

FROM PLAN DATED:

BUILDER: GREEN PARK HOMES

SITE: SECONDO VALES ESTATES

MODEL: HOLLAND 15

ELEVATION: 1

LOT:

CITY: EAST GWILLIMBURY

SALESMAN: M D

DESIGNER:

REVISION: lbv

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/ft²

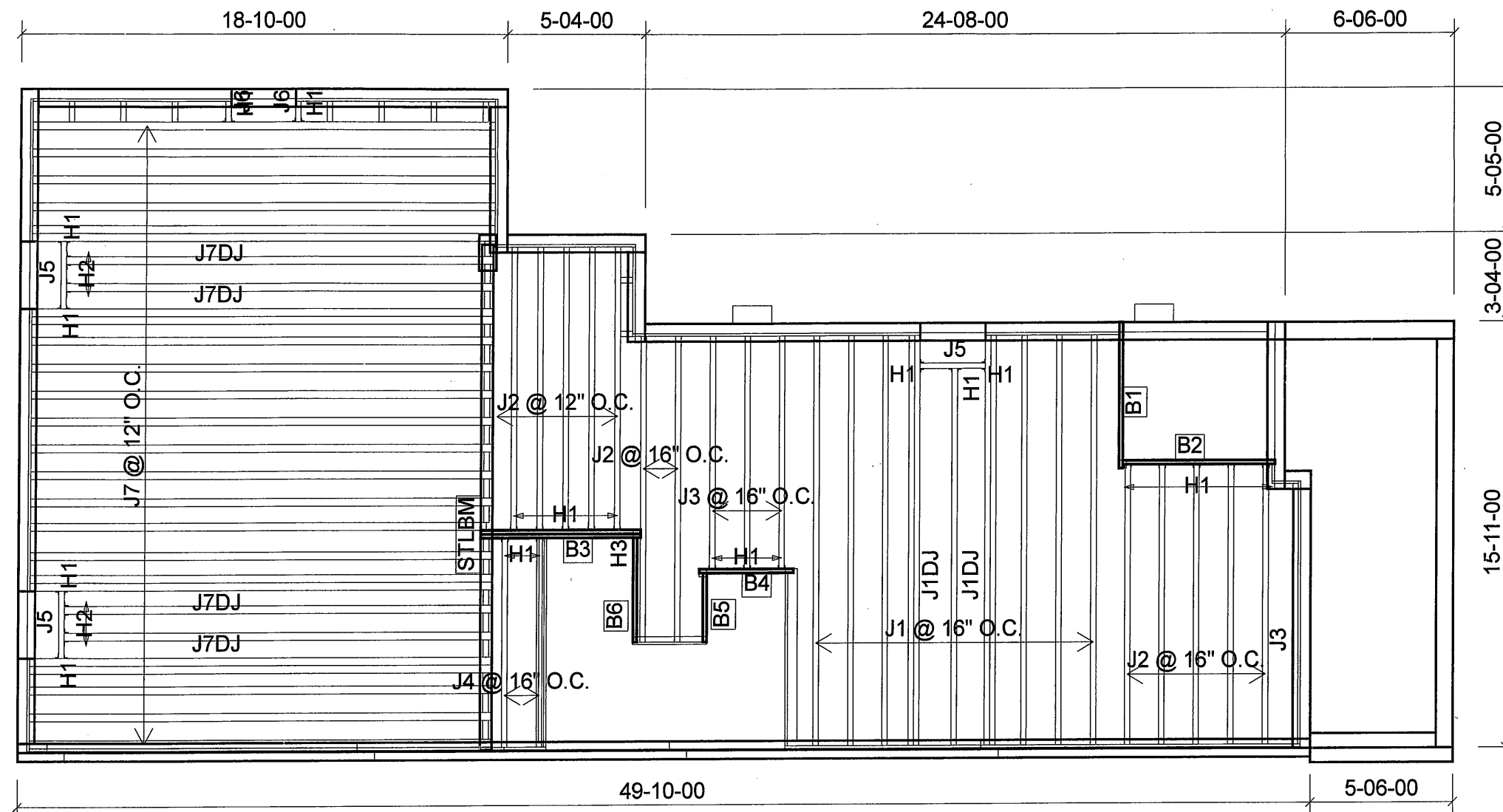
TILED AREAS: 20 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2018-01-26

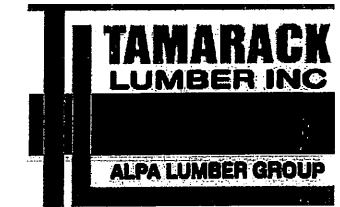
1st FLOOR

24-08-00



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	7
J1DJ	16-00-00	9 1/2" NI-40x	2	4
J2	12-00-00	9 1/2" NI-40x	1	12
J3	10-00-00	9 1/2" NI-40x	1	4
J4	8-00-00	9 1/2" NI-40x	1	2
J5	4-00-00	9 1/2" NI-40x	1	3
J6	2-00-00	9 1/2" NI-40x	1	2
J7	18-00-00	9 1/2" NI-80	1	20
J7DJ	18-00-00	9 1/2" NI-80	2	8
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B1	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
8	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
1	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
4	H2	IUS3.56/9.5
1	H3	HUS1.81/10



FROM PLAN DATED:

BUILDER: GREEN PARK HOMES

SITE: SECONDO VALES ESTATES

MODEL: HOLLAND 15

ELEVATION: 1

LOT:

CITY: EAST GWILLIMBURY

SALESMAN: M D

DESIGNER:

REVISION: lbv

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 FIGURE 7 TABLES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. 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

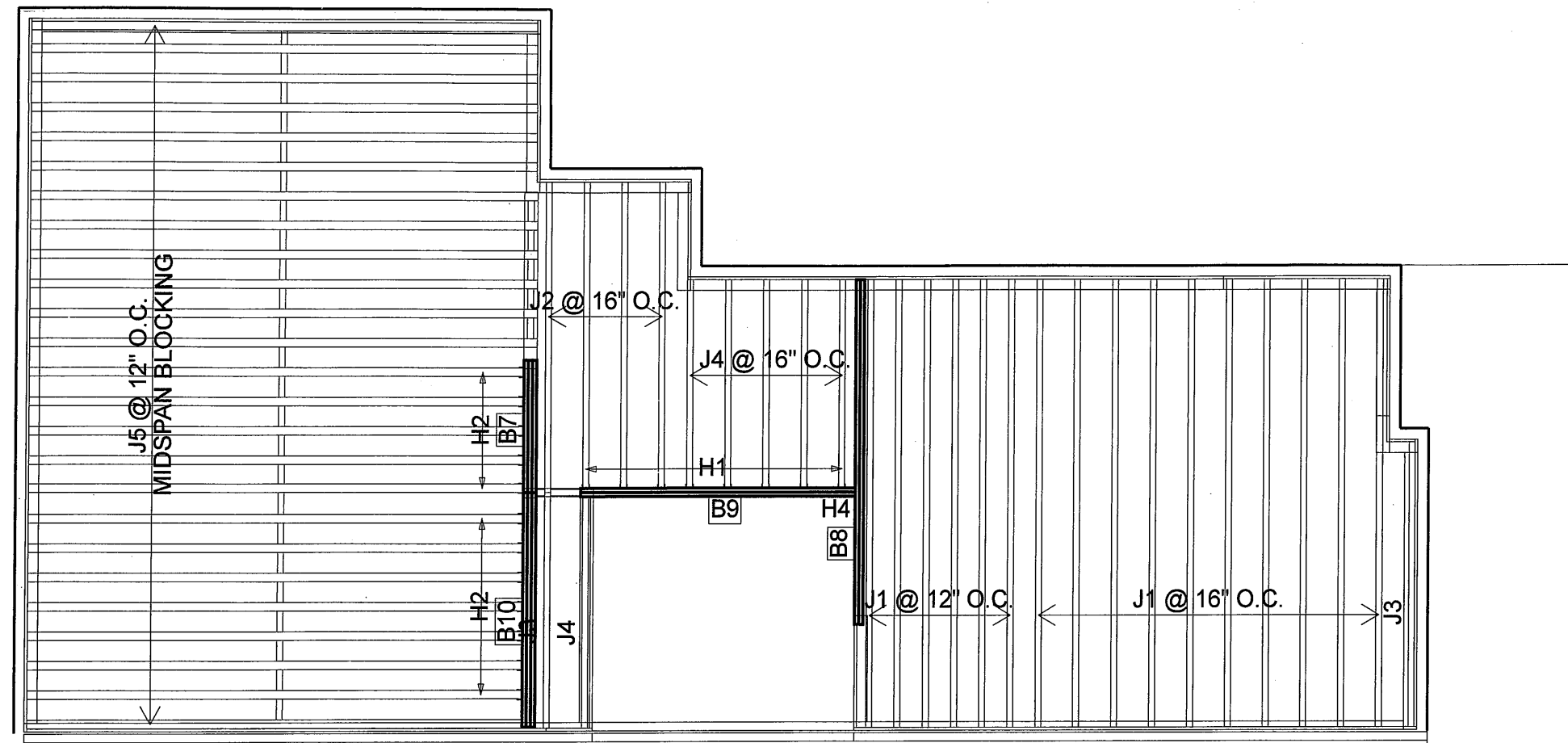
DEAD LOAD: 15.0 lb/ft²

TILED AREAS: 20 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2018-01-26

2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	16
J2	12-00-00	9 1/2" NI-40x	1	4
J3	10-00-00	9 1/2" NI-40x	1	2
J4	8-00-00	9 1/2" NI-40x	1	6
J5	18-00-00	9 1/2" NI-80	1	25
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B7	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary		
Qty	Manuf	Product
8	H1	IUS2.56/9.5
12	H2	IUS3.56/9.5
1	H4	HGUS410

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
BURLINGTON
Nov. 24, 2017 14:45

PROJECT
J7 1ST FLR

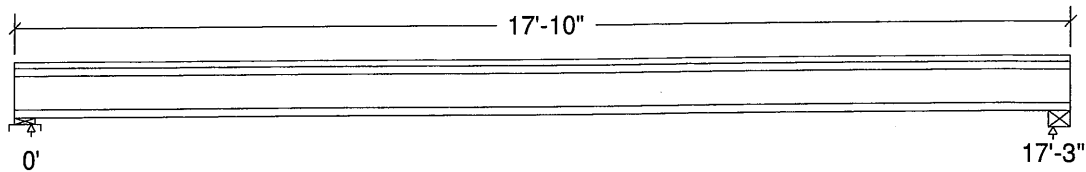
Design Check Calculation Sheet

Nordic Sizer – Canada 6.4

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) :



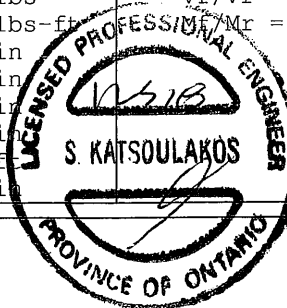
Unfactored:			
Dead	178		178
Live	357		357
Factored:			
Total	758		758
Bearing:			
Resistance			
Joist	1893		1893
Support	9417		-
Des ratio			
Joist	0.40		0.40
Support	0.08		-
Load case	#2		#2
Length	4-3/8		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
Kd	1.00		1.00
KB support	1.00		-
fcp sup	769		-
Kzcp sup	1.00		-

*Minimum bearing length for joists is 2" for exterior supports

Nordic Joist 9-1/2" NI-80 Floor joist @ 12" o.c.
Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Steel Beam, W;
Total length: 17'-10.0"; 3/4" nailed and glued OSB sheathing
This section PASSES the design code check.

Limit States Design using CSA O86-14 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 733	Vr = 1895	lbs	Vf/Vr = 0.39
Moment (+)	Mf = 3162	Mr = 8958	lbs-ft	Mf/Mr = 0.35
Perm. Defl'n	0.12 = <L/999	0.58 = L/360	in	0.21
Live Defl'n	0.24 = L/857	0.43 = L/480	in	0.56
Total Defl'n	0.36 = L/571	0.86 = L/240	in	0.42
Bare Defl'n	0.27 = L/752	0.58 = L/360	in	0.48
Vibration	Lmax = 17'-3	Lv = 18'-5	ft	
Defl'n	= 0.030	= 0.036	in	0.83



DWG NO. TAM 5409-18
STRUCTURAL
COMPONENT ONLY

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#2
Mr+	8958	1.00	1.00	-	1.000	-	-	-	#2
EI	324.1 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

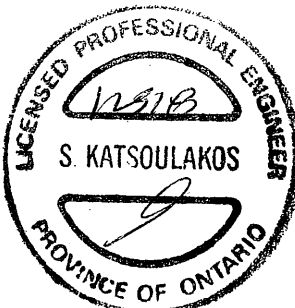
CALCULATIONS:

Deflection: E_Ieff = 375e06 lb-in² K= 4.94e06 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 Part 4) and the CSA O86-14 Engineering Design in Wood standard (May 2014 edition).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to 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 5409 -18
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
BURLINGTON
Nov. 24, 2017 16:12

PROJECT
J5 2ND FLR

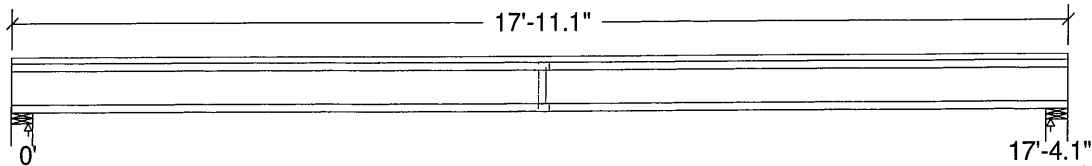
Design Check Calculation Sheet

Nordic Sizer – Canada 6.4

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	179		179
Live	359		359
Factored:			
Total	762		762
Bearing:			
Resistance			
Joist	1893		1893
Support	10829		10829
Des ratio			
Joist	0.40		0.40
Support	0.07		0.07
Load case	#2		#2
Length	4-3/8		4-3/8
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	1.15		1.15

*Minimum bearing length for joists is 2" for exterior supports

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

Nordic Joist 9-1/2" NI-80 Floor joist @ 12" o.c.

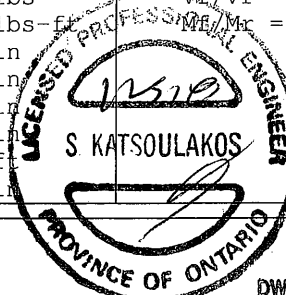
Supports: All - Lumber Wall, No.1/No.2

Total length: 17'-11.1"; 5/8" 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 O86-14 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 737	Vr = 1895	lbs	Vf/Vr = 0.39
Moment (+)	Mf = 3197	Mr = 8958	lbs-ft	Mf/Mr = 0.36
Perm. Defl'n	0.13 = <L/999	0.58 = L/360	in	0.22
Live Defl'n	0.25 = L/829	0.43 = L/480	in	0.58
Total Defl'n	0.38 = L/552	0.87 = L/240	in	0.43
Bare Defl'n	0.28 = L/741	0.58 = L/360	in	0.49
Vibration	Lmax = 17'-4	Lv = 20'-1	ft	
Defl'n	= 0.026	= 0.036	in	0.71



DWG NO. TAM 5410-18
STRUCTURAL
COMPONENT ONLY

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#2
Mr+	8958	1.00	1.00	-	1.000	-	-	-	#2
EI	324.1 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:

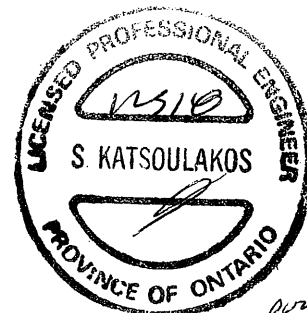
Deflection: E_Ieff = 367e06 lb-in² K= 4.94e06 lbs

"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 Part 4) and the CSA O86-14 Engineering Design in Wood standard (May 2014 edition).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to 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.

CONFORMS TO OBC 2012



DWG NO. TAM 5410
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i1202)

Dry | 2 spans | Right cantilever | 0/12 slope (deg)

November 24, 2017 16:20:40

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: EAST GWILLIMBURY,

Customer:

Code reports: CCMC 12472-R

File Name: HOLLAND 15.mmdl

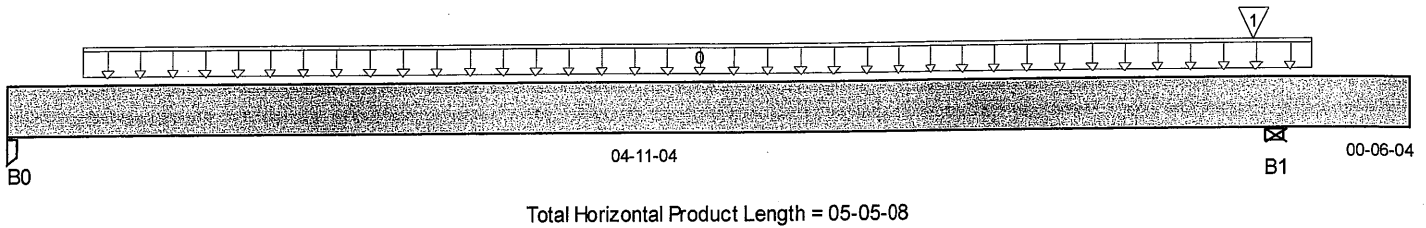
Description: Designs\Flush Beams\Basement\Flush Beams\B1(i1202)

Specifier:

Designer:

Company:

Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	52 / 0	38 / 0		
B1, 3-1/2"	56 / 0	54 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC 1 Floor Material	Unf. Lin. (lb/ft)	L	00-03-08	05-01-00	22	11			n/a
1	E6(i821)	Conc. Pt. (lbs)	L	04-10-04	04-10-04		12			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	149 ft-lbs	12,704 ft-lbs	1.2%	2	02-06-08
Neg. Moment	-1 ft-lbs	n/a	n/a	0	04-11-04
End Shear	81 lbs	5,785 lbs	1.4%	1	01-01-00
Cont. Shear	76 lbs	5,785 lbs	1.3%	1	04-00-00
Total Load Defl.	L/999 (0.002")	n/a	n/a	9	02-06-08
Live Load Defl.	L/999 (0.001")	n/a	n/a	12	02-06-08
Total Neg. Defl.	2xL/1,998 (-0.001")	n/a	n/a	9	05-05-08
Max Defl.	0.002"	n/a	n/a	9	02-06-08
Span / Depth	5.9	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 1-3/4"	125 lbs	2.5%	1.7%	Unspecified
B1 Wall/Plate	3-1/2" x 1-3/4"	152 lbs	4.6%	2%	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: 00-04-08, Bottom: 00-04-08.
 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
 Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.



DWG NO. TAM 5414-88
 STRUCTURAL
 COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i1202)

Dry | 2 spans | Right cantilever | 0/12 slope (deg)

November 24, 2017 16:20:40

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: EAST GWILLIMBURY,

Customer:

Code reports: CCMC 12472-R

File Name: HOLLAND 15.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1(i1202)

Specifier:

Designer:

Company:

Misc:

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

BC CALO®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCK®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.



DWG NO. TAM 5414
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B2(i1030)

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 24, 2017 16:20:43

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: EAST GWILLIMBURY,

Customer:

Code reports: CCMC 12472-R

File Name: HOLLAND 15.mmdl

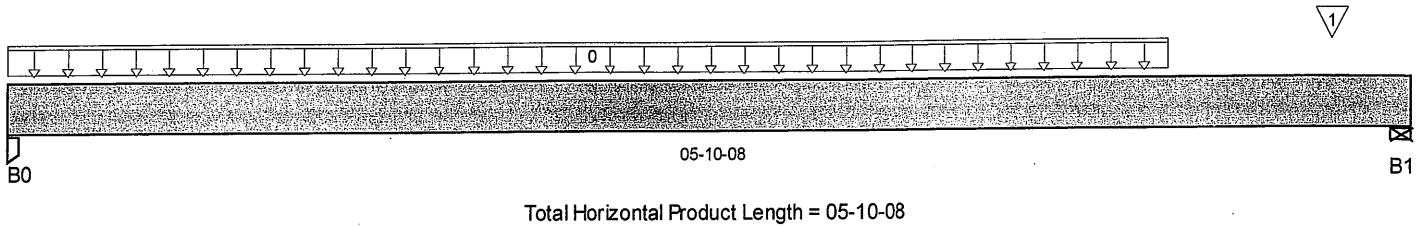
Description: Designs\Flush Beams\Basement\Flush Beams\B2(i1030)

Specifier:

Designer:

Company:

Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 1-3/4"	711 / 0	370 / 0		
B1, 3-1/2"	915 / 0	538 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	04-10-08	233	117			n/a
1		Conc. Pt. (lbs)	L	05-06-08	05-06-08	489	312			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,832 ft-lbs	12,704 ft-lbs	14.4%	1	02-10-08
End Shear	972 lbs	5,785 lbs	16.8%	1	04-09-08
Total Load Defl.	L/999 (0.028")	n/a	n/a	4	02-10-08
Live Load Defl.	L/999 (0.018")	n/a	n/a	5	02-10-08
Max Defl.	0.028"	n/a	n/a	4	02-10-08
Span / Depth	7	n/a	n/a		00-00-00

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	1-3/4" x 1-3/4"	1,530 lbs	61.5%	40.9%	Unspecified
B1 Wall/Plate	3-1/2" x 1-3/4"	2,045 lbs	62.5%	27.4%	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



BC CALC® Design Report
Build 6215

Dry | 1 span | No cant.

January 26, 2018 08:07:17

Job name:

File name: HOLLAND 15.mmdl

Address:

Description: Basement\Flush Beams\B3(i1828)

City, Province, Postal Code: EAS...URY

Specifier:

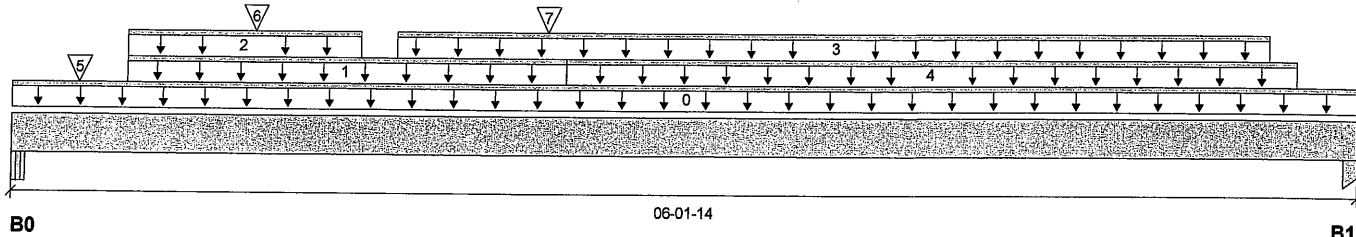
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 06-01-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	4,379 / 0	2,506 / 0		
B1, 3-1/4"	1,850 / 0	1,010 / 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	06-01-14		10			00-00-00
1	15(i1591)	Unf. Lin. (lb/ft)	L	00-06-04	02-06-06		65			n/a
2	15(i1591)	Unf. Lin. (lb/ft)	L	00-06-04	01-07-02	340	170			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	01-09-02	05-09-02	216	108			n/a
4	STAIR	Unf. Lin. (lb/ft)	L	02-06-06	05-10-10	240	120			n/a
5	PBO4(i1269)	Conc. Pt. (lbs)	L	00-03-10	00-03-10	1,979	1,137			n/a
6	-	Conc. Pt. (lbs)	L	01-01-05	01-01-05	459	230			n/a
7	15(i1591)	Conc. Pt. (lbs)	L	02-05-06	02-05-06	1,722	909			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8,351 ft-lbs	23,220 ft-lbs	36.0%	1	02-05-06
End Shear	5,127 lbs	11,571 lbs	44.3%	1	01-02-12
Total Load Deflection	L/999 (0.06")	n/a	n/a	4	03-00-15
Live Load Deflection	L/999 (0.039")	n/a	n/a	5	03-00-15
Max Defl.	0.06"	n/a	n/a	4	03-00-15
Span / Depth	7.0				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Beam	5-1/4" x 3-1/2"	9,701 lbs	98.9%	43.3%	Unspecified
B1 Column	3-1/4" x 3-1/2"	4,038 lbs	43.7%	29.1%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume 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
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.

CONFORMS TO OBC 2012



DWG NO. TAM 6548
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report
Build 6215

Dry | 1 span | No cant.

January 26, 2018 08:07:17

Job name:

File name: HOLLAND 15.mmdl

Address:

Description: Basement\Flush Beams\B3(i1828)

City, Province, Postal Code: EAS...URY

Specifier:

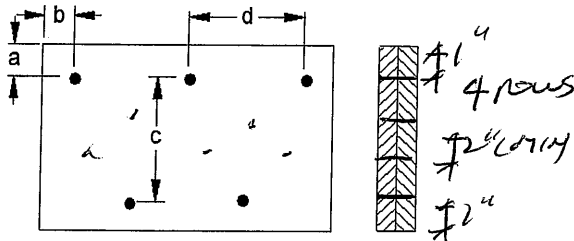
Customer:

Designer:

Code reports: CCMC 12472-R

Company:

Connection Diagram



a minimum = 1"
b minimum = 3"

c = 1-1/2"
d = 4"

Calculated Side Load = 385.2 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

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



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

DWG NO. TAM 6548-18 1625
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B4(i1177)

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 24, 2017 16:20:44

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: EAST GWILLIMBURY,

Customer:

Code reports: CCMC 12472-R

File Name: HOLLAND 15.mmdl

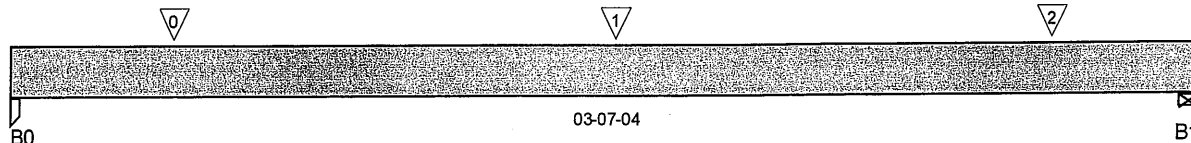
Description: Designs\Flush Beams\Basement\Flush Beams\B4(i1177)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 03-07-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	348 / 0	182 / 0		
B1, 3-1/2"	362 / 0	189 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	J3(i1191)	Conc. Pt. (lbs)	L	00-06-00	00-06-00	235	117			n/a
1	J3(i1170)	Conc. Pt. (lbs)	L	01-10-00	01-10-00	237	118			n/a
2	J3(i1218)	Conc. Pt. (lbs)	L	03-02-00	03-02-00	235	117			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	523 ft-lbs	12,704 ft-lbs	4.1%	1	01-10-00
End Shear	371 lbs	5,785 lbs	6.4%	1	01-01-00
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	01-09-11
Live Load Defl.	L/999 (0.002")	n/a	n/a	5	01-09-11
Max Defl.	0.002"	n/a	n/a	4	01-09-11
Span / Depth	4	n/a	n/a		00-00-00

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 1-3/4"	750 lbs	15.1%	10%	Unspecified
B1 Wall/Plate	3-1/2" x 1-3/4"	779 lbs	23.8%	10.4%	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

BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B5(i888)

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 24, 2017 16:20:39

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: EAST GWILLIMBURY,

Customer:

Code reports: CCMC 12472-R

File Name: HOLLAND 15.mmdl

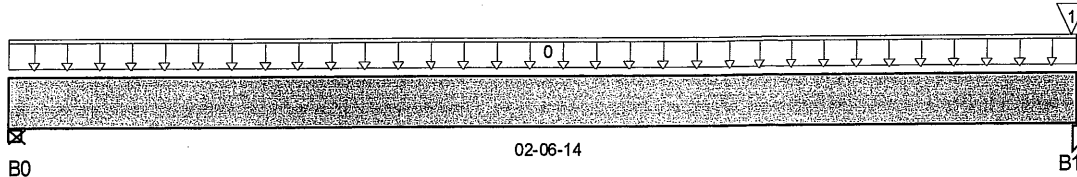
Description: Designs\Flush Beams\Basement\Flush Beams\B5(i888)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 02-06-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/8"	30 / 0	21 / 0		
B1, 1-3/4"	29 / 0	21 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-06-14	22	11			n/a
1	FC1 Floor Material	Conc. Pt. (lbs)	L	02-06-10	02-06-10	1	1			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	37 ft-lbs	12,704 ft-lbs	0.3%	1	01-03-12
End Shear	17 lbs	5,785 lbs	0.3%	1	00-11-14
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-03-12
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-03-12
Max Defl.	0"	n/a	n/a	4	01-03-12
Span / Depth	3	n/a	n/a		00-00-00

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

Bearing Supports

B0	Wall/Plate	2-3/8" x 1-3/4"	71 lbs	3.2%	1.4%	Unspecified
B1	Post	1-3/4" x 1-3/4"	70 lbs	2.8%	1.9%	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

BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.



DWG NO. TAM 5413-18
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B6(i889)

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 24, 2017 16:20:37

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: EAST GWILLIMBURY,

Customer:

Code reports: CCMC 12472-R

File Name: HOLLAND 15.mmdl

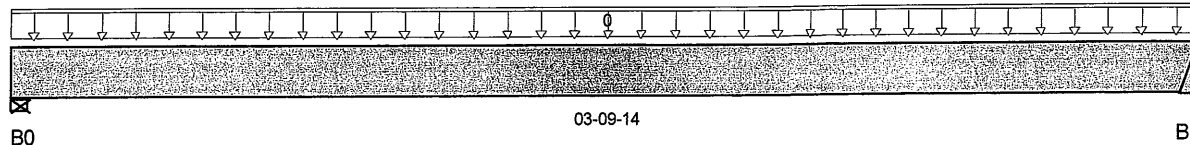
Description: Designs\Flush Beams\Basement\Flush Beams\B6(i889)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 03-09-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/8"	14 / 0	17 / 0		
B1	14 / 0	16 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0 FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-09-14	8	4			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	35 ft-lbs	12,704 ft-lbs	0.3%	1	01-11-02
End Shear	21 lbs	5,785 lbs	0.4%	1	00-11-14
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-11-02
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-11-02
Max Defl.	0"	n/a	n/a	4	01-11-02
Span / Depth	4.5	n/a	n/a		00-00-00

Disclosure

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Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	2-3/8" x 1-3/4"	42 lbs	1.9%	0.8%	Unspecified
B1 Hanger	2" x 1-3/4"	42 lbs	n/a	1%	HUS1.81/10

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

BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.



BC CALC® Design Report

Dry | 2 spans | No cant.

January 20, 2018 10:18:18

Build 6215

Job name:

File name: HOLLAND 15.mmdl

Address:

Description: 1st Floor\Flush Beams\B7(i1397)

City, Province, Postal Code: EAS...URY

Specifier:

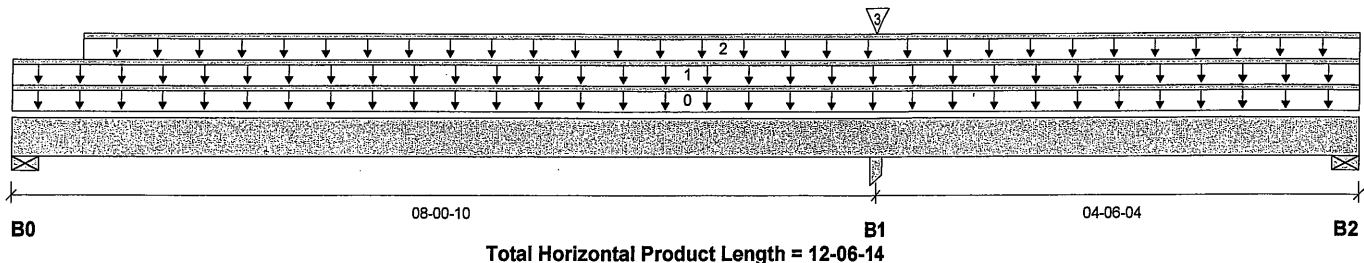
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/8"	1,035 / 35	547 / 0		
B1, 3-1/2"	4,788 / 0	2,562 / 0		
B2, 3-1/2"	821 / 428	211 / 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	12-06-14		14			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-06-14	12	6			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-07-14	12-06-14	355	177			n/a
3	B9(i1404)	Conc. Pt. (lbs)	L	08-00-10	08-00-10	(1,788	947)	+ TOP EDGE LOADED		n/a

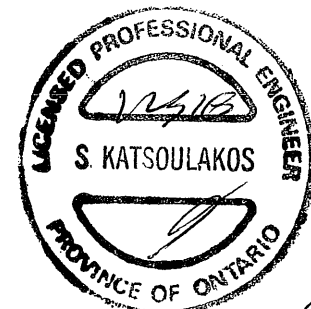
Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4,285 ft-lbs	36,222 ft-lbs	11.8%	2	03-01-14
Neg. Moment	-4,600 ft-lbs	-36,222 ft-lbs	12.7%	1	08-00-10
End Shear	2,192 lbs	17,356 lbs	12.6%	2	00-11-14
Cont. Shear	3,341 lbs	17,356 lbs	19.2%	1	07-01-06
Total Load Deflection	L/999 (0.039")	n/a	n/a	9	03-09-06
Live Load Deflection	L/999 (0.026")	n/a	n/a	12	03-09-06
Total Neg. Defl.	L/999 (-0.006")	n/a	n/a	9	09-09-06
Max Defl.	0.039"	n/a	n/a	9	03-09-06
Span / Depth	10.0				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Wall/Plate 2-3/8" x 5-1/4"	2,236 lbs	42.0%	14.7%	Unspecified
B1	Column 3-1/2" x 5-1/4"	10,384 lbs	87.0%	46.3%	Unspecified
B2	Wall/Plate 3-1/2" x 5-1/4"	1,496 lbs	19.1%	6.7%	Unspecified
B2	Uplift	453 lbs			

Cautions

Uplift of 453 lbs found at span 2 - Right.



BC CALC® Design Report

1st Floor\Flush Beams\B7(i1520)

Dry | 1 span | No cant.

January 26, 2018 08:07:17

Build 6215

Job name:

File name: HOLLAND 15.mmdl

Address:

Description: 1st Floor\Flush Beams\B7(i1520)

City, Province, Postal Code: EAS...URY

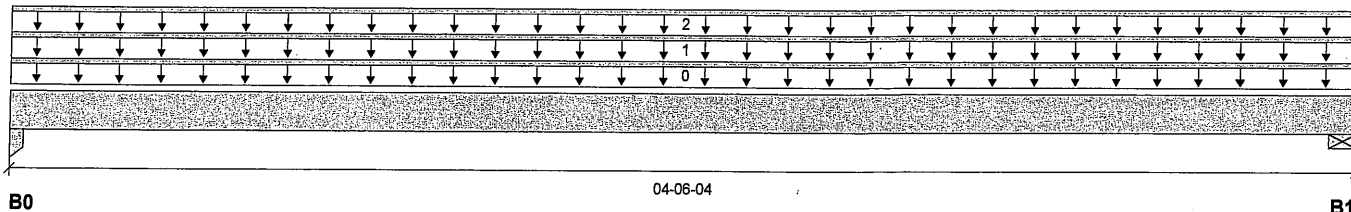
Specifier:

Customer:

Designer:

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 04-06-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 1-3/4"	935 / 0	499 / 0		
B1, 3-1/2"	878 / 0	472 / 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	04-06-04	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	04-06-04	389	194			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-06-04	12	6			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,793 ft-lbs	36,222 ft-lbs	5.0%	1	02-01-04
End Shear	1,235 lbs	17,356 lbs	7.1%	1	00-11-04
Total Load Deflection	L/999 (0.005")	n/a	n/a	4	02-02-00
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	02-02-00
Max Defl.	0.005"	n/a	n/a	4	02-02-00
Span / Depth	5.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Column 1-3/4" x 5-1/4"	2,026 lbs	27.2%	18.1%	Unspecified
B1	Wall/Plate 3-1/2" x 5-1/4"	1,908 lbs	19.4%	8.5%	Unspecified

Notes

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

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

Calculations assume 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.

CONFORMS TO OBC 2012

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.

Nailing schedule applies to both sides of the member.


DWG NO. TAM 6550-18
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report
Build 6215

1st Floor\Flush Beams\B7(i1520)

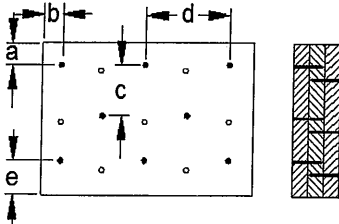
Dry | 1 span | No cant.

January 26, 2018 08:07:17

Job name:
Address:
City, Province, Postal Code: EAS...URY
Customer:
Code reports: CCMC 12472-R

File name: HOLLAND 15.mmdl
Description: 1st Floor\Flush Beams\B7(i1520)
Specifier:
Designer:
Company:

Connection Diagram



a minimum = 2"
b minimum = 3"
c = 2-1/4"
d = 4"
e minimum = 3"

Calculated Side Load = 825.5 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.

Nailing schedule applies to both sides of the member.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL

Disclosure

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

DWG NO. TAM 6550-18 P6
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report

Build 6215

Job name:

Address:

City, Province, Postal Code: EAS...URY

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

January 26, 2018 08:07:17

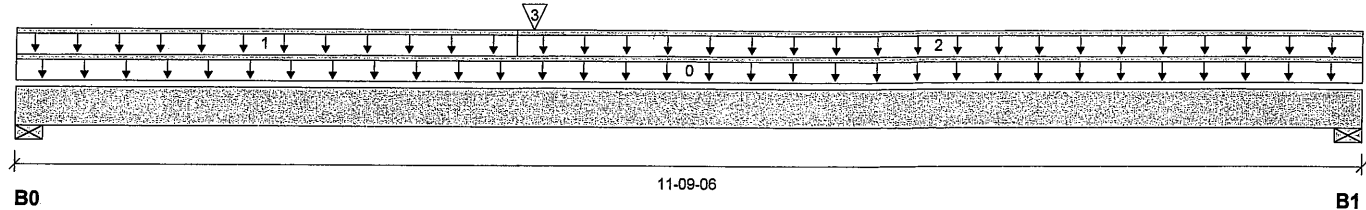
File name: HOLLAND 15.mmdl

Description: 1st Floor\Flush Beams\B8(i1509)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 11-09-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	606 / 0	388 / 0		
B1, 4-3/8"	434 / 0	292 / 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	11-09-06	10				00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-04-08	5				n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	04-04-08	11-09-06	20	10			n/a
3	B9(i1463)	Conc. Pt. (lbs)	L	04-06-04	04-06-04	847	469			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5,635 ft-lbs	23,220 ft-lbs	24.3%	1	04-06-04
End Shear	1,357 lbs	11,571 lbs	11.7%	1	01-01-00
Total Load Deflection	L/897 (0.15")	n/a	26.7%	4	05-05-11
Live Load Deflection	L/999 (0.093")	n/a	n/a	5	05-05-11
Max Defl.	0.15"	n/a	n/a	4	05-05-11
Span / Depth	14.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Wall/Plate 3-1/2" x 3-1/2"	1,394 lbs	21.3%	9.3%	Unspecified
B1	Wall/Plate 4-3/8" x 3-1/2"	1,016 lbs	12.4%	5.4%	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

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 6551
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report
Build 6215

1st Floor\Flush Beams\B8(i1509)

Dry | 1 span | No cant.

January 26, 2018 08:07:17

Job name:

File name: HOLLAND 15.mmdl

Address:

Description: 1st Floor\Flush Beams\B8(i1509)

City, Province, Postal Code: EAS...URY

Specifier:

Customer:

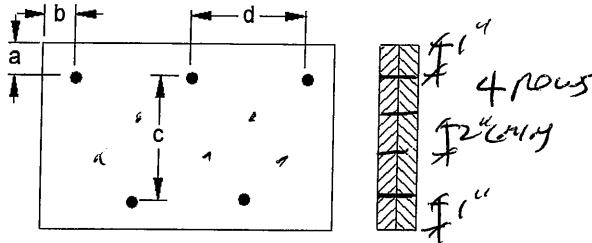
Designer:

Code reports:

CCMC 12472-R

Company:

Connection Diagram



a minimum = 1"
b minimum = 3"

c = 3-1/2"
d = 4"

Calculated Side Load = 157.6 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: Nails

3-1/2" ARDOX SPIRAL

Disclosure

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DWG NO. TAM 6551-18 1/6/24
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report

1st Floor\Flush Beams\B9(i1463)

Dry | 1 span | No cant.

January 26, 2018 08:07:17

Build 6215

Job name:

File name: HOLLAND 15.mmdl

Address:

Description: 1st Floor\Flush Beams\B9(i1463)

City, Province, Postal Code: EAS...URY

Specifier:

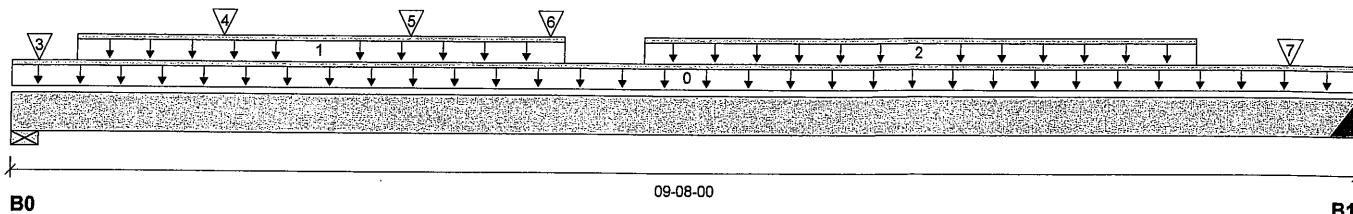
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 09-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,702 / 0	898 / 0		
B1, 2"	868 / 0	480 / 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	09-08-00	1.00	0.65	1.00	1.15	00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-05-08	03-11-08	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	04-06-04	08-06-04	148	74			n/a
3	J2(i1578)	Conc. Pt. (lbs)	L	00-02-04	00-02-04	279	139			n/a
4	J2(i1582)	Conc. Pt. (lbs)	L	01-06-04	01-06-04	283	141			n/a
5	J2(i1587)	Conc. Pt. (lbs)	L	02-10-04	02-10-04	251	125			n/a
6	J4(i1584)	Conc. Pt. (lbs)	L	03-10-04	03-10-04	173	86			n/a
7	J4(i1589)	Conc. Pt. (lbs)	L	09-02-04	09-02-04	145	73			n/a

Controls Summary

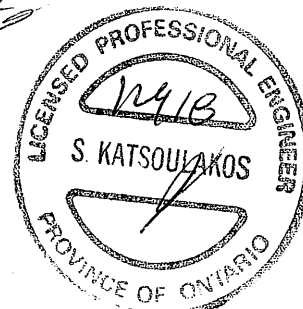
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5,650 ft-lbs	23,220 ft-lbs	24.3%	1	03-10-04
End Shear	2,651 lbs	11,571 lbs	22.9%	1	01-03-00
Total Load Deflection	L/999 (0.118")	n/a	n/a	4	04-08-11
Live Load Deflection	L/999 (0.077")	n/a	n/a	5	04-08-11
Max Defl.	0.118"	n/a	n/a	4	04-08-11
Span / Depth	11.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Wall/Plate 5-1/2" x 3-1/2"	3,676 lbs	35.8%	15.7%	Unspecified
B1	Hanger 2" x 3-1/2"	1,902 lbs	n/a	22.3%	HGUS410

Cautions

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



DWG NO. TAM 6552-18
STRUCTURAL
COMPONENT ONLY



BC CALC® Design Report

Build 6215

Job name:

Address:

City, Province, Postal Code: EAS...URY

Customer:

Code reports: CCMC 12472-R

File name: HOLLAND 15.mmdl

Description: 1st Floor\Flush Beams\B9(i1463)

Specifier:

Designer:

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.

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.

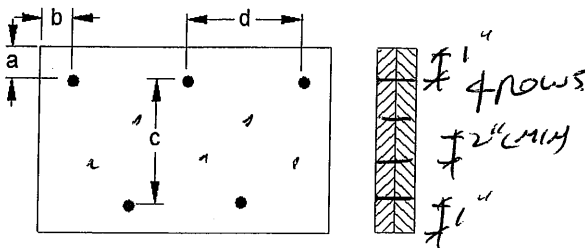
Design based on Dry Service Condition.

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.

Connection Diagram



a minimum = 8"

b minimum = 3"

c = 1-1/2"

d = 6"

Calculated Side Load = 378.5 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 6552-18
STRUCTURAL
COMPONENT ONLY

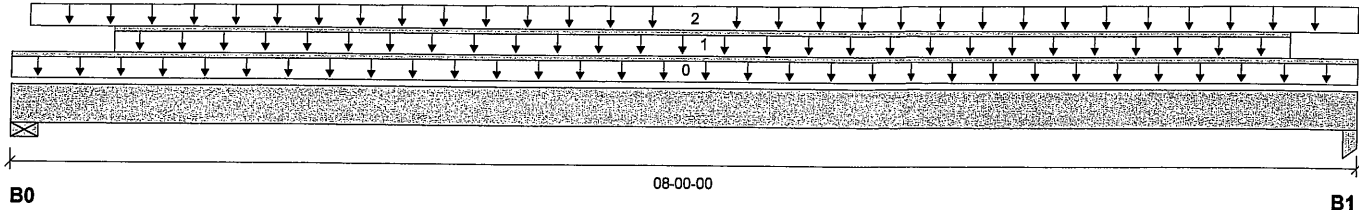


BC CALC® Design Report
Build 6215

Dry | 1 span | No cant.

January 26, 2018 08:07:17

Job name:
Address:
City, Province, Postal Code: EAS...URY
Customer:
Code reports: CCMC 12472-R

File name: HOLLAND 15.mmdl
Description: 1st Floor\Flush Beams\B10(i1522)
Specifier:
Designer:
Company:


Total Horizontal Product Length = 08-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 1-3/4"	1,242 / 0	677 / 0		
B1, 2-1/4"	1,331 / 0	722 / 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	08-00-00	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-07-04	07-07-04	354	176			n/a
2	FC2 Floor Material	Trapezoidal (lb/ft)	L	00-01-04	08-00-00	11	6			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6,051 ft-lbs	36,222 ft-lbs	16.7%	1	04-01-04
End Shear	2,796 lbs	17,356 lbs	16.1%	1	07-00-04
Total Load Deflection	L/999 (0.062")	n/a	n/a	4	03-11-12
Live Load Deflection	L/999 (0.04")	n/a	n/a	5	03-11-12
Max Defl.	0.062"	n/a	n/a	4	03-11-12
Span / Depth	9.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Wall/Plate 1-3/4" x 5-1/4"	2,710 lbs	55.2%	24.2%	Unspecified
B1	Column 2-1/4" x 5-1/4"	2,900 lbs	30.2%	20.1%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume 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.
Nailing schedule applies to both sides of the member.



BC CALC® Design Report
Build 6215

1st Floor\Flush Beams\B10(i1522)

Dry | 1 span | No cant.

January 26, 2018 08:07:17

Job name:

File name: HOLLAND 15.mmdl

Address:

Description: 1st Floor\Flush Beams\B10(i1522)

City, Province, Postal Code: EAS...URY

Specifier:

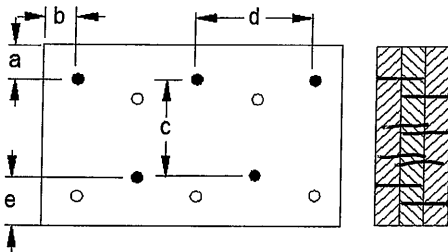
Customer:

Designer:

Code reports: CCMC 12472-R

Company:

Connection Diagram



4 rows

a minimum = 0"
b minimum = 3"

c = 6 1/2"
d = 6"
e minimum = 2"

Calculated Side Load = 657.8 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.

Nailing schedule applies to both sides of the member.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL

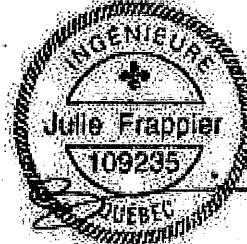
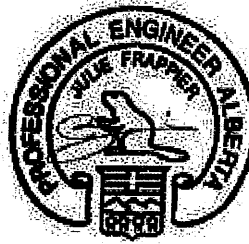
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DWG NO. TAM 6549-13 1622
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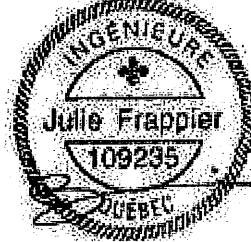
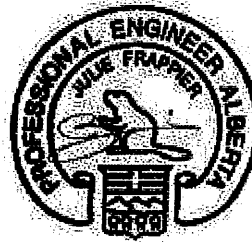
Maximum Floor Spans

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.



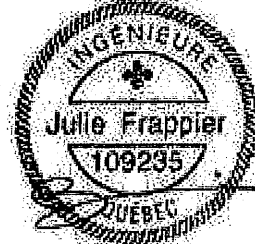
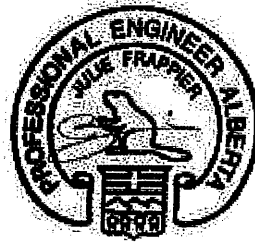
Maximum Floor Spans

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"	15'-7"	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.



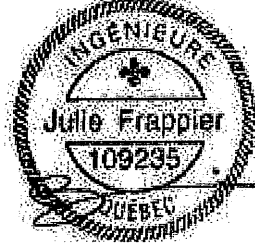
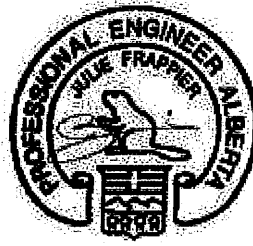
Maximum Floor Spans

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.



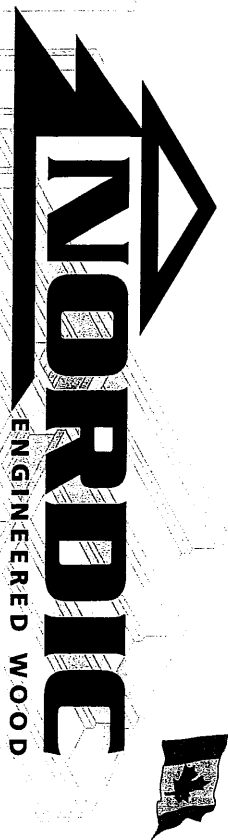
Maximum Floor Spans

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

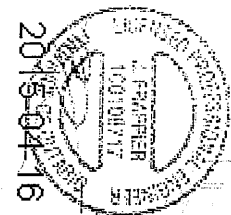
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"	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"

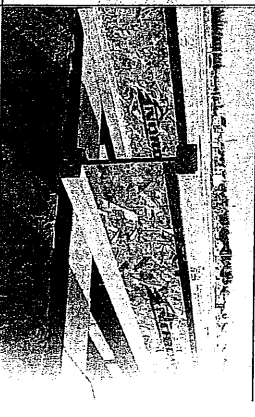
- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load 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



Distributed by:



N-C301 / November 2014

SAFETY AND CONSTRUCTION PRECAUTIONS



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



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

WARNING

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

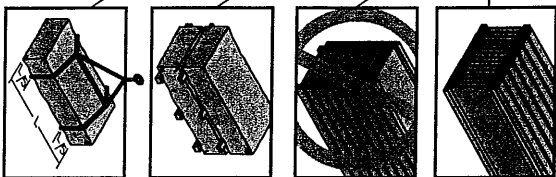
Avoid Accidents by Following these Important Guidelines:

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 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-bridging.
4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stock building materials over beams or walls only.
5. Never install a damaged I-joist.

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

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 stock 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 CBS-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 = 0.305 m

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

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
12"	12S	13.0	13.2	13.9	19.5	16.8	15.4	17.1	24.1
12"	12M	13.1	13.3	14.0	19.6	16.9	15.5	17.2	24.2
12"	12L	13.2	13.4	14.1	19.7	17.0	15.6	17.3	24.3
12"	12H	13.3	13.5	14.2	19.8	17.1	15.7	17.4	24.4
12"	12V	13.4	13.6	14.3	19.9	17.2	15.8	17.5	24.5
12"	12W	13.5	13.7	14.4	20.0	17.3	15.9	17.6	24.6
12"	12X	13.6	13.8	14.5	20.1	17.4	16.0	17.7	24.7
12"	12Y	13.7	13.9	14.6	20.2	17.5	16.1	17.8	24.8
12"	12Z	13.8	14.0	14.7	20.3	17.6	16.2	17.9	24.9
12"	12A	13.9	14.1	14.8	20.4	17.7	16.3	18.0	25.0
12"	12B	14.0	14.2	14.9	20.5	17.8	16.4	18.1	25.1
12"	12C	14.1	14.3	15.0	20.6	17.9	16.5	18.2	25.2
12"	12D	14.2	14.4	15.1	20.7	18.0	16.6	18.3	25.3
12"	12E	14.3	14.5	15.2	20.8	18.1	16.7	18.4	25.4
12"	12F	14.4	14.6	15.3	20.9	18.2	16.8	18.5	25.5
12"	12G	14.5	14.7	15.4	21.0	18.3	16.9	18.6	25.6
12"	12I	14.6	14.8	15.5	21.1	18.4	17.0	18.7	25.7
12"	12J	14.7	14.9	15.6	21.2	18.5	17.1	18.8	25.8
12"	12K	14.8	15.0	15.7	21.3	18.6	17.2	18.9	25.9
12"	12L	14.9	15.1	15.8	21.4	18.7	17.3	19.0	26.0
12"	12M	15.0	15.2	15.9	21.5	18.8	17.4	19.1	26.1
12"	12N	15.1	15.3	16.0	21.6	18.9	17.5	19.2	26.2
12"	12O	15.2	15.4	16.1	21.7	19.0	17.6	19.3	26.3
12"	12P	15.3	15.5	16.2	21.8	19.1	17.7	19.4	26.4
12"	12Q	15.4	15.6	16.3	21.9	19.2	17.8	19.5	26.5
12"	12R	15.5	15.7	16.4	22.0	19.3	17.9	19.6	26.6
12"	12S	15.6	15.8	16.5	22.1	19.4	18.0	19.7	26.7
12"	12T	15.7	15.9	16.6	22.2	19.5	18.1	19.8	26.8
12"	12U	15.8	16.0	16.7	22.3	19.6	18.2	19.9	26.9
12"	12V	15.9	16.1	16.8	22.4	19.7	18.3	20.0	27.0
12"	12W	16.0	16.2	16.9	22.5	19.8	18.4	20.1	27.1
12"	12X	16.1	16.3	17.0	22.6	19.9	18.5	20.2	27.2
12"	12Y	16.2	16.4	17.1	22.7	20.0	18.6	20.3	27.3
12"	12Z	16.3	16.5	17.2	22.8	20.1	18.7	20.4	27.4
12"	12A	16.4	16.6	17.3	22.9	20.2	18.8	20.5	27.5
12"	12B	16.5	16.7	17.4	23.0	20.3	18.9	20.6	27.6
12"	12C	16.6	16.8	17.5	23.1	20.4	19.0	20.7	27.7
12"	12D	16.7	16.9	17.6	23.2	20.5	19.1	20.8	27.8
12"	12E	16.8	17.0	17.7	23.3	20.6	19.2	20.9	27.9
12"	12F	16.9	17.1	17.8	23.4	20.7	19.3	21.0	28.0
12"	12G	17.0	17.2	17.9	23.5	20.8	19.4	21.1	28.1
12"	12H	17.1	17.3	18.0	23.6	20.9	19.5	21.2	28.2
12"	12I	17.2	17.4	18.1	23.7	21.0	19.6	21.3	28.3
12"	12J	17.3	17.5	18.2	23.8	21.1	19.7	21.4	28.4
12"	12K	17.4	17.6	18.3	23.9	21.2	19.8	21.5	28.5
12"	12L	17.5	17.7	18.4	24.0	21.3	19.9	21.6	28.6
12"	12M	17.6	17.8	18.5	24.1	21.4	20.0	21.7	28.7
12"	12N	17.7	17.9	18.6	24.2	21.5	20.1	21.8	28.8
12"	12O	17.8	18.0	18.7	24.3	21.6	20.2	21.9	28.9
12"	12P	17.9	18.1	18.8	24.4	21.7	20.3	22.0	29.0
12"	12Q	18.0	18.2	18.9	24.5	21.8	20.4	22.1	29.1
12"	12R	18.1	18.3	19.0	24.6	21.9	20.5	22.2	29.2
12"	12S	18.2	18.4	19.1	24.7	22.0	20.6	22.3	29.3
12"	12T	18.3	18.5	19.2	24.8	22.1	20.7	22.4	29.4
12"	12U	18.4	18.6	19.3	24.9	22.2	20.8	22.5	29.5
12"	12V	18.5	18.7	19.4	25.0	22.3	20.9	22.6	29.6
12"	12W	18.6	18.8	19.5	25.1	22.4	21.0	22.7	29.7
12"	12X	18.7	18.9	19.6	25.2	22.5	21.1	22.8	29.8
12"	12Y	18.8	19.0	19.7	25.3	22.6	21.2	22.9	29.9
12"	12Z	18.9	19.1	19.8	25.4	22.7	21.3	23.0	30.0
12"	12A	19.0	19.2	19.9	25.5	22.8	21.4	23.1	30.1
12"	12B	19.1	19.3	20.0	25.6	22.9	21.5	23.2	30.2
12"	12C	19.2	19.4	20.1	25.7	23.0	21.6	23.3	30.3
12"	12D	19.3	19.5	20.2	25.8	23.1	21.7	23.4	30.4
12"	12E	19.4	19.6	20.3	25.9	23.2	21.8	23.5	30.5
12"	12F	19.5	19.7	20.4	26.0	23.3	21.9	23.6	30.6
12"	12G	19.6	19.8	20.5	26.1	23.4	22.0	23.7	30.7
12"	12H	19.7	19.9	20.6	26.2	23.5	22.1	23.8	30.8
12"	12I	19.8	20.0	20.7	26.3	23.6	22.2	23.9	30.9
12"	12J	19.9	20.1	20.8	26.4	23.7	22.3	24.0	31.0
12"	12K	20.0	20.2	20.9	26.5	23.8	22.4	24.1	31.1
12"	12L	20.1	20.3	21.0	26.6	23.9	22.5	24.2	31.2
12"	12M	20.2	20.4	21.1	26.7	24.0	22.6	24.3	31.3
12"	12N	20.3	20.5	21.2	26.8	24.1	22.7	24.4	31.4
12"	12O	20.4	20.6	21.3	26.9	24.2	22.8	24.5	31.5
12"	12P	20.5	20.7	21.4	27.0	24.3	22.9	24.6	31.6
12"	12Q	20.6	20.8	21.5	27.1	24.4	23.0	24.7	31.7
12"	12R	20.7	20.9	21.6	27.2	24.5	23.1	24.8	31.8
12"	12S	20.8	21.0	21.7	27.3	24.6	23.2	24.9	31.9
12"	12T	20.9	21.1	21.8	27.4	24.7	23.3	25.0	32.0
12"	12U	21.0	21.2	21.9	27.5	24.8	23.4	25.1	32.1
12"	12V	21.1	21.3	22.0	27.6	24.9	23.5	25.2	32.2
12"	12W	21.2	21.4	22.1	27.7	25.0	23.6	25.3	32.3
12"	12X	21.3	21.5	22.2	27.8	25.1	23.7	25.4	32.4
12"	12Y	21.4	21.6	22.3	27.9	25.2	23.8	25.5	32.5
12"	12Z	21.5	21.7	22.4	28.0	25.3	23.9	25.6	32.6
12"	12A	21.6	21.8	22.5	28.1	25.4	24.0	25.7	32.7
12"	12B	21.7	21.9	22.6	28.2	25.5	24.1	25.8	32.8
12"	12C	21.8	22.0	22.7	28.3	25.6	24.2	25.9	32.9
12"	12D	21.9	22.1	22.8	28.4	25.7	24.3	26.0	33.0
12"	12E	22.0	22.2	22.9	28.5	25.8	24.4	26.1	33.1
12"	12F	22.1	22.3	23.0	28.6	25.9	24.5	26.2	33.2
12"	12G	22.2	22.4	23.1	28.7	26.0	24.6	26.3	33.3
12"	12H	22.3	22.5	23.2	28.8	26.1	24.7	26.4	33.4
12"	12I	22.4	22.6	23.3	28.9	26.2	24.8	26.5	33.5
12"	12J	22.5	22.7	23.4	29.0	26.3	24.9	26.6	33.6
12"	12K	22.6	22.8	23.5	29.1	26.4	25.0	26.7	33.7
12"	12L	22.7	22.9	23.6	29.2	26.5	25.1	26.8	33.8
12"	12M	22.8	23.0	23.7	29.3	26.6	25.2	26.9	33.9
12"	12N	22.9	23.1	23.8	29.4	26.7	25.3	27.0	34.0
12"	12O	23.0	23.2	23.9	29.5	26.8	25.4	27.1	34.1
12"	12P	23.1	23.3	24.0	29.6	26.9	25.5	27.2	34.2
12"	12Q	23.2	23.4	24.1	29.7	27.0	25.6	27.3	34.3
12"	12R	23.3	23.5	24.2	29.8	27.1	25.7	27.4	34.4
12"	12S	23.4	23.6	24.3	29.9	27.2	25.8	27.5	34.5
12"	12T	23.5	23.7	24.4	30.0	27.3	25.9	27.6	34.6
12"	12U	23.6	23.8	24.5	30.1	27.4	26.0	27.7	34.7
12"	12V	23.7	23.9	24.6	30.2	27.5	26.1	27.8	34.8
12"	12W	23.8	24.0	24.7	30.3	27.6	26.2	27.9	34.9
12"	12X	23.9	24.1	24.8	30.4	27.7	26.3	28.0	35.0
12"	12Y	24.0	24.2	24.9	30.5	27.8	26.4	28.1	35.1
12"	12Z	24.1	24.3	25.0	30.6	27.9	26.5	28.2	35.2
12"	12A	24.2	24.4	25.1	30.7	28.0	26.6	28.3	35.3
12"	12B	24.3	24.5	25.2	30.8	28.1	26.7	28.4	35.4
12"	12C	24.4	24.6	25.3	30.9	28.2	26.8	28.5	35.5
12"	12D	24.5	24.7	25.4	31.0	28.3	26.9	28.6	35.6
12"	12E	24.6	24.8	25.5	31.1	28.4	27.0	28.7	35.7
12"	12F	24.7	24.9	25.6	31.2	28.5	27.1	28.8	35.8
12"	12G	24.8	25.0	25.7	31.3	28.6	27.2	28.9	35.9
12"	12H	24.9	25.1	25.8	31.4	28.7	27.3	29.0	36.0
12"	12I	25.0	25.2	25.9	31.5	28.8	27.4	29.1	36.1
12"	12J	25.1	25.3	26.0	31.6	28.9	27.5	29.2	36.2
12"	12K	25.2	25.4	26.1	31.7	29.0	27.6	29.3	36.3
12"	12L	25.3	25.5	26.2	31.8	29.1	27.7	29.4	36.4
12"	12M	25.4	25.6	26.3	31.9	29.2	27.8	29.5	36.5
12"	12N	25.5	25.7	26.4	32.0	29.3	27.9	29.6	36.6
12"	12O	25.6	25.8	26.5	32.1	29.4	28.0	29.7	36.7
12"	12P	25.7	25.9	26.6	32.2	29.5	28.1	29.8	36.8
12"	12Q	25.8	26.0	26.7	32.3	29.6	28.2	29.9	36.9
12"	12R	25.9	26.1	26.8	32.4	29.7	28.3	30.0	37.0
12"	12S	26.0	26.2	26.9	32.5	29.8	28.4	30.1	37.1
12"	12T	26.1	26.3	27.0	32.6	29.9	28.5	30.2	37.2
12"	12U	26.2	26.4	27.1	32.7	30.0	28.6	30.3	37.3
12"	12V	26.3	26.5	27.2	32.8	30.1	28.7	30.4	37.4
12"	12W	26.4</							

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 spans 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.

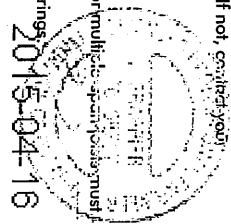
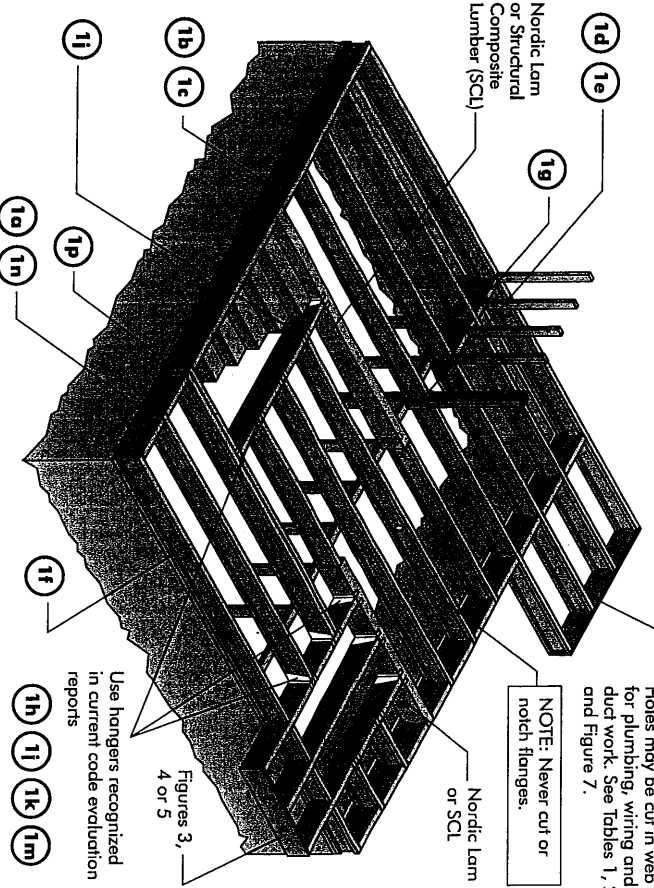


FIGURE 1
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

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.

NOTE: Never cut or notch flanges.

Use hangers recognized in current code evaluation reports

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.

1a

NI blocking panel

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

Attach I-joist to top plate per detail 1b

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

1b

Rim board

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

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.

One 2-1/2" face nail at each side at bearing

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.

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.

NI rim joist per detail 1a

Attach I-joist per detail 1b

Attach rim joist to top plate per detail 1a

Minimum 1-3/4" bearing required

1d

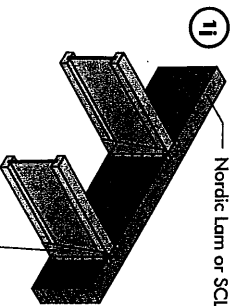
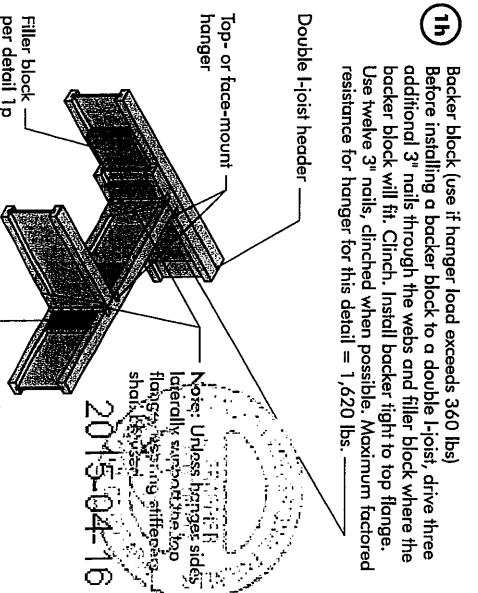
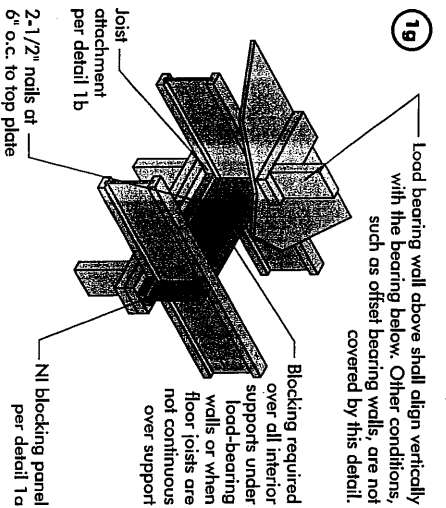
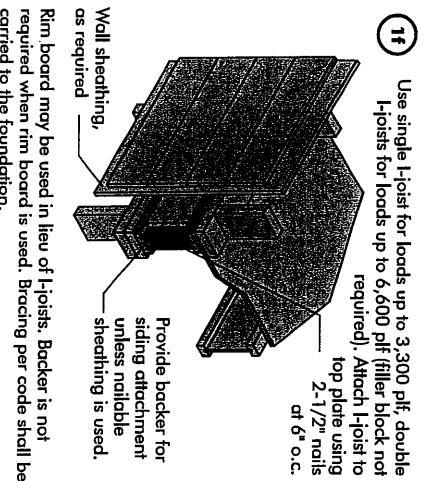
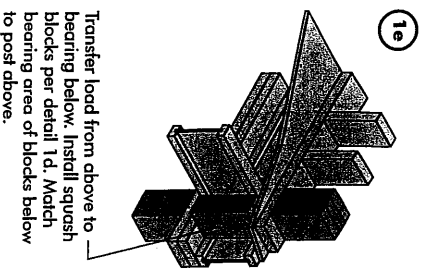
NI or rim board blocking panel per detail 1a

1/16" for squash blocks

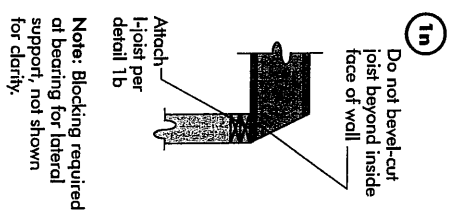
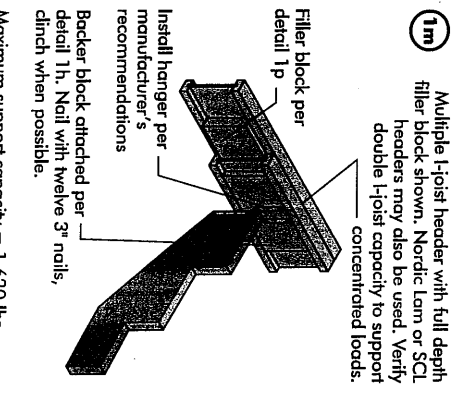
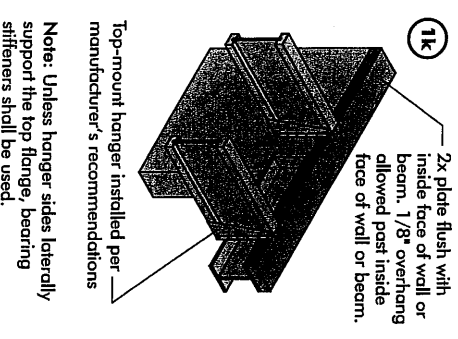
Squash block

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

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



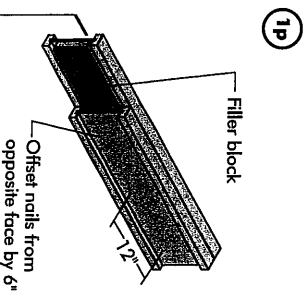
Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.



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"

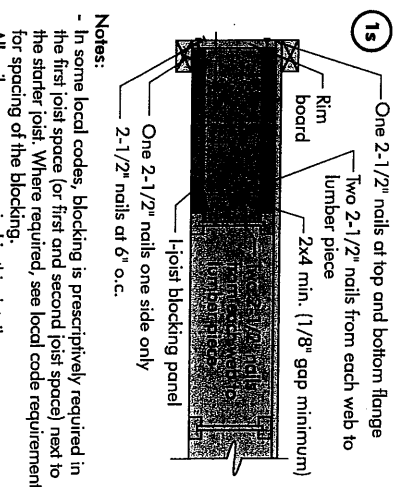
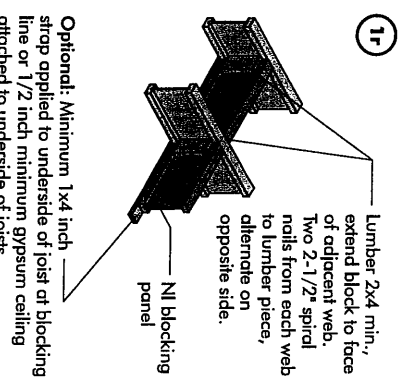
* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437, Standard.
** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".



- Notes:**
- Support back of I-joist web during nailing to prevent damage to web/flange connection.
 - Leave a 1/8 to 1/4-inch 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. (clinched 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 joist using this detail is 860 lb/ft. Verify double I-joist capacity.

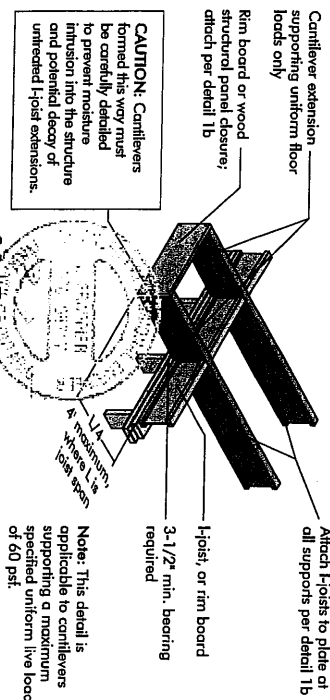
FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

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

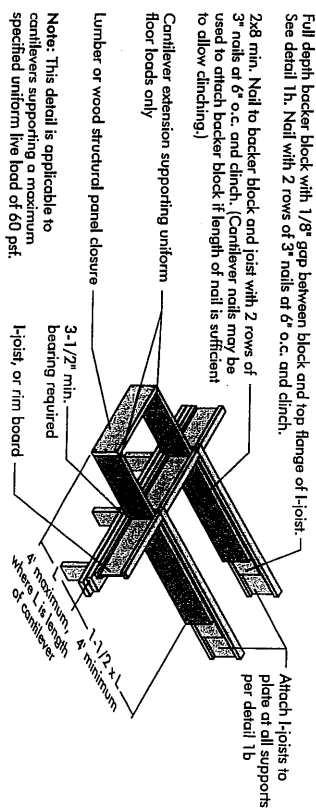


CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

3a I-JOIST CANTILEVER DETAIL FOR BALCONIES (No Wall Load)

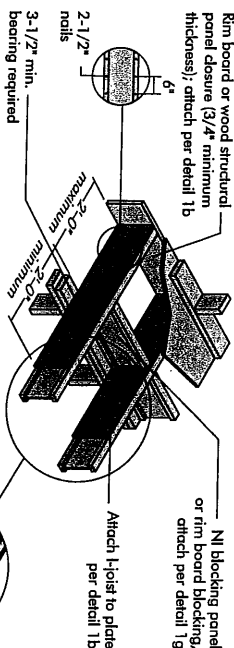


3b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



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

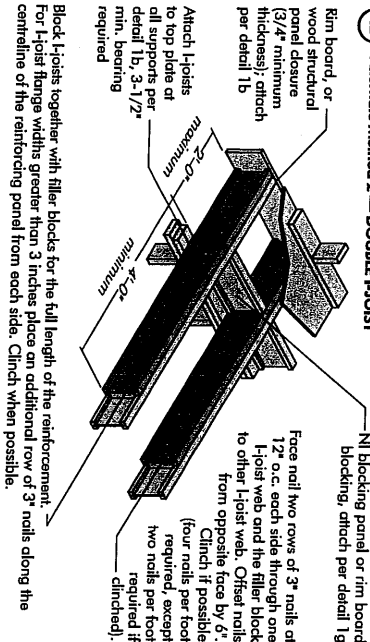
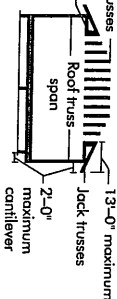
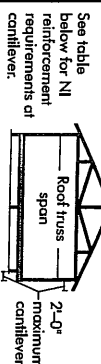


FIGURE 4 (continued)



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			
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
24	12	X	X	X	X	X	X	X	X	X	X	X	X
24	16	X	X	X	X	X	X	X	X	X	X	X	X
24	19.2	X	X	X	X	X	X	X	X	X	X	X	X
24	24	X	X	X	X	X	X	X	X	X	X	X	X
30	12	X	X	X	X	X	X	X	X	X	X	X	X
30	16	X	X	X	X	X	X	X	X	X	X	X	X
30	19.2	X	X	X	X	X	X	X	X	X	X	X	X
30	24	X	X	X	X	X	X	X	X	X	X	X	X
36	12	X	X	X	X	X	X	X	X	X	X	X	X
36	16	X	X	X	X	X	X	X	X	X	X	X	X
36	19.2	X	X	X	X	X	X	X	X	X	X	X	X
36	24	X	X	X	X	X	X	X	X	X	X	X	X
42	12	X	X	X	X	X	X	X	X	X	X	X	X
42	16	X	X	X	X	X	X	X	X	X	X	X	X
42	19.2	X	X	X	X	X	X	X	X	X	X	X	X
42	24	X	X	X	X	X	X	X	X	X	X	X	X

1. N = No reinforcement required.

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

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

4. = Try a deeper joist or closer spacing.

5. 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 opening.

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

7. Table applies to joists 12" to 24" o.c. that meet the floor span requirements for 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.

8. 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 formed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.

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

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

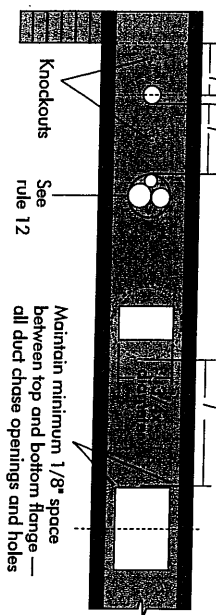
1. The distance between the inside edge of the support and the centerline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
2. I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
3. Whenever possible, field-cut holes should be centered 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 knobout 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.

See Table 1 for minimum distance from bearing

2x diameter of larger hole

2x duct chase length or hole diameter, whichever is larger

Duct chase opening (see Table 2 for minimum distance from bearing)



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.

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

[illegible]

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, the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:

$$\frac{\text{SAF}}{\text{SAF}}$$

Where:

$$\begin{array}{lcl} D_{\text{reduced}} & = & \\ L_{\text{actual}} & = & \\ \text{SAF} & = & \\ D & = & \end{array}$$

Distance from the inside face of any support to centre of hole, reduced for less-than-maximum distance shall not be less than 6 inches from the face of the support to edge of the hole. The actual measured span distance between the inside faces of supports (ft).

Span Adjustment Factor given in this table.

The minimum distance from the inside face of any support to centre of hole from this table. If $\frac{L_{actual}}{SAF}$ is greater than 1, use 1 in the above calculation for $\frac{L_{actual}}{SAF}$.

TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS — SIMILAR TO FIG. 8-1

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of opening (ft-in.)									
		Duct chase length (in.)									
		8	10	12	14	16	18	20	22	24	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
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	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
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	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
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	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
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	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-1	5-1	5-1	5-1	5-1	
	800	7-1	7-5	7-10	5-1	5-					

1. Above table may be used for I-joint spacing of 24 inches on centre or less.
2. Duct class opening location distance is measured from inside face of supports to centre of opening.
3. The above table is based on single-span joist 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 a dead load of 15 psf, and a live load deflection limit of $L/480$. For other applications, contact your local distributor.



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

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.

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-joint.

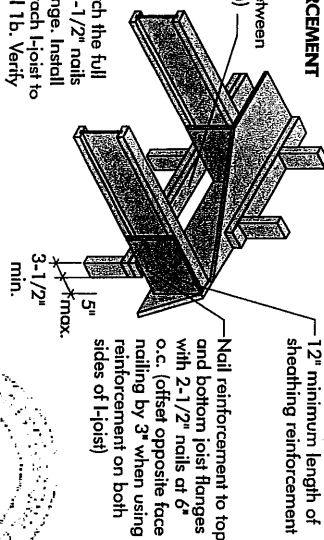
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BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

5d 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 of all supports per detail 1b. Verify reinforced I-joist capacity.

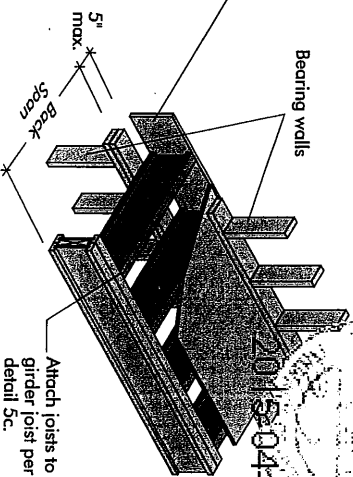


5b SET-BACK DETAIL

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 of 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.

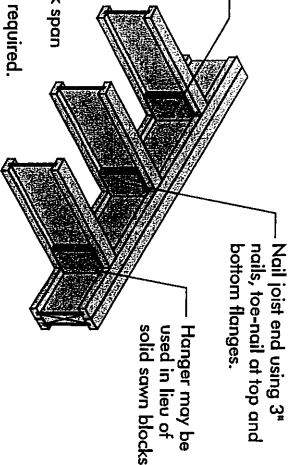
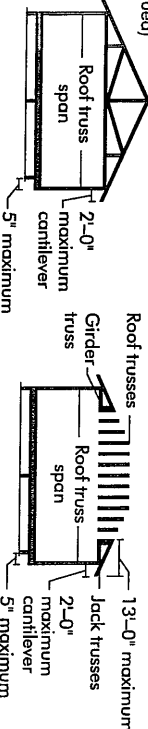


FIGURE 5 (continued)

See table below for NI reinforcement requirements at cantilever.



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)				ROOF LOADING (UNFACTORED)			
	LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf			
	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
26	X	X	X	X	X	X	X	X	X	X	X	X
28	X	X	X	X	X	X	X	X	X	X	X	X
30	X	X	X	X	X	X	X	X	X	X	X	X
32	X	X	X	X	X	X	X	X	X	X	X	X
34	X	X	X	X	X	X	X	X	X	X	X	X
36	X	X	X	X	X	X	X	X	X	X	X	X
38	X	X	X	X	X	X	X	X	X	X	X	X
40	X	X	X	X	X	X	X	X	X	X	X	X
42	X	X	X	X	X	X	X	X	X	X	X	X
44	X	X	X	X	X	X	X	X	X	X	X	X
46	X	X	X	X	X	X	X	X	X	X	X	X
48	X	X	X	X	X	X	X	X	X	X	X	X
50	X	X	X	X	X	X	X	X	X	X	X	X
52	X	X	X	X	X	X	X	X	X	X	X	X
54	X	X	X	X	X	X	X	X	X	X	X	X
56	X	X	X	X	X	X	X	X	X	X	X	X
58	X	X	X	X	X	X	X	X	X	X	X	X
60	X	X	X	X	X	X	X	X	X	X	X	X
62	X	X	X	X	X	X	X	X	X	X	X	X
64	X	X	X	X	X	X	X	X	X	X	X	X
66	X	X	X	X	X	X	X	X	X	X	X	X
68	X	X	X	X	X	X	X	X	X	X	X	X
70	X	X	X	X	X	X	X	X	X	X	X	X
72	X	X	X	X	X	X	X	X	X	X	X	X
74	X	X	X	X	X	X	X	X	X	X	X	X
76	X	X	X	X	X	X	X	X	X	X	X	X
78	X	X	X	X	X	X	X	X	X	X	X	X
80	X	X	X	X	X	X	X	X	X	X	X	X
82	X	X	X	X	X	X	X	X	X	X	X	X
84	X	X	X	X	X	X	X	X	X	X	X	X
86	X	X	X	X	X	X	X	X	X	X	X	X
88	X	X	X	X	X	X	X	X	X	X	X	X
90	X	X	X	X	X	X	X	X	X	X	X	X
92	X	X	X	X	X	X	X	X	X	X	X	X
94	X	X	X	X	X	X	X	X	X	X	X	X
96	X	X	X	X	X	X	X	X	X	X	X	X
98	X	X	X	X	X	X	X	X	X	X	X	X
100	X	X	X	X	X	X	X	X	X	X	X	X

1. N = No reinforcement required.
1 = NI reinforced with 3/4" wood structural panel on one side only.
2 = NI reinforced with 3/4" wood structural panel on both sides, or double I-joists.
X = Try a deeper joist or closer spacing.
2. 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.
3. 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.

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 of 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. (Many weather accelerators 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.

Maximum Joist Spacing (in.)	Minimum Panel Thickness (in.)	Common Wire or Spiral Nails	Neil Size and Type Ring Thread Nails or Screws	Staples	Maximum Spacing of Fasteners	Edges	Intern Supports
14	5/8	2"	1-3/4"	2"	6"		12"
20	5/8	2"	1-3/4"	2"	6"		12"
24	3/4	2"	1-3/4"	2"	6"		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.

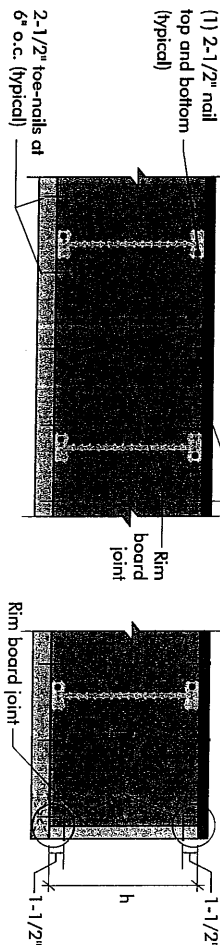
IMPORTANT NOTE: Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

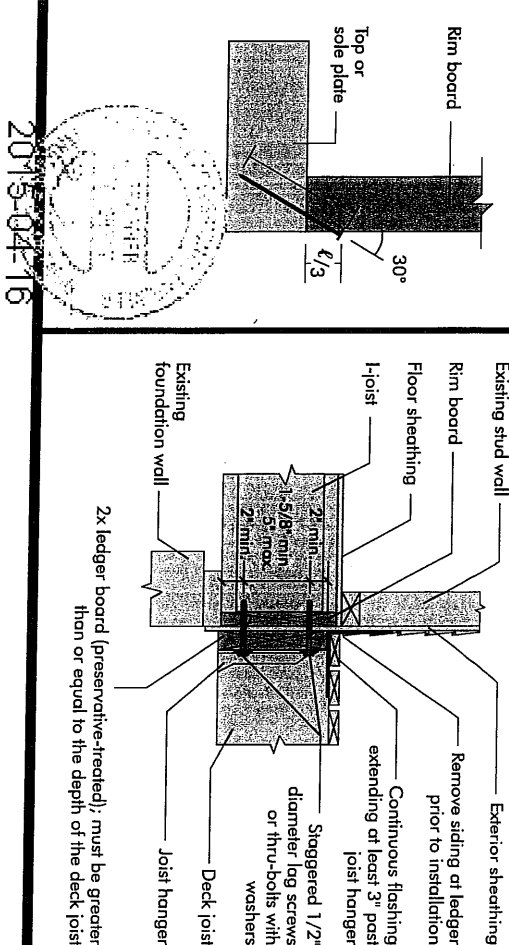
2-1/2" nails at 6" o.c. (typical)



Rim board Joint at Corner

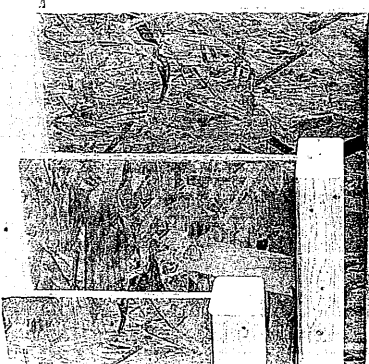


8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL

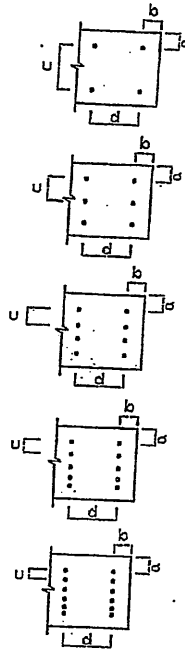


Customer: Ciba-Geigy guarantees that, in accordance with our specifications, Nordic products are free from manufacturing defects in material and workmanship.

Furthermore, *Chibogmas* warrant 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.



LVL HEADER AND CONVENTIONAL LUMBER NAILING DETAILS		
DETAIL NUMBER	NUMBER OF ROWS	SPACING (INCHES o/c) "d"
A	2	12
B	2	8
C	2	6
D	2	4
1A	3	12
1B	3	8
1C	3	6
1D	3	4
2A	4	12
2B	4	8
2C	4	6
2D	4	4
3A	5	12
3B	5	8
3C	5	6
3D	5	4
4A	6	12
4B	6	8
4C	6	6
4D	6	4



NOTES:

- (1) MINIMUM LUMBER EDGE DISTANCE "a" = 1"
- (2) MINIMUM LUMBER END DISTANCE "b" = 2"
- (3) MINIMUM NAIL ROW SPACING "c" = 2"
- (4) STAGGER NAILS "d/2" BETWEEN PLYS FOR MULTI-PLY MEMBERS (3 PLY OR MORE)
- (5) ALL NAILS ARE 3-1/2" ARDOX SPIRAL NAILS
- (6) DO NOT USE AIR-DRIVEN NAILS



DWG NO TAMN1001.14

STRUCTURAL

COMPONENT ONLY

TO BE USED ONLY
WITH BEAM CALCS
BEARING THE
STAMP BELOW

PROVIDE NAILING

DETAIL # X SEE

DWG #TAMN1001-14