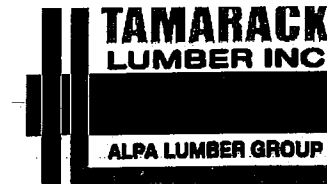




Connector Summary		
Qty	Manuf	Product
8	H1	IUS2.56/11.88



FROM PLAN DATED: FEB 2017
BUILDER: GREENPARK HOMES
SITE: RUSSELL GARDENS
MODEL: ROSEWOOD 3
ELEVATION: 1,2
LOT:
CITY: WATERDOWN
SALESMAN: M D
DESIGNER: AJ
REVISION:

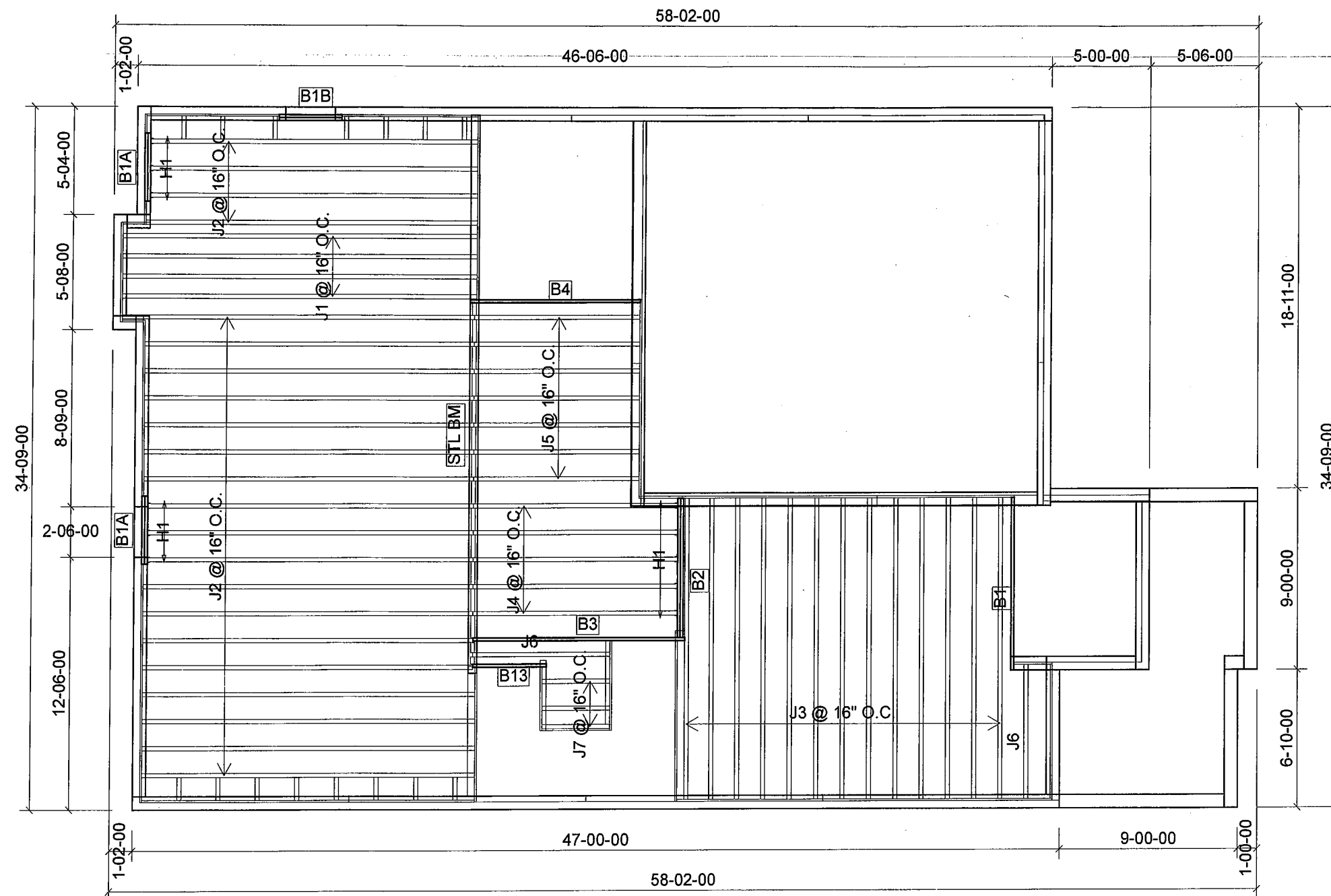
NOTES:
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SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2
S.P.F REQ'D UNDER INTERIOR
UNIFORM LOAD BEARING WALLS.
MULTIPLE SQUASH BLOCKS REQ'D
UNDER CONCENTRATED LOADS. SEE
FIGURE 1. CANTILEVERED JOISTS
INCLUDING CANT' OVER BRICK REQ.
I-JOIST BLOCKING ALONG BEARING
AND RIMBOARD CLOSURE AT ENDS.
SEE FIGURES 4 & 5 FOR
REINFORCEMENT REQUIREMENTS.
FOR HOLES INCLUDING DUCT
CHASE AND FIELD CUT OPENINGS
SEE FIGURE 7, TABLES 1 & 2.
CERAMIC TILE APPLICATION AS PER
O.B.C 9.30.6.

LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 8/19/2017

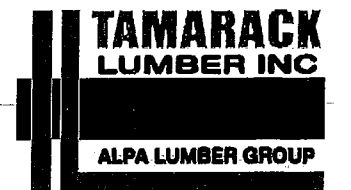
1st FLOOR

DECK CONDITION



Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	4
J2	18-00-00	11 7/8" NI-40x	1	22
J3	16-00-00	11 7/8" NI-40x	1	13
J4	12-00-00	11 7/8" NI-40x	1	5
J5	10-00-00	11 7/8" NI-40x	1	7
J6	8-00-00	11 7/8" NI-40x	1	2
J7	4-00-00	11 7/8" NI-40x	1	3
B3	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B13	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1A	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	4
B1B	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

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



FROM PLAN DATED: FEB 2017

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS

MODEL: ROSEWOOD 3

ELEVATION: 1,2

LOT:

CITY: WATERDOWN

SALESMAN: M D

DESIGNER: AJ

REVISION:

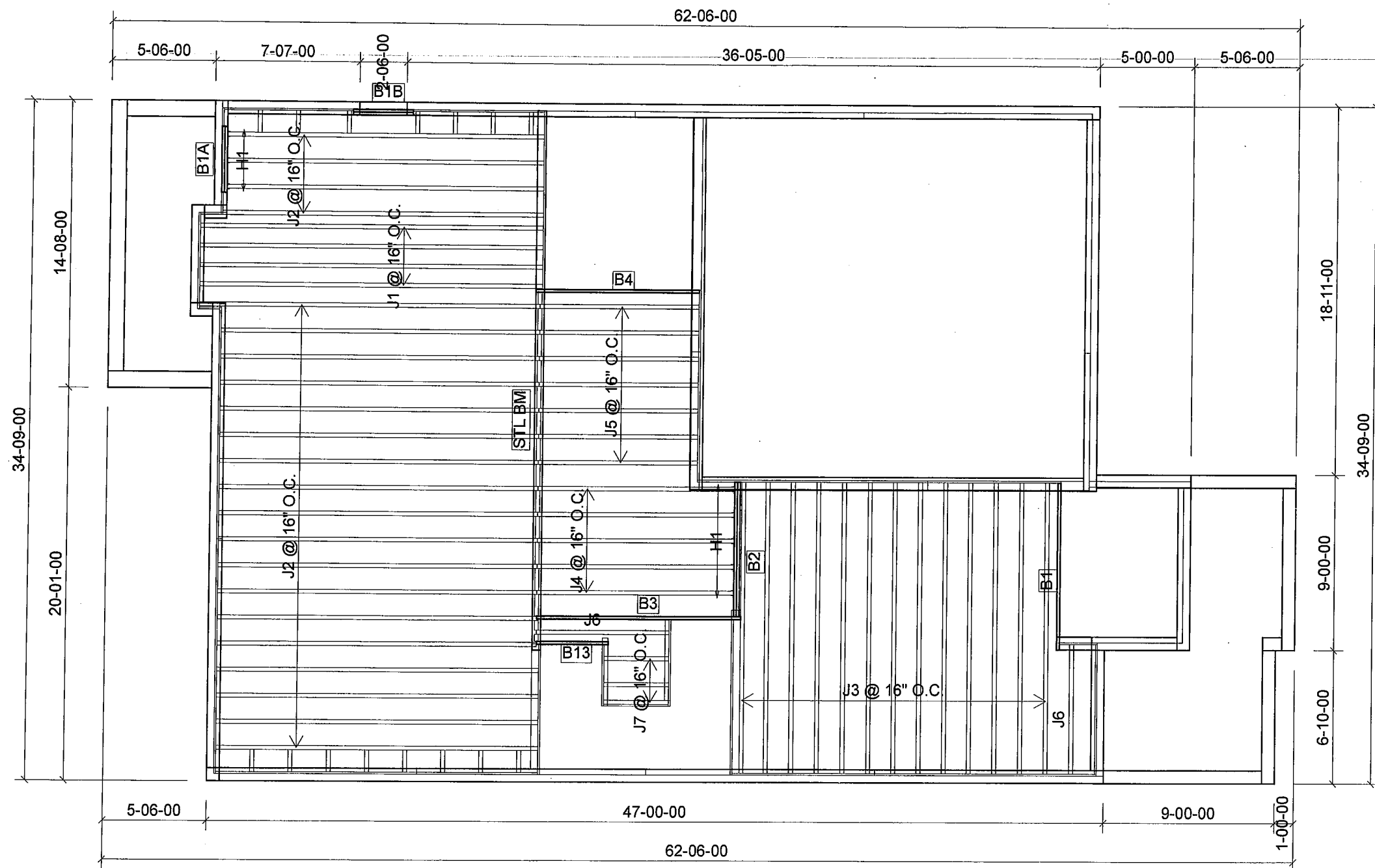
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CHASE AND FIELD CUT OPENINGS
SEE FIGURE 7, TABLES 1 & 2.
CERAMIC TILE APPLICATION AS PER
O.B.C 9.30.6.

LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 8/19/2017

1st FLOOR

WALK UP



Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	4
J2	18-00-00	11 7/8" NI-40x	1	22
J3	16-00-00	11 7/8" NI-40x	1	13
J4	12-00-00	11 7/8" NI-40x	1	5
J5	10-00-00	11 7/8" NI-40x	1	7
J6	8-00-00	11 7/8" NI-40x	1	2
J7	4-00-00	11 7/8" NI-40x	1	3
B3	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B13	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1A	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1B	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
8	H1	IUS2.56/11.88

FROM PLAN DATED: FEB 2017

BUILDER: GREENPARK HOMES

SITE: RUSSEL GARDENS

MODEL: ROSEWOOD 3

ELEVATION: 1,2

LOT:

CITY: WATERDOWN

SALESMAN: M D

DESIGNER: AJ

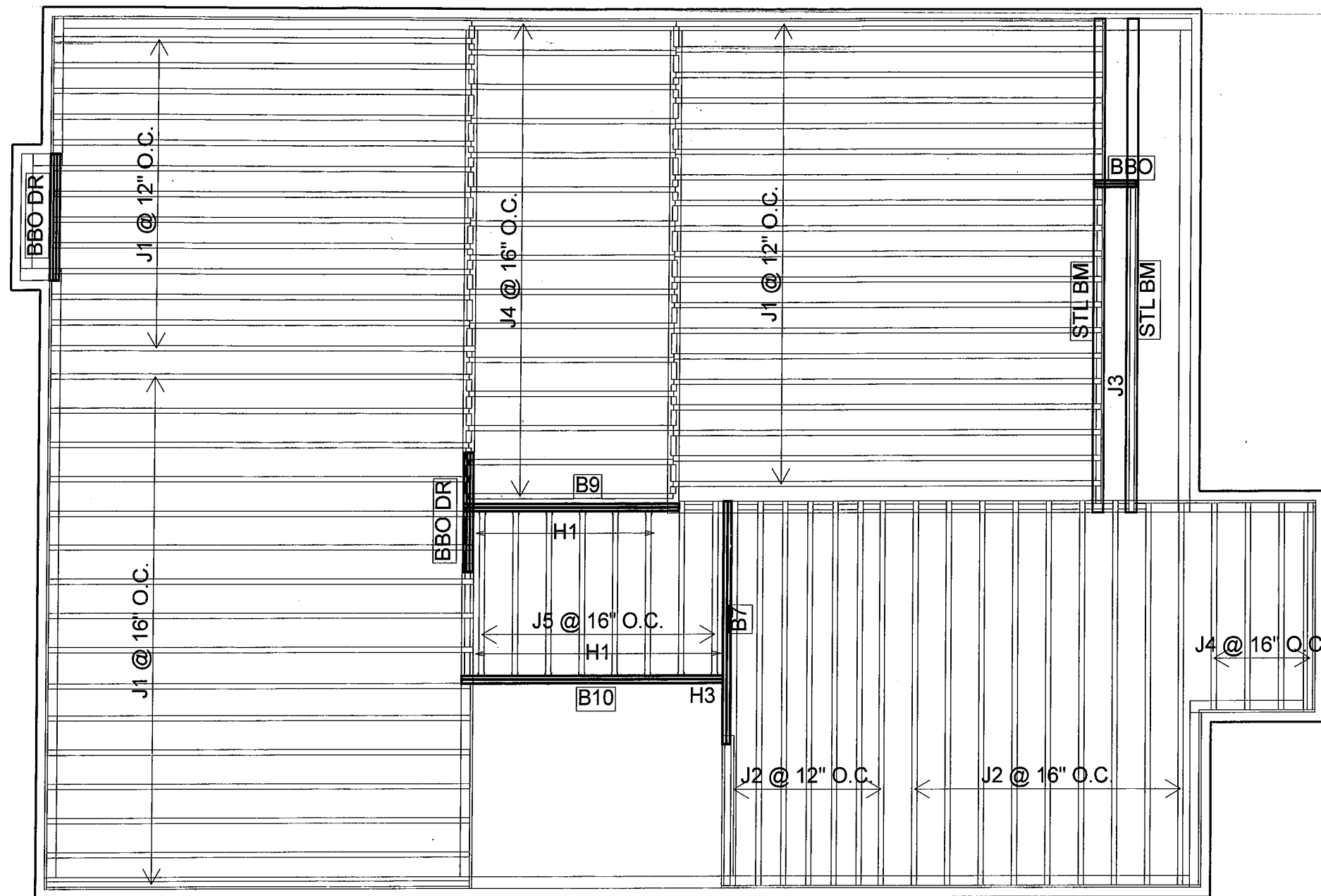
REVISION:

NOTES:
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CHASE AND FIELD CUT OPENINGS
SEE FIGURE 7 TABLES 1 & 2 OF THE
INSTALLATION GUIDE. CERAMIC TILE
APPLICATION AS PER O.B.C. 9.30.6

LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 5/8" GLUED AND NAILED

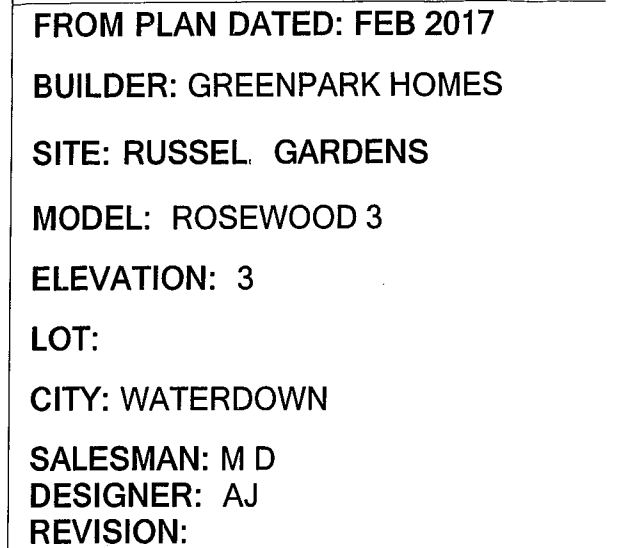
DATE: 6/29/2017

2nd FLOOR



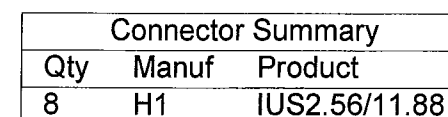
Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	48
J2	16-00-00	11 7/8" NI-40x	1	16
J3	14-00-00	11 7/8" NI-40x	1	1
J4	10-00-00	11 7/8" NI-40x	1	19
J5	8-00-00	11 7/8" NI-40x	1	8
B10	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B7	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B9	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

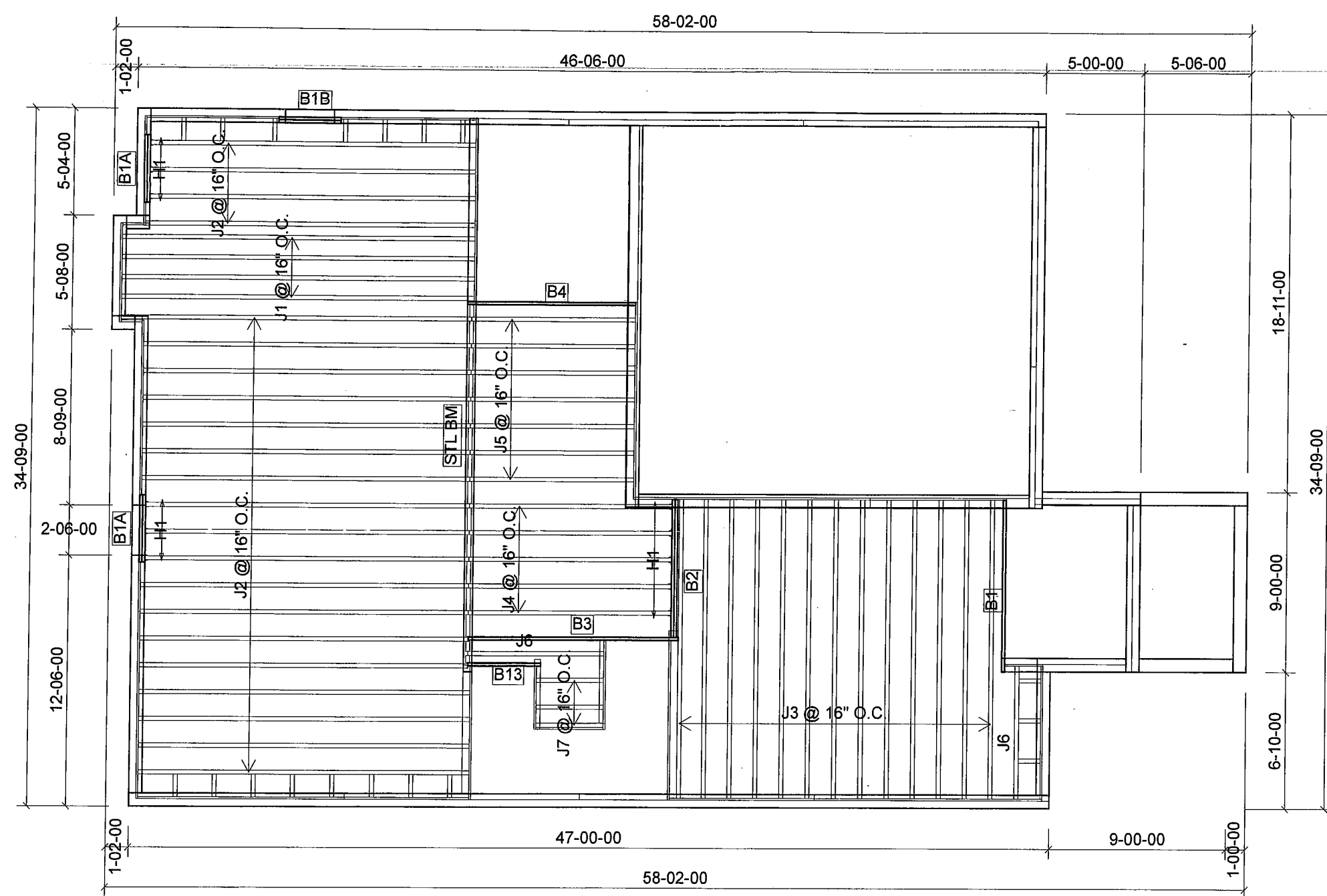
Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/11.88
1	H3	HGUS410



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

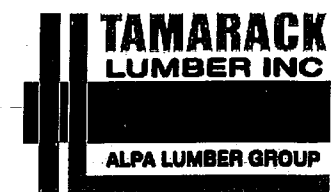
1st FLOOR





Products				
PlotID	Length	Product	Plies	Net Qty
J1	20'-00"-00	11 7/8" NI-40x	1	4
J2	18'-00"-00	11 7/8" NI-40x	1	22
J3	16'-00"-00	11 7/8" NI-40x	1	13
J4	12'-00"-00	11 7/8" NI-40x	1	5
J5	10'-00"-00	11 7/8" NI-40x	1	7
J6	8'-00"-00	11 7/8" NI-40x	1	2
J7	4'-00"-00	11 7/8" NI-40x	1	3
B3	12'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	10'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	10'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2	8'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B13	4'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1A	4'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	4
B1B	4'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

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



FROM PLAN DATED: FEB 2017

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS

MODEL: ROSEWOOD 3

ELEVATION: 3

LOT:

CITY: WATERDOWN

SALESMAN: M D

DESIGNER: AJ

REVISION:

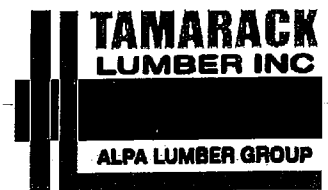
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REINFORCEMENT REQUIREMENTS.
FOR HOLES INCLUDING DUCT
CHASE AND FIELD CUT OPENINGS
SEE FIGURE 7, TABLES 1 & 2.
CERAMIC TILE APPLICATION AS PER
O.B.C 9.30.6.

LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 8/19/2017

1st FLOOR

DECK CONDITION

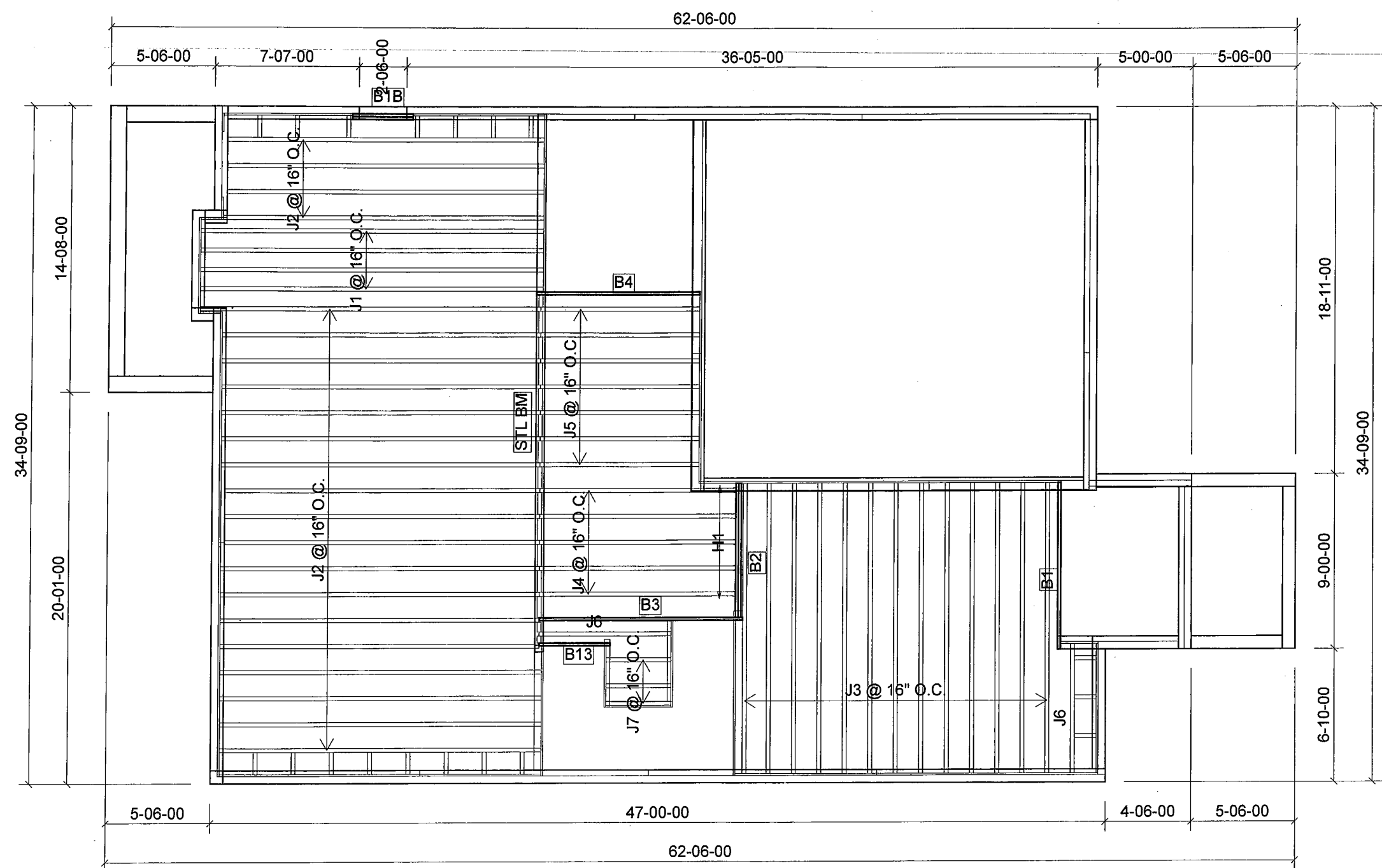


FROM PLAN DATED: FEB 2017
BUILDER: GREENPARK HOMES
SITE: RUSSELL GARDENS
MODEL: ROSEWOOD 3
ELEVATION: 3
LOT:
CITY: WATERDOWN
SALESMAN: M D
DESIGNER: AJ
REVISION:

NOTES:
REFER TO THE NORDIC
INSTALLATION GUIDE FOR PROPER
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SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2
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TILED AREAS: 20 lb/ft
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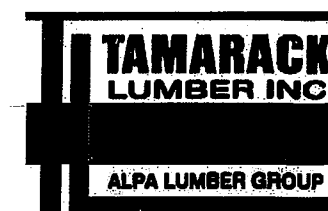
DATE: 8/19/2017

1st FLOOR
WALK UP



Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	4
J2	18-00-00	11 7/8" NI-40x	1	22
J3	16-00-00	11 7/8" NI-40x	1	13
J4	12-00-00	11 7/8" NI-40x	1	5
J5	10-00-00	11 7/8" NI-40x	1	7
J6	8-00-00	11 7/8" NI-40x	1	2
J7	4-00-00	11 7/8" NI-40x	1	3
B3	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B13	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1B	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
5	H1	IUS2.56/11.88

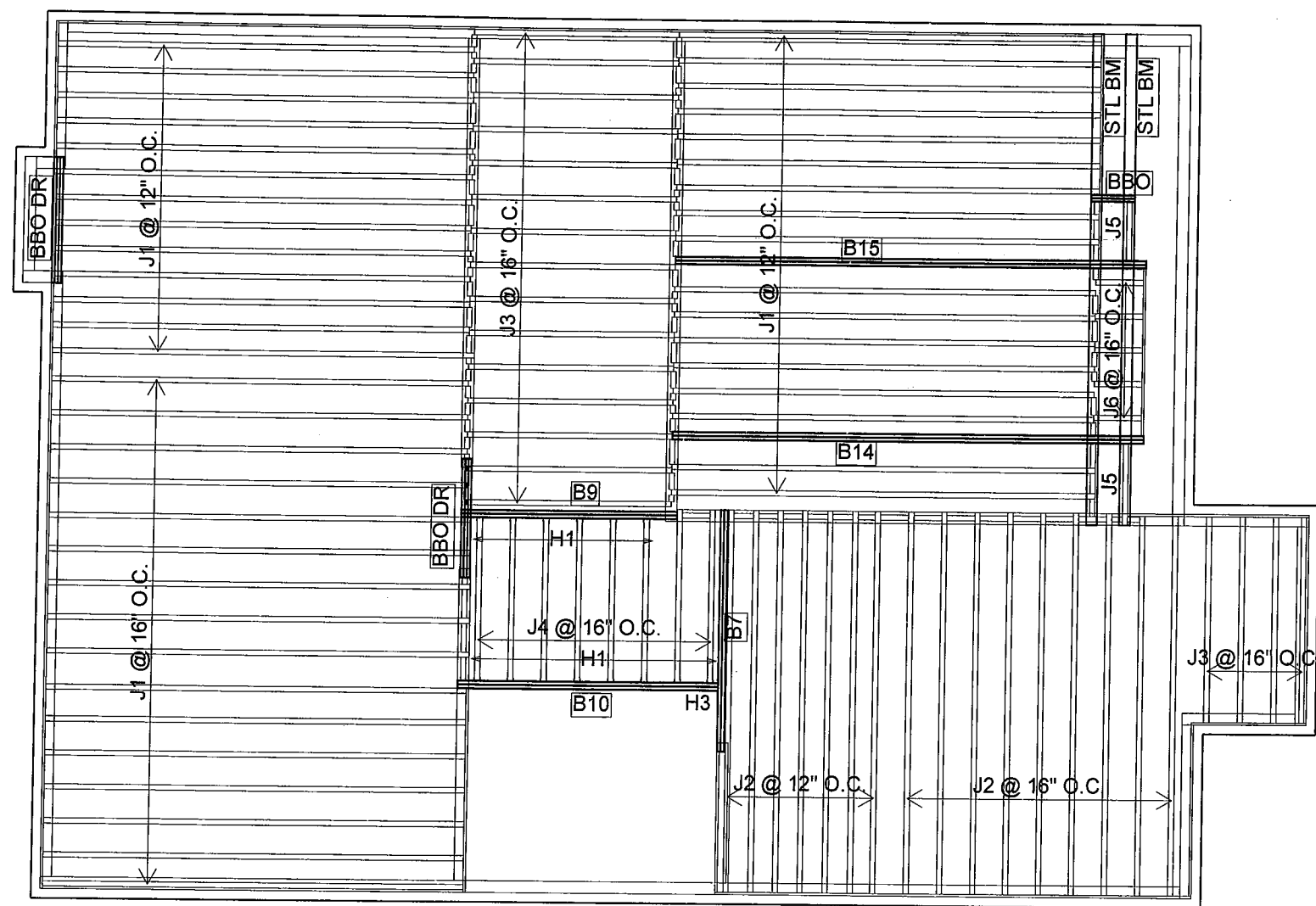


FROM PLAN DATED: FEB 2017
BUILDER: GREENPARK HOMES
SITE: RUSSEL GARDENS
MODEL: ROSEWOOD 3
ELEVATION: 3
LOT:
CITY: WATERDOWN
SALESMAN: M D
DESIGNER: AJ
REVISION:

NOTES:
REFER TO THE NORDIC
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SEE FIGURE 7 TABLES 4 & 5 FOR
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SEE FIGURE 7 TABLES 1 & 2 OF THE
INSTALLATION GUIDE. CERAMIC TILE
APPLICATION AS PER O.B.C. 9.30.6
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 6/29/2017

2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	46
J2	16-00-00	11 7/8" NI-40x	1	16
J3	10-00-00	11 7/8" NI-40x	1	19
J4	8-00-00	11 7/8" NI-40x	1	8
J5	4-00-00	11 7/8" NI-40x	1	2
J6	2-00-00	11 7/8" NI-40x	1	5
B14	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B15	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B10	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B7	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B9	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/11.88
1	H3	HGUS410

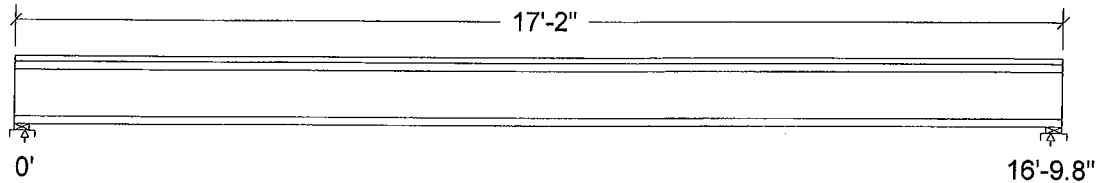
Design Check Calculation Sheet

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
Self-weight	Dead	Full UDL			2.9	plf

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



Unfactored:			
Dead	192		192
Live	336		336
Factored:			
Total	745		745
Bearing:			
Resistance			
Joist	2189		2189
Support	5304		5304
Des ratio			
Joist	0.34		0.34
Support	0.14		0.14
Load case	#2		#2
Length	3		3
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

Nordic 11-7/8" NI-40x Floor joist @ 12" o.c.

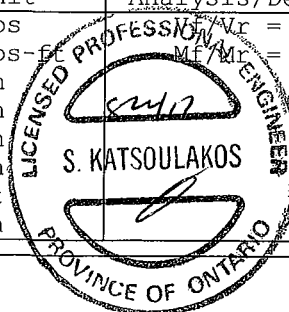
Supports: All - Lumber Sill plate, No.1/No.2

Total length: 17'-2.0"; 5/8" nailed and glued OSB sheathing

This section PASSES the design code check.

Limit States Design using CSA-O86-09 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 745	Vr = 2336	lbs	Vf/Vr = 0.32
Moment(+)	Mf = 3130	Mr = 6255	lbs-ft	Mf/Mr = 0.50
Perm. Defl'n	0.11 = <L/999	0.56 = L/360	in	0.19
Live Defl'n	0.19 = <L/999	0.42 = L/480	in	0.45
Total Defl'n	0.30 = L/682	0.84 = L/240	in	0.35
Bare Defl'n	0.22 = L/934	0.56 = L/360	in	0.39
Vibration	Lmax = 16'-10	Lv = 18'-4	ft	
Defl'n	= 0.029	= 0.038	in	0.77



Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#2
Mr+	6255	1.00	1.00	-	1.000	-	-	-	#2
EI	371.1 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

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

CALCULATIONS:Deflection: E_Ieff = 433e06 lb-in² K= 6.18e06 lbs

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

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC Part 4) and the CSA O86-09 Engineering Design in Wood standard, which includes Update No.1. **CONFORMS TO OBC 2012**
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to 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 4/2017
 STRUCTURAL
 COMPONENT ONLY

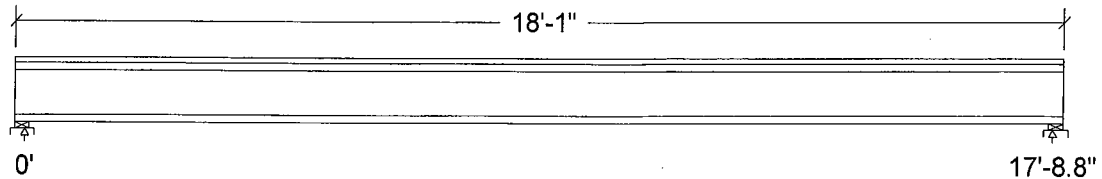
Design Check Calculation Sheet

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
Self-weight	Dead	Full UDL			2.9	plf

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



Unfactored:			
Dead	203		203
Live	355		355
Factored:			
Total	785		785
Bearing:			
Resistance			
Joist	2189		2189
Support	5304		5304
Des ratio			
Joist	0.36		0.36
Support	0.15		0.15
Load case	#2		#2
Length	3		3
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

Nordic 11-7/8" NI-40x Floor joist @ 12" o.c.

Supports: All - Lumber Sill plate, No.1/No.2

Total length: 18'-1.0"; 3/4" nailed and glued OSB sheathing

This section PASSES the design code check.

Limit States Design using CSA-O86-09 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 785	Vr = 2336	lbs	Vf/Vr = 0.34
Moment (+)	Mf = 3480	Mr = 6255	lbs-ft	Mf/Mr = 0.56
Perm. Defl'n	0.13 = <L/999	0.59 = L/360	in	0.22
Live Defl'n	0.23 = L/945	0.44 = L/480	in	0.51
Total Defl'n	0.35 = L/601	0.89 = L/240	in	0.40
Bare Defl'n	0.26 = L/805	0.59 = L/360	in	0.45
Vibration	Lmax = 17'-9	Lv = 19'-6	ft	
Defl'n	= 0.027	= 0.035	in	0.78



DWG NO. TAM 42022-17
STRUCTURAL
COMPONENT ONLY

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#2
Mr+	6255	1.00	1.00	-	1.000	-	-	-	#2
EI	371.1 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

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

CALCULATIONS:Deflection: E_Ieff = 443e06 lb-in² K= 6.18e06 lbs

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

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC Part 4) and the CSA O86-09 Engineering Design in Wood standard, which includes Update No.1.
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. YAW 42825-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i3719)

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

June 29, 2017 17:27:41

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports:

CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

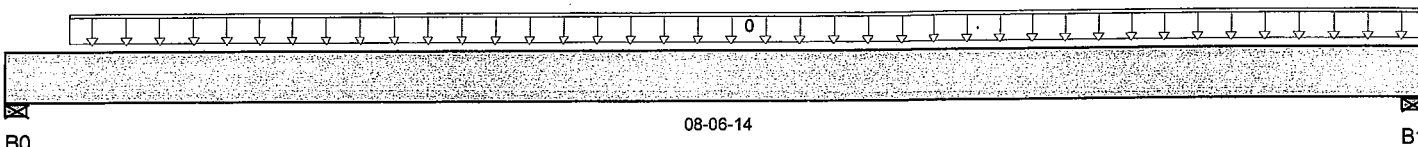
Description: Designs\Flush Beams\Basement\Flush Beams\B1(i3719)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 08-06-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 8"	62 / 0	58 / 0		
B1, 4-3/8"	63 / 0	56 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
0 FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-04-08	08-06-14	15	8	1.00	1.15	n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	293 ft-lbs	19,364 ft-lbs	1.5%	1	04-05-04
End Shear	111 lbs	7,232 lbs	1.5%	1	01-07-14
Total Load Defl.	L/999 (0.005")	n/a	n/a	4	04-05-04
Live Load Defl.	L/999 (0.002")	n/a	n/a	5	04-05-04
Max Defl.	0.005"	n/a	n/a	4	04-05-04
Span / Depth	7.7	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 Wall/Plate	8" x 1-3/4"	165 lbs	1%	1%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	165 lbs	5%	1.8%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 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 42026-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

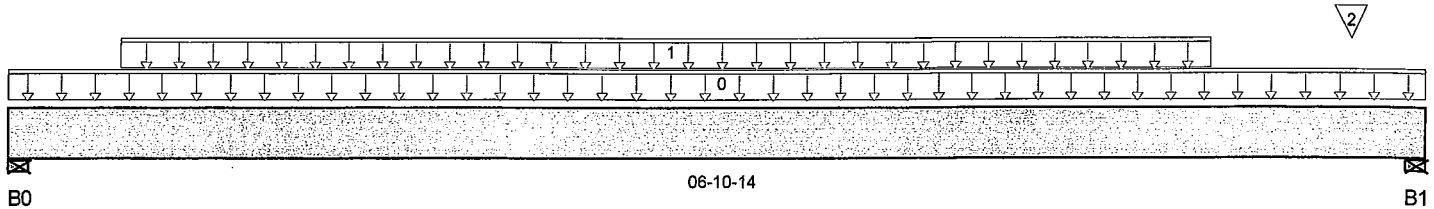
Description: Designs\Flush Beams\Basement\Flush Beams\B2(i3711)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 06-10-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	628 / 0	356 / 0		
B1, 4-3/8"	920 / 0	518 / 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	06-10-14	7	3			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-06-08	05-10-08	208	104			n/a
2	J4(i3720)	Conc. Pt. (lbs)	L	06-06-08	06-06-08	384	208			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,378 ft-lbs	38,727 ft-lbs	6.1%	1	03-10-08
End Shear	1,276 lbs	14,464 lbs	8.8%	1	01-03-14
Total Load Defl.	L/999 (0.012")	n/a	n/a	4	03-05-08
Live Load Defl.	L/999 (0.008")	n/a	n/a	5	03-05-08
Max Defl.	0.012"	n/a	n/a	4	03-05-08
Span / Depth	6.4	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 3-1/2"	1,388 lbs	23.2%	8.1%	Unspecified
B1 Wall/Plate	4-3/8" x 3-1/2"	2,027 lbs	31%	10.8%	Unspecified

Notes

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

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

Calculations assume 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.

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9


 DWG NO. YAM4202917
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



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

June 29, 2017 17:27:41

Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B2(i371

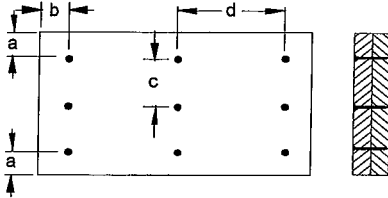
Specifier:

Designer:

Company:

Misc:

Connection Diagram



a minimum = 2" c = 3-15/16"
b minimum = 3" d = 6 1/4"

Calculated Side Load = 461.8 lb/ft

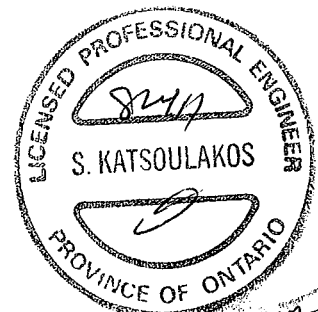
Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: 16d Nails
3 1/2" ARDOX SPIRAL

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.

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DWNG. TAM 4282917
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B3(i3896)

BC CALC® Design Report



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

June 29, 2017 17:27:41

Build 5033

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

Job Name:

Description: Designs\Flush Beams\Basement\Flush Beams\B3(i3896)

Address:

Specifier:

City, Province, Postal Code: WATERDOWN,

Designer:

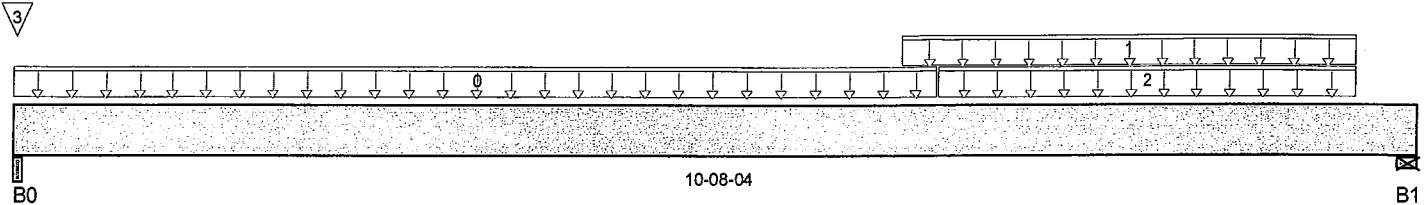
Customer:

Company:

Code reports:

CCMC 12472-R

Misc:



Total Horizontal Product Length = 10-08-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-5/8"	405 / 0	246 / 0		
B1, 5-1/2"	859 / 0	462 / 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	00-00-00	07-00-04	41	20			n/a
1	User Load	Unf. Lin. (lb/ft)	L	06-08-12	10-02-12	240	120			n/a
2	FC 1 Floor Material	Unf. Lin. (lb/ft)	L	07-00-04	10-02-12	27	14			n/a
3	6(i544)	Conc. Pt. (lbs)	L	00-00-04	00-00-04	49	36			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,124 ft-lbs	19,364 ft-lbs	16.1%	1	07-00-04
End Shear	1,290 lbs	7,232 lbs	17.8%	1	09-02-14
Total Load Defl.	L/999 (0.078")	n/a	n/a	4	05-07-05
Live Load Defl.	L/999 (0.05")	n/a	n/a	5	05-07-05
Max Defl.	0.078"	n/a	n/a	4	05-07-05
Span / Depth	10.2	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

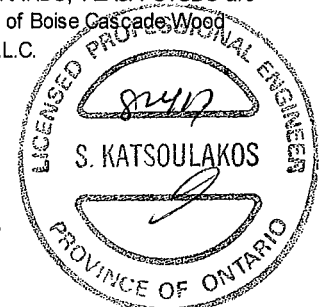
	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	2-5/8" x 1-3/4"	915 lbs	46.6%	16.3%	Unspecified
B1 Wall/Plate	5-1/2" x 1-3/4"	1,866 lbs	45.4%	15.9%	Unspecified

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

DWONG.TAM 42032-17
 STRUCTURAL
 COMPONENT ONLY



BC CALC® Design Report



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

June 29, 2017 17:27:41

Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

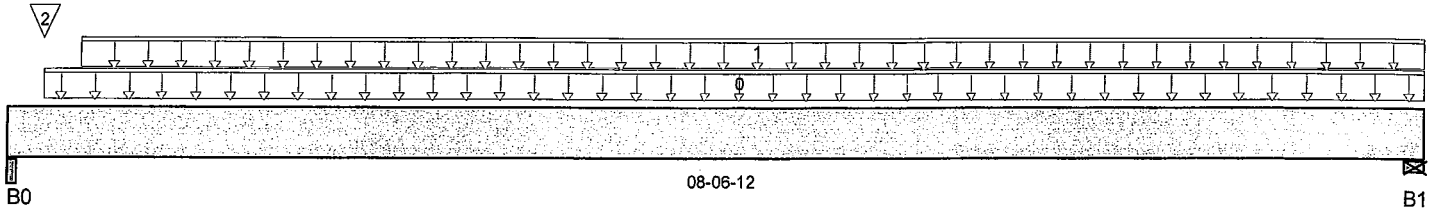
Description: Designs\Flush Beams\Basement\Flush Beams\B4(i3693)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 08-06-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	151 / 0	113 / 0		
B1, 4-3/8"	80 / 0	66 / 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	00-02-10	08-06-12	16	8			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	08-06-12	3	1			n/a
2	5(i532)	Conc. Pt. (lbs)	L	00-02-10	00-02-10	73	48			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	372 ft-lbs	19,364 ft-lbs	1.9%	1	04-03-13
End Shear	138 lbs	7,232 lbs	1.9%	1	01-05-02
Total Load Defl.	L/999 (0.006")	n/a	n/a	4	04-03-13
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	04-03-13
Max Defl.	0.006"	n/a	n/a	4	04-03-13
Span / Depth	8	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 Beam	5-1/4" x 1-3/4"	368 lbs	9.4%	3.3%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	203 lbs	6.2%	2.2%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

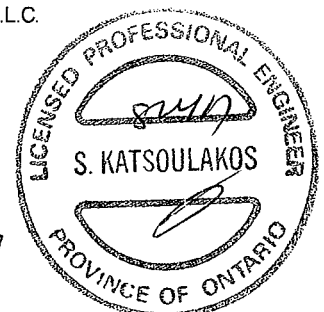
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

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 4203117
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report


Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

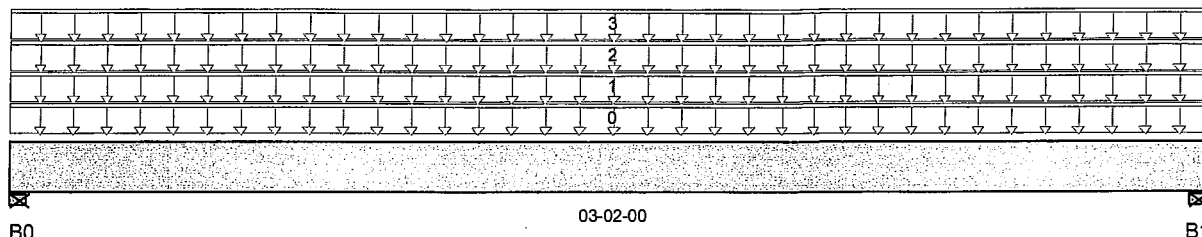
Description: Designs\Flush Beams\Basement\Flush Beams\B1B(i3706

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 03-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	71 / 0	443 / 0		
B1, 4"	71 / 0	443 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	E13(i3076)	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00	18	93			n/a
1	E14(i3256)	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00		81			n/a
2	E6(i429)	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00		81			n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00	27	13			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	338 ft-lbs	25,173 ft-lbs	1.3%	0	01-07-00
End Shear	102 lbs	9,401 lbs	1.1%	0	01-03-14
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-07-00
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-07-00
Max Defl.	0"	n/a	n/a	4	01-07-00
Span / Depth	2.7	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 3-1/2"	621 lbs	16%	5.6%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	621 lbs	16%	5.6%	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 DBC 2012

 DWG NO. TAM 42838-17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



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

June 29, 2017 17:27:41

Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1B(i37

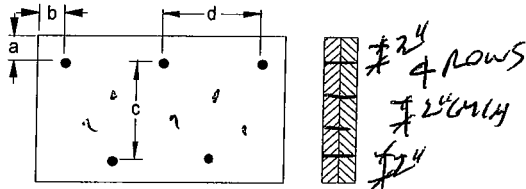
Specifier:

Designer:

Company:

Msc:

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 6"

Member has no side loads.

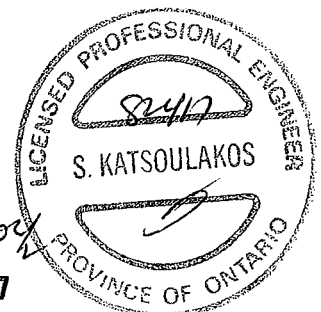
Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

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 CALCO®, 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.



BC CALC® Design Report


Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

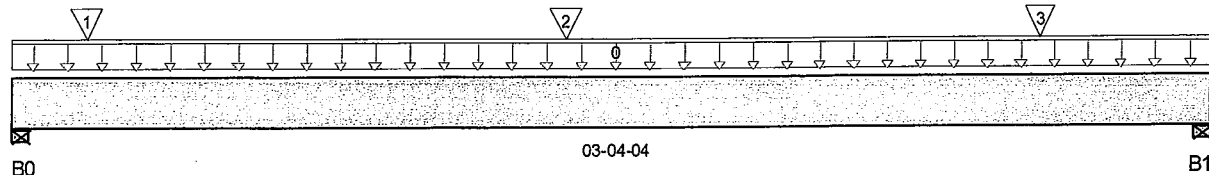
Description: Designs\Flush Beams\Basement\Flush Beams\B1A(i3899

Specifier:

Designer:

Company:

Msc:



Total Horizontal Product Length = 03-04-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	1,241 / 0	768 / 0		
B1, 6-1/4"	1,281 / 0	805 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	E1(i431)	Unf. Lin. (lb/ft)	L	00-00-00	03-04-04	346	254			n/a
1	J2(i3901)	Conc. Pt. (lbs)	L	00-02-08	00-02-08	454	227			n/a
2	J2(i3890)	Conc. Pt. (lbs)	L	01-06-08	01-06-08	454	227			n/a
3	J2(i3821)	Conc. Pt. (lbs)	L	02-10-08	02-10-08	454	227			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,374 ft-lbs	38,727 ft-lbs	3.5%	1	01-06-08
End Shear	1,556 lbs	14,464 lbs	10.8%	1	01-03-14
Total Load Defl.	L/999 (0.001")	n/a	n/a	4	01-06-15
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	01-06-15
Max Defl.	0.001"	n/a	n/a	4	01-06-15
Span / Depth	2.7	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 3-1/2"	2,820 lbs	47.2%	16.5%	Unspecified
B1 Wall/Plate	6-1/4" x 3-1/2"	2,927 lbs	31.3%	11%	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 UBC 2012


 DWG NO. TAM 42833-17
 STRUCTURAL
 COMPONENT ONLY



Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1A(i38

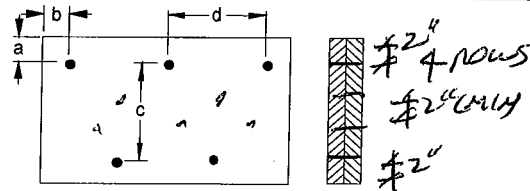
Specifier:

Designer:

Company:

Misc:

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 6"

Calculated Side Load = 862.9 lb/ft

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

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

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.

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DWONG, TAM 42833 17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

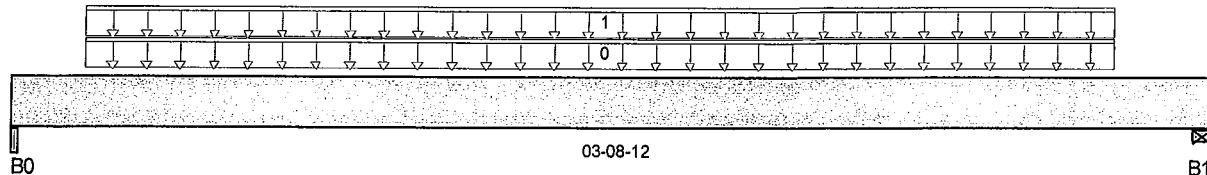
Description: Designs\Flush Beams\Basment\Flush Beams\B13(i3872

Specifier:

Designer:

Company:

Msc:



Total Horizontal Product Length = 03-08-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-5/8"	404 / 0	213 / 0		
B1, 3-1/2"	406 / 0	214 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	User Load	Unf. Lin. (lb/ft)	L	00-02-12	03-05-04	240	120			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	03-05-04	12	6			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	758 ft-lbs	19,364 ft-lbs	3.9%	1	01-09-15
End Shear	862 lbs	7,232 lbs	11.9%	1	01-02-08
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	01-09-15
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	01-09-15
Max Defl.	0.002"	n/a	n/a	4	01-09-15
Span / Depth	3.4	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 Beam	2-5/8" x 1-3/4"	871 lbs	44.4%	15.5%	Unspecified
B1 Wall/Plate	3-1/2" x 1-3/4"	877 lbs	33.5%	11.7%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

BC CALO®, 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.



DWD NO. TAM 4283417
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

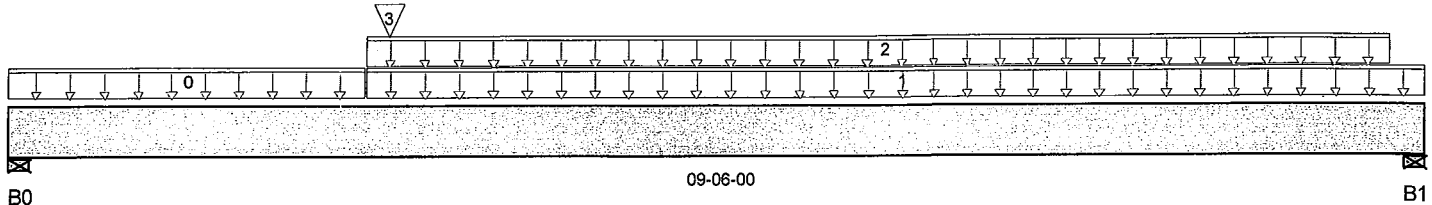
Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i3850)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 09-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	708 / 0	457 / 0		
B1, 5-1/2"	285 / 0	216 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-04-12	9	4			n/a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	02-04-12	09-06-00	6	3			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	02-04-12	09-03-04	6	3			n/a
3	B10(i3965)	Conc. Pt. (lbs)	L	02-06-08	02-06-08	885	505			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,600 ft-lbs	38,727 ft-lbs	9.3%	1	02-06-08
End Shear	1,589 lbs	14,464 lbs	11%	1	01-03-14
Total Load Defl.	L/999 (0.029")	n/a	n/a	4	04-03-03
Live Load Defl.	L/999 (0.018")	n/a	n/a	5	04-03-03
Max Defl.	0.029"	n/a	n/a	4	04-03-03
Span / Depth	8.9	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 3-1/2"	1,634 lbs	27.3%	9.6%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	698 lbs	8.5%	3%	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

 DWG NO. TAM 4283517
**STRUCTURAL
 COMPONENT ONLY**



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor...IB7(i3850)

BC CALC® Design Report



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

June 29, 2017 17:27:42

Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i3850

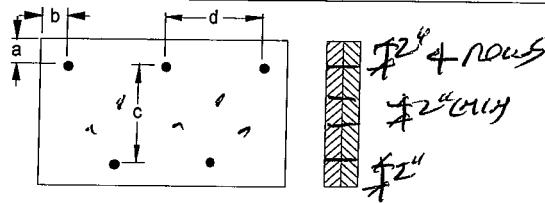
Specifier:

Designer:

Company:

Misc:

Connection Diagram



a minimum = 2" c = 7-7/8" 4"
b minimum = 3" d = 4"

Calculated Side Load = 206.2 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: Nails

3 1/2" ARDOX SPIRAL

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.

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DWG NO. TAM 1728317
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



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

June 29, 2017 17:27:42

Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

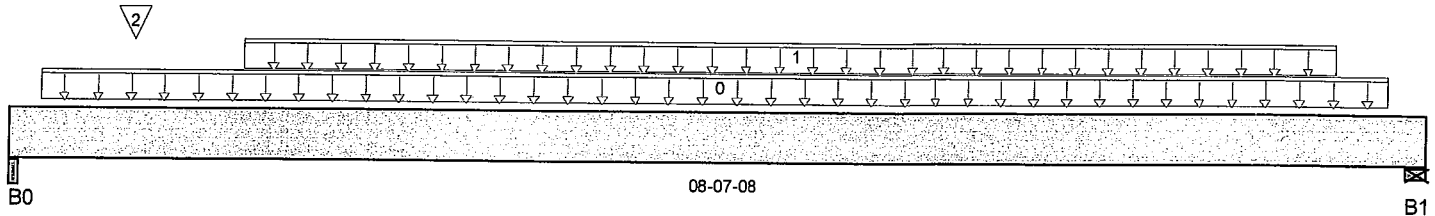
Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(i3839)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 08-07-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-1/2"	555 / 0	329 / 0		
B1, 5-1/2"	545 / 0	326 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-04	08-04-12	9	4			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-05-00	08-01-00	134	68			n/a
2	J4(i3992)	Conc. Pt. (lbs)	L	00-09-00	00-09-00	125	62			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,502 ft-lbs	38,727 ft-lbs	6.5%	1	04-09-00
End Shear	1,088 lbs	14,464 lbs	7.5%	1	07-02-02
Total Load Defl.	L/999 (0.02")	n/a	n/a	4	04-03-00
Live Load Defl.	L/999 (0.013")	n/a	n/a	5	04-03-00
Max Defl.	0.02"	n/a	n/a	4	04-03-00
Span / Depth	8	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	4-1/2" x 3-1/2"	1,243 lbs	18.5%	6.5%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	1,225 lbs	14.9%	5.2%	Unspecified

Notes

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

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

Calculations assume 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 DBC 2012



DWD NO. TAM 428367
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(i3839

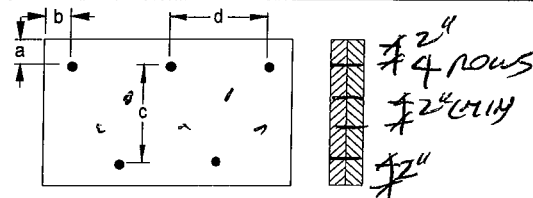
Specifier:

Designer:

Company:

Misc:

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 6"

Calculated Side Load = 251.6 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

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.

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DWONG TAM 42836
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10(i3965)

BC CALC® Design Report



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

June 29, 2017 17:27:42

Build 5033

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

Job Name:

Description: Designs\Flush Beams\1st Floor\Flush Beams\B10(i3965)

Address:

Specifier:

City, Province, Postal Code: WATERDOWN,

Designer:

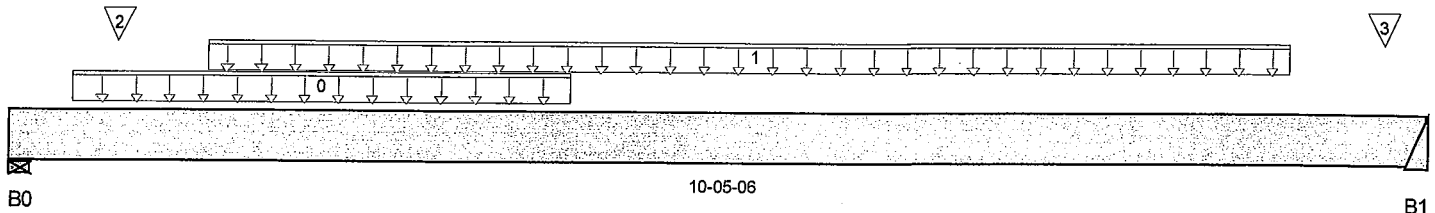
Customer:

Company:

Code reports:

CCMC 12472-R

Misc:



Total Horizontal Product Length = 10-05-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,397 / 0	765 / 0		
B1	892 / 0	509 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	User Load	Unf. Lin. (lb/ft)	L	00-05-08	04-01-08	240	120			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-05-08	09-05-08	141	71			n/a
2	J4(i3992)	Conc. Pt. (lbs)	L	00-09-08	00-09-08	131	66			n/a
3	J4(i3985)	Conc. Pt. (lbs)	L	10-01-08	10-01-08	148	74			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,825 ft-lbs	38,727 ft-lbs	15%	1	04-09-08
End Shear	2,336 lbs	14,464 lbs	16.2%	1	01-05-06
Total Load Defl.	L/999 (0.075")	n/a	n/a	4	05-01-08
Live Load Defl.	L/999 (0.048")	n/a	n/a	5	05-01-08
Max Defl.	0.075"	n/a	n/a	4	05-01-08
Span / Depth	10.1	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	3,053 lbs	37.1%	13%	Unspecified
B1 Hanger	2" x 3-1/2"	1,974 lbs	n/a	23.1%	HGUS410

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



DWG NO. TAM4283717
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10(i3965)

BC CALC® Design Report



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

June 29, 2017 17:27:42

Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B10(i3965)

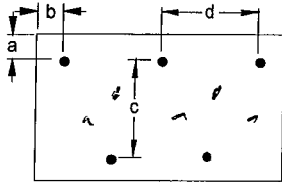
Specifier:

Designer:

Company:

Misc:

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 6"

Calculated Side Load = 286.2 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

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DWG NO. TAM 42839/17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Dry | 3 spans | Right cantilever | 0/12 slope (deg)

June 29, 2017 17:27:43

Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

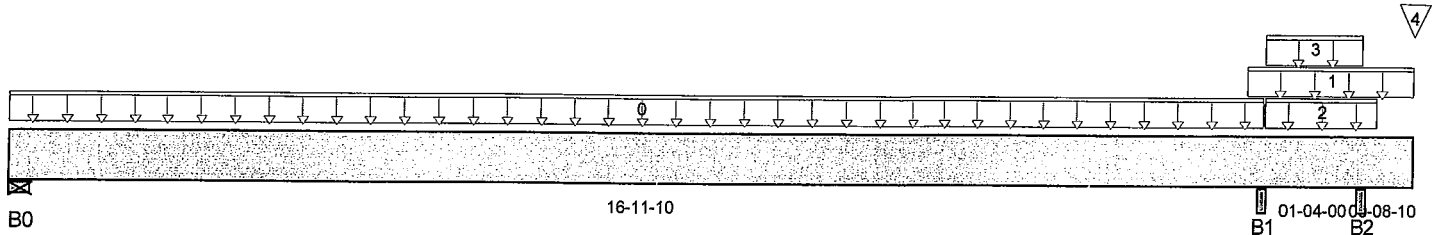
Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i3723)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 19-00-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/4"	265 / 0	212 / 0	0 / 0	
B1, 5-1/4"	1,469 / 0	1,217 / 0	58 / 0	
B2, 5-1/4"	130 / 916	0 / 481	152 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	17-00-00	40	20			n/a
1	User Load	Unf. Lin. (lb/ft)	L	16-09-00	19-00-04	33	130	78		n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	17-00-00	18-06-04	17	9			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	17-00-00	18-03-14	50	25			n/a
4	FC2 Floor Material	Conc. Pt. (lbs)	L	19-00-00	19-00-00	18	38	20		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,085 ft-lbs	38,727 ft-lbs	5.4%	27	06-08-01
Neg. Moment	-3,280 ft-lbs	-38,727 ft-lbs	8.5%	39	16-11-10
End Shear	540 lbs	14,464 lbs	3.7%	1	01-02-10
Cont. Shear	2,254 lbs	14,464 lbs	15.6%	92	18-02-02
Uplift	1,976 lbs	n/a	n/a	92	18-03-10
Total Load Defl.	L/999 (0.06")	n/a	n/a	241	07-05-10
Live Load Defl.	L/999 (0.034")	n/a	n/a	345	07-05-10
Total Neg. Defl.	L/999 (-0")	n/a	n/a	241	17-06-08
Max Defl.	0.06"	n/a	n/a	241	07-05-10
Span / Depth	17	n/a	n/a		00-00-00

Bearing Supports

Bearing Supports			Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	2-3/4" x 3-1/2"		663 lbs	16.1%	5.6%	Unspecified
B1	Beam	5-1/4" x 3-1/2"		3,754 lbs	47.8%	16.7%	Unspecified
B2	Beam	5-1/4" x 3-1/2"		1,976 lbs	25.2%	8.8%	Unspecified

Cautions

Uplift of 1,976 lbs found at span 2 - Right.

Uplift of 1,976 lbs found at span 3 - Left.



DWG NO. TAM 420317
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Dry | 3 spans | Right cantilever | 0/12 slope (deg)

June 29, 2017 17:27:43

Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i372

Specifier:

Designer:

Company:

Misc:

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.

CONFORMS TO CBC 2012

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

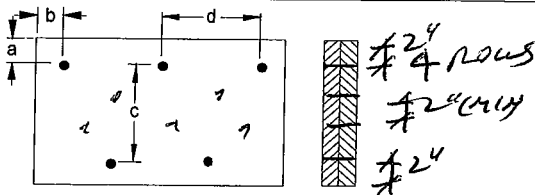
Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

Disclosure

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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.

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 8"

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

Member has no side loads.

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAM 42017
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor...B15(i3712)

BC CALC® Design Report



Dry | 3 spans | Right cantilever | 0/12 slope (deg)

June 29, 2017 17:27:43

Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

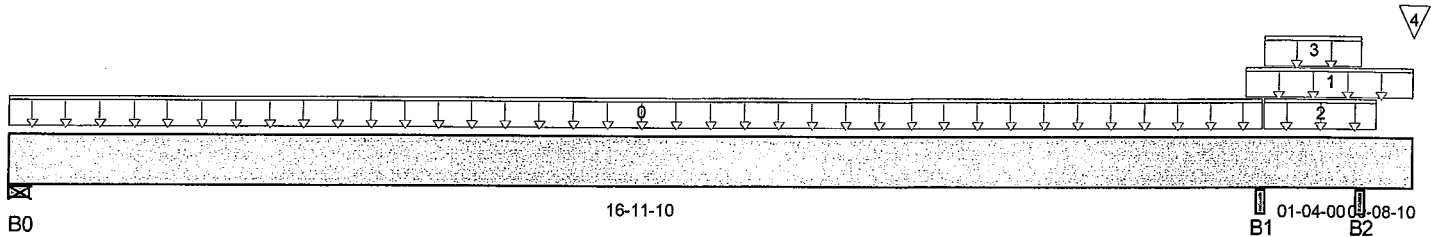
Description: Designs\Flush Beams\1st Floor\Flush Beams\B15(i3712)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 19-00-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/4"	265 / 0	212 / 0	0 / 0	
B1, 5-1/4"	1,458 / 0	1,216 / 0	59 / 0	
B2, 5-1/4"	112 / 928	0 / 502	144 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	17-00-00	40	20			n/a
1	User Load	Unf. Lin. (lb/ft)	L	16-09-00	19-00-04	33	130	78		n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	17-00-00	18-06-04	14	7			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	17-00-00	18-03-14	35	17			n/a
4	FC2 Floor Material	Conc. Pt. (lbs)	L	19-00-00	19-00-00	15	28	14		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,085 ft-lbs	38,727 ft-lbs	5.4%	27	06-08-01
Neg. Moment	-3,279 ft-lbs	-38,727 ft-lbs	8.5%	39	16-11-10
End Shear	540 lbs	14,464 lbs	3.7%	1	01-02-10
Cont. Shear	2,269 lbs	14,464 lbs	15.7%	92	18-02-02
Uplift	2,019 lbs	n/a	n/a	94	18-03-10
Total Load Defl.	L/999 (0.06")	n/a	n/a	241	07-05-10
Live Load Defl.	L/999 (0.034")	n/a	n/a	345	07-05-10
Total Neg. Defl.	L/999 (-0")	n/a	n/a	241	17-06-06
Max Defl.	0.06"	n/a	n/a	241	07-05-10
Span / Depth	17	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	2-3/4" x 3-1/2"	663 lbs	16.1%	5.6%	Unspecified
B1 Beam	5-1/4" x 3-1/2"	3,737 lbs	47.6%	16.7%	Unspecified
B2 Beam	5-1/4" x 3-1/2"	2,019 lbs	25.7%	9%	Unspecified

Cautions

Uplift of 2,019 lbs found at span 2 - Right.

Uplift of 2,019 lbs found at span 3 - Left.

(SIMPSON 1-T522 @ 0.32)



DWG NO. TAM 420297
STRUCTURAL
COMPONENT ONLY



Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 3 EL-3 NEW.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B15(i3712)

Specifier:

Designer:

Company:

Misc:

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.

CONFORMS TO OBC 2012

Unbalanced snow loads determined from building geometry were used in selected products verification.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

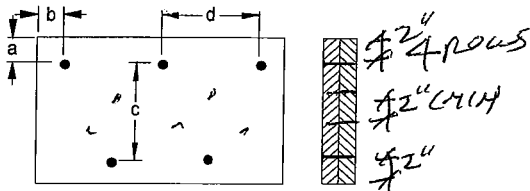
Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

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.

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Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 12"

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

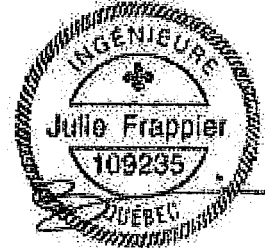
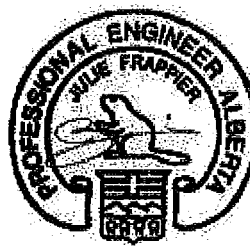
Member has no side loads.

Connectors are: 16d nails

3 1/2" ARDOX SPIRAL



DWOND.TAM 4283717
STRUCTURAL
COMPONENT ONLY



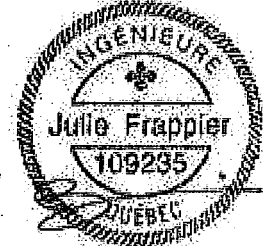
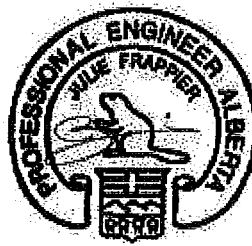
Maximum Floor Spans

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

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



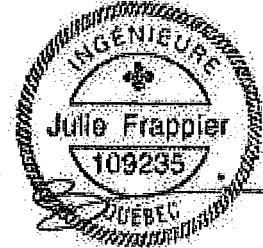
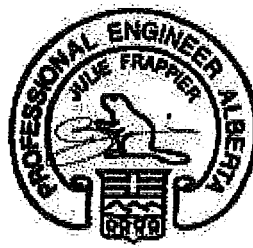
Maximum Floor Spans

Live Load = 40 psf, Dead Load = 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.



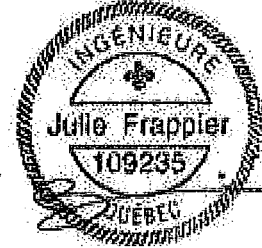
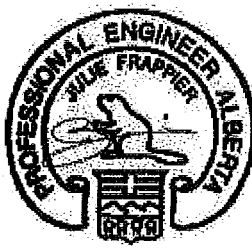
Maximum Floor Spans

Live Load = 40 psf, Dead Load = 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

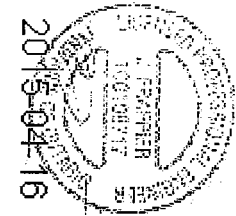
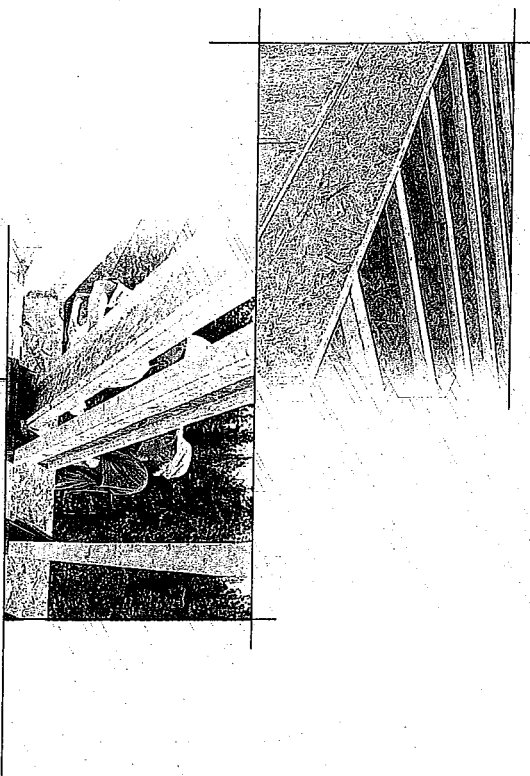
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"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



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SAFETY AND CONSTRUCTION PRECAUTIONS

WARNING

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

Avoid Accidents by Following these Important Guidelines:

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-briding at joist ends. When I-joists are applied continuous 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-briding.
4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
5. Never install a damaged I-joist.

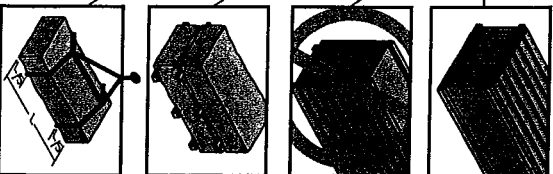


Never stack building materials over unsheathed I-joists. Once sheathed, do not over-stress I-joist with concentrated loads from building materials.

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

STORAGE AND HANDLING GUIDELINES

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



MAXIMUM FLOOR SPANS

- 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.
- 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. Adjacent spans shall meet the requirements given in CGS-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.
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate 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 uniform loads, an engineering analysis may be required based on the use of the design properties.
- Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
- SI units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

WEB STIFFENERS

RECOMMENDATIONS:

- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found in the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.
 - A bearing stiffener is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
 - A load stiffener is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the cantilever tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.
- SI units conversion: 1 inch = 25.4 mm

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"
NI-20	NI-20	15.1'	14.2'	13.5'	12.8'	14.3'	13.2'	12.0'	11.7'
NI-20	NI-20	16.1'	15.2'	14.4'	13.7'	15.3'	14.2'	13.0'	12.7'
NI-20	NI-20	17.1'	16.1'	15.3'	14.6'	16.3'	15.2'	14.0'	13.7'
NI-20	NI-20	17.5'	16.5'	15.6'	14.9'	16.7'	15.6'	14.3'	14.0'
NI-20	NI-20	18.5'	17.5'	16.6'	15.9'	17.7'	16.6'	15.3'	15.0'
NI-20	NI-20	19.5'	18.5'	17.6'	16.9'	18.7'	17.6'	16.3'	16.0'
NI-20	NI-20	20.4'	19.4'	18.5'	17.8'	19.6'	18.5'	17.1'	16.8'
NI-20	NI-20	21.4'	20.4'	19.5'	18.8'	20.6'	19.5'	18.1'	17.8'
NI-20	NI-20	22.4'	21.4'	20.5'	19.8'	21.6'	20.5'	19.1'	18.8'
NI-20	NI-20	23.4'	22.4'	21.5'	20.8'	22.6'	21.5'	20.1'	19.8'
NI-20	NI-20	24.4'	23.4'	22.5'	21.8'	23.6'	22.5'	21.1'	20.8'
NI-20	NI-20	25.4'	24.4'	23.5'	22.8'	24.6'	23.5'	22.1'	21.8'
NI-20	NI-20	26.4'	25.4'	24.5'	23.8'	25.6'	24.5'	23.1'	22.8'
NI-20	NI-20	27.4'	26.4'	25.5'	24.8'	26.6'	25.5'	24.1'	23.8'
NI-20	NI-20	28.4'	27.4'	26.5'	25.8'	27.6'	26.5'	25.1'	24.8'
NI-20	NI-20	29.4'	28.4'	27.5'	26.8'	28.6'	27.5'	26.1'	25.8'
NI-20	NI-20	30.4'	29.4'	28.5'	27.8'	29.6'	28.5'	27.1'	26.8'
NI-20	NI-20	31.4'	30.4'	29.5'	28.8'	30.6'	29.5'	28.1'	27.8'
NI-20	NI-20	32.4'	31.4'	30.5'	29.8'	31.6'	30.5'	29.1'	28.8'
NI-20	NI-20	33.4'	32.4'	31.5'	30.8'	32.6'	31.5'	30.1'	29.8'
NI-20	NI-20	34.4'	33.4'	32.5'	31.8'	33.6'	32.5'	31.1'	30.8'
NI-20	NI-20	35.4'	34.4'	33.5'	32.8'	34.6'	33.5'	32.1'	31.8'
NI-20	NI-20	36.4'	35.4'	34.5'	33.8'	35.6'	34.5'	33.1'	32.8'
NI-20	NI-20	37.4'	36.4'	35.5'	34.8'	36.6'	35.5'	34.1'	33.8'
NI-20	NI-20	38.4'	37.4'	36.5'	35.8'	37.6'	36.5'	35.1'	34.8'
NI-20	NI-20	39.4'	38.4'	37.5'	36.8'	38.6'	37.5'	36.1'	35.8'
NI-20	NI-20	40.4'	39.4'	38.5'	37.8'	39.6'	38.5'	37.1'	36.8'
NI-20	NI-20	41.4'	40.4'	39.5'	38.8'	40.6'	39.5'	38.1'	37.8'
NI-20	NI-20	42.4'	41.4'	40.5'	39.8'	41.6'	40.5'	39.1'	38.8'
NI-20	NI-20	43.4'	42.4'	41.5'	40.8'	42.6'	41.5'	40.1'	39.8'
NI-20	NI-20	44.4'	43.4'	42.5'	41.8'	43.6'	42.5'	41.1'	40.8'
NI-20	NI-20	45.4'	44.4'	43.5'	42.8'	44.6'	43.5'	42.1'	41.8'
NI-20	NI-20	46.4'	45.4'	44.5'	43.8'	45.6'	44.5'	43.1'	42.8'
NI-20	NI-20	47.4'	46.4'	45.5'	44.8'	46.6'	45.5'	44.1'	43.8'
NI-20	NI-20	48.4'	47.4'	46.5'	45.8'	47.6'	46.5'	45.1'	44.8'
NI-20	NI-20	49.4'	48.4'	47.5'	46.8'	48.6'	47.5'	46.1'	45.8'
NI-20	NI-20	50.4'	49.4'	48.5'	47.8'	49.6'	48.5'	47.1'	46.8'
NI-20	NI-20	51.4'	50.4'	49.5'	48.8'	50.6'	49.5'	48.1'	47.8'
NI-20	NI-20	52.4'	51.4'	50.5'	49.8'	51.6'	50.5'	49.1'	48.8'
NI-20	NI-20	53.4'	52.4'	51.5'	50.8'	52.6'	51.5'	50.1'	49.8'
NI-20	NI-20	54.4'	53.4'	52.5'	51.8'	53.6'	52.5'	51.1'	50.8'
NI-20	NI-20	55.4'	54.4'	53.5'	52.8'	54.6'	53.5'	52.1'	51.8'
NI-20	NI-20	56.4'	55.4'	54.5'	53.8'	55.6'	54.5'	53.1'	52.8'
NI-20	NI-20	57.4'	56.4'	55.5'	54.8'	56.6'	55.5'	54.1'	53.8'
NI-20	NI-20	58.4'	57.4'	56.5'	55.8'	57.6'	56.5'	55.1'	54.8'
NI-20	NI-20	59.4'	58.4'	57.5'	56.8'	58.6'	57.5'	56.1'	55.8'
NI-20	NI-20	60.4'	59.4'	58.5'	57.8'	59.6'	58.5'	57.1'	56.8'
NI-20	NI-20	61.4'	60.4'	59.5'	58.8'	60.6'	59.5'	58.1'	57.8'
NI-20	NI-20	62.4'	61.4'	60.5'	59.8'	61.6'	60.5'	59.1'	58.8'
NI-20	NI-20	63.4'	62.4'	61.5'	60.8'	62.6'	61.5'	60.1'	59.8'
NI-20	NI-20	64.4'	63.4'	62.5'	61.8'	63.6'	62.5'	61.1'	60.8'
NI-20	NI-20	65.4'	64.4'	63.5'	62.8'	64.6'	63.5'	62.1'	61.8'
NI-20	NI-20	66.4'	65.4'	64.5'	63.8'	65.6'	64.5'	63.1'	62.8'
NI-20	NI-20	67.4'	66.4'	65.5'	64.8'	66.6'	65.5'	64.1'	63.8'
NI-20	NI-20	68.4'	67.4'	66.5'	65.8'	67.6'	66.5'	65.1'	64.8'
NI-20	NI-20	69.4'	68.4'	67.5'	66.8'	68.6'	67.5'	66.1'	65.8'
NI-20	NI-20	70.4'	69.4'	68.5'	67.8'	69.6'	68.5'	67.1'	66.8'
NI-20	NI-20	71.4'	70.4'	69.5'	68.8'	70.6'	69.5'	68.1'	67.8'
NI-20	NI-20	72.4'	71.4'	70.5'	69.8'	71.6'	70.5'	69.1'	68.8'
NI-20	NI-20	73.4'	72.4'	71.5'	70.8'	72.6'	71.5'	70.1'	69.8'
NI-20	NI-20	74.4'	73.4'	72.5'	71.8'	73.6'	72.5'	71.1'	70.8'
NI-20	NI-20	75.4'	74.4'	73.5'	72.8'	74.6'	73.5'	72.1'	71.8'
NI-20	NI-20	76.4'	75.4'	74.5'	73.8'	75.6'	74.5'	73.1'	72.8'
NI-20	NI-20	77.4'	76.4'	75.5'	74.8'	76.6'	75.5'	74.1'	73.8'
NI-20	NI-20	78.4'	77.4'	76.5'	75.8'	77.6'	76.5'	75.1'	74.8'
NI-20	NI-20	79.4'	78.4'	77.5'	76.8'	78.6'	77.5'	76.1'	75.8'
NI-20	NI-20	80.4'	79.4'	78.5'	77.8'	79.6'	78.5'	77.1'	76.8'
NI-20	NI-20	81.4'	80.4'	79.5'	78.8'	80.6'	79.5'	78.1'	77.8'
NI-20	NI-20	82.4'	81.4'	80.5'	79.8'	81.6'	80.5'	79.1'	78.8'
NI-20	NI-20	83.4'	82.4'	81.5'	80.8'	82.6'	81.5'	80.1'	79.8'
NI-20	NI-20	84.4'	83.4'	82.5'	81.8'	83.6'	82.5'	81.1'	80.8'
NI-20	NI-20	85.4'	84.4'	83.5'	82.8'	84.6'	83.5'	82.1'	81.8'
NI-20	NI-20	86.4'	85.4'	84.5'	83.8'	85.6'	84.5'	83.1'	82.8'
NI-20	NI-20	87.4'	86.4'	85.5'	84.8'	86.6'	85.5'	84.1'	83.8'
NI-20	NI-20	88.4'	87.4'	86.5'	85.8'	87.6'	86.5'	85.1'	84.8'
NI-20	NI-20	89.4'	88.4'	87.5'	86.8'	88.6'	87.5'	86.1'	85.8'
NI-20	NI-20	90.4'	89.4'	88.5'	87.8'	89.6'	88.5'	87.1'	86.8'
NI-20	NI-20	91.4'	90.4'	89.5'	88.8'	90.6'	89.5'	88.1'	87.8'
NI-20	NI-20	92.4'	91.4'	90.5'	89.8'	91.6'	90.5'	89.1'	88.8'
NI-20	NI-20	93.4'	92.4'	91.5'	90.8'	92.6'	91.5'	90.1'	89.8'
NI-20	NI-20	94.4'	93.4'	92.5'	91.8'	93.6'	92.5'	91.1'	90.8'
NI-20	NI-20	95.4'	94.4'	93.5'	92.8'	94.6'	93.5'	92.1'	91.8'
NI-20	NI-20	96.4'	95.4'	94.5'	93.8'	95.6'	94.5'	93.1'	92.8'
NI-20	NI-20	97.4'	96.4'	95.5'	94.8'	96.6'	95.5'	94.1'	93.8'
NI-20	NI-20	98.4'	97.4'	96.5'	95.8'	97.6'	96.5'	95.1'	94.8'
NI-20	NI-20	99.4'	98.4'	97.5'	96.8'	98.6'	97.5'	96.1'	95.8'
NI-20	NI-20	100.4'	99.4'	98.5'	97.8'	99.6'	98.5'	97.1'	96.8'
NI-20	NI-20	101.4'	100.4'	99.5'	98.8'	100.6'	99.5'	98.1'	97.8'
NI-20	NI-20	102.4'	101.4'	100.5'	99.8'	101.6'	100.5'	99.1'	98.8'
NI-20	NI-20	103.4'	102.4'	101.5'	100.8'	102.6'	101.5'	100.1'	99.8'
NI-20	NI-20	104.4'	103.4'	102.5'	101.8'	103.6'	102.5'	101.1'	100.8'
NI-20	NI-20	105.4'	104.4'	103.5'	102.8'	104.6'	103.5'	102.1'	101.8'
NI-20	NI-20	106.4'	105.4'	104.5'	103.8'	105.6'	104.5'	103.1'	102.8'
NI-20	NI-20	107.4'	106.4'	105.5'	104.8'	106.6'	105.5'	104.1'	103.8'
NI-20	NI-20	108.4'	107.4'	106.5'	105.8'	107.6'	106.5'	105.1'	104.8'
NI-20	NI-20	109.4'	108.4'	107.5'	106.8'	108.6'	107.5'	106.1'	105.8'
NI-20	NI-20	110.4'	109.4'	108.5'	107.8'	109.6'	108.5'	107.1'	106.8'
NI-20	NI-20	111.4'	110.4'	109.5'	108.8'	110.6'	109.5'	108.1'	107.8'
NI-20	NI-20	112.4'	111.4'	110.5'	109.8'	111.6'	110.5'	109.1'	108.8'
NI-20	NI-20	113.4'	112.4'	111.5'	110.8'	112.6'	111.5'	110.1'	109.8'
NI-20	NI-20	114.4'	113.4'	112.5'	111.8'	113.6'	112.5'	111.1'	110.8'
NI-20	NI-20	115.4'	114.4'	113.5'	112.8'	114.6'	113.5'	112.1'	111.8'
NI-20	NI-20	116.4'	115.4'	114.5'	113.8'	115.6'	114.5'	113.1'	112.8'
NI-20	NI-20	117.4'	116.4'	115.5'	114.8'	116.6'	115.5'	114.1'	113.8'
NI-20	NI-20	118.4'	117.4'	116.5'	115.8'	117.6'	116.5'	115.1'	114.8'
NI-20	NI-20	119.4'	118.4'	117.5'	116.8'	118.6'	117.5'	116.1'	115.8'
NI-20	NI-20	120.4'	119.4'	118.5'	117.8'	119.6'	118.5'	117.1'	116.8'
NI-20	NI-20	121.4'	120.4'	119.5'	118.8'	120.6'	119.5'	118.1'	117.8'
NI-20	NI-20	122.4'	121.4'	120.5'	119.8'	121.6'	120.5'	119.1'	118.8'
NI-20	NI-20	123.4'	122.4'	121.5'	120.8'	122.6'	121.5'	120.1'	119.8'
NI-20	NI-20	124.4'	123.4'	122.5'	121.8'	123.6'	122.5'	121.1'	120.8'
NI-20	NI-20	125.4'	124.4'	123.5'	122.8'	124.6'	123.5'	122.1'	121.8'
NI-20	NI-20	126.4'	125.4'	124.5'	123.8'	125.6'	124.5'	123.1'	122.8'
NI-20	NI-20	127.4'	126.4'	125.5'	124.8'	126.6'	125.5'	124.1'	123.8'
NI-20	NI-20	128.4'	127.4'	126.5'	125.8'	127.6'	126.5'	125.1'	124.8'
NI-20	NI-20	129.4'	128.4'	127.5'	126.8'	128.6'	127.5'	126.1'	125.8'
NI-20	NI-20	130.4'	129.4'	128.5'	127.8'	129.6'	128.5'	127.1'	126.8'
NI-20	NI-20	131.4'	130.4'	129.5'	128.8'	130.6'	129.5'	128.1'	127.8'
NI-20	NI-20	132.4'	131.4'	130.5'	129.8'	131.6'	130.5'	129.1'	128.8'
NI-20	NI-20	133.4'	132.4'	131.5'	130.8'	132.6'	131.5'	130.1'	129.8'
NI-20	NI-20	134.4'	133.4'	132.5'	131.8'	133.6'	132.5'	131.1'	130.8'
NI-20	NI-20	135.4'	134.4'	133.5'	132.8'	134.6'	133.5'	132.1'	131.8'
NI-20	NI-20	136.4'	135.4'	134.5'	133.8'	135.6'	134.5'	133.1'	132.8'
NI-20	NI-20	137.4'	136.4'	135.5'	134.8'	136.6'	135.5'	134.1'	133.8'
NI-20	NI-20	138.4'	137.4'	136.5'	135.8'	137.6'	136.5'	135.1'	134.8'
NI-20	NI-20	139.4'	138.4'	137.5'	136.8'	138.6'	137.5'	136.1'	135.8'
NI-20	NI-20	140.4'	139.4'	138.5'	137.8'	139.6'	138.5'	137.	

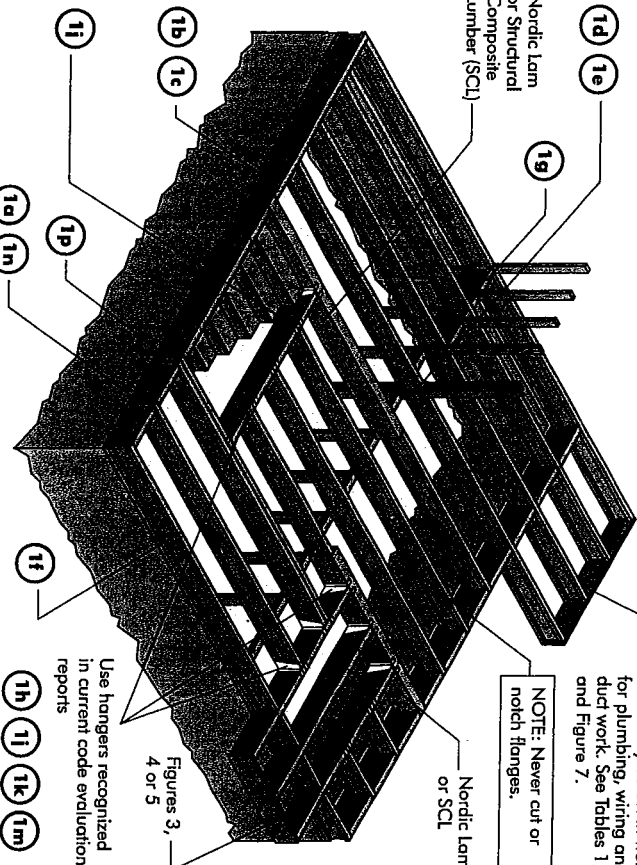
INSTALLING NORDIC I-JOISTS

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 rafter. 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 gypsun 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.

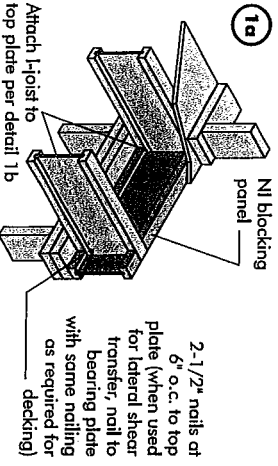
2015-04-16

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

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

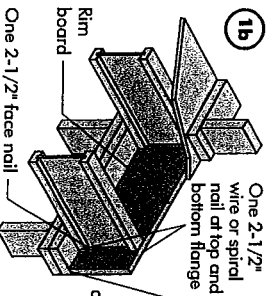


All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for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



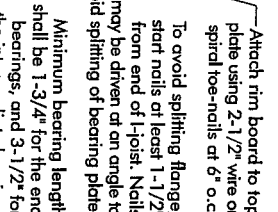
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
NI Joists	3,300

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



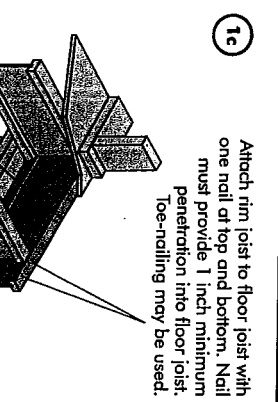
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

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



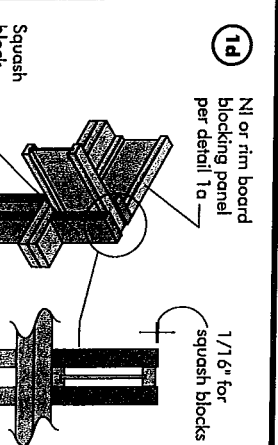
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

*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.



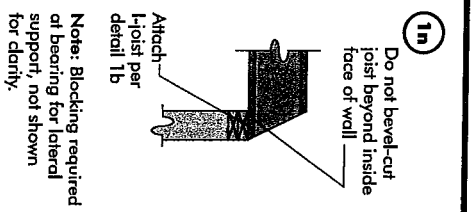
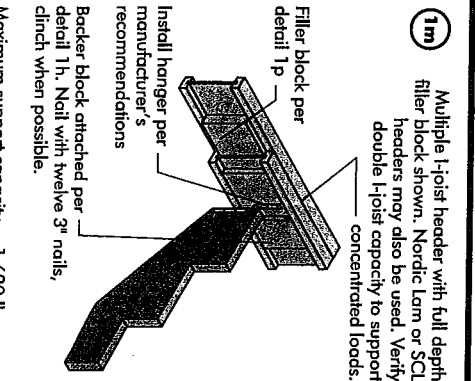
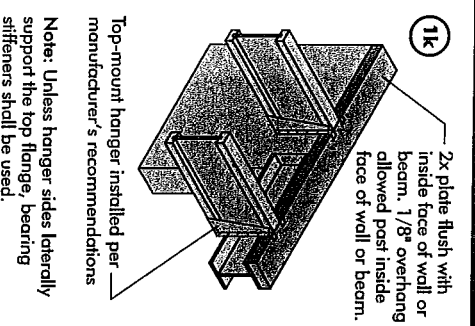
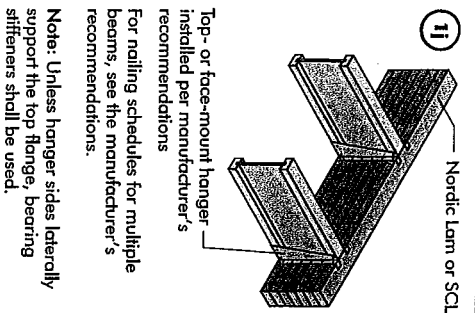
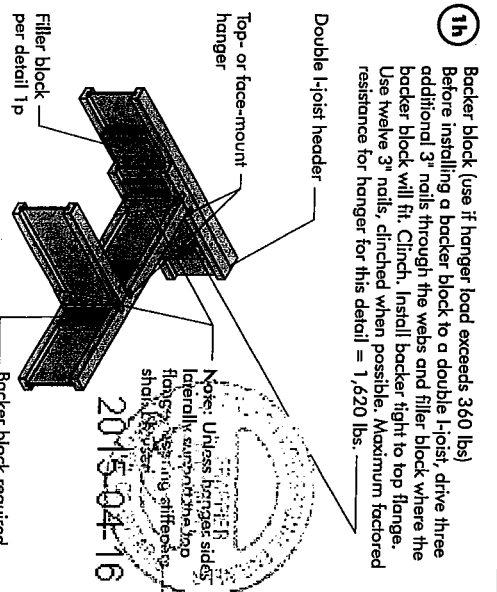
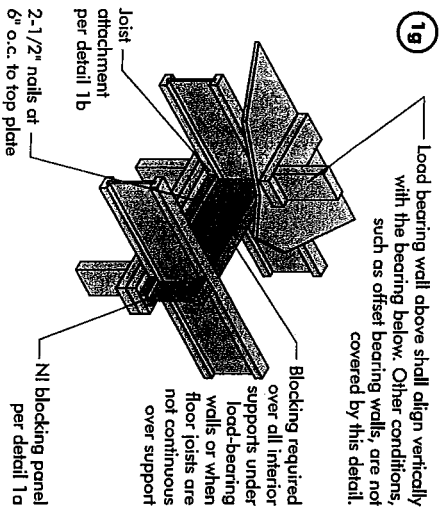
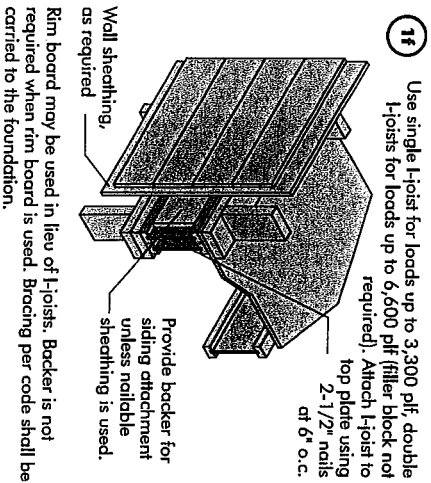
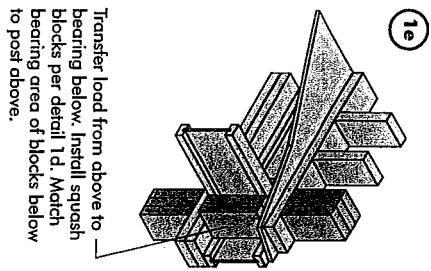
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

*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.



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

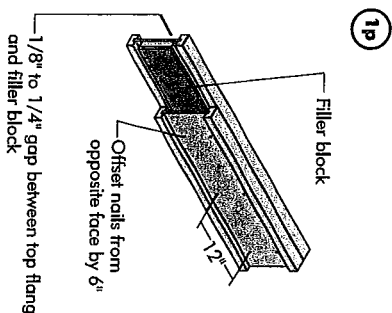
*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.



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"

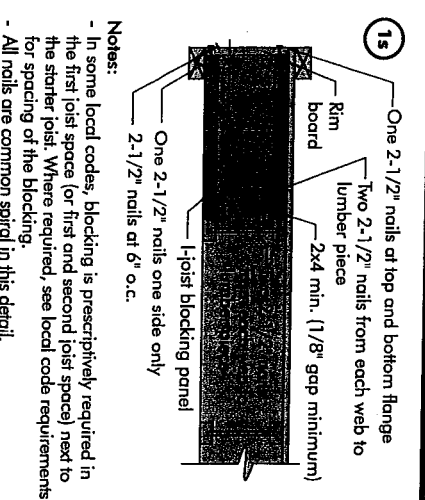
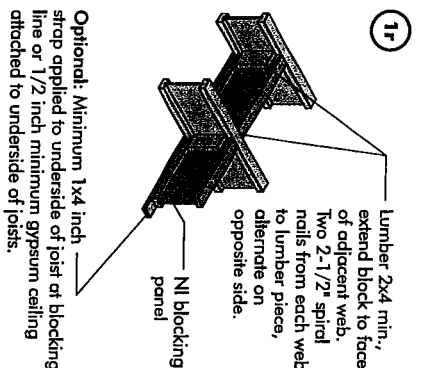
* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Standard.
 ** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net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

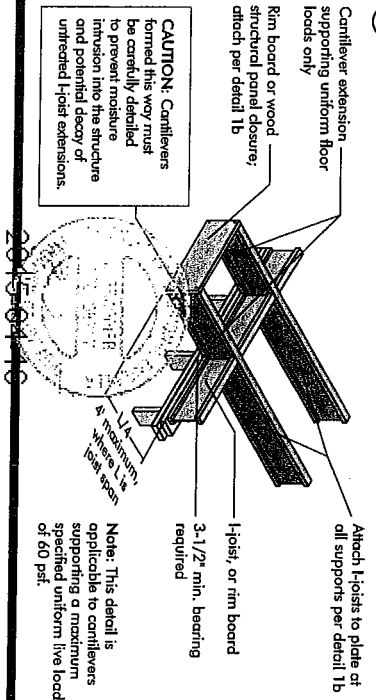
Flange Size	Joist Depth	Filler Block Size
2-1/2" x 1-1/2"	9-1/2" x 14"	2-1/8" x 6"
2-1/2" x 1-1/2"	11-7/8" x 14"	2-1/8" x 8"
3-1/2" x 1-1/2"	9-1/2" x 14"	2-1/8" x 10"
3-1/2" x 1-1/2"	11-7/8" x 14"	2-1/8" x 12"
3-1/2" x 2"	11-7/8" x 14"	3" x 6"
3-1/2" x 2"	11-7/8" x 14"	3" x 8"
3-1/2" x 2"	11-7/8" x 14"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



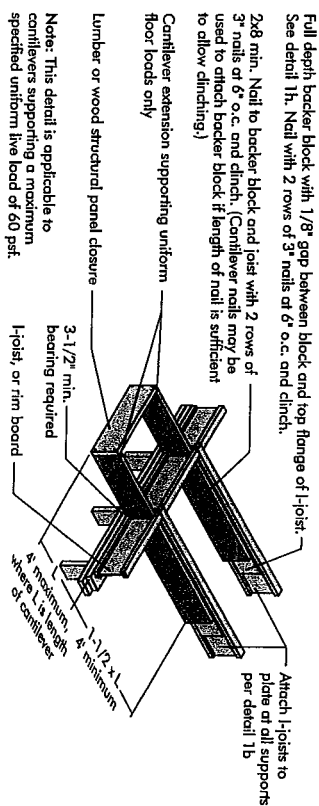
- Notes:**
- In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.
 - All nails are common spiral in this detail.

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

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

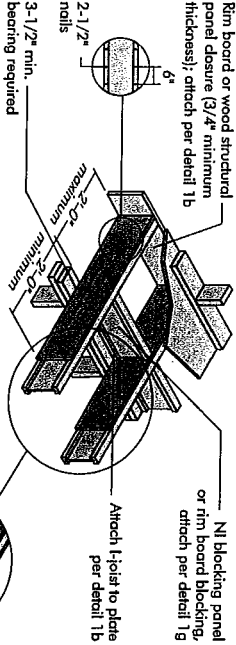


3b) LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



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

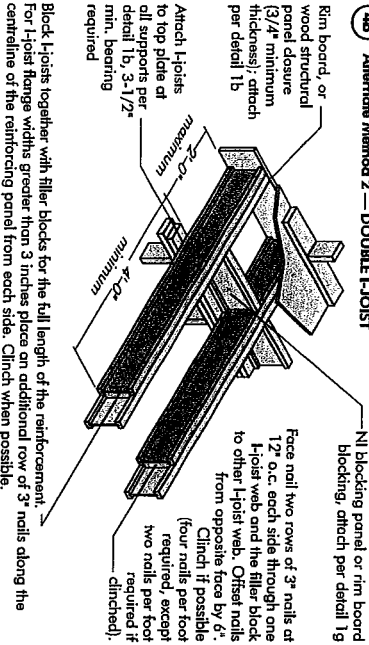
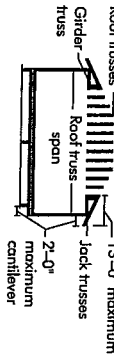
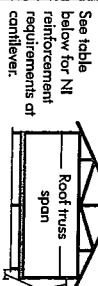


FIGURE 4 (continued)



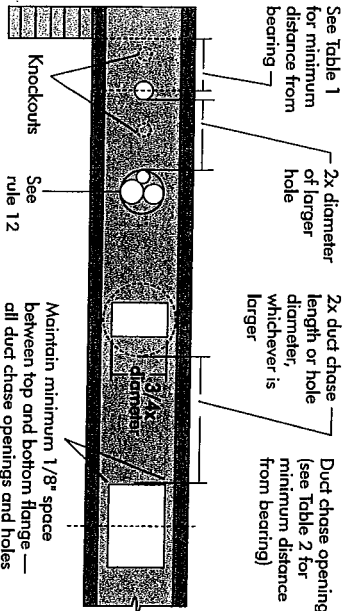
CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)											
		LL = 30 psf, DL = 15 psf JOIST SPACING (in.)				LL = 40 psf, DL = 15 psf JOIST SPACING (in.)				LL = 50 psf, DL = 15 psf JOIST SPACING (in.)			
9-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
11-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
13-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
15-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
17-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
19-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
21-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
23-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
25-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
27-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
29-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
31-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
33-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
35-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
37-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
39-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
41-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
43-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
45-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
47-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
49-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
51-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
53-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
55-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
57-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
59-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
61-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
63-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
65-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
67-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
69-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
71-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
73-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
75-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
77-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
79-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
81-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
83-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
85-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
87-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
89-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
91-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
93-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
95-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
97-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
99-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
101-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
103-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
105-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
107-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
109-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
111-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
113-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
115-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
117-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
119-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
121-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
123-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
125-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
127-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
129-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
131-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
133-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
135-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
137-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
139-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
141-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
143-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
145-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
147-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
149-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
151-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
153-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
155-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
157-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
159-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
161-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
163-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
165-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
167-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
169-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
171-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
173-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
175-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
177-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
179-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
181-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
183-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
185-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
187-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
189-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
191-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
193-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
195-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
197-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
199-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
201-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
203-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
205-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
207-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
209-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
211-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
213-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
215-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
217-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
219-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
221-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
223-1/2	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
225-1/2	12	12	16	19.2	24	12	16	19.2					

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

**FIGURE 7
FIELD-CUT HOLE LOCATOR**



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

**TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS
Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf**

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of hole (ft-in.)												Span adjustment Factor		
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4		11	12
10	20	10 1/2	11 1/2	12 1/2	13 1/2	14 1/2	15 1/2	16 1/2	17 1/2	18 1/2	19 1/2	20 1/2	21 1/2	22 1/2	23 1/2	24 1/2
12	24	12 1/2	13 1/2	14 1/2	15 1/2	16 1/2	17 1/2	18 1/2	19 1/2	20 1/2	21 1/2	22 1/2	23 1/2	24 1/2	25 1/2	26 1/2
14	28	14 1/2	15 1/2	16 1/2	17 1/2	18 1/2	19 1/2	20 1/2	21 1/2	22 1/2	23 1/2	24 1/2	25 1/2	26 1/2	27 1/2	28 1/2
16	32	16 1/2	17 1/2	18 1/2	19 1/2	20 1/2	21 1/2	22 1/2	23 1/2	24 1/2	25 1/2	26 1/2	27 1/2	28 1/2	29 1/2	30 1/2
18	36	18 1/2	19 1/2	20 1/2	21 1/2	22 1/2	23 1/2	24 1/2	25 1/2	26 1/2	27 1/2	28 1/2	29 1/2	30 1/2	31 1/2	32 1/2
20	40	20 1/2	21 1/2	22 1/2	23 1/2	24 1/2	25 1/2	26 1/2	27 1/2	28 1/2	29 1/2	30 1/2	31 1/2	32 1/2	33 1/2	34 1/2
22	44	22 1/2	23 1/2	24 1/2	25 1/2	26 1/2	27 1/2	28 1/2	29 1/2	30 1/2	31 1/2	32 1/2	33 1/2	34 1/2	35 1/2	36 1/2
24	48	24 1/2	25 1/2	26 1/2	27 1/2	28 1/2	29 1/2	30 1/2	31 1/2	32 1/2	33 1/2	34 1/2	35 1/2	36 1/2	37 1/2	38 1/2
26	52	26 1/2	27 1/2	28 1/2	29 1/2	30 1/2	31 1/2	32 1/2	33 1/2	34 1/2	35 1/2	36 1/2	37 1/2	38 1/2	39 1/2	40 1/2
28	56	28 1/2	29 1/2	30 1/2	31 1/2	32 1/2	33 1/2	34 1/2	35 1/2	36 1/2	37 1/2	38 1/2	39 1/2	40 1/2	41 1/2	42 1/2
30	60	30 1/2	31 1/2	32 1/2	33 1/2	34 1/2	35 1/2	36 1/2	37 1/2	38 1/2	39 1/2	40 1/2	41 1/2	42 1/2	43 1/2	44 1/2
32	64	32 1/2	33 1/2	34 1/2	35 1/2	36 1/2	37 1/2	38 1/2	39 1/2	40 1/2	41 1/2	42 1/2	43 1/2	44 1/2	45 1/2	46 1/2
34	68	34 1/2	35 1/2	36 1/2	37 1/2	38 1/2	39 1/2	40 1/2	41 1/2	42 1/2	43 1/2	44 1/2	45 1/2	46 1/2	47 1/2	48 1/2
36	72	36 1/2	37 1/2	38 1/2	39 1/2	40 1/2	41 1/2	42 1/2	43 1/2	44 1/2	45 1/2	46 1/2	47 1/2	48 1/2	49 1/2	50 1/2
38	76	38 1/2	39 1/2	40 1/2	41 1/2	42 1/2	43 1/2	44 1/2	45 1/2	46 1/2	47 1/2	48 1/2	49 1/2	50 1/2	51 1/2	52 1/2
40	80	40 1/2	41 1/2	42 1/2	43 1/2	44 1/2	45 1/2	46 1/2	47 1/2	48 1/2	49 1/2	50 1/2	51 1/2	52 1/2	53 1/2	54 1/2
42	84	42 1/2	43 1/2	44 1/2	45 1/2	46 1/2	47 1/2	48 1/2	49 1/2	50 1/2	51 1/2	52 1/2	53 1/2	54 1/2	55 1/2	56 1/2
44	88	44 1/2	45 1/2	46 1/2	47 1/2	48 1/2	49 1/2	50 1/2	51 1/2	52 1/2	53 1/2	54 1/2	55 1/2	56 1/2	57 1/2	58 1/2
46	92	46 1/2	47 1/2	48 1/2	49 1/2	50 1/2	51 1/2	52 1/2	53 1/2	54 1/2	55 1/2	56 1/2	57 1/2	58 1/2	59 1/2	60 1/2
48	96	48 1/2	49 1/2	50 1/2	51 1/2	52 1/2	53 1/2	54 1/2	55 1/2	56 1/2	57 1/2	58 1/2	59 1/2	60 1/2	61 1/2	62 1/2
50	100	50 1/2	51 1/2	52 1/2	53 1/2	54 1/2	55 1/2	56 1/2	57 1/2	58 1/2	59 1/2	60 1/2	61 1/2	62 1/2	63 1/2	64 1/2
52	104	52 1/2	53 1/2	54 1/2	55 1/2	56 1/2	57 1/2	58 1/2	59 1/2	60 1/2	61 1/2	62 1/2	63 1/2	64 1/2	65 1/2	66 1/2
54	108	54 1/2	55 1/2	56 1/2	57 1/2	58 1/2	59 1/2	60 1/2	61 1/2	62 1/2	63 1/2	64 1/2	65 1/2	66 1/2	67 1/2	68 1/2
56	112	56 1/2	57 1/2	58 1/2	59 1/2	60 1/2	61 1/2	62 1/2	63 1/2	64 1/2	65 1/2	66 1/2	67 1/2	68 1/2	69 1/2	70 1/2
58	116	58 1/2	59 1/2	60 1/2	61 1/2	62 1/2	63 1/2	64 1/2	65 1/2	66 1/2	67 1/2	68 1/2	69 1/2	70 1/2	71 1/2	72 1/2
60	120	60 1/2	61 1/2	62 1/2	63 1/2	64 1/2	65 1/2	66 1/2	67 1/2	68 1/2	69 1/2	70 1/2	71 1/2	72 1/2	73 1/2	74 1/2
62	124	62 1/2	63 1/2	64 1/2	65 1/2	66 1/2	67 1/2	68 1/2	69 1/2	70 1/2	71 1/2	72 1/2	73 1/2	74 1/2	75 1/2	76 1/2
64	128	64 1/2	65 1/2	66 1/2	67 1/2	68 1/2	69 1/2	70 1/2	71 1/2	72 1/2	73 1/2	74 1/2	75 1/2	76 1/2	77 1/2	78 1/2
66	132	66 1/2	67 1/2	68 1/2	69 1/2	70 1/2	71 1/2	72 1/2	73 1/2	74 1/2	75 1/2	76 1/2	77 1/2	78 1/2	79 1/2	80 1/2
68	136	68 1/2	69 1/2	70 1/2	71 1/2	72 1/2	73 1/2	74 1/2	75 1/2	76 1/2	77 1/2	78 1/2	79 1/2	80 1/2	81 1/2	82 1/2
70	140	70 1/2	71 1/2	72 1/2	73 1/2	74 1/2	75 1/2	76 1/2	77 1/2	78 1/2	79 1/2	80 1/2	81 1/2	82 1/2	83 1/2	84 1/2
72	144	72 1/2	73 1/2	74 1/2	75 1/2	76 1/2	77 1/2	78 1/2	79 1/2	80 1/2	81 1/2	82 1/2	83 1/2	84 1/2	85 1/2	86 1/2
74	148	74 1/2	75 1/2	76 1/2	77 1/2	78 1/2	79 1/2	80 1/2	81 1/2	82 1/2	83 1/2	84 1/2	85 1/2	86 1/2	87 1/2	88 1/2
76	152	76 1/2	77 1/2	78 1/2	79 1/2	80 1/2	81 1/2	82 1/2	83 1/2	84 1/2	85 1/2	86 1/2	87 1/2	88 1/2	89 1/2	90 1/2
78	156	78 1/2	79 1/2	80 1/2	81 1/2	82 1/2	83 1/2	84 1/2	85 1/2	86 1/2	87 1/2	88 1/2	89 1/2	90 1/2	91 1/2	92 1/2
80	160	80 1/2	81 1/2	82 1/2	83 1/2	84 1/2	85 1/2	86 1/2	87 1/2	88 1/2	89 1/2	90 1/2	91 1/2	92 1/2	93 1/2	94 1/2
82	164	82 1/2	83 1/2	84 1/2	85 1/2	86 1/2	87 1/2	88 1/2	89 1/2	90 1/2	91 1/2	92 1/2	93 1/2	94 1/2	95 1/2	96 1/2
84	168	84 1/2	85 1/2	86 1/2	87 1/2	88 1/2	89 1/2	90 1/2	91 1/2	92 1/2	93 1/2	94 1/2	95 1/2	96 1/2	97 1/2	98 1/2
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88	176	88 1/2	89 1/2	90 1/2	91 1/2	92 1/2	93 1/2	94 1/2	95 1/2	96 1/2	97 1/2	98 1/2	99 1/2	100 1/2	101 1/2	102 1/2
90	180	90 1/2	91 1/2	92 1/2	93 1/2	94 1/2	95 1/2	96 1/2	97 1/2	98 1/2	99 1/2	100 1/2	101 1/2	102 1/2	103 1/2	104 1/2
92	184	92 1/2	93 1/2	94 1/2	95 1/2	96 1/2	97 1/2	98 1/2	99 1/2	100 1/2	101 1/2	102 1/2	103 1/2	104 1/2	105 1/2	106 1/2
94	188	94 1/2	95 1/2	96 1/2	97 1/2	98 1/2	99 1/2	100 1/2	101 1/2	102 1/2	103 1/2	104 1/2	105 1/2	106 1/2	107 1/2	108 1/2
96	192	96 1/2	97 1/2	98 1/2	99 1/2	100 1/2	101 1/2	102 1/2	103 1/2	104 1/2	105 1/2	106 1/2	107 1/2	108 1/2	109 1/2	110 1/2
98	196	98 1/2	99 1/2	100 1/2	101 1/2	102 1/2	103 1/2	104 1/2	105 1/2	106 1/2	107 1/2	108 1/2	109 1/2	110 1/2	111 1/2	112 1/2
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102	204	102 1/2	103 1/2	104 1/2	105 1/2	106 1/2	107 1/2	108 1/2	109 1/2	110 1/2	111 1/2	112 1/2	113 1/2	114 1/2	115 1/2	116 1/2
104	208	104 1/2	105 1/2	106 1/2	107 1/2	108 1/2	109 1/2	110 1/2	111 1/2	112 1/2	113 1/2	114 1/2	115 1/2	116 1/2	117 1/2	118 1/2
106	212	106 1/2	107 1/2	108 1/2	109 1/2	110 1/2	111 1/2	112 1/2	113 1/2	114 1/2	115 1/2	116 1/2	117 1/2	118 1/2	119 1/2	120 1/2
108	216	108 1/2	109 1/2	110 1/2	111 1/2	112 1/2	113 1/2	114 1/2	115 1/2	116 1/2	117 1/2	118 1/2	119 1/2	120 1/2	121 1/2	122 1/2
110	220	110 1/2	111 1/2	112 1/2	113 1/2	114 1/2	115 1/2	116 1/2	117 1/2	118 1/2	119 1/2	120 1/2	121 1/2	122 1/2	123 1/2	124 1/2
112	224	112 1/2	113 1/2	114 1/2	115 1/2	116 1/2	117 1/2	118 1/2	119 1/2	120 1/2	121 1/2	122 1/2	123 1/2	124 1/2	125 1/2	126 1/2
114	228	114 1/2	115 1/2	116 1/2	117 1/2	118 1/2	119 1/2	120 1/2	121 1/2	122 1/2	123 1/2	124 1/2	125 1/2	126 1/2	127 1/2	128 1/2
116	232	116 1/2	117 1/2	118 1/2	119 1/2	120 1/2	121 1/2	122 1/2	123 1/2	124 1/2	125 1/2	126 1/2	127 1/2	128 1/2	129 1/2	130 1/2
118	236	118 1/2	119 1/2	120 1/2	121 1/2	122 1/2	123 1/2	124 1/2	125 1/2	126 1/2	127 1/2	128 1/2	129 1/2	130 1/2	131 1/2	132 1/2
120	240	120 1/2	121 1/2	122 1/2	123 1/2	124 1/2	125 1/2	126 1/2	127 1/2	128 1/2	129 1/2	130 1/2	131 1/2	132 1/2	133 1/2	134 1/2
122	244	122 1/2	123 1/2	124 1/2	125 1/2	126 1/2	127 1/2	128 1/2	129 1/2	130 1/2	131 1/2	132 1/2	133 1/2	134 1/2	135 1/2	136 1/2
124	248	124 1/2	125 1/2	126 1/2	127 1/2	128 1/2	129 1/2	130 1/2	131 1/2	132 1/2	133 1/2	134 1/2	135 1/2	136 1/2	137 1/2	138 1/2
126	252	126 1/2	127 1/2	128 1/2	129 1/2	130 1/2	131 1/2	132 1/2	133 1/2	134 1/2	135 1/2	136 1/2	137 1/2	138 1/2	139 1/2	140 1/2

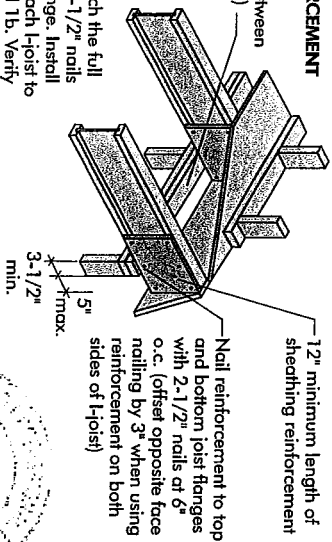
Above table may be used for Joist spacing of 24 inches on center.

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

5c SHEATHING REINFORCEMENT

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

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

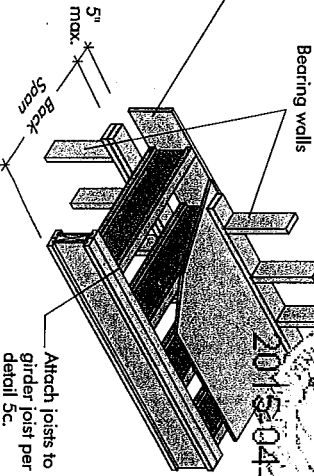


5b SET-BACK DETAIL

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

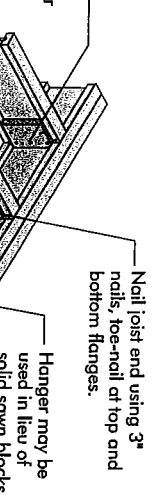
Notes:

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



5c SET-BACK CONNECTION

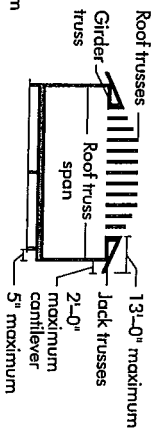
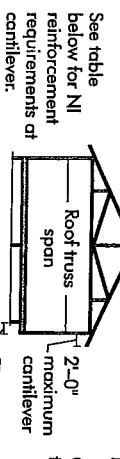
Vertical solid sawn blocks (2x6 S-P-F No. 2 or better) nailed through joist web and web of girder using 2-1/2" nails.



Notes:

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

FIGURE 5 (continued)



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

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

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

1. N = No reinforcement required.
1 = N1 reinforced with 3/4" wood structural panel on one side only.
2 = N2 reinforced with 3/4" wood structural panel on both sides, or double I-joist.
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.
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.

INSTALLING THE GLUED FLOOR SYSTEM

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

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

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

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

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

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

RIM BOARD INSTALLATION DETAILS

8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim board Joint Between Floor Joists

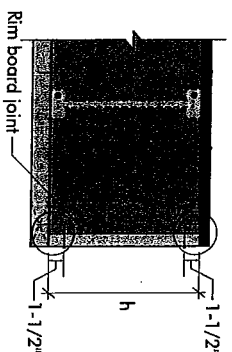
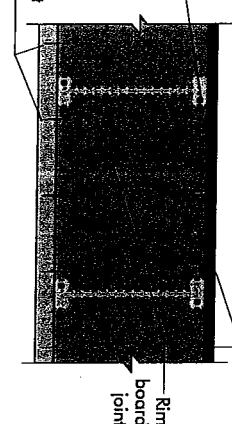
2-1/2" nails at 6" o.c. (typical)

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

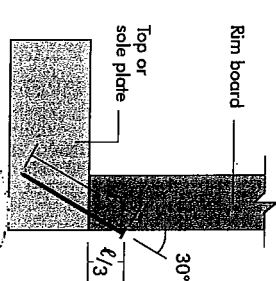
Rim board Joint at Corner

1-1/2"

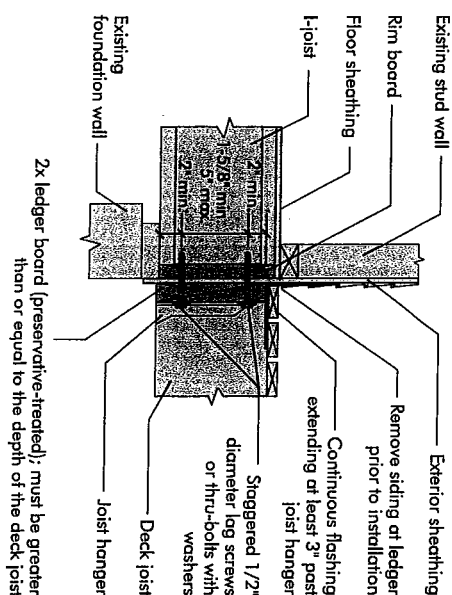
2-1/2" toe-nails at 6" o.c. (typical)



8b TOE-NAIL CONNECTION AT RIM BOARD



8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL

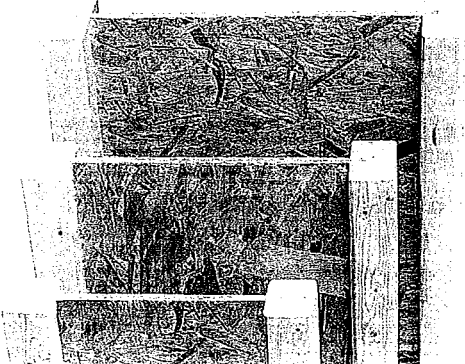


2015-04-16

PRODUCT WARRANTY

Customer acknowledges purchase of this product in accordance with the specifications. No other products are to be used in conjunction with this product.

Furthermore, Customer acknowledges that this product is not intended for use in areas subject to fire, flood, or other conditions that may void the warranty. The manufacturer's warranty is limited to the product and does not cover labor or other costs associated with the installation or removal of the product.



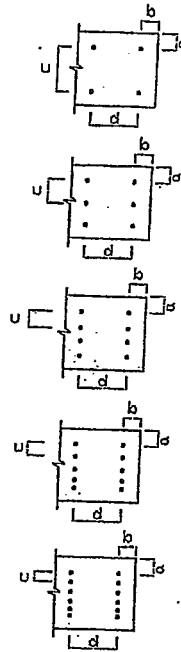
MICRO CITY

ENGINEERING SERVICES INC.

TEL: (519) 287 - 2242

R.R. #1, P.O. BOX 61, GLENCOE, ONTARIO, N0L 1M0

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 CLOS
BEARING THE
STAMP BELOW

PROVIDE NAILING
DETAIL # X SEE
DWG #TAMN1001-14