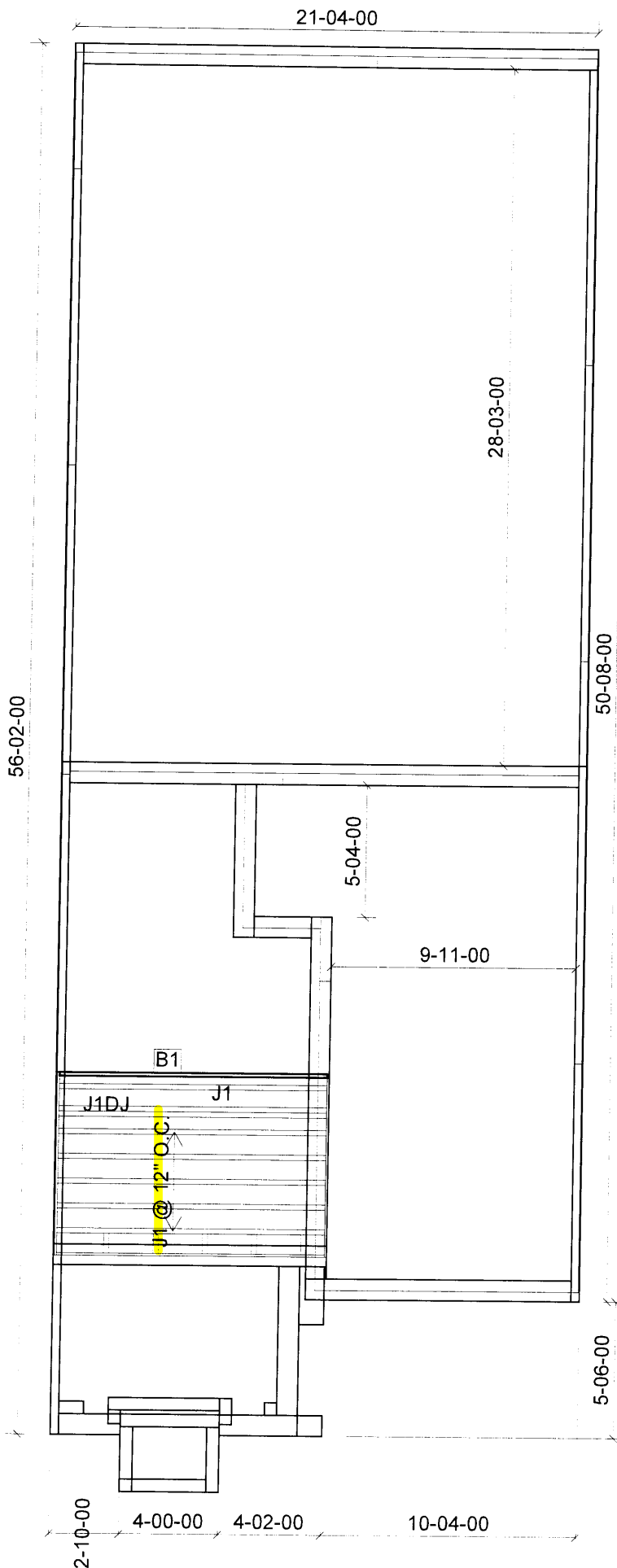


FROM PLAN DATED: JAN 2018
BUILDER: BAYVIEW WELLINGTON
SITE: ALCONA SHORES
MODEL: TH-10
ELEVATION: A,A2,A3
LOT:
CITY: INNISFIL
SALESMAN: M D
DESIGNER: CZ
REVISION:

NOTES:
REFER TO THE NORDIC
INSTALLATION GUIDE FOR PROPER
STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2
S.P.F REQ'D UNDER INTERIOR
UNIFORM LOAD BEARING WALLS.
MULTIPLE SQUASH BLOCKS REQ'D
UNDER CONCENTRATED LOADS. SEE
FIGURE 1. CANTILEVERED JOISTS
INCLUDING CANT' OVER BRICK REQ.
I-JOIST BLOCKING ALONG BEARING
AND RIMBOARD CLOSURE AT ENDS.
SEE FIGURES 4 & 5 FOR
REINFORCEMENT REQUIREMENTS.
FOR HOLES INCLUDING DUCT
CHASE AND FIELD CUT OPENINGS
SEE FIGURE 7, TABLES 1 & 2.
CERAMIC TILE APPLICATION AS PER
O.B.C 9.30.6.
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 3/4" GLUED AND NAILED

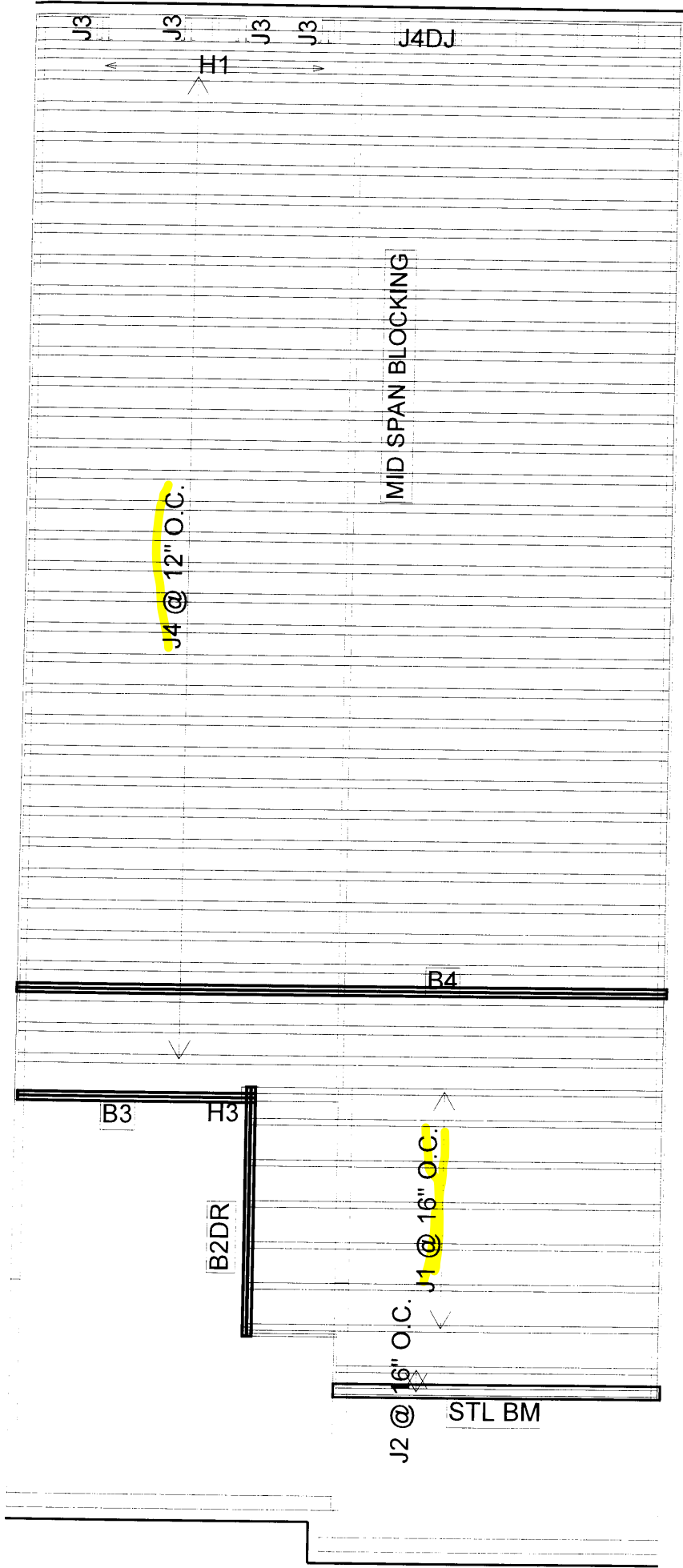
DATE: 31/07/2018

LOW FOYER



Town of Innisfil Certified Model
10/25/2018 10:58:32 AM kbayley

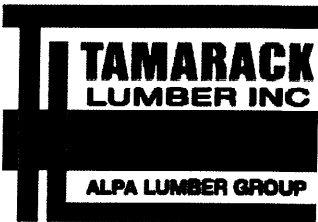
4950
2165



Town of Innisfil Certified Model
10/25/2018 10:58:55 AM kbayley

Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	11 7/8" NI-40x	1	7
J2	12-00-00	11 7/8" NI-40x	1	2
J3	2-00-00	11 7/8" NI-40x	1	4
J4	22-00-00	11 7/8" NI-80	1	33
J4DJ	22-00-00	11 7/8" NI-80	2	2
B2DR	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B4	22-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B3	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
4	H1	IUS2.56/11.88
1	H3	H2.5A*



FROM PLAN DATED: JAN 2018

BUILDER: BAYVIEW WELLINGTON

SITE: ALCONA SHORES

MODEL: TH-10

ELEVATION: A,A2,A3

LOT:

CITY: INNISFIL

SALESMAN: M D

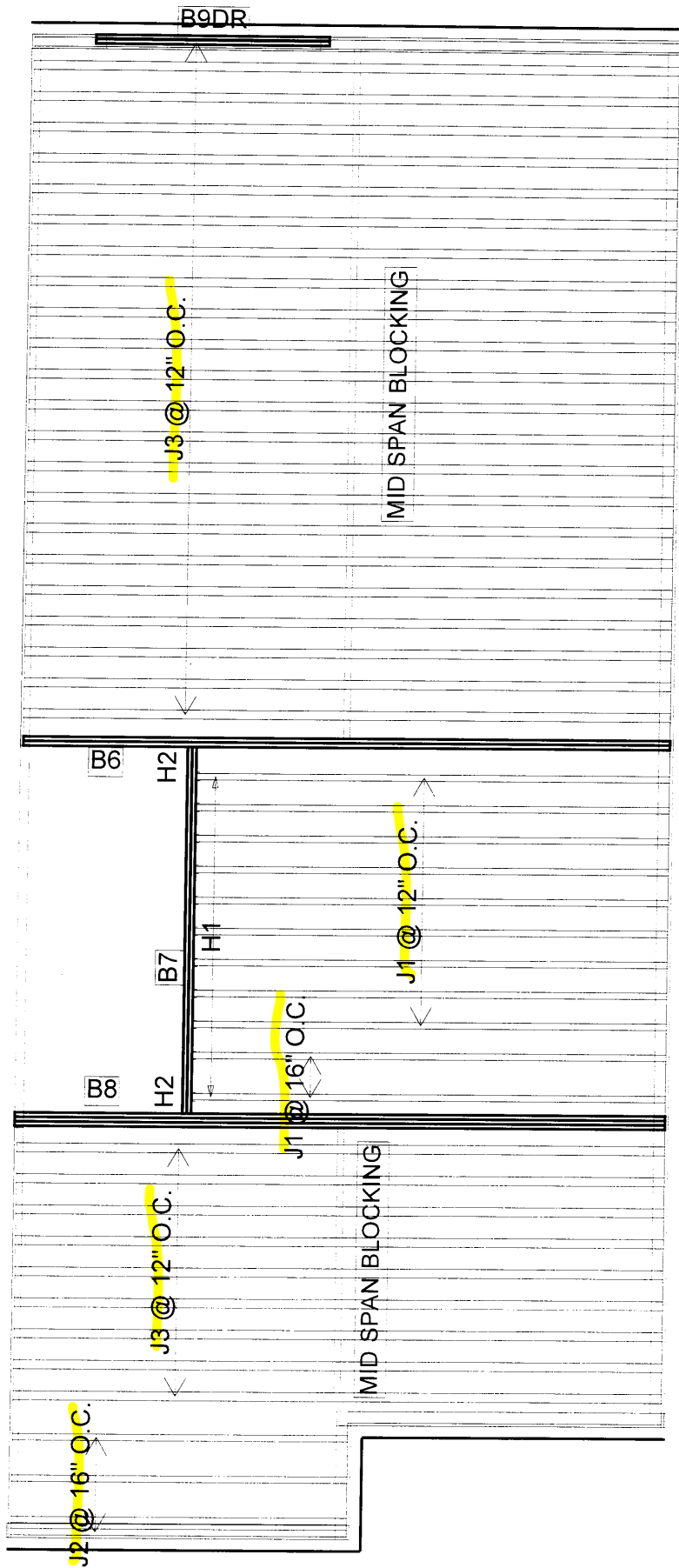
DESIGNER: CZ

REVISION:

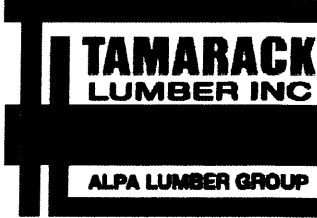
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S.P.F. REQ'D UNDER INTERIOR
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FOR HOLES INCLUDING DUCT
CHASE AND FIELD CUT OPENINGS
SEE FIGURE 7 TABLES 1 & 2 OF THE
INSTALLATION GUIDE. CERAMIC TILE
APPLICATION AS PER O.B.C. 9.30.6
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 31/07/2018

MAIN FLOOR



Town of Innisfil Certified Model
10/25/2018 10:58:59 AM kbayley



FROM PLAN DATED: JAN 2018
BUILDER: BAYVIEW WELLINGTON
SITE: ALCONA SHORES
MODEL: TH-10
ELEVATION: A,A2
LOT:
CITY: INNISFIL
SALESMAN: M D
DESIGNER: CZ
REVISION:

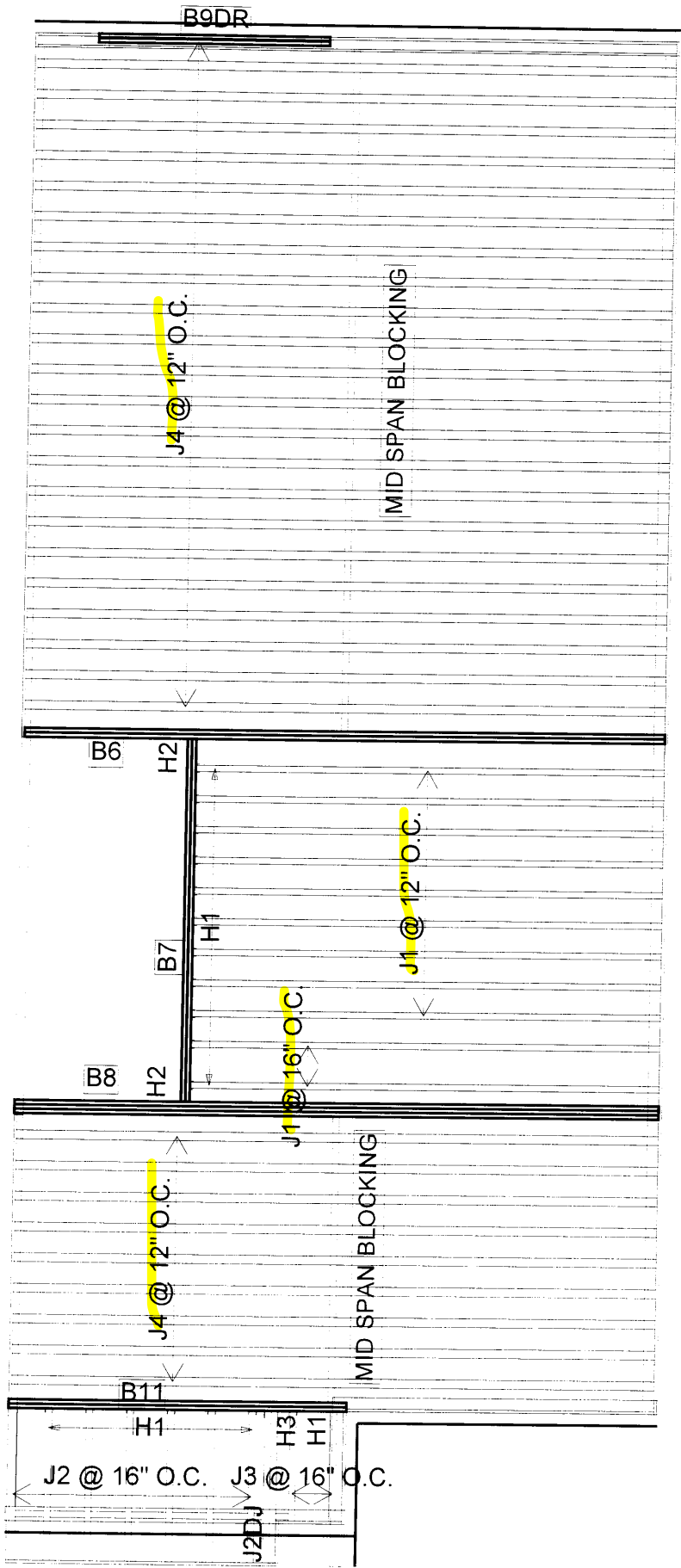
Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	11 7/8" NI-40x	1	11
J2	12-00-00	11 7/8" NI-40x	1	4
J3	22-00-00	11 7/8" NI-80	1	32
B9DR	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6	22-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B8	22-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B7	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
11	H1	IUS2.56/11.88
1	H2	HGUS410
1	H2	HGUS410

NOTES:
REFER TO THE NORDIC
INSTALLATION GUIDE FOR PROPER
STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2
S.P.F. REQ'D UNDER INTERIOR
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APPLICATION AS PER O.B.C. 9.30.6
LOADING:
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LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 31/07/2018

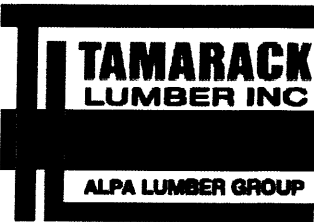
UPPER FLOOR



Town of Innisfil Certified Model
10/25/2018 10:59:04 AM kbayley

Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	11 7/8" NI-40x	1	11
J2	6-00-00	11 7/8" NI-40x	1	7
J2DJ	6-00-00	11 7/8" NI-40x	2	2
J3	4-00-00	11 7/8" NI-40x	1	2
J4	22-00-00	11 7/8" NI-80	1	32
B9DR	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6	22-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B8	22-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B11	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B7	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
18	H1	IUS2.56/11.88
1	H2	HGUS410
1	H2	HGUS410
1	H3	HU310-2



FROM PLAN DATED: JAN 2018
BUILDER: BAYVIEW WELLINGTON
SITE: ALCONA SHORES
MODEL: TH-10
ELEVATION: A3
LOT:
CITY: INNISFIL
SALESMAN: M D
DESIGNER: CZ
REVISION:

NOTES:
REFER TO THE NORDIC
INSTALLATION GUIDE FOR PROPER
STORAGE AND INSTALLATION.
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S.P.F. REQ'D UNDER INTERIOR
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APPLICATION AS PER O.B.C. 9.30.6
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LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 31/07/2018

UPPER FLOOR

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
3269 NORTH SERVICE ROAD
BURLINGTON, ON
by CZ
May 1, 2018 17:14

PROJECT
J4-2ND FL.wwb

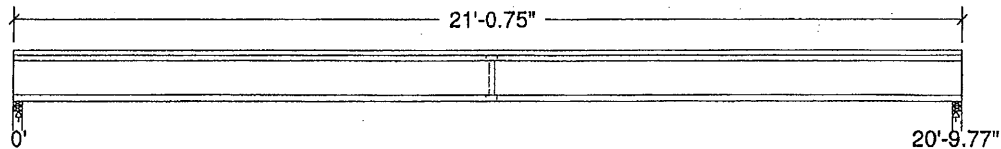
Design Check Calculation Sheet

Nordic Sizer -- Canada 7.0

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area			20.00	psf
Load2	Live	Full Area			40.00	psf

Maximum Reactions (lbs), Bearing Resistances (lbs) and Bearing Lengths (in) :



Unfactored:			
Dead	208		208
Live	416		416
Factored:			
Total	885		885
Bearing:			
Resistance			
Joist	2186		2186
Support	5559		5559
Des ratio			
Joist	0.40		0.40
Support	0.16		0.16
Load case	#2		#2
Length	2-3/8		2-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		1.00
fcp sup	769		769
Kzcp sup	1.09		1.09



Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

Nordic 11-7/8" NI-80 Floor joist @ 12" o.c.

Supports: All - Lumber Wall, No.1/No.2

Total length: 21'-0.75"; Clear span: 20'-7.99"; 3/4" nailed and glued OSB sheathing with 1 row of blocking and 1/2" gypsum ceiling

This section **PASSES** the design code check.

Limit States Design using CSA-086-09 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 885	Vr = 2336	lbs	Vf/Vr = 0.38
Moment(+)	Mf = 4603	Mr = 11609	lbs-ft	Mf/Mr = 0.40
Perm. Defl'n	0.15 = < L/999	0.69 = L/360	in	0.22
Live Defl'n	0.30 = L/822	0.52 = L/480	in	0.58
Total Defl'n	0.46 = L/548	1.04 = L/240	in	0.44
Bare Defl'n	0.34 = L/729	0.69 = L/360	in	0.49
Vibration	Lmax = 20'-9.8	Lv = 24'-3.6	ft	0.86
Defl'n	= 0.022	= 0.031	in	0.70

DWG NO. TAM 4263-18
STRUCTURAL
COMPONENT ONLY

T. 18071468

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#2
Mr+	11609	1.00	1.00	-	1.000	-	-	-	#2
EI	547.1 million	-	-	-	-	-	-	-	#2

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L

Moment(+) : LC #2 = 1.25D + 1.5L

Deflection: LC #1 = 1.0D (permanent)

LC #2 = 1.0D + 1.0L (live)

LC #2 = 1.0D + 1.0L (total)

LC #2 = 1.0D + 1.0L (bare joist)

Bearing : Support 1 - LC #2 = 1.25D + 1.5L

Support 2 - LC #2 = 1.25D + 1.5L

Load Types: D=dead W=wind S=snow H=earth,groundwater E=earthquake
L=live(use,occupancy) Ls=live(storage,equipment) f=fire

Load Patterns: s=S/2 L=L+Ls __=no pattern load in this span

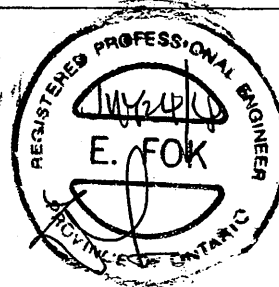
All Load Combinations (LCs) are listed in the Analysis output

CALCULATIONS:Deflection: E_{ieff} = 625e06 lb-in² K= 6.18e06 lbs

"Live" deflection = Deflection from all non-dead loads (live, wind, snow...)

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-09 Engineering Design in Wood standard, which includes Update No.1 **CONFORMS TO OBC 2012**
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis 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 this component based on the design criteria and loadings shown.



DWG NO. TAM 4263-18H
STRUCTURAL
COMPONENT ONLY

T. 18071468(2)



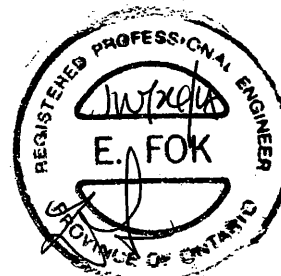
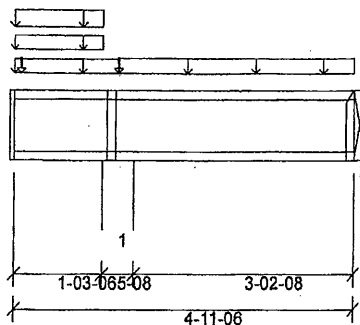
Customer:
Street 1:
City:
From Plan Date: JAN 2018

Job Name: TH-10ELA3
Level: UPPER FLOOR FRAMING
Label: J2DJ - 1951
Type: FloorJoist

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

Status:
Design
Passed

Graphical Illustration Not to Scale. Pitch: 0/12 Designed by: MiTek SAPPHIRE™ Structure Version 8.2.0.246.Update1 ReportVersion: 2016.08.17 05/10/2018 17:22



DESIGN INFORMATION

Building Code: NBCC 2010, Part9
Design Methodology: LSD
Service Condition: Dry
System Live Load: 40.0 psf
System Dead Load: 20.0 psf
System Spacing: 16" c.c
LL Deflection Limit: L/480,
TL Deflection Limit: L/240,

CONFORMS TO OBC 2012

Floor Assembly Requirements:

Subfloor: 3/4" Softwood Plywood
Connection: Glued And Nailed
Ceiling: None
Blocking: None
Bridging: None
Strapping: None

Lateral Restraint Requirements:

Top and bottom edges of member to be fully restrained laterally, or have the following maximum unbraced length:

Top: 0-00 Bottom: 3-02-08

Factored Resistance of Support Material:

- 534 psi Wall @ 1-06-02
- 534 psi Beam @ 4-11-06

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.

MITAL EQUIP OR EQUIV
ALONG TOP 4 BOTTOM CHORDS
@ 24" O.C. S1466349.

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	Design	Limit	Result
Max Factored Moment:	1-06-02	1.25D + 1.5L	221 lb ft	8945 lb ft	Passed - 2%
Max Factored Shear:	1-03-05	1.25D + 1.5L	230 lb	3042 lb	Passed - 8%
Live Load (LL) Deflection:	3-02-12	L	0.001"	L/480	Passed - L/999
Total Load (TL) Deflection:	2-10-13	D + L	0.000"	L/240	Passed - L/999
Vibration Controlled Span:	-	-	3-02-08	20-09-15	Passed - 15%

SUPPORT AND REACTION INFORMATION

Support Location	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1-06-02	5-08	1.25D + 1.5L	0.65	367 lb		11180 lb	14685 lb	Passed - 3%
4-11-06	1-12	0.9D + 1.5L	0.82	60 lb		4020 lb	-	Passed - 2%
4-11-06	1-12	1.25D + 1.5L	0.65		-33 lb	4020 lb	-	Passed - 1%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Other Information or Requirement for Reinforcement Accessories
2	HU310-2		Connector has not been designed. Connector to be specified by others..

* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction.

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)
Uniform	0-00	1-06-02	FC3 Floor Material	6.00 lb/ft	12.00 lb/ft	-
Uniform	0-00	1-03-06	E36(799)	81.00 lb/ft	-	-
Uniform	0-00	1-03-06	FC3 Floor Material	8.00 lb/ft	12.00 lb/ft	-
Uniform	1-06-02	4-11-06	FC3 Floor Material	13.00 lb/ft	27.00 lb/ft	-
Point	1-03	1-03	-	24.00 lb	-	-
Point	1-06-02	1-06-02	E38(800)	30.00 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)
1	1-03-06	1-08-14	E19(296)	236.00 lb	91.00 lb	-
2	4-11-06	4-11-06	B11(11193)	-13.00 lb	50.00/-8.00 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped 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.
- Design for vibration control is based on the concluding report: "Development of Design Procedures for Vibration Controlled Spans Using Engineered Wood Members," dated Sep-04-97
- 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. Actual field conditions may differ from those shown. These results should be reviewed by a qualified design professional.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Anchorage for uplift reactions to be specified by others. Installation of member 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.

DWG NO. TAM4264-184
STRUCTURAL
COMPONENT ONLY

T.18071469



Bolse Cascade

**Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLOOR FRAMING\Flush Beams\B1(i1221)**

Dry | 1 span | No cant.

July 31, 2018 08:39:24

BC CALC® Member Report

Build 6475

Job name:

File name: TH-10.mmd

Address:

Description: 1ST FLOOR FRAMING\Flush Beams\B1(i1221)

City, Province, Postal Code: INNISFIL

Specifier:

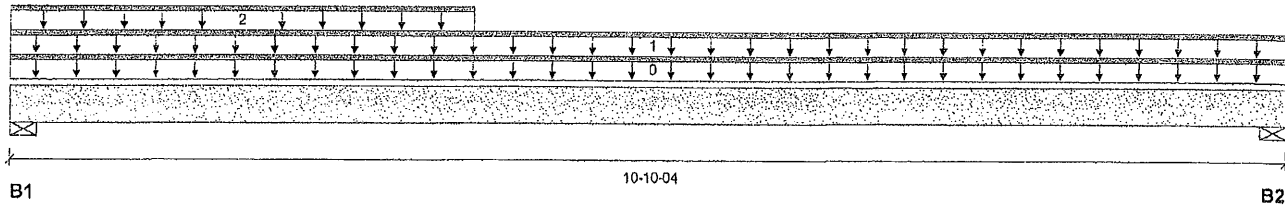
Customer:

Designer: CZ

Code reports:

CCMC 12472-R

Company:

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

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	318 / 0	185 / 0		
B2, 4-3/8"	117 / 0	85 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-10-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-10-04	Top	11	6			n/a
2	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-10-14	Top	80	40			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,159 ft-lbs	11,610 ft-lbs	10.0 %	1	03-06-08
End Shear	510 lbs	5,785 lbs	8.8 %	1	00-11-14
Total Load Deflection	L/999 (0.06")	n/a	n/a	4	04-11-15
Live Load Deflection	L/999 (0.036")	n/a	n/a	5	04-11-15
Max Defl.	0.06"	n/a	n/a	4	04-11-15
Span / Depth	13.2				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 1-3/4"	708 lbs	31.9 %	14.0 %	Unspecified
B2	Wall/Plate 4-3/8" x 1-3/4"	281 lbs	6.9 %	3.0 %	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 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012**Disclosure**

Use of the Bolse 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 Bolse 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.

DWG NO. YAN 4950-1814
STRUCTURAL
COMPONENT ONLY

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

T-1808164



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****2ND FLOOR FRAMING\Dropped Beams\B2DR(i1232)****PASSED**

BC CALCO® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: INNISFIL

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

July 31, 2018 08:39:39

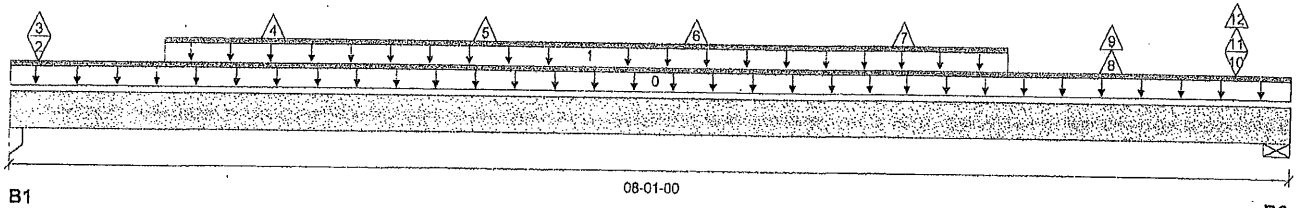
File name: TH-10.mmdl

Description: 2ND FLOOR FRAMING\Dropped Beams\B2DR(i1232)

Specifier:

Designer: CZ

Company:



Total Horizontal Product Length = 08-01-00

Reaction Summary (Down / Uplift) (lbs)

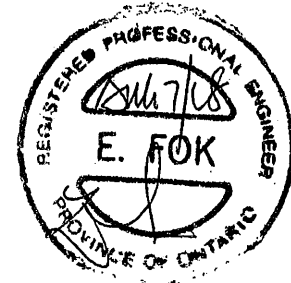
Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	259 / 206	0 / 118		
B2, 5-1/2"	862 / 309	254 / 0		

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	08-01-00	Top		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-11-08	06-03-08	Top	65				n/a
2	-	Conc. Pt. (lbs)	L	00-02-01	00-02-01	Top	53				n/a
3	-	Conc. Pt. (lbs)	L	00-02-01	00-02-01	Top		-64			n/a
4	J1(i1234)	Conc. Pt. (lbs)	L	01-07-08	01-07-08	Top	-91	-45			n/a
5	J1(i1226)	Conc. Pt. (lbs)	L	02-11-08	02-11-08	Top	-91	-45			n/a
6	J1(i1235)	Conc. Pt. (lbs)	L	04-03-08	04-03-08	Top	-91	-45			n/a
7	J1(i1219)	Conc. Pt. (lbs)	L	05-07-08	05-07-08	Top	-91	-45			n/a
8	J1(i1229)	Conc. Pt. (lbs)	L	06-11-08	06-11-08	Top	77	-40			n/a
9	J1(i1229)	Conc. Pt. (lbs)	L	06-11-08	06-11-08	Top	-80				n/a
10	-	Conc. Pt. (lbs)	L	07-08-14	07-08-14	Top	634	368			n/a
11	-	Conc. Pt. (lbs)	L	07-08-14	07-08-14	Top		-35			n/a
12	-	Conc. Pt. (lbs)	L	07-08-14	07-08-14	Top	-71				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	529 ft-lbs	23,220 ft-lbs	2.3 %	3	04-03-08
Neg. Moment	-922 ft-lbs	-23,220 ft-lbs	4.0 %	2	04-03-08
End Shear	462 lbs	11,571 lbs	4.0 %	2	01-01-00
Total Load Deflection	L/999 (0.006")	n/a	n/a	6	03-11-08
Live Load Deflection	L/999 (-0.009")	n/a	n/a	9	03-11-08
Total Neg. Defl.	L/999 (-0.013")	n/a	n/a	7	03-11-08
Max Defl.	-0.013"	n/a	n/a	7	03-11-08
Span / Depth	9.4				



Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Column	3-1/2" x 3-1/2"	281 lbs	2.8 %	1.9 %	Unspecified
B1 Uplift		457 lbs			
B2 Wall/Plate	5-1/2" x 3-1/2"	1,611 lbs	10.3 %	6.9 %	Unspecified
B2 Uplift		235 lbs			

CautionsUplift of 457 lbs found at span 1 - Left. *C. Simpson 1-12-54 @ (B1)*

PG 1/2
 DWG NO. YAM4951-1817
 STRUCTURAL
 COMPONENT ONLY

T-1808165



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING\Dropped Beams\B2DR\I1232)**

BC CALC® Member Report

Dry | 1 span | No cant.

July 31, 2018 08:39:39

Build 6475

Job name:

File name: TH-10.mmdl

Address:

Description: 2ND FLOOR FRAMING\Dropped Beams\B2DR\I1232)

City, Province, Postal Code: INNISFIL

Specifier:

Customer:

Designer: CZ

Code reports:

CCMC 12472-R

Company:

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.

CONFORMS TO OBC 2012

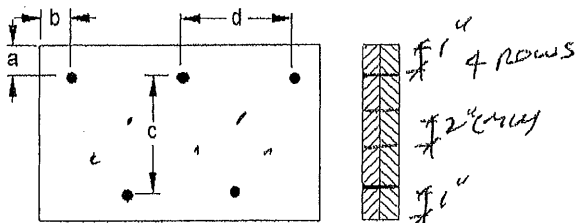
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Member has no side loads.

Connection Diagram: Full Length of Member

a minimum = 2"

c = 3-1/2"

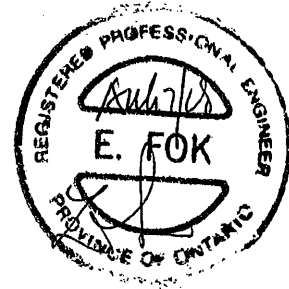
b minimum = 3"

d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Member has no side loads.

Connectors are: Nails

3-1/2" ARDOX SPIRAL**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™, ALUJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

STRUCTURAL
COMPONENT ONLY

T-1808165(2)



Boise Cascade

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING\Flush Beams\B3(i955)**

Dry | 1 span | No cant.

May 11, 2018 08:22:24

BC CALC® Design Report

Build 6215

Job name:

File name: TH-10.mmdl

Address:

Description: 2ND FLOOR FRAMING\Flush Beams\B3(i955)

City, Province, Postal Code: INNISFIL

Specifier:

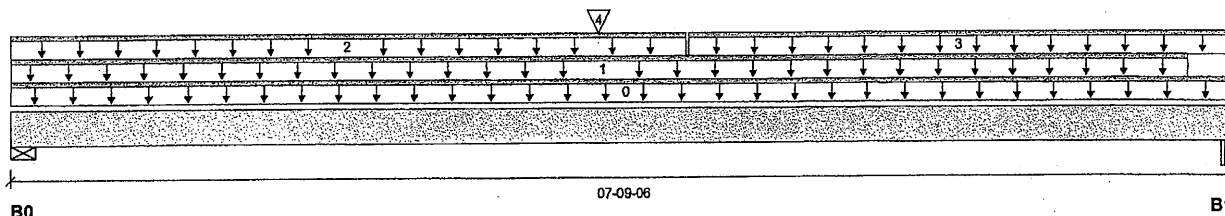
Customer:

Designer: CZ

Code reports:

CCMC 12472-R

Company:

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

Bearing	Live	Dead	Snow	Wind
B0, 2-3/8"	336 / 0	403 / 0		
B1, 5-3/16"	849 / 0	547 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-09-06	12				00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-05-14	28	14			n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-00-00	04-03-02	60				n/a
3	STAIR	Unf. Lin. (lb/ft)	L	04-03-06	07-09-06	240	120			n/a
4	LANDING	Conc. Pt. (lbs)	L	03-08-09	03-08-09	140	78			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2,649 ft-lbs	35,392 ft-lbs	7.5 %	1	04-04-15
End Shear	1,144 lbs	14,464 lbs	7.9 %	1	06-04-05
Total Load Deflection	L/999 (0.018")	n/a	n/a	4	03-11-00
Live Load Deflection	L/999 (0.01")	n/a	n/a	5	03-11-13
Max Defl.	0.018"	n/a	n/a	4	03-11-00
Span / Depth	7.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Wall/Plate 2-3/8" x 3-1/2"	1,008 lbs	22.7 %	9.9 %	Unspecified
B1	Beam 5-3/16" x 3-1/2"	1,958 lbs	20.1 %	8.8 %	Unspecified

Notes

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

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

Calculations assume 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 2010 and CSA O86.

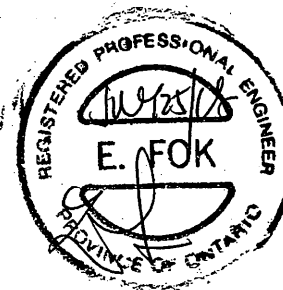
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Member has no side loads.



DWG NO. TAM 4267-18 H
STRUCTURAL
COMPONENT ONLY

T.18071472



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B3(i955)

Dry | 1 span | No cant.

May 11, 2018 08:22:24

BC CALC® Design Report

Build 6215

Job name:

Address:

City, Province, Postal Code: INNISFIL

Customer:

Code reports: CCMC 12472-R

File name: TH-10.mmdl

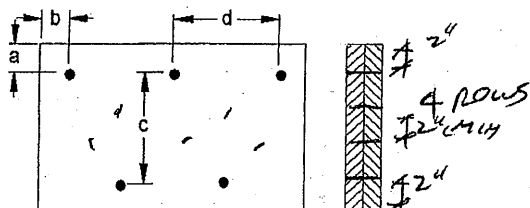
Description: 2ND FLOOR FRAMING\Flush Beams\B3(i955)

Specifier:

Designer: CZ

Company:

Connection Diagram



a minimum = 2"
b minimum = 3"

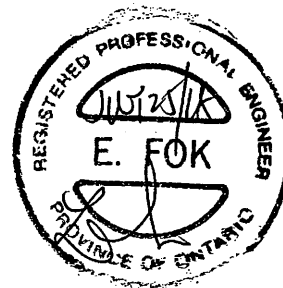
c = 7-7/8"
d = 12"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Member has no side loads.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



Disclosure

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BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,
DWG NO. TAM 4267-B H 10/22
STRUCTURAL
COMPONENT ONLY

T.18071472(2)



Boise Cascade

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING\Dropped Beams\B4(i957)**

Dry | 1 span | No cant.

May 11, 2018 08:22:24

BC CALC® Design Report

Build 6215

Job name:

Address:

City, Province, Postal Code: INNISFIL

Customer:

Code reports: CCMC 12472-R

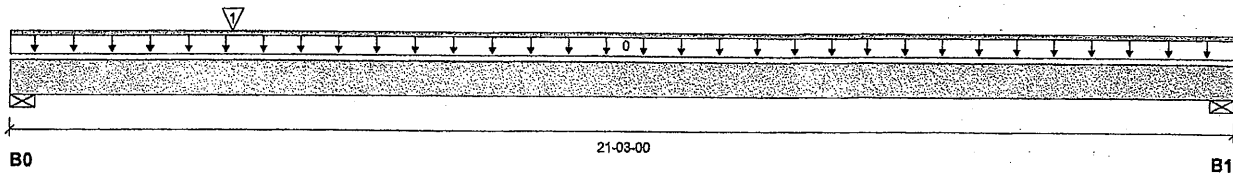
File name: TH-10.mmdl

Description: 2ND FLOOR FRAMING\Dropped Beams\B4(i957)

Specifier:

Designer: CZ

Company:



Total Horizontal Product Length = 21-03-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	116 / 0	192 / 0		
B1, 3-1/2"	24 / 0	141 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	21-03-00		12			00-00-00
1	LANDING	Conc. Pt. (lbs)	L	03-09-11	03-09-11	140	78			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,456 ft-lbs	19,443 ft-lbs	7.5 %	1	07-01-01
End Shear	395 lbs	14,464 lbs	2.7 %	1	01-03-06
Total Load Deflection	L/999 (0.088")	n/a	n/a	4	10-01-07
Live Load Deflection	L/999 (0.023")	n/a	n/a	5	09-01-05
Max Defl.	0.088"	n/a	n/a	4	10-01-07
Span / Depth	21.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Wall/Plate 3-1/2" x 3-1/2"	269 lbs	4.2 %	2.8 %	Unspecified
B1	Wall/Plate 3-1/2" x 3-1/2"	198 lbs	3.1 %	2.0 %	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: 10-02-13, Bottom: 10-02-13.

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 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Member has no side loads.



DWG NO. TAM 4268.84
STRUCTURAL
COMPONENT ONLY

T.18071473



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

PASSED

BC CALC® Design Report
Build 6215

2ND FLOOR FRAMING\Dropped Beams\B4(i957)

Dry | 1 span | No cant.

May 11, 2018 08:22:24

Job name:

File name: TH-10.mmdl

Address:

Description: 2ND FLOOR FRAMING\Dropped Beams\B4(i957)

City, Province, Postal Code: INNISFIL

Specifier:

Customer:

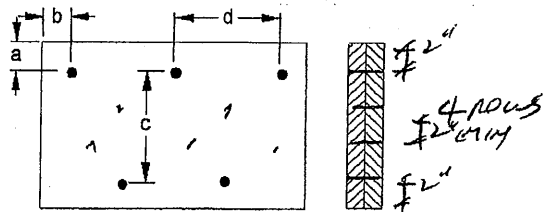
Designer: CZ

Code reports:

CCMC 12472-R

Company:

Connection Diagram



a minimum = 2"
b minimum = 3"

c = 7-7/8"
d = 12"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Member has no side loads.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



Disclosure

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BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®, DWG NO. TAM 4166-18, STRUCTURAL COMPONENT ONLY

T. 18071473(2)



Boise Cascade

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****UPPER FLOOR FRAMING\Flush Beams\B6(i956)****PASSED**

BC CALC® Design Report

Dry | 1 span | No cant.

May 11, 2018 08:22:24

Build 6215

Job name:

File name: TH-10.mmdl

Address:

Description: UPPER FLOOR FRAMING\Flush Beams\B6(i956)

City, Province, Postal Code: INNISFIL

Specifier:

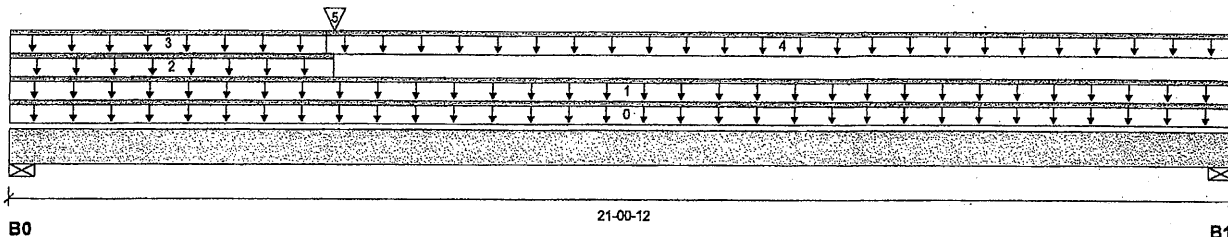
Customer:

Designer: CZ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 21'-00-12

Reaction Summary (Down / Uplift) (lbs)

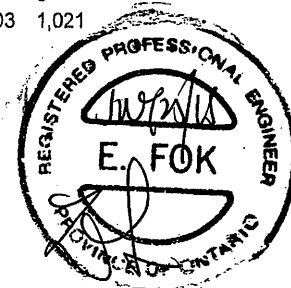
Bearing	Live	Dead	Snow	Wind
B0, 2-3/8"	1,710 / 0	1,320 / 0		
B1, 4-3/8"	843 / 0	609 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	21-00-12		12			00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	21-00-12	18	9			n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-00-00	05-05-15		60			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-04-06	6				n/a
4	FC3 Floor Material	Unf. Lin. (lb/ft)	L	05-04-06	21-00-12	15	8			n/a
5	B7(i970)	Conc. Pt. (lbs)	L	05-06-02	05-06-02	1,903	1,021			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	20,485 ft-lbs	35,392 ft-lbs	57.9 %	1	05-06-00
End Shear	4,049 lbs	14,464 lbs	28.0 %	1	01-02-04
Total Load Deflection	L/256 (0.969")	n/a	93.9 %	4	09-07-00
Live Load Deflection	L/430 (0.576")	n/a	83.7 %	5	09-07-00
Max Defl.	0.969"	n/a	n/a	4	09-07-00
Span / Depth	20.8				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate 2-3/8" x 3-1/2"	4,216 lbs	95.0 %	41.6 %	Unspecified
B1	Wall/Plate 4-3/8" x 3-1/2"	2,027 lbs	24.8 %	10.8 %	Unspecified

Notes

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

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

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

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

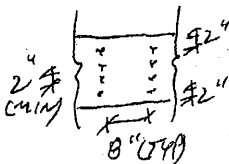
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Concentrated side-load exceeds allowable magnitude for connection design. Please consult a technical representative or Professional Engineer for the design of the connection.



PROVIDE 4 ROWS OF 3-1/2" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE / END DISTANCE. DO NOT USE AIR NAILS.

Disclosure

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BC CALC®, BC FRAMER®, AJST™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®, DWG NO. TAM 426984
STRUCTURAL COMPONENT ONLY

T.18071474



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

PASSED

BC CALC® Design Report
Build 6215

UPPER FLOOR FRAMING\Flush Beams\B7(I970)

Dry | 1 span | No cant.

May 11, 2018 08:22:24

Job name:

File name: TH-10.mmdl

Address:

Description: UPPER FLOOR FRAMING\Flush Beams\B7(I970)

City, Province, Postal Code: INNISFIL

Specifier:

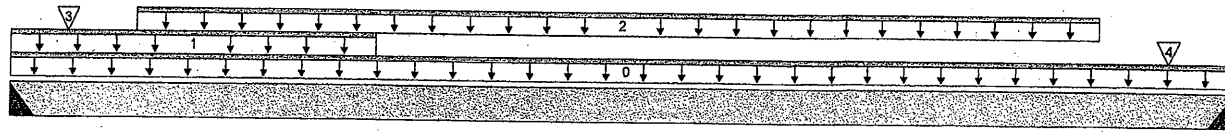
Customer:

Designer: CZ

Code reports:

CCMC 12472-R

Company:



B0

11-10-00

B1

Total Horizontal Product Length = 11-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2"	2,529 / 0	1,334 / 0		
B1, 2"	1,903 / 0	1,021 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-10-00	1.00	0.65	1.00	1.15	
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	240	120			00-00-00
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-02-08	10-06-08	314	157			n/a
3	J1(I971)	Conc. Pt. (lbs)	L	00-06-08	00-06-08	329	164			n/a
4	J1(I345)	Conc. Pt. (lbs)	L	11-02-08	11-02-08	330	165			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	13,052 ft-lbs	35,392 ft-lbs	36.9 %	1	05-10-08
End Shear	4,420 lbs	14,464 lbs	30.6 %	1	01-01-14
Total Load Deflection	L/603 (0.231")	n/a	39.8 %	4	05-10-08
Live Load Deflection	L/924 (0.151")	n/a	39.0 %	5	05-10-08
Max Defl.	0.231"	n/a	n/a	4	05-10-08
Span / Depth	11.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Hanger 2" x 3-1/2"	5,461 lbs	n/a	63.9 %	HGUS410
B1	Hanger 2" x 3-1/2"	4,130 lbs	n/a	48.4 %	HGUS410

Cautions

Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

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.

Hanger Manufacturer: Unassigned

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.



DWG NO. TAM 4170-18H
STRUCTURAL
COMPONENT ONLY

T.18071475



Boise Cascade

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****UPPER FLOOR FRAMING\Flush Beams\B7(i970)**

Dry | 1 span | No cant.

May 11, 2018 08:22:24

BC CALC® Design Report

Build 6215

Job name:

Address:

City, Province, Postal Code: INNISFIL

Customer:

Code reports: CCMC 12472-R

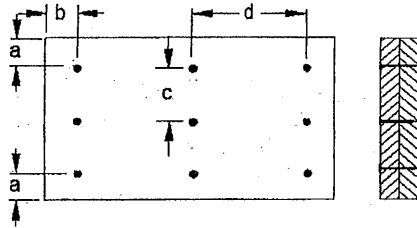
File name: TH-10.mmdl

Description: UPPER FLOOR FRAMING\Flush Beams\B7(i970)

Specifier:

Designer: CZ

Company:

Connection Diagram

a minimum = 2"

c = 4"

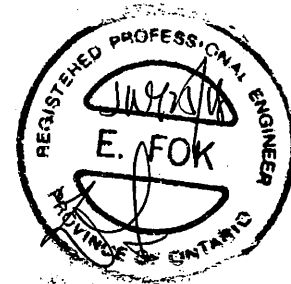
b minimum = 3"

d = 6"

Calculated Side Load = 644.6 lb/ft

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL**Disclosure**

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DWG NO. TAM 4270-18H
STRUCTURAL
COMPONENT ONLY

T.18071475(2)



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

PASSED

UPPER FLOOR FRAMING\Flush Beams\B8(i1006)

Dry | 1 span | No cant.

May 11, 2018 08:22:24

BC CALC® Design Report

Build 6215

Job name:

Address:

City, Province, Postal Code: INNISFIL

Customer:

Code reports: CCMC 12472-R

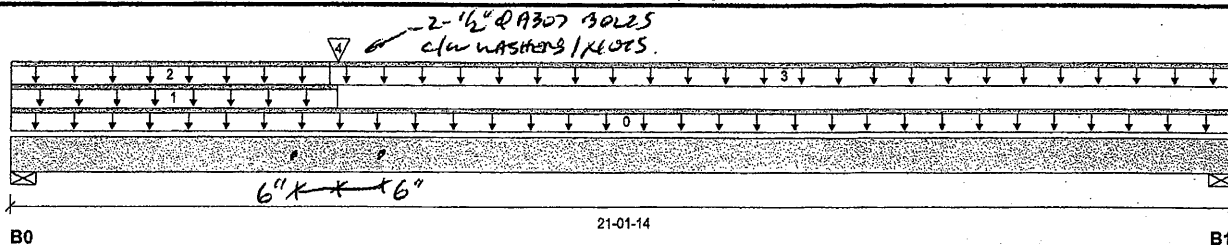
File name: TH-10.mmdl

Description: UPPER FLOOR FRAMING\Flush Beams\B8(i1006)

Specifier:

Designer: CZ

Company:



Total Horizontal Product Length = 21-01-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	2,169 / 0	1,619 / 0		
B1, 4-3/8"	1,006 / 0	754 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	21-01-14		18			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	05-07-02		60			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-05-08	23	11			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	05-05-08	21-01-14	33	17			n/a
4	B7(i970)	Conc. Pt. (lbs)	L	05-07-04	05-07-04	2,529	1,333			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	26,054 ft-lbs	55,212 ft-lbs	47.2 %	1	05-07-02
End Shear	5,092 lbs	21,696 lbs	23.5 %	1	01-03-06
Total Load Deflection	L/307 (0.807")	n/a	78.3 %	4	09-08-03
Live Load Deflection	L/515 (0.48")	n/a	69.9 %	5	09-08-03
Max Defl.	0.807"	n/a	n/a	4	09-08-03
Span / Depth	20.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Wall/Plate 3-1/2" x 5-1/4"	5,279 lbs	53.8 %	23.5 %	Unspecified
B1	Wall/Plate 4-3/8" x 5-1/4"	2,451 lbs	20.0 %	8.7 %	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.

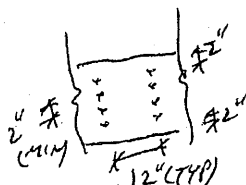
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Concentrated side-load exceeds allowable magnitude for connection design. Please consult a technical representative or Professional Engineer for the design of the connection. OK WITH NAILING.

CONFORMS TO OBC 2012



PROVIDE 4 ROWS OF 3-1/2" ARDOX SPIRAL NAILS @ 12" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE / END DISTANCE. DO NOT USE AIR NAILS. STAGGER NAILS 6" BETWEEN PILES.

+ BOLTS

Disclosure

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

DWG NO. TAM 4271-1814
STRUCTURAL
COMPONENT ONLY

T.18071476



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

PASSED

BC CALC® Design Report

UPPER FLOOR FRAMING\Dropped Beams\B9DR(i794)

Dry | 1 span | No cant.

May 11, 2018 08:22:24

Build 6215

Job name:

File name: TH-10.mmdl

Address:

Description: UPPER FLOOR FRAMING\...ped Beams\B9DR(i794)

City, Province, Postal Code: INNISFIL

Specifier:

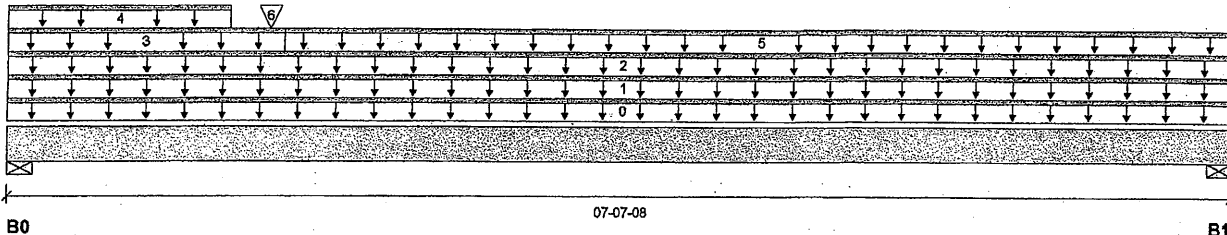
Customer:

Designer: CZ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 07-07-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	1,271 / 0	1,408 / 0	4,058 / 0	
B1, 3-1/2"	312 / 0	497 / 0	753 / 0	

Load Summary

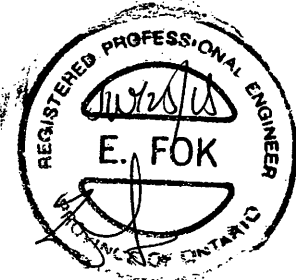
Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-07-08		10			00-00-00
1	J3(i792)	Unf. Lin. (lb/ft)	L	00-00-00	07-07-08	20	13			n/a
2	R1(i787)	Unf. Lin. (lb/ft)	L	00-00-00	07-07-08	5	5			n/a
3	R1(i787)	Unf. Lin. (lb/ft)	L	00-00-00	01-08-08		65			n/a
4	R1(i787)	Unf. Lin. (lb/ft)	L	00-00-00	01-04-08	267	243	922		n/a
5	R1(i787)	Unf. Lin. (lb/ft)	L	01-08-08	07-07-08		49			n/a
6	R1(i787)	Conc. Pt. (lbs)	L	01-07-08	01-07-08	(1,027	957	3,545)		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	9,045 ft-lbs	23,220 ft-lbs	39.0 %	13	01-07-08
End Shear	6,291 lbs	11,571 lbs	54.4 %	13	01-01-08
Total Load Deflection	L/999 (0.091")	n/a	n/a	45	03-05-06
Live Load Deflection	L/999 (0.067")	n/a	n/a	61	03-04-07
Max Defl.	0.091"	n/a	n/a	45	03-05-06
Span / Depth	9.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Wall/Plate 4" x 3-1/2"	8,483 lbs	74.6 %	49.7 %	Unspecified
B1	Wall/Plate 3-1/2" x 3-1/2"	1,907 lbs	19.2 %	12.8 %	Unspecified



DWG NO. TAM 4272-18H
STRUCTURAL
COMPONENT ONLY

7.18071477



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

PASSED

BC CALC® Design Report
Build 6215

UPPER FLOOR FRAMING\Dropped Beams\B9DR(i794)

Dry | 1 span | No cant.

May 11, 2018 08:22:24

Job name:

File name: TH-10.mmdl

Address:

Description: UPPER FLOOR FRAMING\...ped Beams\B9DR(i794)

City, Province, Postal Code: INNISFIL

Specifier:

Customer:

Designer: CZ

Code reports: CCMC 12472-R

Company:

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 2010 and CSA O86.

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

CONFORMS TO OBC 2012

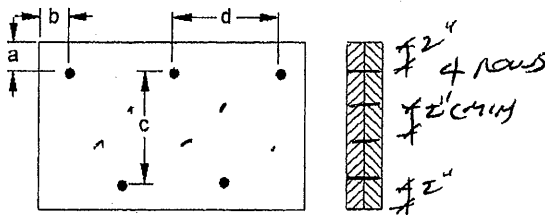
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Member has no side loads.

Connection Diagram



a minimum = 1"
b minimum = 3"

c = 2-1/2"
d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Member has no side loads.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



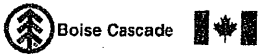
Disclosure

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DWG NO. TAM 422-18
STRUCTURAL
COMPONENT ONLY

T-1807147.7(2)

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED**BC CALC® Design Report
Build 6215

Dry | 1 span | No cant.

May 4, 2018 14:39:50

Job name:

File name: TH-10ELA3.mmdl

Address:

Description: UPPER FLOOR FRAMING\Flush Beams\B11(i1193)

City, Province, Postal Code: INNISFIL

Specifier:

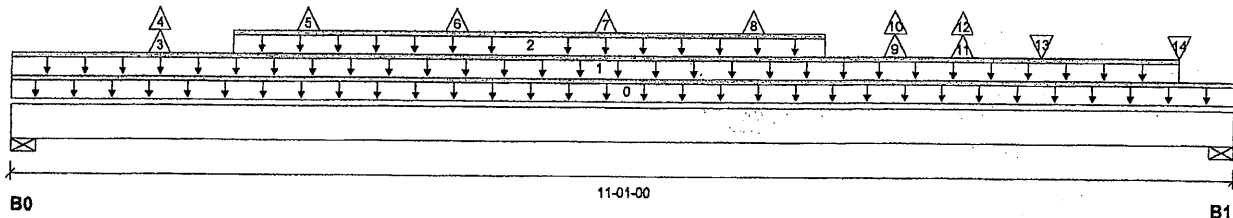
Customer:

Designer: CZ

Code reports:

CCMC 12472-R

Company:

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

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	433 / 68	84 / 0		
B1, 5-1/2"	430 / 53	118 / 0		

Load Summary

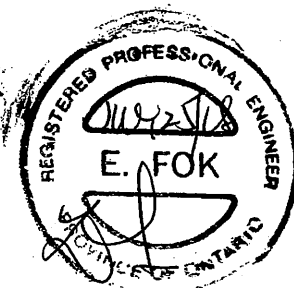
Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-01-00		12			00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-06-15	15	8			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	02-00-00	07-04-00	74				n/a
3	J2(i938)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	92	-7			n/a
4	J2(i938)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	-18				n/a
5	J2(i933)	Conc. Pt. (lbs)	L	02-08-00	02-08-00	-20	-8			n/a
6	J2(i933)	Conc. Pt. (lbs)	L	04-00-00	04-00-00	-20	-8			n/a
7	J2(i933)	Conc. Pt. (lbs)	L	05-04-00	05-04-00	-20	-8			n/a
8	J2(i933)	Conc. Pt. (lbs)	L	06-08-00	06-08-00	-20	-8			n/a
9	J2(i932)	Conc. Pt. (lbs)	L	08-00-00	08-00-00	73	-4			n/a
10	J2(i932)	Conc. Pt. (lbs)	L	08-00-00	08-00-00	-15				n/a
11	J2DJ(i951)	Conc. Pt. (lbs)	L	08-07-06	08-07-06	50	-13			n/a
12	J2DJ(i951)	Conc. Pt. (lbs)	L	08-07-06	08-07-06	-8				n/a
13	J3(i930)	Conc. Pt. (lbs)	L	09-04-00	09-04-00	73	36			n/a
14	Bk1(i1183)	Conc. Pt. (lbs)	L	10-06-15	10-06-15	13	6			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2,100 ft-lbs	35,392 ft-lbs	5.9 %	1	05-04-00
Neg. Moment	-101 ft-lbs	-35,392 ft-lbs	0.3 %	4	05-04-00
End Shear	740 lbs	14,464 lbs	5.1 %	1	09-07-10
Total Load Deflection	L/999 (0.029")	n/a	n/a	6	05-06-00
Live Load Deflection	L/999 (0.024")	n/a	n/a	8	05-06-00
Max Defl.	0.029"	n/a	n/a	6	05-06-00
Span / Depth	10.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate 3-1/2" x 3-1/2"	754 lbs	11.5 %	5.0 %	Unspecified
B1	Wall/Plate 5-1/2" x 3-1/2"	792 lbs	7.7 %	3.4 %	Unspecified

DWG NO. TAM 4273-18H
STRUCTURAL
COMPONENT ONLY

T-18071478



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

PASSED

BC CALC® Design Report
Build 6215

Dry | 1 span | No cant.

May 4, 2018 14:39:50

Job name:

File name: TH-10ELA3.mmdl

Address:

Description: UPPER FLOOR FRAMING\Flush Beams\B11(i1193)

City, Province, Postal Code: INNISFIL

Specifier:

Customer:

Designer: CZ

Code reports: CCMC 12472-R

Company:

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 2010 and CSA O86.

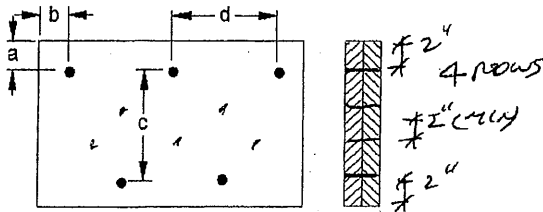
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connection Diagram



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 12"

Calculated Side Load = 73.9 lb/ft

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are:

Nails

3-1/2" ARDOX SPIRAL



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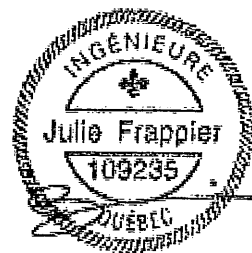
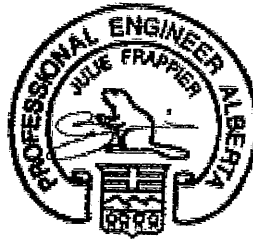
BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®

DWG NO. TAM 4233-8
STRUCTURAL
COMPONENT ONLY

T. (807) 478(2)

Maximum Floor Spans

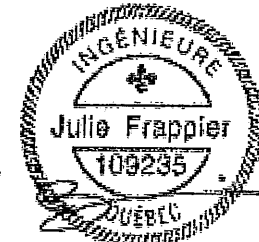
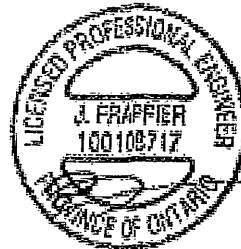
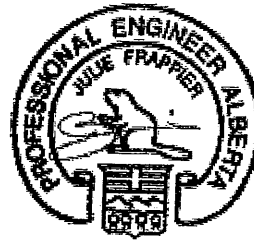
Live Load = 40 psf, Dead Load = 15 psf
Simple Spans, L/480 Deflection Limit
5/8" OSB G&N Sheathing



Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-2"	13'-9"	N/A	15'-7"	14'-8"	14'-2"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
	NI-70	17'-1"	16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-10"	N/A
	NI-80	17'-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A
11-7/8"	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
14"	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
16"	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-8"	15'-3"	14'-5"	N/A	16'-8"	15'-3"	14'-5"	N/A
	NI-40x	17'-11"	16'-11"	16'-1"	N/A	18'-5"	17'-1"	16'-1"	N/A
	NI-60	18'-2"	17'-1"	16'-4"	N/A	18'-7"	17'-4"	16'-4"	N/A
	NI-70	19'-2"	17'-10"	17'-2"	N/A	19'-7"	18'-3"	17'-7"	N/A
	NI-80	19'-5"	18'-0"	17'-4"	N/A	19'-10"	18'-5"	17'-8"	N/A
11-7/8"	NI-20	19'-6"	18'-1"	17'-3"	N/A	19'-11"	18'-3"	17'-3"	N/A
	NI-40x	21'-0"	19'-6"	18'-8"	N/A	21'-7"	20'-2"	19'-2"	N/A
	NI-60	21'-4"	19'-9"	18'-11"	N/A	21'-11"	20'-4"	19'-6"	N/A
	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-5"	20'-5"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-8"	N/A
14"	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	NI-40x	23'-7"	21'-11"	20'-11"	N/A	24'-3"	22'-7"	21'-7"	N/A
	NI-60	24'-0"	22'-3"	21'-3"	N/A	24'-8"	22'-11"	21'-11"	N/A
	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-11"	N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A
16"	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	25'-3"	24'-2"	N/A
	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
	NI-80	28'-2"	26'-1"	24'-10"	N/A	28'-10"	26'-9"	25'-6"	N/A
	NI-90x	29'-0"	26'-10"	25'-7"	N/A	29'-7"	27'-5"	26'-2"	N/A

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



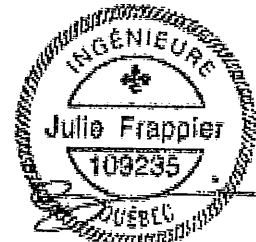
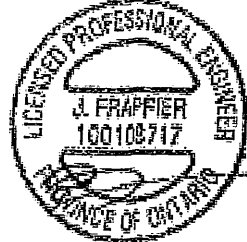
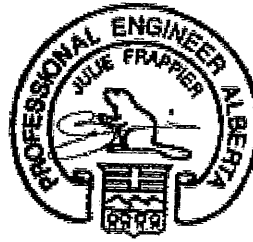
Maximum Floor Spans

Live Load = 40 psf, Dead Load = 15 psf
Simple Spans, L/480 Deflection Limit
3/4" OSB G&N Sheathing

Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"	16'-7"	15'-11"	15'-3"
	NI-70	18'-0"	16'-11"	16'-3"	15'-7"	18'-5"	17'-3"	16'-7"	15'-11"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"
11-7/8"	NI-20	17'-10"	16'-10"	16'-2"	15'-6"	18'-6"	17'-4"	16'-9"	16'-1"
	NI-40x	19'-4"	17'-11"	17'-3"	16'-6"	19'-11"	18'-6"	17'-9"	17'-0"
	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"
	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
14"	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"
	NI-40x	21'-5"	19'-10"	18'-11"	17'-11"	22'-1"	20'-6"	19'-7"	18'-7"
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"
	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"
16"	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"
	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"
	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-8"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
	NI-60	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'-6"	16'-6"	15'-5"
	NI-70	20'-0"	18'-7"	17'-9"	16'-7"	20'-5"	18'-11"	17'-10"	16'-7"
	NI-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10"
11-7/8"	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"
	NI-40x	21'-10"	20'-4"	19'-4"	17'-8"	22'-5"	20'-6"	19'-4"	17'-8"
	NI-60	22'-1"	20'-7"	19'-7"	18'-4"	22'-8"	20'-10"	19'-8"	18'-4"
	NI-70	23'-4"	21'-8"	20'-8"	19'-7"	23'-10"	22'-3"	21'-2"	19'-9"
	NI-80	23'-7"	21'-11"	20'-11"	19'-9"	24'-1"	22'-6"	21'-5"	20'-0"
14"	NI-90x	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-0"	22'-0"	20'-9"
	NI-40x	24'-5"	22'-9"	21'-8"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"
	NI-60	24'-10"	23'-1"	22'-0"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"
	NI-70	26'-1"	24'-3"	23'-2"	21'-10"	26'-8"	24'-11"	23'-9"	22'-4"
	NI-80	26'-6"	24'-7"	23'-5"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"
16"	NI-90x	27'-3"	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"	24'-8"	23'-4"
	NI-60	27'-3"	25'-5"	24'-2"	22'-10"	28'-0"	26'-2"	24'-9"	23'-1"
	NI-70	28'-8"	26'-8"	25'-4"	23'-11"	29'-3"	27'-4"	26'-1"	24'-8"
	NI-80	29'-1"	27'-0"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
	NI-90x	29'-11"	27'-10"	26'-6"	25'-0"	30'-6"	28'-5"	27'-2"	25'-8"

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



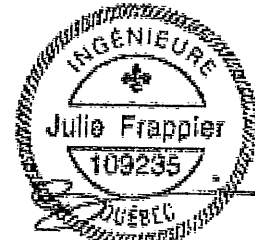
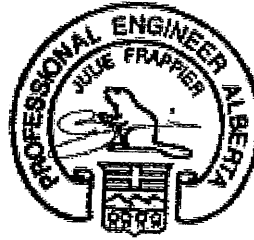
Maximum Floor Spans

Live Load = 40 psf, Dead Load = 30 psf
Simple Spans, L/480 Deflection Limit
5/8" OSB G&N Sheathing

Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
	NI-70	17'-1"	16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-10"	N/A
	NI-80	17'-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A
11-7/8"	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
14"	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
16"	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	NI-40x	17'-9"	16'-1"	15'-1"	N/A	17'-9"	16'-1"	15'-1"	N/A
	NI-60	18'-1"	16'-4"	15'-4"	N/A	18'-1"	16'-4"	15'-4"	N/A
	NI-70	19'-2"	17'-10"	16'-9"	N/A	19'-7"	17'-10"	16'-9"	N/A
	NI-80	19'-5"	18'-0"	17'-1"	N/A	19'-10"	18'-3"	17'-1"	N/A
11-7/8"	NI-20	18'-9"	17'-0"	16'-0"	N/A	18'-9"	17'-0"	16'-0"	N/A
	NI-40x	21'-0"	19'-3"	17'-9"	N/A	21'-3"	19'-3"	17'-9"	N/A
	NI-60	21'-4"	19'-8"	18'-5"	N/A	21'-8"	19'-8"	18'-5"	N/A
	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-4"	20'-0"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-5"	N/A
14"	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	NI-40x	23'-7"	21'-5"	19'-6"	N/A	24'-1"	21'-5"	19'-6"	N/A
	NI-60	24'-0"	22'-3"	21'-0"	N/A	24'-8"	22'-5"	21'-0"	N/A
	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-9"	N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A
16"	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	24'-10"	23'-4"	N/A
	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
	NI-80	28'-2"	26'-1"	24'-10"	N/A	28'-10"	26'-9"	25'-6"	N/A
	NI-90x	29'-0"	26'-10"	25'-7"	N/A	29'-7"	27'-5"	26'-2"	N/A

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



Maximum Floor Spans

Live Load = 40 psf, Dead Load = 30 psf
Simple Spans, L/480 Deflection Limit
3/4" OSB G&N Sheathing

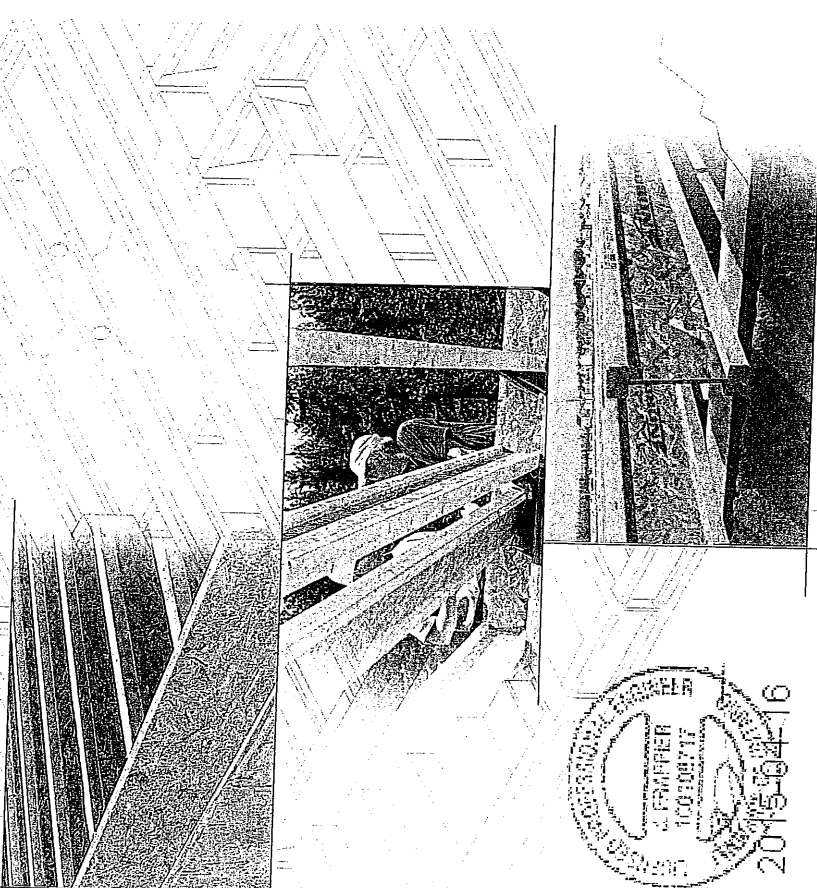
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"	16'-5"	15'-5"	14'-3"
	NI-70	18'-0"	16'-11"	16'-3"	15'-6"	18'-5"	17'-3"	16'-7"	15'-6"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	15'-10"
11-7/8"	NI-20	17'-10"	16'-10"	16'-0"	14'-10"	18'-6"	17'-1"	16'-0"	14'-10"
	NI-40x	19'-4"	17'-11"	17'-3"	15'-10"	19'-11"	18'-6"	17'-9"	15'-10"
	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-1"
	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
14"	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"
	NI-40x	21'-5"	19'-10"	18'-11"	17'-5"	22'-1"	20'-6"	19'-6"	17'-5"
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"
	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"
16"	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"
	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"
	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-9"	16'-1"	15'-1"	13'-11"	17'-9"	16'-1"	15'-1"	13'-11"
	NI-60	18'-1"	16'-5"	15'-5"	14'-3"	18'-1"	16'-5"	15'-5"	14'-3"
	NI-70	19'-10"	17'-11"	16'-9"	15'-6"	19'-10"	17'-11"	16'-9"	15'-6"
	NI-80	20'-2"	18'-3"	17'-1"	15'-10"	20'-2"	18'-3"	17'-1"	15'-10"
11-7/8"	NI-20	18'-10"	17'-1"	16'-0"	14'-10"	18'-10"	17'-1"	16'-0"	14'-10"
	NI-40x	21'-3"	19'-3"	17'-9"	15'-10"	21'-3"	19'-3"	17'-9"	15'-10"
	NI-60	21'-9"	19'-8"	18'-5"	17'-1"	21'-9"	19'-8"	18'-5"	17'-1"
	NI-70	23'-4"	21'-5"	20'-1"	18'-6"	23'-8"	21'-5"	20'-1"	18'-6"
	NI-80	23'-7"	21'-10"	20'-5"	18'-11"	24'-1"	21'-10"	20'-5"	18'-11"
14"	NI-90x	24'-3"	22'-6"	21'-3"	19'-7"	24'-8"	22'-7"	21'-3"	19'-7"
	NI-40x	24'-2"	21'-5"	19'-6"	17'-5"	24'-2"	21'-5"	19'-6"	17'-5"
	NI-60	24'-9"	22'-5"	21'-0"	19'-6"	24'-9"	22'-5"	21'-0"	19'-6"
	NI-70	26'-1"	24'-3"	22'-9"	21'-0"	26'-8"	24'-3"	22'-9"	21'-0"
	NI-80	26'-6"	24'-7"	23'-3"	21'-6"	27'-1"	24'-10"	23'-3"	21'-6"
16"	NI-90x	27'-3"	25'-4"	24'-1"	22'-4"	27'-9"	25'-10"	24'-3"	22'-4"
	NI-60	27'-3"	24'-11"	23'-5"	21'-7"	27'-6"	24'-11"	23'-5"	21'-7"
	NI-70	28'-8"	26'-8"	25'-3"	23'-4"	29'-3"	26'-11"	25'-3"	23'-4"
	NI-80	29'-1"	27'-0"	25'-9"	23'-10"	29'-8"	27'-6"	25'-10"	23'-10"
	NI-90x	29'-11"	27'-10"	26'-6"	24'-10"	30'-6"	28'-5"	26'-11"	24'-10"

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.

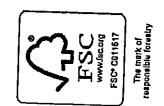
INSTALLATION GUIDE

FOR RESIDENTIAL FLOORS



2015-04-16
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FSC C011817

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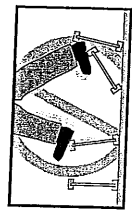
SAFETY AND CONSTRUCTION PRECAUTIONS

WARNING

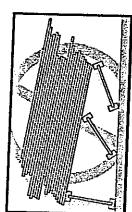
I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed.

Avoid Accidents by Following these Important Guidelines:

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-briding at joist ends. When I-joists are applied continuous blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap 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-briding.
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.



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

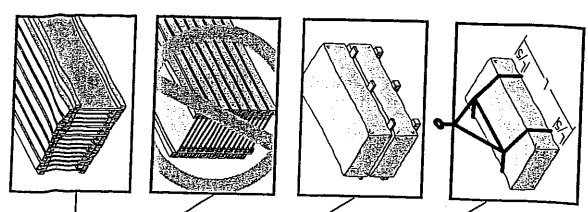


Never stack building materials over unsheathed I-joists. Once sheathed, do not over-stress I-joist with concentrated loads from building materials.

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

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 flatwise.
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-joists 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 5th points, using a spreader bar if necessary.
8. Do not handle I-joists in a horizontal orientation.
9. NEVER USE OR TRY TO REPAIR A DAMAGED I-JOIST.



MAXIMUM FLOOR SPANS

1. Maximum **clear** spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of $1.50L + 1.25D$. The serviceability limit states include 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 span.
2. Spans are based on a composite floor with glued-nailed 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 CGBS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
3. Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
5. This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
6. Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
7. SI units conversion: 1 inch = 25.4 mm
1 foot = 305 mm

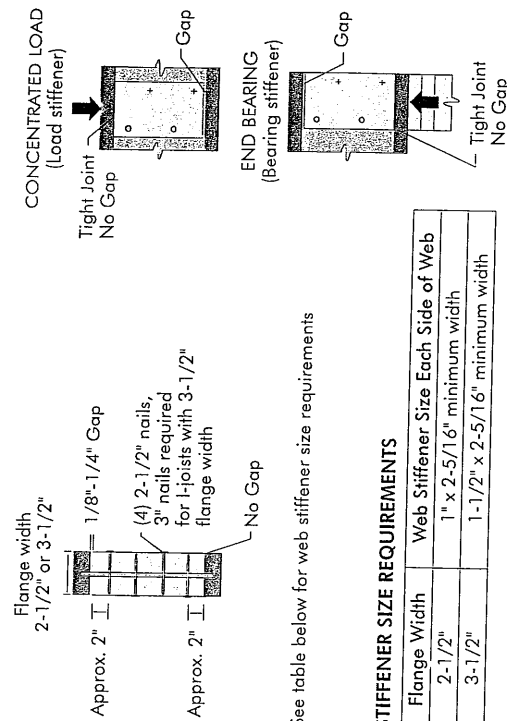
WEB STIFFENERS

RECOMMENDATIONS:

- A **bearing stiffener** is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found of the *I-joist Construction Guide* (C101). The gap between the stiffener and the flange is at the top.
- A **bearing stiffener** is required when the I-joist 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 greater than 2,370 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the cantilever tip and the support. These values are a standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

SI units conversion: 1 inch = 25.4 mm

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS



See table below for web stiffener size requirements

STIFFENER SIZE REQUIREMENTS

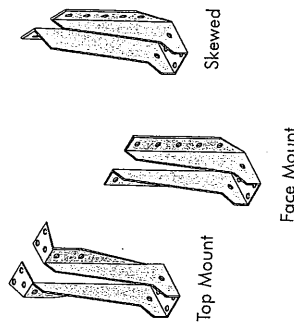
Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-5/16" minimum width
3-1/2"	1-1/2" x 2-5/16" minimum width

MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS
SIMPLE AND MULTIPLE SPANS

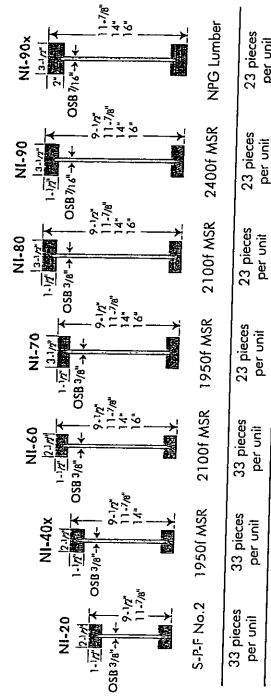
Joist Depth	Joist Series	Simple spans			Multiple spans				
		12"	16"	On centre spacing	12"	16"	On centre spacing		
9-1/2"	NI-20	15-1"	14-2"	13-9"	13-5"	16-3"	15-4"	14-10"	24"
	NI-40x	16-1"	15-2"	14-8"	14-9"	17-5"	16-5"	15-10"	14-7"
	NI-60	16-3"	15-4"	14-10"	14-11"	17-7"	16-7"	16-0"	15-5"
	NI-70	17-1"	16-1"	15-6"	15-7"	18-7"	17-6"	16-9"	16-1"
	NI-80	17-3"	16-3"	15-8"	15-9"	18-10"	17-6"	16-11"	16-10"
11-7/8"	NI-20	16-1 1/2"	16-0"	15-5"	15-6"	18-4"	17-3"	16-8"	17-0"
	NI-40x	18-1"	17-0"	16-5"	16-6"	20-0"	18-6"	17-9"	16-7"
	NI-60	18-4"	17-3"	16-7"	16-9"	20-3"	18-9"	18-0"	18-1"
	NI-70	19-6"	18-0"	17-4"	17-5"	21-6"	19-11"	19-0"	18-1"
	NI-80	19-9"	18-3"	17-6"	17-7"	21-9"	20-2"	19-3"	19-1"
14"	NI-90	20-2"	18-7"	17-10"	17-11"	22-3"	20-7"	19-8"	19-4"
	NI-90x	20-4"	18-9"	17-11"	18-0"	22-3"	20-9"	19-10"	19-9"
	NI-40x	20-1"	18-7"	17-10"	17-11"	22-2"	20-6"	19-8"	19-1 1/2"
	NI-60	20-5"	18-1 1/2"	18-1"	18-2"	22-7"	20-11"	19-8"	19-4"
	NI-70	21-7"	20-3"	19-1"	19-2"	23-10"	22-1"	20-0"	20-1"
16"	NI-80	21-11"	20-0"	19-4"	19-5"	24-3"	22-5"	21-5"	21-2"
	NI-90	22-5"	20-8"	19-9"	19-10"	24-9"	22-10"	21-6"	21-6"
	NI-90x	22-7"	20-11"	19-11"	20-0"	25-0"	23-1"	22-0"	21-10"
	NI-60	22-3"	20-8"	19-9"	19-10"	24-7"	22-9"	21-9"	22-2"
	NI-70	23-6"	21-9"	20-9"	20-10"	26-0"	24-0"	22-11"	21-10"
16"	NI-80	23-11"	22-1"	21-1"	21-2"	26-5"	24-5"	23-0"	23-0"
	NI-90	24-5"	22-6"	21-5"	21-6"	26-11"	24-10"	23-9"	23-9"
	NI-90x	24-8"	22-9"	21-9"	21-10"	27-3"	25-2"	24-0"	24-1"

I-JOIST HANGERS

1. Hangers shown illustrate the three most commonly used metal hangers to support I-joists.
2. All nailing must meet the hanger manufacturer's recommendations.
3. Hangers should be selected based on the joist depth, flange width and load capacity based on the maximum spans.
4. Web stiffeners are required when the sides of the hangers do not laterally brace the top flange of the I-joist.



NORDIC I-JOIST SERIES

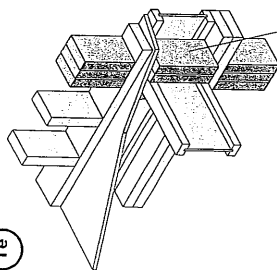


Chantiers Chibougamau Ltd. harvests its own trees, which enables Nordic products to adhere to strict quality control procedures throughout the manufacturing process. Every phase of the operation, from logging to the finished product, reflects our commitment to quality.

Nordic Engineered Wood Joists use only finger-jointed black spruce lumber in their flanges, ensuring consistent quality, superior strength and longer span carrying capacity.

SI units conversion: 1 inch = 25.4 mm

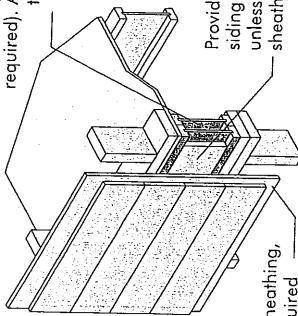
1e



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

1f

Use single I-joist for loads up to 3,300 plf, double I-joists for loads up to 6,600 plf (filler block not required). Attach I-joist to top plate using 2-1/2" nails at 6" o.c.

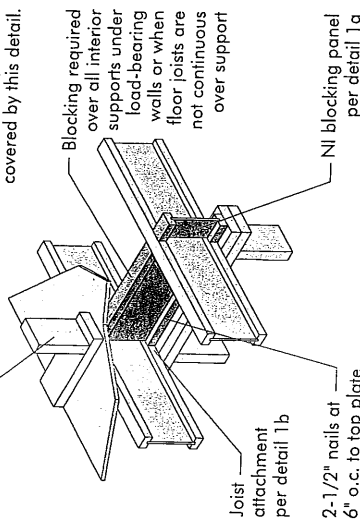


Wall sheathing, as required. Provide backer for siding attachment unless nailable sheathing is used.

Rim board may be used in lieu of I-joists. Backer is not required when rim board is used. Bracing per code shall be carried to the foundation.

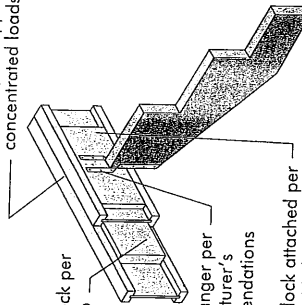
1g

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



1m

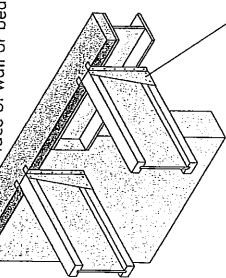
Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify double I-joist capacity to support concentrated loads.



Maximum support capacity = 1,620 lbs.

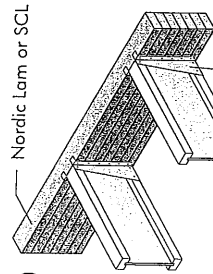
1k

2x plate flush with inside face of wall or beam. 1/8" overhang allowed past inside face of wall or beam.



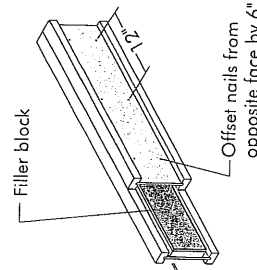
Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

1j



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

1p



1/8" to 1/4" gap between top flange and filler block

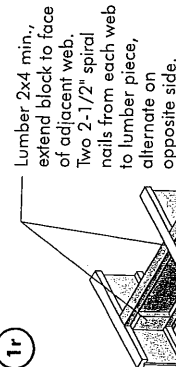
Notes:

- Support back of I-joist web during nailing to prevent damage to web/flange connection.
- Leave a 1/8" to 1/4" gap between top of filler block and bottom of top I-joist flange.
- Filler block is required between joists for full length of span.
- Nail joists together with two rows of 3" nails at 12 inches o.c. (clinch when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
- The maximum factored load that may be applied to one side of the double I-joist using this detail is 860 lbf/ft. Verify double I-joist capacity.

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

Flange Size	Joist Depth	Filler Block Size
2-1/2" x 1-1/2"	9-1/2" 11-7/8" 14" 16"	2-1/8" x 6" 2-1/8" x 8" 2-1/8" x 10" 2-1/8" x 12"
3-1/2" x 1-1/2"	9-1/2" 11-7/8" 14" 16"	3" x 6" 3" x 8" 3" x 10" 3" x 12"
3-1/2" x 2"	11-7/8" 14" 16"	3" x 7" 3" x 9" 3" x 11"

1r



Optional: Minimum 1x4 inch strap applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joists.

1h

Backer block (use if hanger load exceeds 360 lbs) Before installing a backer block to a double I-joist, drive three additional 3" nails through the webs and filler block where the backer block will fit. Clinch. Install backer tight to top flange. Use twelve 3" nails, clinched when possible. Maximum factored resistance for hanger for this detail = 1,620 lbs.

Double I-joist header

Top- or face-mount hanger

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

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Filler block per detail 1p

Backer block required (both sides for face-mount hangers)

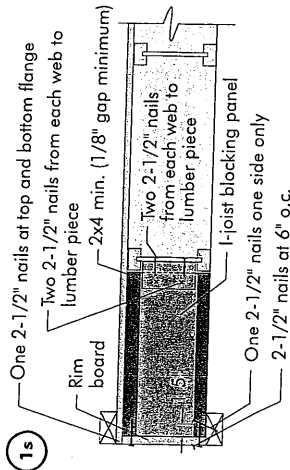
For hanger capacity see hanger manufacturer's recommendations. Verify double I-joist capacity to support concentrated loads.

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"

* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O337 Standard.
** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".

1s



Notes:

- In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.
- All nails are common spiral in this detail.

INSTALLING NORDIC I-JOISTS

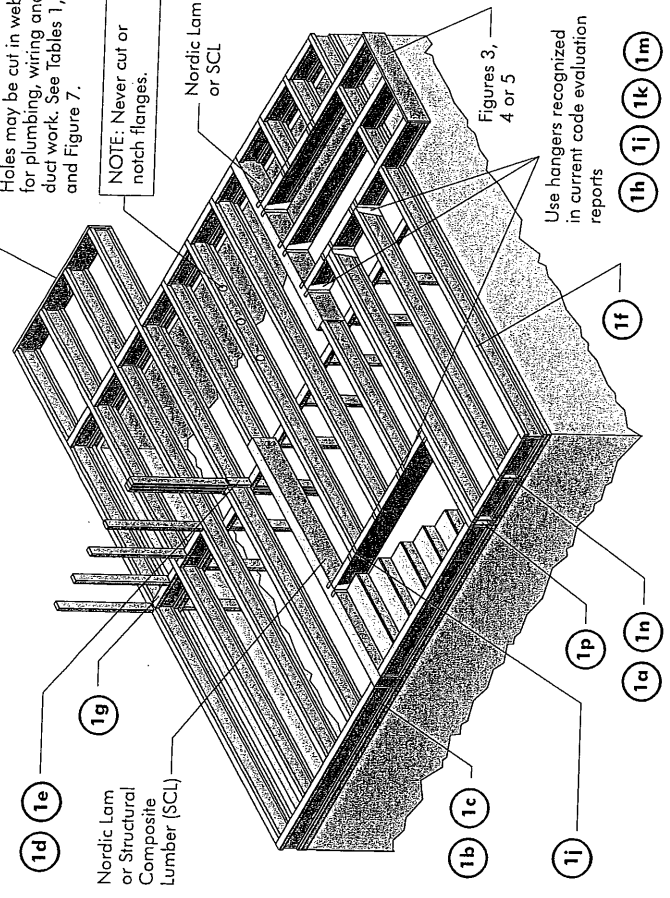
1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact your supplier.
2. Except for cutting to length, I-joist flanges should **never** be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple-span joists must be level.
5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings.
6. When using hangers, seat I-joists firmly in 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 track lighting fixtures, audio equipment and security cameras. Never suspend unusual or heavy loads from the I-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist webs.
9. Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonry.
10. Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
11. For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
12. Due to shrinkage, common framing lumber set on edge **may never** be used as blocking or rim boards. I-joist blocking panels or other engineered wood products – such as rim board – must be cut to fit between the I-joists, and an 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 gypsum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporary bracing or struts must be used.
14. If square-edge panels are used, edges must be supported between I-joists with 2x4 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: Space nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.



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

Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.

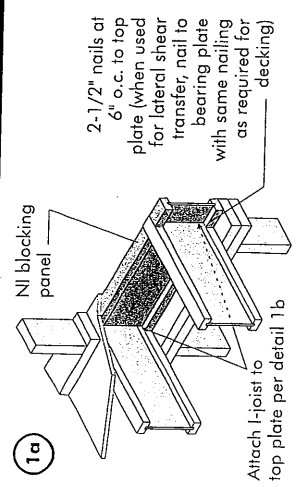
Figures 3, 4 or 5
Holes may be cut in web for plumbing, wiring and duct work. See Tables 1, 2 and Figure 7.



Use hangers recognized in current code evaluation reports

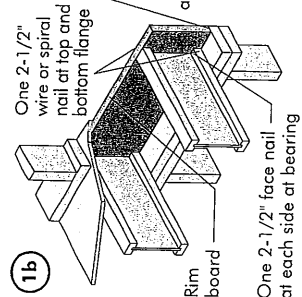
Figures 3, 4 or 5

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 Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.



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

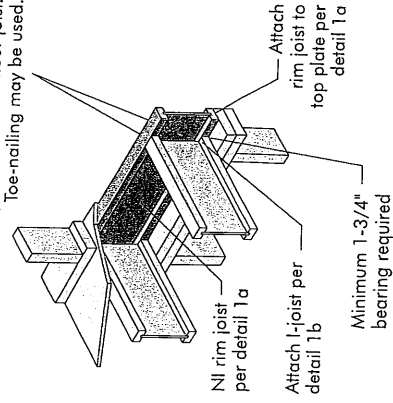


Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

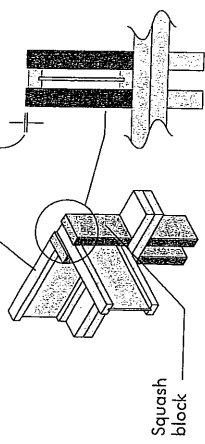
*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

Attach rim board to top plate using 2-1/2" wire or spiral toe-nails at 6" 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. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.

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



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

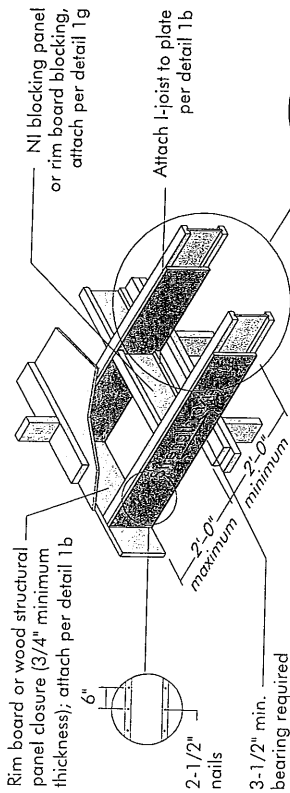


Pair of Squash Blocks	Maximum Factored Vertical Pair of Squash Blocks (lbs)		
	3-1/2" wide	5-1/2" wide	8,500
2x Lumber	5,500	8,500	
1-1/8" Rim Board Plus	4,300	6,600	

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

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE

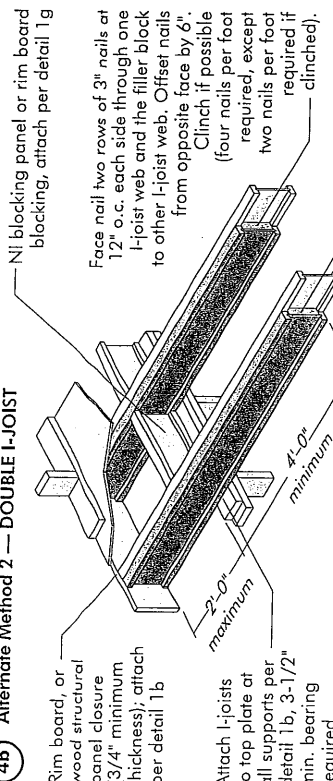


Method 2 — SHEATHING REINFORCEMENT TWO SIDES

- Use same installation as Method 1 but reinforce both sides of I-joist with sheathing.
- Use nailing pattern shown for Method 1 with opposite face nailing offset by 3".

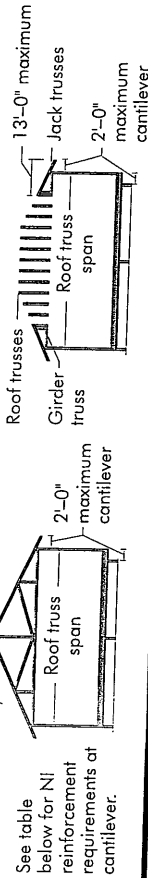
Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail 1b. Verify reinforced I-joist capacity.

4b Alternate Method 2 — DOUBLE I-JOIST



Block I-joists together with filler blocks for the full length of the reinforcement. For I-joist flange widths greater than 3 inches place an additional row of 3" nails along the centreline of the reinforcing panel from each side. Clinch when possible.

FIGURE 4 (continued)



For hip roofs with the jack trusses running parallel to the cantilevered floor joists, the I-joist reinforcement requirements for a span of 26 ft. shall be permitted to be used.

CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	LL = 30 psf, DL = 15 psf						LL = 40 psf, DL = 15 psf						LL = 50 psf, DL = 15 psf					
		JOIST SPACING (in.)						JOIST SPACING (in.)						JOIST SPACING (in.)					
		12	16	19.2	24	24	24	12	16	19.2	24	24	24	12	16	19.2	24	24	24
9-1/2"	26	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	32	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	34	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
11-7/8"	26	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	32	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	34	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
14"	26	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	32	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	34	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
16"	26	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	32	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	34	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

1. N = No reinforcement required.

2. 1 = NI reinforced with 3/4" wood structural panel on one side only.

3. 2 = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.

X = Try a deeper joist or closer spacing.

4. Maximum design load shall be: 15 psf roof dead load, 55 psf floor total load, and 80 psf wall load. Wall load is based on 3'-0" maximum width window or door openings.

For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.

3. Table applies to joists 12" to 24" o.c. that meet the floor 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. Use 12" o.c. requirements for lesser spacing.

4. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.

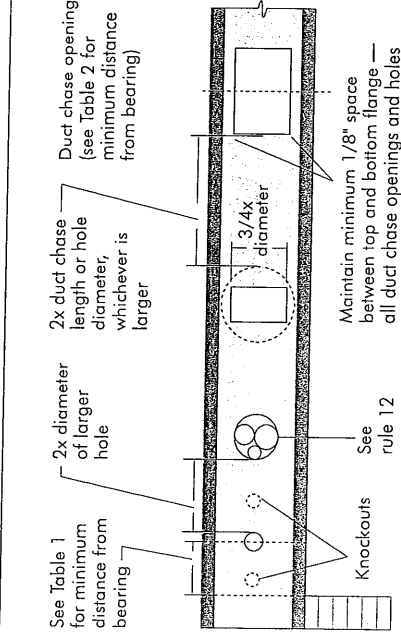
5. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

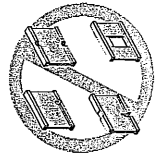
- 1. The distance between the inside edges of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- 2. I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
- 3. Whenever possible, field-cut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

FIGURE 7
FIELD-CUT HOLE LOCATOR



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

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



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

Holes in webs should be cut with a sharp saw.

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

TABLE 1

LOCATION OF CIRCULAR HOLES IN JOIST WEBS

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

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of hole (ft.-in.)															Span adjustment Factor
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4	
9-1/2"	NL-20	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---	---	---	---	
	NL-40x	0-7"	1-6"	3-0"	4-4"	6-0"	6-4"	---	---	---	---	---	---	---	---	---	
	NL-60	1-3"	2-6"	4-0"	5-4"	7-0"	7-5"	---	---	---	---	---	---	---	---	---	
	NL-70	2-0"	3-4"	4-9"	6-3"	8-0"	8-4"	---	---	---	---	---	---	---	---	---	
	NL-80	2-3"	3-6"	5-0"	6-6"	8-2"	8-8"	---	---	---	---	---	---	---	---	---	
11-7/8"	NL-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---	---	---	---	
	NL-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-4"	7-0"	8-4"	---	---	---	---	---	---	
	NL-60	0-7"	1-8"	3-0"	4-3"	5-9"	6-0"	7-3"	8-10"	10-0"	---	---	---	---	---	---	
	NL-70	1-3"	2-6"	4-0"	5-4"	6-9"	7-0"	8-4"	10-0"	11-2"	---	---	---	---	---	---	
	NL-80	1-6"	2-10"	4-2"	5-6"	7-0"	7-5"	8-6"	10-3"	11-4"	---	---	---	---	---	---	
14"	NL-20	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---	---	---	---	
	NL-40x	0-7"	0-8"	0-9"	2-5"	4-4"	4-9"	6-3"	8-9"	10-2"	---	---	---	---	---	---	
	NL-60	0-7"	0-8"	1-0"	2-4"	3-9"	3-9"	5-2"	6-0"	6-6"	6-0"	8-3"	10-2"	---	---	---	
	NL-70	0-8"	1-10"	3-0"	4-5"	5-10"	6-2"	7-3"	8-9"	9-9"	10-4"	12-0"	13-5"	---	---	---	
	NL-80	0-10"	2-0"	3-4"	4-9"	6-2"	6-5"	7-6"	9-0"	10-0"	10-8"	12-4"	13-9"	---	---	---	
16"	NL-20	0-7"	0-8"	0-10"	2-5"	4-0"	4-5"	5-9"	7-5"	8-8"	9-4"	11-4"	12-11"	---	---	---	
	NL-40x	0-7"	0-8"	0-8"	2-0"	3-9"	4-2"	5-5"	7-3"	8-5"	9-2"	---	---	---	---	---	
	NL-60	0-7"	0-8"	0-8"	1-6"	2-10"	3-2"	4-2"	5-6"	6-4"	7-0"	8-5"	9-8"	10-2"	12-2"	13-9"	
	NL-70	0-7"	1-0"	2-3"	3-6"	4-10"	5-3"	6-3"	7-8"	8-6"	9-2"	10-8"	12-0"	12-4"	14-0"	15-6"	
	NL-80	0-7"	1-3"	2-8"	3-10"	5-3"	5-6"	6-6"	8-0"	9-0"	9-5"	11-0"	12-3"	12-9"	14-5"	16-0"	
18"	NL-20	0-7"	0-8"	0-8"	1-9"	3-3"	3-8"	4-9"	6-5"	7-5"	8-0"	9-10"	11-3"	11-9"	13-9"	15-4"	
	NL-40x	0-7"	0-8"	0-9"	2-0"	3-6"	4-0"	5-0"	6-9"	7-9"	8-4"	10-2"	11-6"	12-0"	13-9"	15-4"	
	NL-50x	0-7"	0-8"	0-9"	2-0"	3-6"	4-0"	5-0"	6-9"	7-9"	8-4"	10-2"	11-6"	12-0"	13-9"	15-4"	

Above table may be used for L-foist spacing of 24 inches on centres or less.

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

OPTIONAL:

The above table is based on the I-joists used at their maximum span. If the I-joists are placed at less than their full maximum span (see Maximum Span Table) as given above may be reduced as follows:
 $D_{reduced} = L_{actual} \times D$

Where:
 $D_{reduced}$ = Distance from the inside face of any support to centre of hole, reduced for less-than-maximum span applications (ft.)
 L_{actual} = The actual measured span distance between the inside faces of supports (ft.)
 S_{AF} = Span Adjustment Factor given in this table.
 D = The minimum distance from the inside face of any support to centre of hole from this table.
If L_{actual} is greater than 1, use 1 in the above calculation for L_{actual} .
 S_{AF}

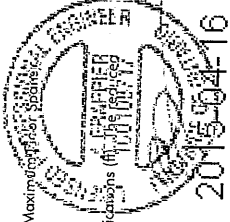


TABLE 2

DUCT CHASE OPENING SIZES AND LOCATIONS — Simple Span Only

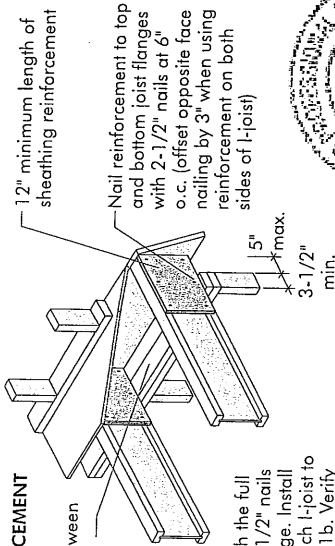
Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of opening (ft.-in.)											
		8	10	12	14	16	18	20	22	24	26	28	30
9-1/2"	NL-20	4-1"	4-3"	4-10"	5-4"	5-8"	6-1"	6-5"	7-1"	7-5"	7-8"	8-2"	8-6"
	NL-40x	4-1"	4-3"	4-10"	5-4"	5-8"	6-1"	6-5"	7-1"	7-5"	7-8"	8-2"	8-6"
	NL-60	5-1"	5-4"	6-2"	6-7"	7-1"	7-5"	8-0"	8-4"	8-8"	9-2"	9-6"	10-0"
	NL-80	5-1"	5-4"	6-2"	6-7"	7-1"	7-5"	8-0"	8-4"	8-8"	9-2"	9-6"	10-0"
	NL-20x	5-1"	5-4"	6-2"	6-7"	7-1"	7-5"	8-0"	8-4"	8-8"	9-2"	9-6"	10-0"
11-7/8"	NL-20	5-9"	6-2"	7-9"	8-6"	9-1"	9-6"	10-1"	10-6"	11-1"	11-6"	12-1"	12-6"
	NL-40x	5-9"	6-2"	7-9"	8-6"	9-1"	9-6"	10-1"	10-6"	11-1"	11-6"	12-1"	12-6"
	NL-60	6-8"	7-2"	8-0"	8-6"	9-1"	9-6"	10-1"	10-6"	11-1"	11-6"	12-1"	12-6"
	NL-80	7-1"	7-5"	8-0"	8-5"	9-0"	9-5"	10-0"	10-5"	11-0"	11-5"	12-0"	12-5"
	NL-20x	7-1"	7-5"	8-0"	8-5"	9-0"	9-5"	10-0"	10-5"	11-0"	11-5"	12-0"	12-5"
14"	NL-20	7-7"	8-1"	8-7"	9-0"	9-6"	10-1"	10-6"	11-1"	11-6"	12-1"	12-6"	13-1"
	NL-40x	7-7"	8-1"	8-7"	9-0"	9-6"	10-1"	10-6"	11-1"	11-6"	12-1"	12-6"	13-1"
	NL-60	8-9"	9-3"	9-8"	10-1"	10-6"	11-1"	11-6"	12-1"	12-6"	13-1"	13-6"	14-1"
	NL-80	9-1"	9-5"	9-9"	10-3"	10-7"	11-1"	11-5"	11-9"	12-3"	12-7"	13-1"	13-5"
	NL-20x	9-1"	9-5"	9-9"	10-3"	10-7"	11-1"	11-5"	11-9"	12-3"	12-7"	13-1"	13-5"
16"	NL-20	10-4"	10-8"	11-2"	11-6"	12-0"	12-4"	12-8"	13-2"	13-6"	14-0"	14-4"	14-8"
	NL-40x	10-4"	10-8"	11-2"	11-6"	12-0"	12-4"	12-8"	13-2"	13-6"	14-0"	14-4"	14-8"
	NL-60	10-4"	10-8"	11-2"	11-6"	12-0"	12-4"	12-8"	13-2"	13-6"	14-0"	14-4"	14-8"
	NL-80	10-4"	10-8"	11-2"	11-6"	12-0"	12-4"	12-8"	13-2"	13-6"	14-0"	14-4"	14-8"
	NL-20x	10-4"	10-8"	11-2"	11-6"	12-0"	12-4"	12-8"	13-2"	13-6"	14-0"	14-4"	14-8"

1. Above table may be used for I-joist spacing of 24 inches on centre or less.
2. Duct chase opening location distance is measured from inside face of supports to centre of opening.
3. The above table is based on simple-span joists only. For other applications, contact your local distributor.
4. Distances are based on uniformly loaded floor joists that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. For other applications, contact your local distributor.

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

5a SHEATHING REINFORCEMENT

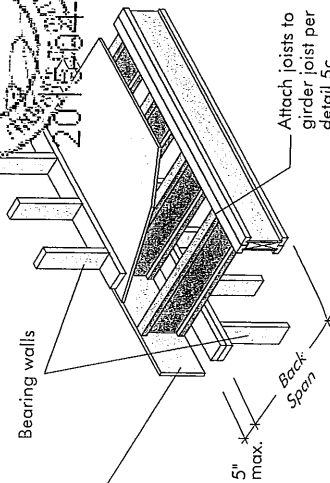
Provide full depth blocking between joists over support (not shown)



Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides 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 I-joist to plate at all supports per detail 1b. Verify reinforced I-joist capacity.

5b SET-BACK DETAIL

Rim board or wood structural panel closure (3/4" minimum thickness), attach per detail 1b.

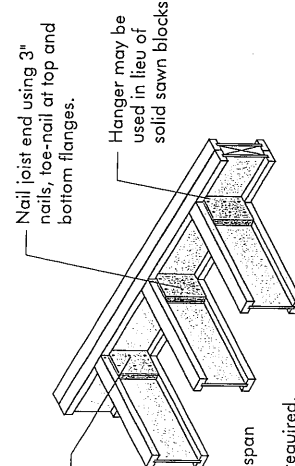


Notes:

- Provide full depth blocking between joists over support (not shown for clarity)
- Attach I-joist to plate at all supports per detail 1b.
- 3-1/2" minimum I-joist bearing required.

5c SET-BACK CONNECTION

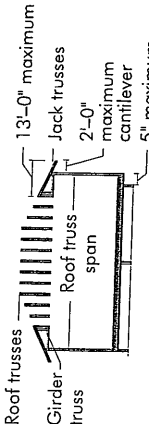
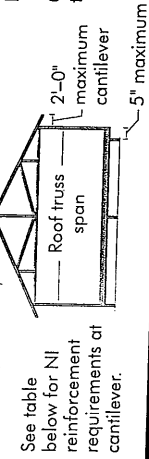
Vertical solid sawn blocks (2x6 S-P-F No. 2 or better) nailed through joist web and web of girder using 2-1/2" nails. Alternate for opposite side.



Notes:

- Verify girder joist capacity if the back span exceeds the joist spacing.
- Attach double I-joist per detail 1p, if required.

FIGURE 5 (continued)



For hip roofs with the jack trusses running parallel to the cantilevered floor joists, the I-joist reinforcement requirements for a span of 26 ft. shall be permitted to be used.

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft.)	ROOF LOADING (UNFACTORED)									
		LL = 30 psf, DL = 15 psf					LL = 40 psf, DL = 15 psf				
		JOIST SPACING (in.)					JOIST SPACING (in.)				
		12	16	19.2	24		12	16	19.2	24	
9-1/2"	26	1	X	X	X	2	2	X	X	X	2
	28	1	X	X	X	2	2	X	X	X	2
	30	1	X	X	X	2	2	X	X	X	2
	32	2	X	X	X	2	2	X	X	X	2
	34	2	X	X	X	2	2	X	X	X	2
11-7/8"	26	2	X	X	X	2	2	X	X	X	2
	28	N	2	2	2	1	1	2	2	2	1
	30	1	2	2	2	1	1	2	2	2	1
	32	1	2	2	2	1	1	2	2	2	1
	34	1	2	2	2	2	2	2	2	2	2
14"	26	1	X	X	X	2	2	X	X	X	2
	28	N	2	2	2	N	N	2	2	2	N
	30	N	2	2	2	1	1	2	2	2	1
	32	N	2	2	2	1	1	2	2	2	1
	34	N	2	2	2	1	1	2	2	2	1
16"	26	1	2	2	2	1	1	2	2	2	1
	28	N	2	2	2	N	N	2	2	2	N
	30	N	2	2	2	1	1	2	2	2	1
	32	N	2	2	2	1	1	2	2	2	1
	34	N	2	2	2	1	1	2	2	2	1

1. N = No reinforcement required.
2. N = NI reinforced with 3/4" wood structural panel on one side only.
3. Table applies to joists 12" to 24" o.c. that meet the floor 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. Use 12" o.c. requirements for lesser spacing.
4. For larger openings, or multiple 3-0" width openings spaced less than 6-0" o.c., additional joists beneath the opening's cripple studs may be required.
5. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
6. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

INSTALLING THE GLUED FLOOR SYSTEM

1. Wipe any mud, dirt, water, or ice from I-joist flanges before gluing.
2. Snap a chalk line across the I-joists four feet in from the wall for panel edge alignment and as a boundary for spreading glue.
3. Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.
4. Lay the first panel with tongue side to the wall, and nail in place. This protects the tongue of the next panel from damage when topped into place with a block and sledgehammer.
5. Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists.
6. Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
7. After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used on I-joist flanges.
8. Tap the second row of panels into place, using a block to protect groove edges.
9. Stagger end joints in each succeeding row of panels. A 1/8-inch space between all end joints and 1/8-inch at all edges, including T&G edges, is recommended. (Use a spacer tool or an 2-1/2" common nail to assure accurate and consistent spacing.)
10. **Complete all nailing of each panel before glue sets.** Check the manufacturer's recommendations for cure time. (Warm weather accelerates glue setting.) Use 2" ring- or screw-shank nails for panels 3/4-inch thick or less, and 2-1/2" ring- or screw-shank nails for thicker panels. Space nails per the table below. Closer nail spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the glue bond.

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

Minimum Joist Spacing (in.)	Minimum Panel Thickness (in.)	Nail Size and Type				Maximum Spacing of Fasteners	
		Common Wire or Spiral Nails	Ring Thread Nails or Screws	Staples			
16	5/8	2"	1-3/4"	2"		Edges	12"
20	5/8	2"	1-3/4"	2"		Intern. Supports	12"
24	3/4	2"	1-3/4"	2"			12"

1. Fasteners of sheathing and subflooring shall conform to the above table.
2. Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown driven with the crown parallel to framing.
3. Flooring screws shall not be less than 1/8-inch in diameter.
4. Special conditions may impose heavy traffic and concentrated loads that require construction in excess of the minimums shown.
5. Use only adhesives conforming to CAN/CGSB-71.26 Standard, Adhesives for Field-Gluing Plywood to Lumber Framing for Floor System, applied in accordance with the manufacturer's recommendations. If OSB panels with sealed surfaces and edges are to be used, use only solvent-based glues; check with panel manufacturer.

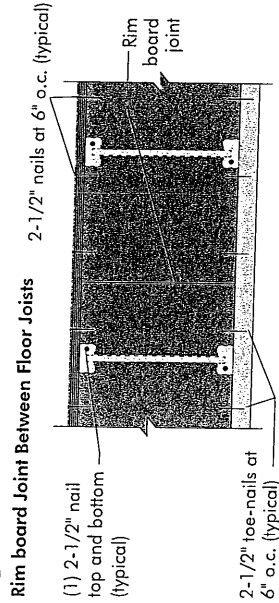
Ref.: NRC-CNRC, National Building Code of Canada 2010, Table 9.23.3.5.

IMPORTANT NOTE:

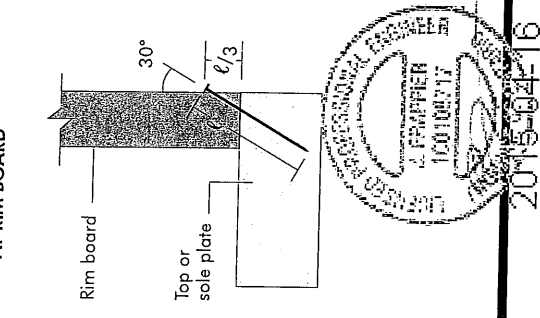
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

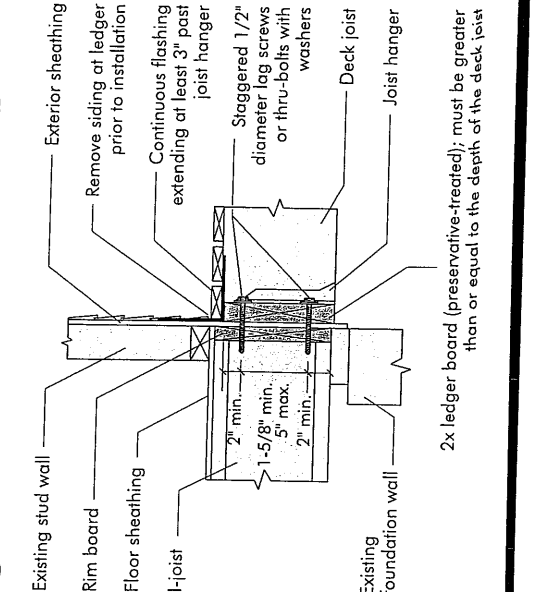
8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



8b TOE-NAIL CONNECTION AT RIM BOARD



8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL



PRODUCT WARRANTY

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

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