	312-1/2"	313-1/2"	314-1/2"	315-1/2"	316-1/2"	317-1/2"	318-1/2"	319-1/2"	320-1/2"	321-1/2"	322-1/2"	323-1/2"	324-1/2"	325-1/2"	326-1/2"	327-1/2"	328-1/2"	329-1/2"	330-1/2"	331-1/2"	332-1/2"	333-1/2"	334-1/2"	335-1/2"	336-1/2"	337-1/2"	338-1/2"	339-1/2"	340-1/2"	341-1/2"	342-1/2"	343-1/2"	344-1/2"	345-1/2"	346-1/2"	347-1/2"	348-1/2"	349-1/2"	350-1/2"	351-1/2"	352-1/2"	353-1/2"	354-1/2"	355-1/2"	356-1/2"	357-1/2"	358-1/2"	359-1/2"	360-1/2"	361-1/2"	362-1/2"	363-1/2"	364-1/2"	365-1/2"	366-1/2"	367-1/2"	368-1/2"	369-1/2"	370-1/2"	371-1/2"	372-1/2"	373-1/2"	374-1/2"	375-1/2"	376-1/2"	377-1/2"	378-1/2"	379-1/2"	380-1/2"	381-1/2"	382-1/2"	383-1/2"	384-1/2"	385-1/2"	386-1/2"	387-1/2"	388-1/2"	389-1/2"	390-1/2"	391-1/2"	392-1/2"	393-1/2"	394-1/2"	395-1/2"	396-1/2"	397-1/2"	398-1/2"	399-1/2"	400-1/2"	401-1/2"	402-1/2"	403-1/2"	404-1/2"	405-1/2"	406-1/2"	407-1/2"	408-1/2"	409-1/2"	410-1/2"	411-1/2"	412-1/2"	413-1/2"	414-1/2"	415-1/2"	416-1/2"	417-1/2"	418-1/2"	419-1/2"	420-1/2"	421-1/2"	422-1/2"	423-1/2"	424-1/2"	425-1/2"	426-1/2"	427-1/2"	428-1/2"	429-1/2"	430-1/2"	431-1/2"	432-1/2"	433-1/2"	434-1/2"	435-1/2"	436-1/2"	437-1/2"	438-1/2"	439-1/2"	440-1/2"	441-1/2"	442-1/2"	443-1/2"	444-1/2"	445-1/2"	446-1/2"	447-1/2"	448-1/2"	449-1/2"	450-1/2"	451-1/2"	452-1/2"	453-1/2"	454-1/2"	455-1/2"	456-1/2"	457-1/2"	458-1/2"	459-1/2"	460-1/2"	461-1/2"	462-1/2"	463-1/2"	464-1/2"	465-1/2"	466-1/2"	467-1/2"	468-1/2"	469-1/2"	470-1/2"	471-1/2"	472-1/2"	473-1/2"	474-1/2"	475-1/2"	476-1/2"	477-1/2"	478-1/2"	479-1/2"	480-1/2"	481-1/2"	482-1/2"	483-1/2"	484-1/2"	485-1/2"	486-1/2"	487-1/2"	488-1/2"	489-1/2"	490-1/2"	491-1/2"	492-1/2"	493-1/2"	494-1/2"	495-1/2"	496-1/2"	497-1/2"	498-1/2"	499-1/2"	500-1/2"	501-1/2"	502-1/2"	503-1/2"	504-1/2"	505-1/2"	506-1/2"	507-1/2"	508-1/2"	509-1/2"	510-1/2"	511-1/2"	512-1/2"	513-1/2"	514-1/2"	515-1/2"	516-1/2"	517-1/2"	518-1/2"	519-1/2"	520-1/2"	521-1/2"	522-1/2"	523-1/2"	524-1/2"	525-1/2"	526-1/2"	527-1/2"	528-1/2"	529-1/2"	530-1/2"	531-1/2"	532-1/2"	533-1/2"	534-1/2"	535-1/2"	536-1/2"	537-1/2"	538-1/2"	539-1/2"	540-1/2"	541-1/2"	542-1/2"	543-1/2"	544-1/2"	545-1/2"	546-1/2"	547-1/2"	548-1/2"	549-1/2"	550-1/2"	551-1/2"	552-1/2"	553-1/2"	554-1/2"	555-1/2"	556-1/2"	557-1/2"	558-1/2"	559-1/2"	560-1/2"	561-1/2"	562-1/2"	563-1/2"	564-1/2"	565-1/2"	566-1/2"	567-1/2"	568-1/2"	569-1/2"	570-1/2"	571-1/2"	572-1/2"	573-1/2"	574-1/2"	575-1/2"	576-1/2"	577-1/2"	578-1/2"	579-1/2"	580-1/2"	581-1/2"	582-1/2"	583-1/2"	584-1/2"	585-1/2"	586-1/2"	587-1/2"	588-1/2"	589-1/2"	590-1/2"	591-1/2"	592-1/2"	593-1/2"	594-1/2"	595-1/2"	596-1/2"	597-1/2"	598-1/2"	599-1/2"	600-1/2"	601-1/2"	602-1/2"	603-1/2"	604-1/2"	605-1/2"	606-1/2"	607-1/2"	608-1/2"	609-1/2"	610-1/2"	611-1/2"	612-1/2"	613-1/2"	614-1/2"	615-1/2"	616-1/2"	617-1/2"	618-1/2"	619-1/2"	620-1/2"	621-1/2"	622-1/2"	623-1/2"	624-1/2"	625-1/2"	626-1/2"	627-1/2"	628-1/2"	629-1/2"	630-1/2"	631-1/2"	632-1/2"	633-1/2"	634-1/2"	635-1/2"	636-1/2"	637-1/2"	638-1/2"	639-1/2"	640-1/2"	641-1/2"	642-1/2"	643-1/2"	644-1/2"	645-1/2"	646-1/2"	647-1/2"	648-1/2"	649-1/2"	650-1/2"	651-1/2"	652-1/2"	653-1/2"	654-1/2"	655-1/2"	656-1/2"	657-1/2"	658-1/2"	659-1/2"	660-1/2"	661-1/2"	662-1/2"	663-1/2"	664-1/2"	665-1/2"	666-1/2"	667-1/2"	668-1/2"	669-1/2"	670-1/2"	671-1/2"	672-1/2"	673-1/2"	674-1/2"	675-1/2"	676-1/2"	677-1/2"	678-1/2"	679-1/2"	680-1/2"	681-1/2"	682-1/2"	683-1/2"	684-1/2"	685-1/2"	686-1/2"	687-1/2"	688-1/2"	689-1/2"	690-1/2"	691-1/2"	692-1/2"	693-1/2"	694-1/2"	695-1/2"	696-1/2"	697-1/2"	698-1/2"	699-1/2"	700-1/2"	701-1/2"	702-1/2"	703-1/2"	704-1/2"	705-1/2"	706-1/2"	707-1/2"	708-1/2"	709-1/2"	710-1/2"	711-1/2"	712-1/2"	713-1/2"	714-1/2"	715-1/2"	716-1/2"	717-1/2"	718-1/2"	719-1/2"	720-1/2"	721-1/2"	722-1/2"	723-1/2"	724-1/2"	725-1/2"	726-1/2"	727-1/2"	728-1/2"	729-1/2"	730-1/2"	731-1/2"	732-1/2"	733-1/2"	734-1/2"	735-1/2"	736-1/2"	737-1/2"	738-1/2"	739-1/2"	740-1/2"	741-1/2"	742-1/2"	743-1/2"	744-1/2"	745-1/2"	746-1/2"	747-1/2"	748-1/2"	749-1/2"	750-1/2"	751-1/2"	752-1/2"	753-1/2"	754-1/2"	755-1/2"	756-1/2"	757-1/2"	758-1/2"	759-1/2"	760-1/2"	761-1/2"	762-1/2"	763-1/2"	764-1/2"	765-1/2"	766-1/2"	767-1/2"	768-1/2"	769-1/2"	770-1/2"	771-1/2"	772-1/2"	773-1/2"	774-1/2"	775-1/2"	776-1/2"	777-1/2"	778-1/2"	779-1/2"	780-1/2"	781-1/2"	782-1/2"	783-1/2"	784-1/2"	785-1/2"	786-1/2"	787-1/2"	788-1/2"	789-1/2"	790-1/2"	791-1/2"	792-1/2"	793-1/2"	794-1/2"	795-1/2"	796-1/2"	797-1/2"	798-1/2"	799-1/2"	800-1/2"	801-1/2"	802-1/2"	803-1/2"	804-1/2"	805-1/2"	806-1/2"	807-1/2"	808-1/2"	809-1/2"	810-1/2"	811-1/2"	812-1/2"	813-1/2"	814-1/2"	815-1/2"	816-1/2"	817-1/2"	818-1/2"	819-1/2"	820-1/2"	821-1/2"	822-1/2"	823-1/2"	824-1/2"	825-1/2"	826-1/2"	827-1/2"	828-1/2"	829-1/2"	830-1/2"	831-1/2"	832-1/2"	833-1/2"	834-1/2"	835-1/2"	836-1/2"	837-1/2"	838-1/2"	839-1/2"	840-1/2"	841-1/2"	842-1/2"	843-1/2"	844-1/2"	845-1/2"	846-1/2"	847-1/2"	848-1/2"	849-1/2"	850-1/2"	851-1/2"	852-1/2"	853-1/2"	854-1/2"	855-1/2"	856-1/2"	857-1/2"	858-1/2"	859-1/2"	860-1/2"	861-1/2"	862-1/2"	863-1/2"	864-1/2"	865-1/2"	866-1/2"	867-1/2"	868-1/2"	869-1/2"	870-1/2"	871-1/2"	872-1/2"	873-1/2"	874-1/2"	875-1/2"	876-1/2"	877-1/2"	878-1/2"	879-1/2"	880-1/2"	881-1/2"	882-1/2"	883-1/2"	884-1/2"	885-1/2"	886-1/2"	887-1/2"	888-1/2"	889-1/2"	890-1/2"	891-1/2"	892-1/2"	893-1/2"	894-1/2"	895-1/2"	896-1/2"	897-1/2"	898-1/2"	899-1/2"	900-1/2"	901-1/2"	902-1/2"	903-1/2"	904-1/2"	905-1/2"	906-1/2"	907-1/2"	908-1/2"	909-1/2"	910-1/2"	911-1/2"	912-1/2"	913-1/2"	914-1/2"	915-1/2"	916-1/2"	917-1/2"	918-1/2"	919-1/2"	920-1/2"	921-1/2"	922-1/2"	923-1/2"	924-1/2"	925-1/2"	926-1/2"	927-1/2"	928-1/2"	929-1/2"	930-1/2"	931-1/2"	932-1/2"	933-1/2"	934-1/2"	935-1/2"	936-1/2"	937-1/2"	938-1/2"	939-1/2"	940-1/2"	941-1/2"	942-1/2"	943-1/2"	944-1/2"	945-1/2"	946-1/2"	947-1/2"	948-1/2"	949-1/2"	950-1/2"	951-1/2"	952-1/2"	953-1/2"
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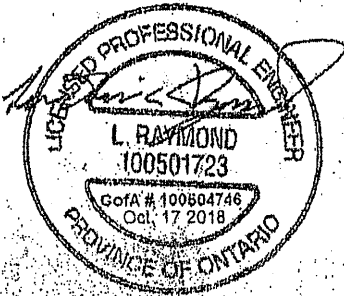
The construction details for residential designs are prone to changes.

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/>

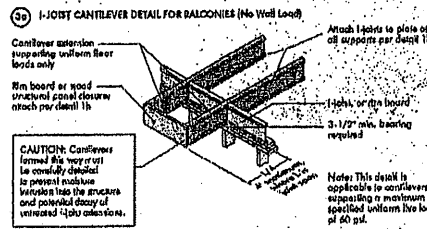
This document does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of its component based on the design criteria and loadings shown on the calculation sheets.

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

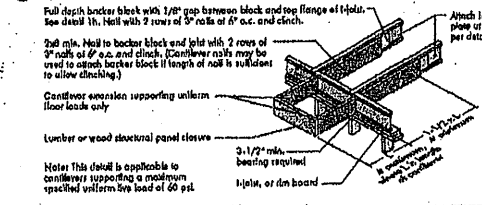


N-C301/April 2014

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)



30b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

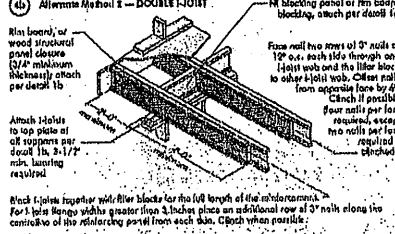
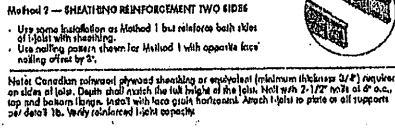
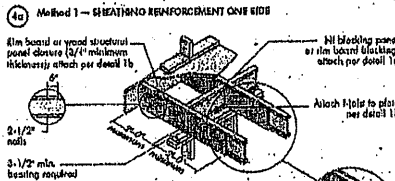
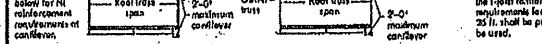


FIGURE 4 (continued)



CANTILEVER REINFORCEMENT METHODS ALLOWED

Span (ft)	1st Floor				2nd Floor				3rd Floor				4th Floor				5th Floor				6th Floor				7th Floor				8th Floor				9th Floor				10th Floor			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
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	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X													

1. N = No reinforcement required.
2. H = Reinforced with 3/4\"/>

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

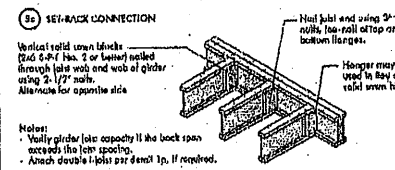
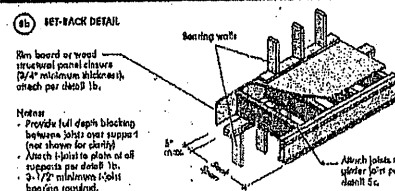
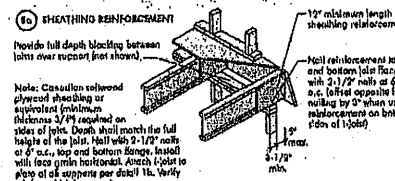
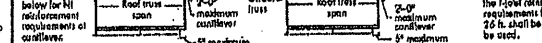


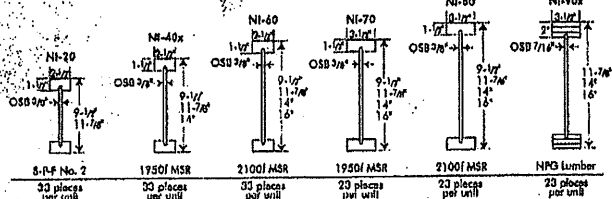
FIGURE 5 (continued)



BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

Span (ft)	1st Floor				2nd Floor				3rd Floor				4th Floor				5th Floor				6th Floor				7th Floor				8th Floor			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
10	22	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	24	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	26	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	28	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	30	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12	22	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	24	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	26	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	28	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	30	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	22	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	24	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	26	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	28	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	30	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16	22	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	24	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	26	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	28	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	30	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18	22	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	24	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	26	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	28	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	30	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20	22	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	24	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	26	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	28	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	30	1	X	X	X	X	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

1. N = No reinforcement required.
2. H = Reinforced with 3/4\"/>



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 workmanlike 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.

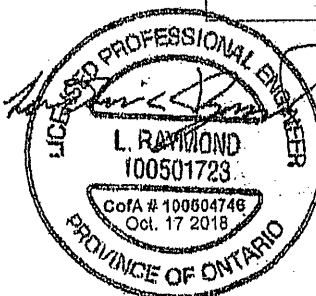
Jolt Series		Minimum Distance from Inside Face of Supports to Centre of Opening (ft. - in.)												
Jolt Depth	Jolt Series	Duct Core Length (ft. - in.)												
		8	10	12	14	16	18	20	22	24				
9-1/2"	Ni-30	5'-11"	6'-2"	6'-5"	6'-8"	6'-9"	6'-11"	6'-9"	7'-1"	7'-5"				
	Ni-40x	5'-4"	5'-8"	6'-0"	6'-5"	6'-10"	7'-5"	7'-9"	8'-2"	8'-6"				
	Ni-60	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"	7'-6"	8'-0"	8'-3"	8'-7"				
	Ni-70	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"	7'-6"	8'-0"	8'-3"	8'-7"				
	Ni-90x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"				
11-7/8"	Ni-30	5'-9"	5'-2"	6'-4"	7'-1"	7'-5"	8'-1"	8'-3"	8'-9"	9'-4"				
	Ni-40x	4'-9"	7'-2"	7'-6"	8'-1"	8'-6"	9'-1"	9'-6"	10'-1"	10'-9"				
	Ni-60	5'-0"	5'-5"	6'-0"	6'-5"	6'-10"	7'-5"	7'-10"	8'-5"	9'-0"				
	Ni-70	7'-1"	7'-4"	7'-9"	8'-3"	8'-7"	9'-1"	9'-5"	10'-1"	10'-4"				
	Ni-90	7'-2"	7'-7"	8'-0"	8'-5"	8'-10"	9'-3"	9'-8"	10'-2"	10'-7"				
14"	Ni-30x	7'-5"	8'-1"	8'-6"	9'-1"	9'-6"	10'-1"	11'-2"	12'-0"	12'-6"				
	Ni-40x	8'-0"	9'-3"	9'-8"	10'-1"	10'-6"	11'-1"	11'-6"	13'-3"	13'-6"				
	Ni-60	8'-7"	9'-1"	9'-6"	9'-10"	9'-10"	10'-5"	10'-9"	11'-2"	11'-7"				
	Ni-70	9'-1"	9'-4"	9'-9"	10'-2"	10'-7"	11'-1"	11'-6"	12'-1"	12'-6"				
	Ni-90x	9'-4"	9'-7"	10'-2"	10'-7"	11'-1"	11'-6"	12'-1"	12'-7"	13'-2"				
16"	Ni-40	10'-3"	10'-8"	11'-2"	11'-6"	12'-1"	12'-6"	12'-9"	14'-1"	14'-7"				
	Ni-70	10'-1"	10'-5"	11'-0"	11'-4"	11'-10"	12'-3"	12'-8"	13'-2"	14'-0"				
	Ni-90	10'-4"	10'-9"	11'-3"	11'-7"	12'-1"	12'-6"	13'-0"	13'-6"	14'-0"				
	Ni-100	10'-4"	10'-9"	11'-3"	11'-7"	12'-1"	12'-6"	13'-0"	13'-6"	14'-0"				
	Ni-120	10'-4"	10'-9"	11'-3"	11'-7"	12'-1"	12'-6"	13'-0"	13'-6"	14'-0"				

1. Above table may be used for 1-joint spacing of 24 inches on centre or less.
2. Dual chord opening location distance is measured from inside face of supports to centre of opening.
3. The above table is based on simple-span joist only. For other applications, consult 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 joists being used at their maximum spans. The minimum distance as shown above may be reduced for shorter spans and/or smaller joist distribution.

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 axis between the holes is another good method to minimize damage to the joint.

Never stack building materials over unsheathed I-joists. Once sheathed, do not over-stress I-joists with concentrated loads from building materials.

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



1 of 2

1b NI blocking panel or rim joist

Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load (plf)
NI Joists	3,300

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

Attach 1-joint to top plate per detail 1b.

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

1b Rim board

Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load (plf)
1-1/8" Rim Board Plus	8,000

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

Attach rim board to top plate using 2-1/2" w/o or spiral toe-nails at 6" o.c.

One 2-1/2" w/o or spiral nail at top and bottom flange.

To avoid splitting flange, start nail at least 1-1/2" from end of 1-joint. Nails may be driven at an angle to avoid splitting of blocking plate.

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

1d NI or rim board blocking panel per detail 1a

Pair of Squish Blocks	Maximum Factored Vertical Load per Pair of Squish Blocks (lb)
2x Lumber	5,000
1-1/8" Rim Board Plus	4,000

Provide lateral bracing per detail 1a or 1b.

1e Transfer load from above to bearing below. Install squish blocks per detail 1d. Match bearing area of blocking below to post above.

1f Joist attachment per detail 1b

Load bearing wall above shall align vertically with the bearing below. Other conditions, such as offset bearing walls, are not covered by this detail.

Blocking required over all interior supports under load-bearing walls or when floor joists are not continuous over support.

NI blocking panel per detail 1a

2-1/2" nails at 6" o.c. to top plate

1h Backer block (use if hanger load exceeds 360 lbs). Before installing a backer block to a double 1-joint, drive three additional 2" nails through the web and filler block where the backer block will fit. Clinch, install backer right to top flange. Use twelve 3" nails, clinched where possible. Minimum (addition) resistance for hanger for this detail = 1,620 lbs.

BACKER BLOCKS (Blocks must be long enough to permit required nailing without splitting)

Flange Width	Material Thickness Required	Minimum Depth
2-1/2"	1"	5-1/2"
3-1/2"	1-1/2"	7-1/4"

Maximum grade for backer block material shall be S-F5 No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-C325 or CAN/CSA-C437 Standard.

* For face-mount hangers use nail joist depth minus 2-1/4" for joists with 1-1/2" thick flange, for 2" thick flanges use nail depth minus 4-1/4".

1i Nordic Lemo or Structural Composite Lumber (SCL)

For nailing schedules for multiple beams, see the manufacturer's recommendations.

Top or face-mount hanger installed per manufacturer's recommendations.

NOTE: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

1l Top plate flush with inside face of wall or beam. 1/8" overhang allowed inside face of wall or beam.

NOTE: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

Top-mount hanger installed per manufacturer's recommendations.

1m Multiple 1-joint header with full depth filler block shown. Nordic Lemo or SCL headers may also be used. Verify double 1-joint capacity to support concentrated loads.

Backer block attached per detail 1h. Nail with twelve 3" nails, clinch where possible.

Filler block per detail 1p

Maximum support capacity = 1,620 lbs.

Install hanger per manufacturer's recommendations.

1n Do not bore-cut joist beyond inside face of wall.

Attach 1-joint per detail 1b

NOTE: Blocking required at bearing for lateral support, not shown for clarity.

1r Lumber 2x4 min., extend block to face of adjacent web. Two 2-1/2" spiral nails from each web to lumber piece, alternate on opposite side.

NI blocking panel

OPTIONAL: Minimum 1x4 inch strip applied to underside of joist at blocking line or 1/2 inch minimum plywood ceiling attached to underside of joists.

1p FILLER BLOCK REQUIREMENTS FOR DOUBLE 1-JOIST CONSTRUCTION

Offset nails from opposite face by 6"

1/4" to 1/2" gap between top flange and filler block

NOTE: 1. Support block of 1-joint web-plug nailing to prevent damage to web-flange connection.
2. Leave a 1/8" to 1/4" inch gap between top of filler block and bottom of top 1-joint flange.
3. Filler block is required between joists for full length of span.
4. Nail back-together with two rows of 3" nails at 12 inches o.c. (staggered when possible) on each side of the double 1-joint. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
5. The maximum factored load that may be applied to one end of the double joist using this detail is 800 lb/ft. Verify double 1-joint capacity.

Flange Size	Nail Depth	Filler Block Size
2-1/2" x 12"	5-1/2"	2-1/8" x 6"
1-1/2" x 12"	11-7/8"	2-1/8" x 6"
3-1/2" x 12"	14"	2-1/8" x 10"
2-1/2" x 12"	14"	2-1/8" x 12"
1-1/2" x 12"	14"	2" x 8"
3-1/2" x 12"	14"	2" x 10"
2-1/2" x 12"	14"	2" x 12"
3-1/2" x 12"	11-7/8"	3" x 7"
2-1/2" x 12"	14"	3" x 8"
3-1/2" x 12"	14"	3" x 11"

1r One 2-1/2" nail at top and bottom flange

2x4 min. (1/8" gap minimum)

Two 2-1/2" nails from each web to lumber piece

1-joint blocking panel

One 2-1/2" nail on side only

NOTE: In some local codes, blocking is prescriptively required in the first joist space for first and second joist space, next to the singular joist. Where required, see local code requirements for blocking of the blocking.

All nails are common spiral in this detail.

WEB STIFFENERS

RECOMMENDATIONS:

- A bearing stiffener is required in all engineered applications with factored reactions greater than those in the joist perimeter table found in the Construction Detail (C301). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the 1-joint is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
- A load stiffener is required at locations where a factored concentrated load exceeds that 2,700 lbs applied to the top flange between supports. Vertical gaps of a stiffener, anywhere between the cantilever tip and the support, those values are for standard term load duration, and may be required for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

FIGURE 2 WEB STIFFENER INSTALLATION DETAILS

Flange width 2-1/2" or 3-1/2"

Approx. 2"

1/8" - 1/4" Gap

(4) 2-1/2" nails, 3" nails required for flanges with 3-1/2" flange width

No Gap

See the adjacent table for web stiffener size requirements.

CONCENTRATED LOAD (Load stiffener)

Tight Joint No Gap

Gap

BIND BEARING (Bearing stiffener)

Gap

Tight Joint No Gap

STIFFENER SIZE REQUIREMENTS

Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-3/16" minimum width
3-1/2"	1-1/2" x 2-3/16" minimum width

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

Method 1 - SHEATHING REINFORCEMENT ONE SIDE

Rim board of wood structural panel covers 3/4" minimum thickness, attach per detail 1b

NI blocking panel or rim board blocking, attach per detail 1b

Attach 1-joint to plan per detail 1b

2-1/2" nails

3-1/2" min. bearing required

Method 2 - SHEATHING REINFORCEMENT TWO SIDES

Use same installation as Method 1 but reinforce both sides of 1-joint with sheathing.

Use nailing pattern shown for Method 1 with opposite face nailing offset by 6"

NOTE: Continual selfward sheathing or equivalent (minimum thickness 3/8") required on side of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c. top and bottom flange. Install with face grain horizontal. Attach 1-joint to plan at all supports per detail 1b. Verify reinforced 1-joint capacity.

RIM BOARD INSTALLATION DETAILS

1a ATTACHMENT DETAILS WHERE RIM BOARDS ABOUT

Rim Board Joint Between Floor Joists

2-1/2" nails at 6" o.c. (typical)

(1) 2-1/2" nail top and bottom (typical)

Rim board joint

Rim board joint at corner

2-1/2" nails

1-1/2"

1b TOE-NAIL CONNECTION AT RIM BOARD

Nail board

Top or sole plate

30°

2-1/2"

1-1/2"



The construction details for residential designs are prone to changes.

Details released after September 2013 supersede 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 1810-096)