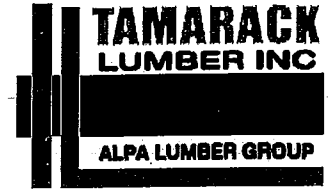


Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	10
J2	16-00-00	11 7/8" NI-40x	1	20
J3	14-00-00	11 7/8" NI-40x	1	12
J3DJ	14-00-00	11 7/8" NI-40x	2	4
J4	12-00-00	11 7/8" NI-40x	1	2
J5	4-00-00	11 7/8" NI-40x	1	1
J6	2-00-00	11 7/8" NI-40x	1	4
B3	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B1	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B9	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
4	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
12	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88



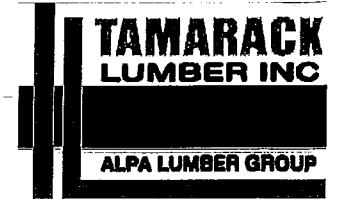
FROM PLAN DATED: FEB 2017  
BUILDER: GREENPARK HOMES  
SITE: RUSSELL GARDENS  
MODEL: ROSEWOOD 1A  
ELEVATION: 1  
LOT:  
CITY: WATERDOWN  
SALESMAN: M D  
DESIGNER: AJ  
REVISION:

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

DATE: 8/21/2017

1st FLOOR

STANDARD



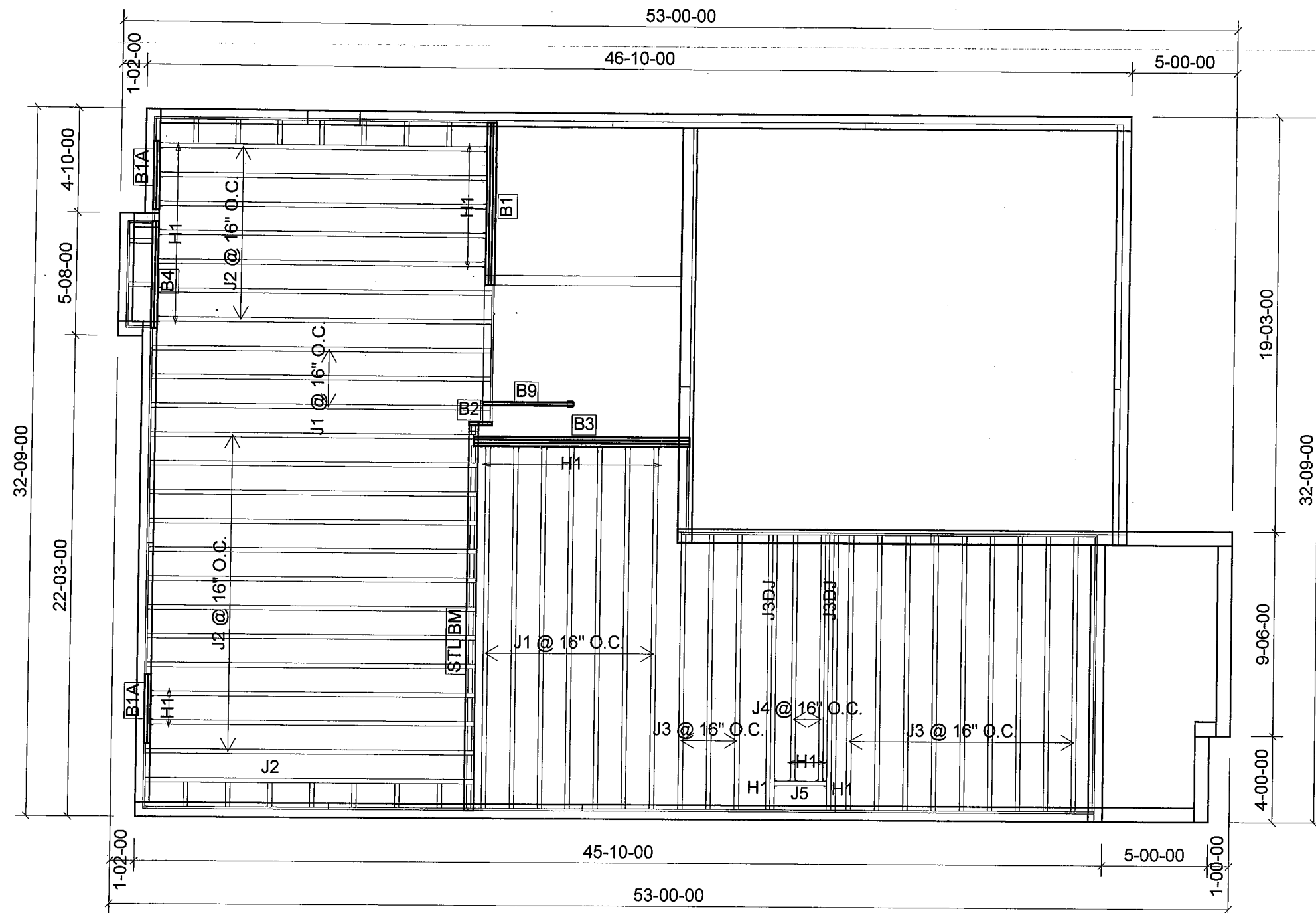
FROM PLAN DATED: FEB 2017  
BUILDER: GREENPARK HOMES  
SITE: RUSSELL GARDENS  
MODEL: ROSEWOOD 1A  
ELEVATION: 1  
LOT:  
CITY: WATERDOWN  
SALESMAN: M D  
DESIGNER: AJ  
REVISION:

NOTES:  
REFER TO THE NORDIC  
INSTALLATION GUIDE FOR PROPER  
STORAGE AND INSTALLATION.  
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2  
S.P.F REQ'D UNDER INTERIOR  
UNIFORM LOAD BEARING WALLS.  
MULTIPLE SQUASH BLOCKS REQ'D  
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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/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft  
TILED AREAS: 20 lb/ft  
SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 8/21/2017

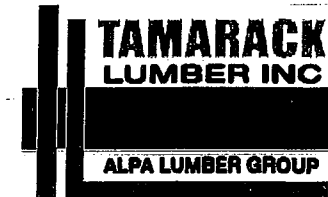
## 1st FLOOR

## DECK CONDITION



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	10
J2	16-00-00	11 7/8" NI-40x	1	20
J3	14-00-00	11 7/8" NI-40x	1	12
J3DJ	14-00-00	11 7/8" NI-40x	2	4
J4	12-00-00	11 7/8" NI-40x	1	2
J5	4-00-00	11 7/8" NI-40x	1	1
B3	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B1	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B9	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1A	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	4
B2	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
9	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
12	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88



FROM PLAN DATED: FEB 2017

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS

MODEL: ROSEWOOD 1A

ELEVATION: 1

LOT:

CITY: WATERDOWN

SALESMAN: M D

DESIGNER: AJ

REVISION:

NOTES:

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

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft<sup>2</sup>

DEAD LOAD: 15.0 lb/ft

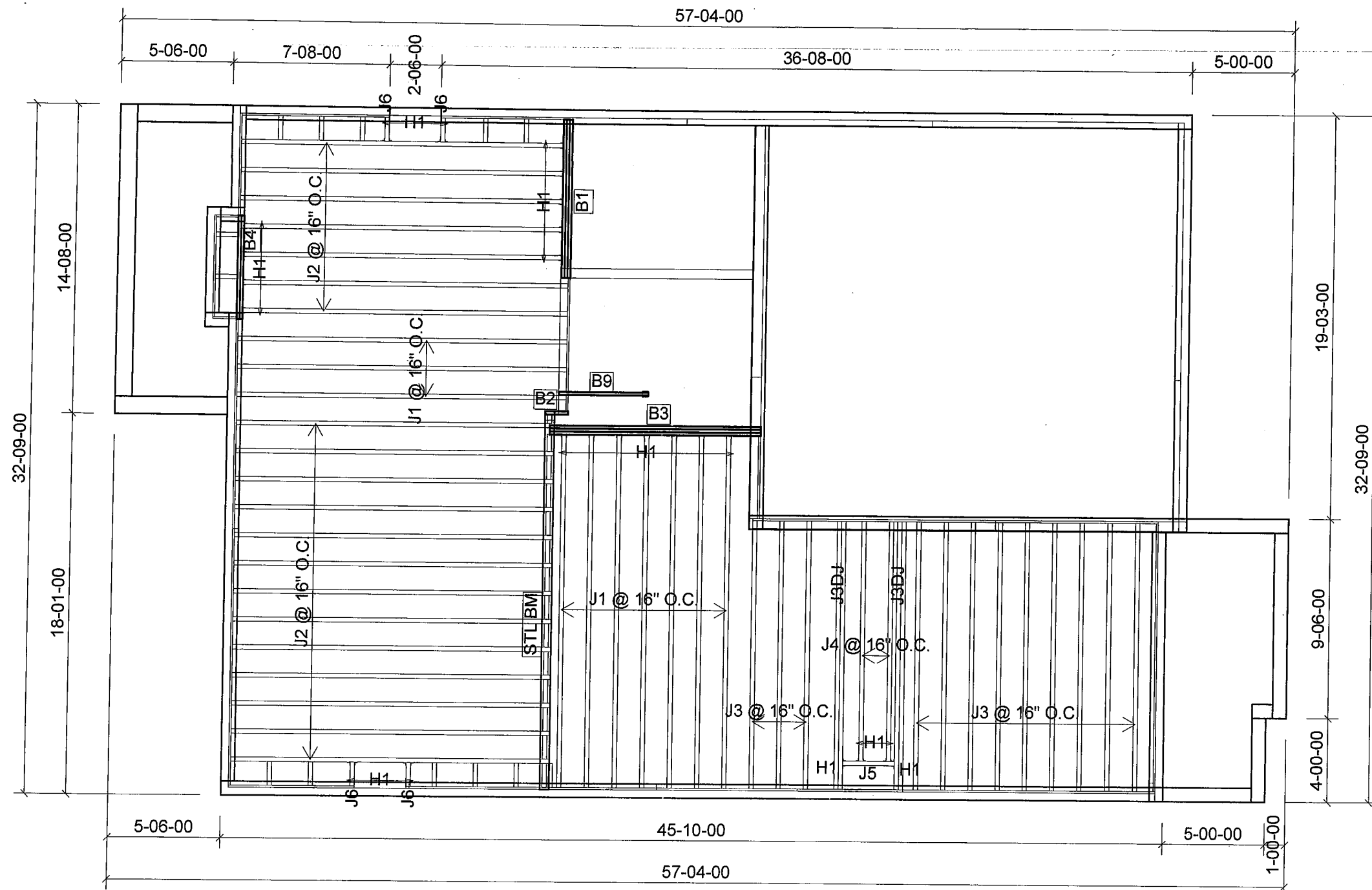
TILED AREAS: 20 lb/ft

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 8/21/2017

1st FLOOR

WALK UP CONDITION



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	10
J2	16-00-00	11 7/8" NI-40x	1	20
J3	14-00-00	11 7/8" NI-40x	1	12
J3DJ	14-00-00	11 7/8" NI-40x	2	4
J4	12-00-00	11 7/8" NI-40x	1	2
J5	4-00-00	11 7/8" NI-40x	1	1
J6	2-00-00	11 7/8" NI-40x	1	4
B3	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B1	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B9	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
4	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
12	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88

FROM PLAN DATED: FEB 2017

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS

MODEL: ROSEWOOD 1A

ELEVATION: 1

LOT:

CITY: WATERDOWN

SALESMAN: M D

DESIGNER: AJ

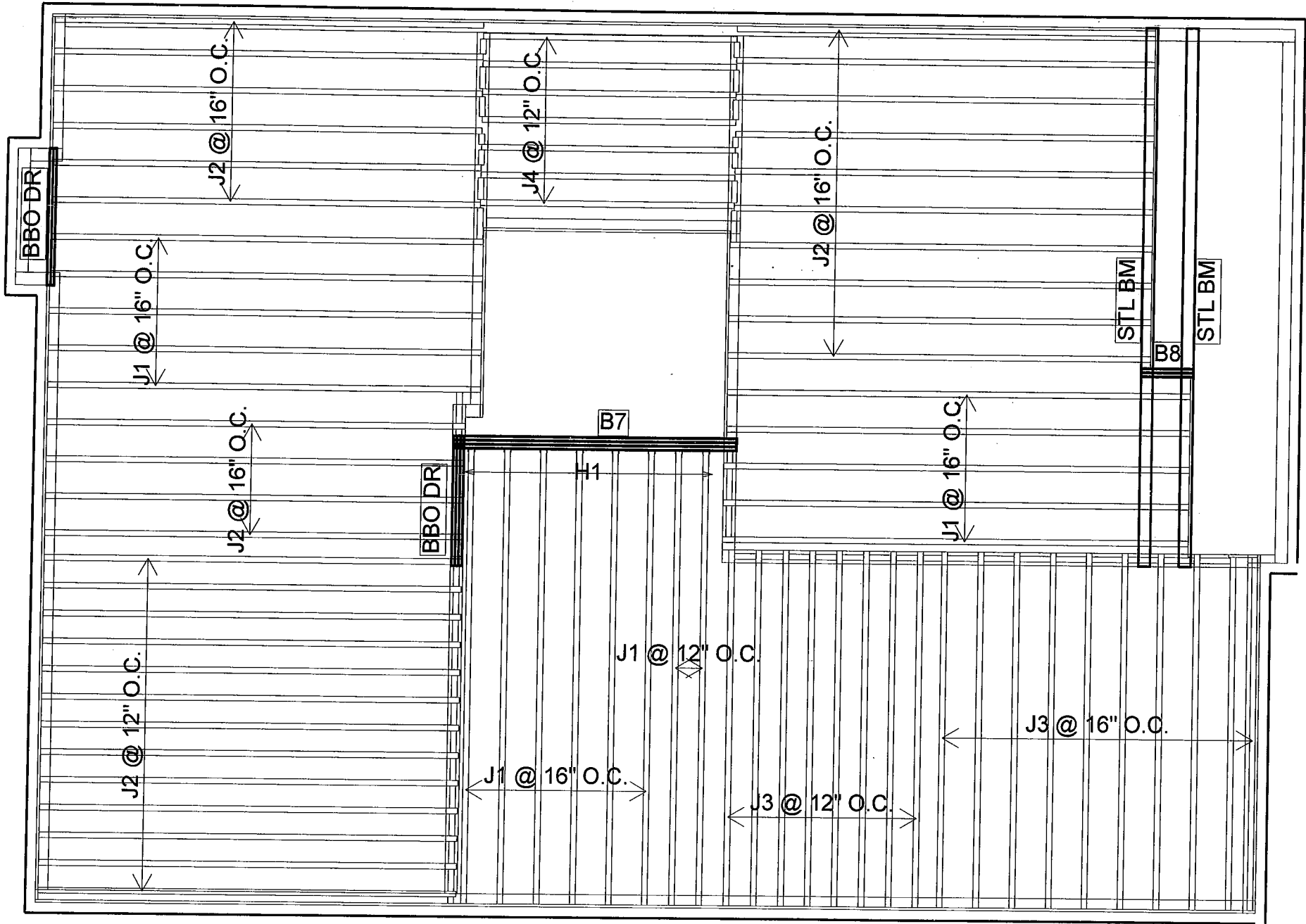
REVISION:

NOTES:  
REFER TO THE NORDIC  
INSTALLATION GUIDE FOR PROPER  
STORAGE AND INSTALLATION.  
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2  
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UNIFORM LOAD BEARING WALLS.  
MULTIPLE SQUASH BLOCKS REQ'D  
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I-JOIST BLOCKING ALONG BEARING  
AND RIMBOARD CLOSURE AT ENDS.  
SEE FIGURE 7 TABLES 4 & 5 FOR  
REINFORCEMENT REQUIREMENTS.  
FOR HOLES INCLUDING DUCT  
CHASE AND FIELD CUT OPENINGS  
SEE FIGURE 7 TABLES 1 & 2 OF THE  
INSTALLATION GUIDE. CERAMIC TILE  
APPLICATION AS PER O.B.C. 9.30.6  
LOADING:  
DESIGN LOADS: L/480.000  
LIVE LOAD: 40.0 lb/ft²  
DEAD LOAD: 15.0 lb/ft  
TILED AREAS: 20 lb/ft  
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 8/21/2017

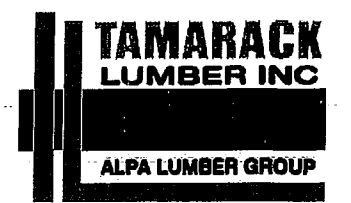
2nd FLOOR

STANDARD



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	18
J2	16-00-00	11 7/8" NI-40x	1	33
J3	14-00-00	11 7/8" NI-40x	1	18
J4	10-00-00	11 7/8" NI-40x	1	7
B7	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B8	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
1	H1	IUS2.56/9.5
7	H1	IUS2.56/11.88



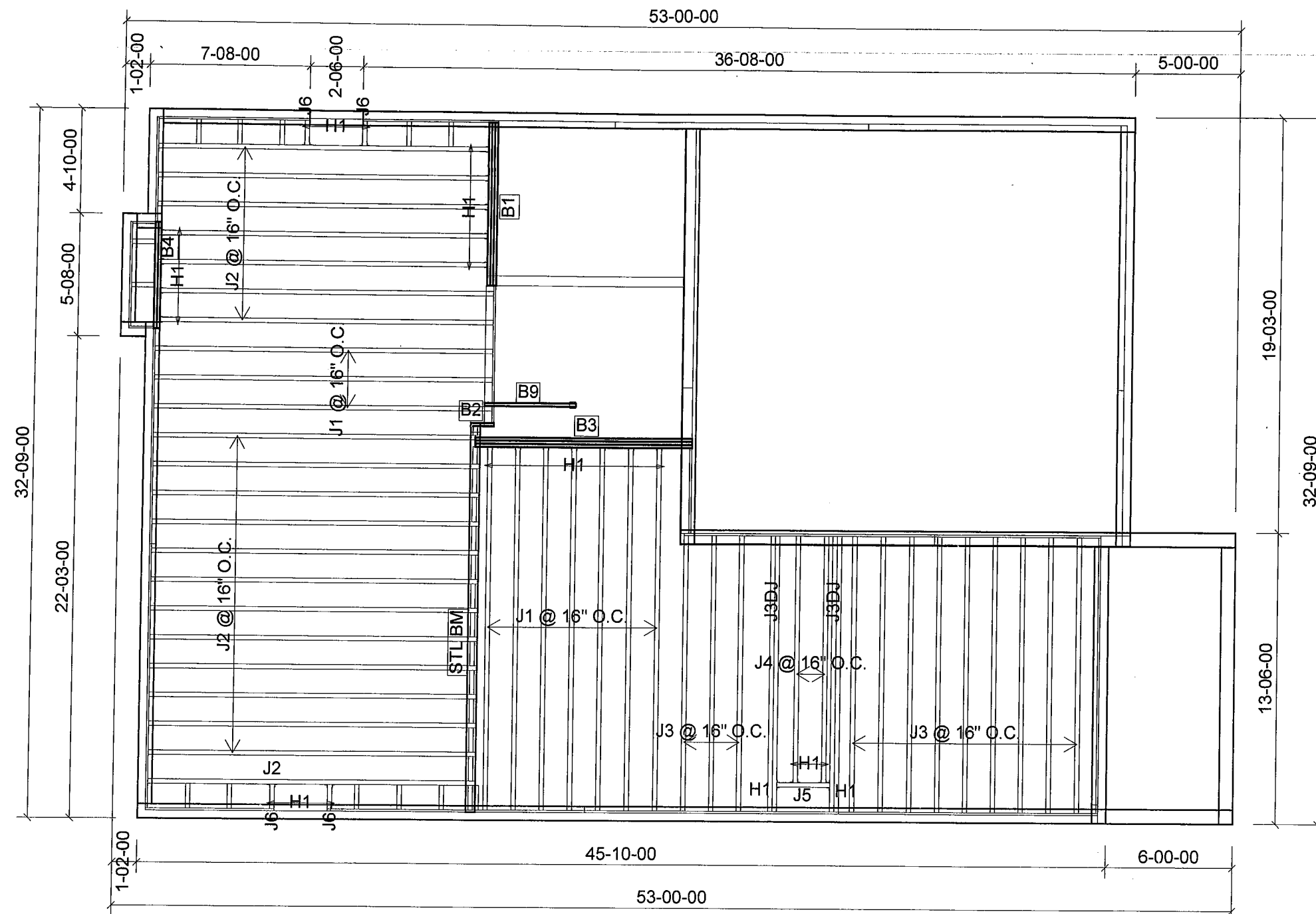
FROM PLAN DATED: FEB 2017  
BUILDER: GREENPARK HOMES  
SITE: RUSSELL GARDENS  
MODEL: ROSEWOOD 1A  
ELEVATION: 2,3  
LOT:  
CITY: WATERDOWN  
SALESMAN: M D  
DESIGNER: AJ  
REVISION:

NOTES:  
REFER TO THE NORDIC  
INSTALLATION GUIDE FOR PROPER  
STORAGE AND INSTALLATION.  
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2  
S.P.F REQ'D UNDER INTERIOR  
UNIFORM LOAD BEARING WALLS.  
MULTIPLE SQUASH BLOCKS REQ'D  
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I-JOIST BLOCKING ALONG BEARING  
AND RIMBOARD CLOSURE AT ENDS.  
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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/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft  
TILED AREAS: 20 lb/ft  
SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 8/21/2017

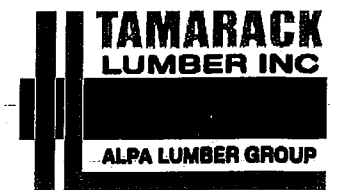
1st FLOOR

STANDARD



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	10
J2	16-00-00	11 7/8" NI-40x	1	20
J3	14-00-00	11 7/8" NI-40x	1	12
J3DJ	14-00-00	11 7/8" NI-40x	2	4
J4	12-00-00	11 7/8" NI-40x	1	2
J5	4-00-00	11 7/8" NI-40x	1	1
J6	2-00-00	11 7/8" NI-40x	1	4
B3	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B1	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B9	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
4	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
12	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88



FROM PLAN DATED: FEB 2017

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS

MODEL: ROSEWOOD 1A

ELEVATION: 2,3

LOT:

CITY: WATERDOWN

SALESMAN: M D

DESIGNER: AJ

REVISION:

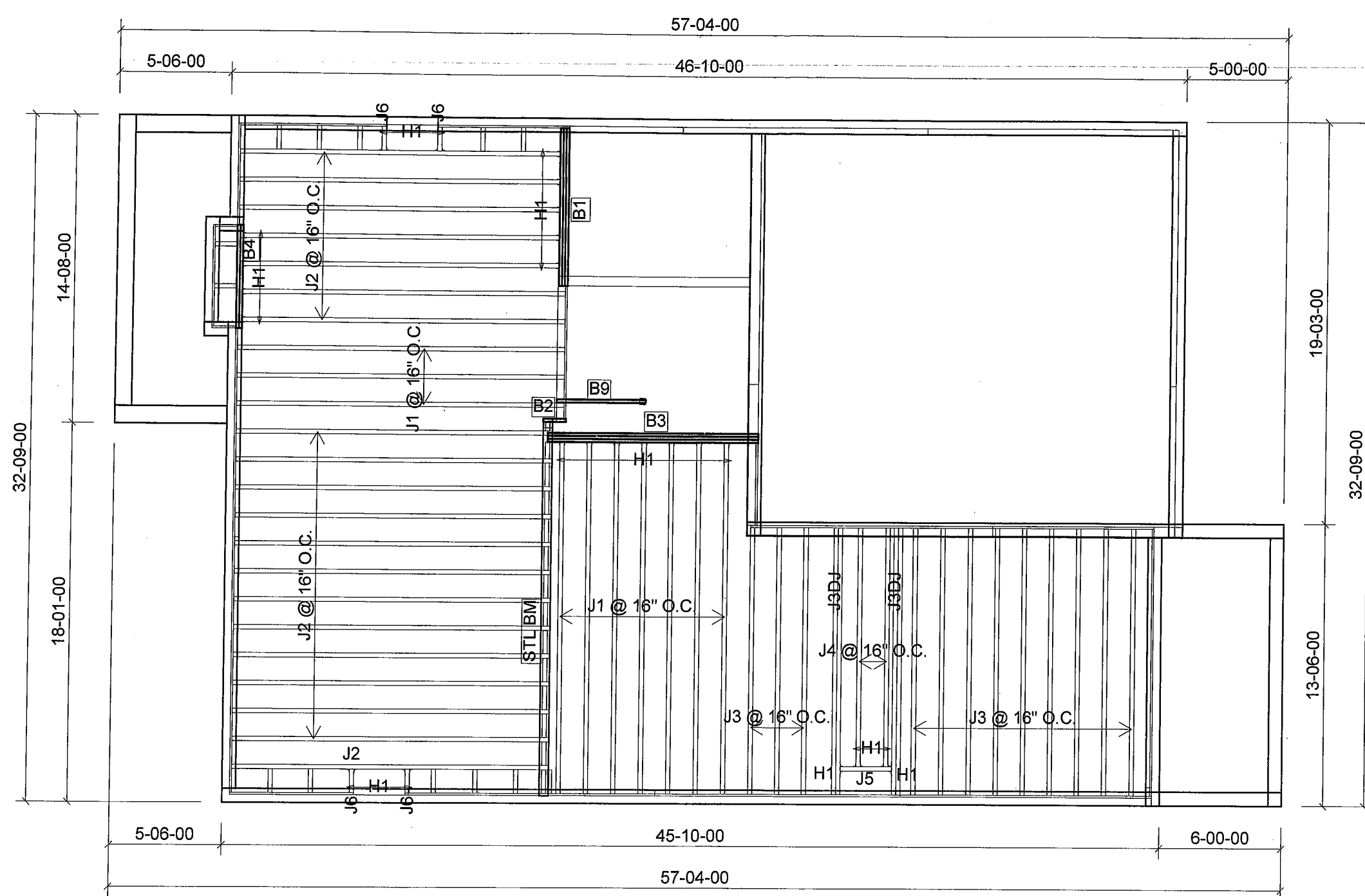
NOTES:  
REFER TO THE NORDIC  
INSTALLATION GUIDE FOR PROPER  
STORAGE AND INSTALLATION.  
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2  
S.P.F REQ'D UNDER INTERIOR  
UNIFORM LOAD BEARING WALLS.  
MULTIPLE SQUASH BLOCKS REQ'D  
UNDER CONCENTRATED LOADS. SEE  
FIGURE 1. CANTILEVERED JOISTS  
INCLUDING CANT' OVER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

LOADING:  
DESIGN LOADS: L/480.000  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft  
TILED AREAS: 20 lb/ft  
SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 8/21/2017

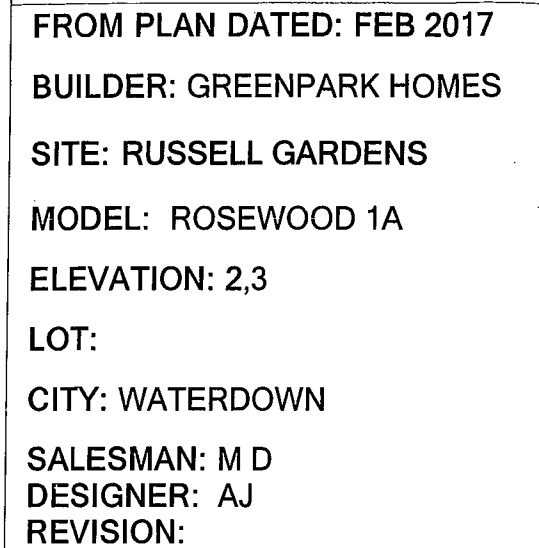
1st FLOOR

WALK UP CONDITON



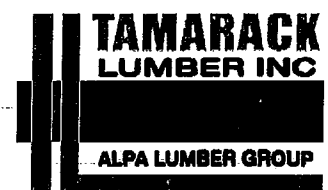
Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	10
J2	16-00-00	11 7/8" NI-40x	1	20
J3	14-00-00	11 7/8" NI-40x	1	12
J3DJ	14-00-00	11 7/8" NI-40x	2	4
J4	12-00-00	11 7/8" NI-40x	1	2
J5	4-00-00	11 7/8" NI-40x	1	1
J6	2-00-00	11 7/8" NI-40x	1	4
B3	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B1	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B9	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
4	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
12	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88



DATE: 8/21/2017

## DECK CONDITON



FROM PLAN DATED: FEB 2017

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS

MODEL: ROSEWOOD 1A

ELEVATION: 2

LOT:

CITY: WATERDOWN

SALESMAN: M D

DESIGNER: AJ

REVISION:

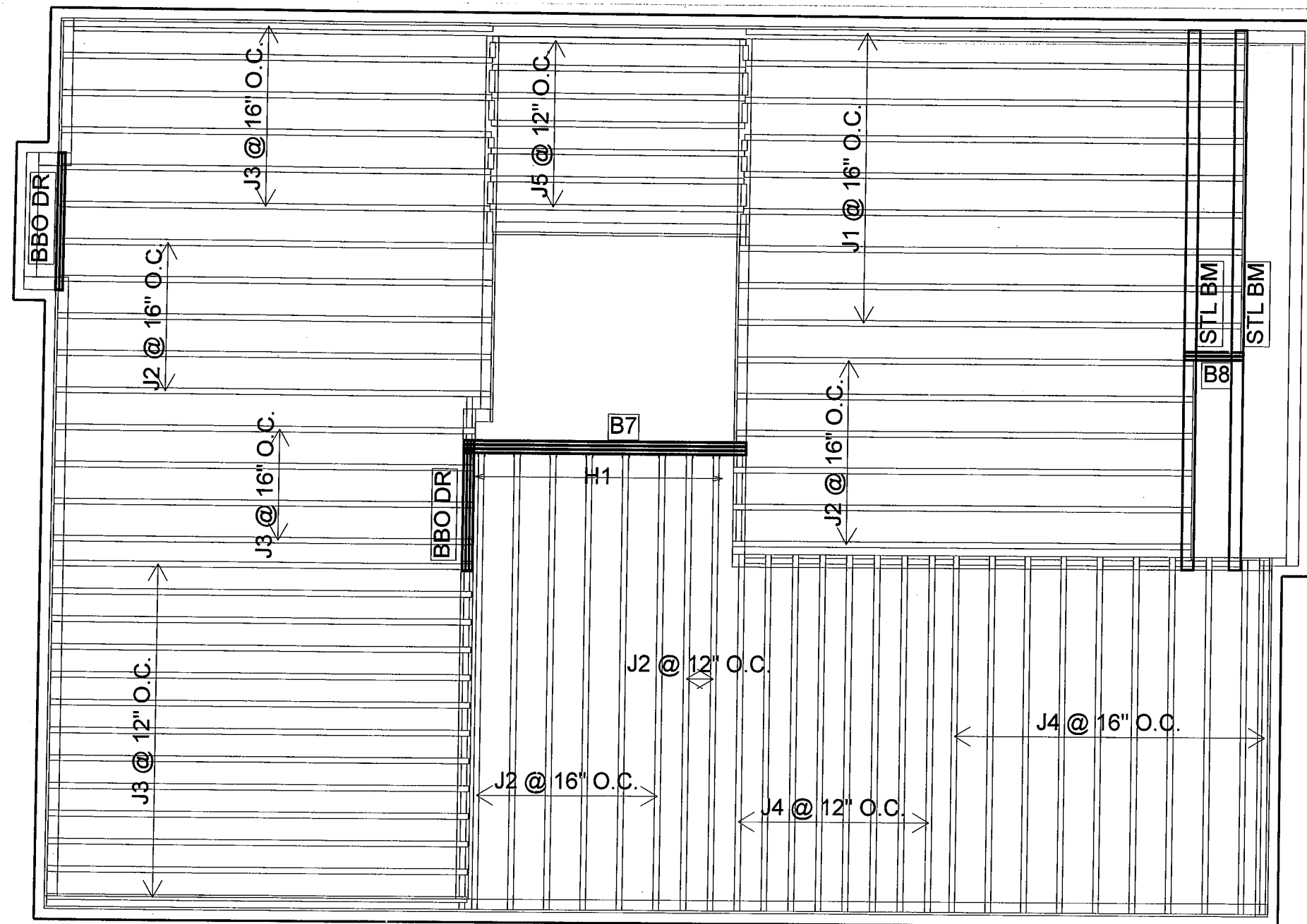
NOTES:  
REFER TO THE NORDIC  
INSTALLATION GUIDE FOR PROPER  
STORAGE AND INSTALLATION.  
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2  
S.P.F. REQ'D UNDER INTERIOR  
UNIFORM LOAD BEARING WALLS.  
MULTIPLE SQUASH BLOCKS REQ'D  
UNDER CONCENTRATED LOADS. SEE  
FIGURE 1. CANTILEVERED JOISTS  
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I-JOIST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

LOADING:  
DESIGN LOADS: L/480.000  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft  
TILED AREAS: 20 lb/ft  
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 8/21/2017

2nd FLOOR

STANDARD



Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	9
J2	18-00-00	11 7/8" NI-40x	1	19
J3	16-00-00	11 7/8" NI-40x	1	23
J4	14-00-00	11 7/8" NI-40x	1	18
J5	10-00-00	11 7/8" NI-40x	1	7
B7	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B8	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
1	H1	IUS2.56/9.5
7	H1	IUS2.56/11.88



FROM PLAN DATED: FEB 2017

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS

MODEL: ROSEWOOD 1A

ELEVATION: 3

LOT:

CITY: WATERDOWN

SALESMAN: M D

DESIGNER: AJ

REVISION:

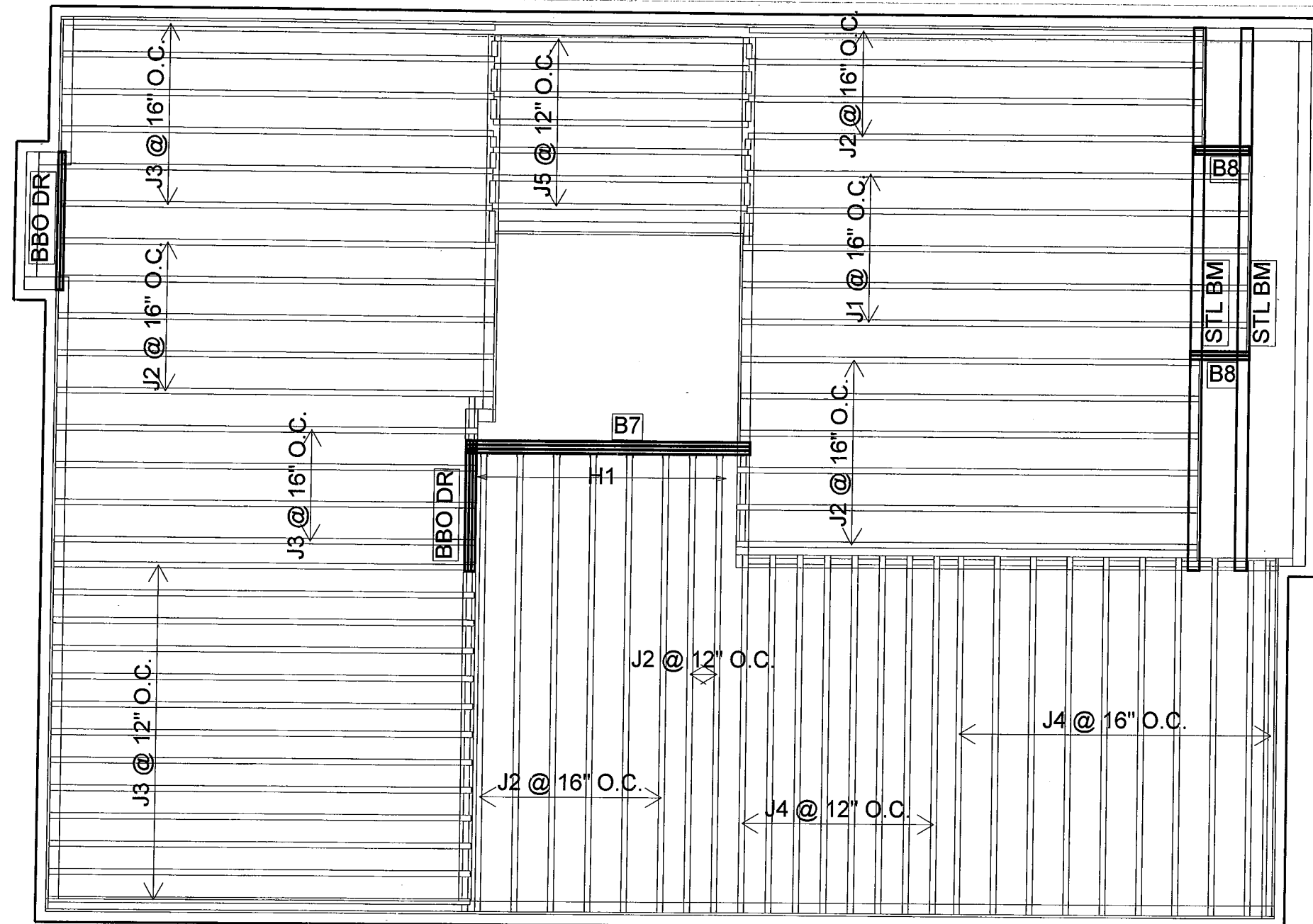
NOTES:  
REFER TO THE NORDIC  
INSTALLATION GUIDE FOR PROPER  
STORAGE AND INSTALLATION.  
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2  
S.P.F. REQ'D UNDER INTERIOR  
UNIFORM LOAD BEARING WALLS.  
MULTIPLE SQUASH BLOCKS REQ'D  
UNDER CONCENTRATED LOADS. SEE  
FIGURE 1. CANTILEVERED JOISTS  
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I-JOIST BLOCKING ALONG BEARING  
AND RIMBOARD CLOSURE AT ENDS.  
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FOR HOLES INCLUDING DUCT  
CHASE AND FIELD CUT OPENINGS  
SEE FIGURE 7 TABLES 1 & 2 OF THE  
INSTALLATION GUIDE. CERAMIC TILE  
APPLICATION AS PER O.B.C. 9.30.6

LOADING:  
DESIGN LOADS: L/480.000  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft  
TILED AREAS: 20 lb/ft  
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 8/21/2017

**2nd FLOOR**

**STANDARD**



Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	5
J2	18-00-00	11 7/8" NI-40x	1	23
J3	16-00-00	11 7/8" NI-40x	1	23
J4	14-00-00	11 7/8" NI-40x	1	18
J5	10-00-00	11 7/8" NI-40x	1	7
B7	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B8	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	4

Connector Summary		
Qty	Manuf	Product
1	H1	IUS2.56/9.5
7	H1	IUS2.56/11.88



# Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i2554)

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

August 21, 2017 08:11:29

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 1A EL-1.mmdl

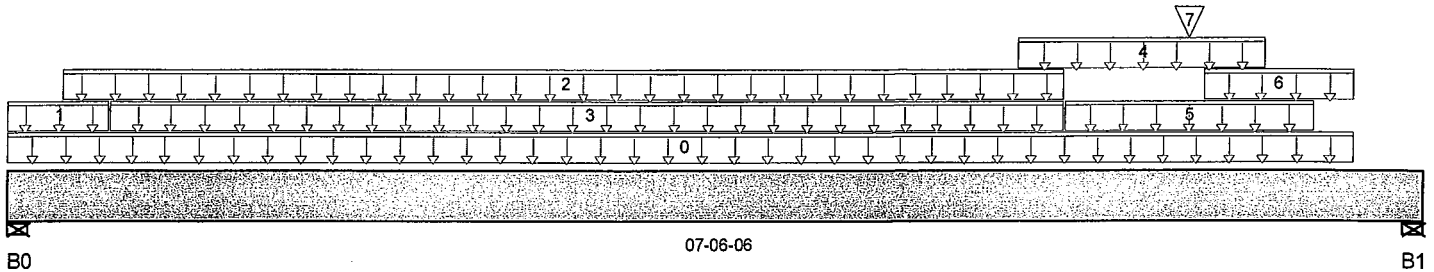
Description: Designs\Flush Beams\Basement\Flush Beams\B1(i2554)

Specifier:

Designer:

Company:

Misc:



B0

07-06-06

B1

Total Horizontal Product Length = 07-06-06

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

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	3,094 / 0	1,932 / 0		
B1, 2-3/8"	2,668 / 0	1,664 / 0		

## Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	5(i350)	Unf. Lin. (lb/ft)	L	00-00-00	07-02-00		81			n/a
1	5(i350)	Unf. Lin. (lb/ft)	L	00-00-00	00-06-08	311	155			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-03-08	05-07-08	328	164			n/a
3	5(i350)	Unf. Lin. (lb/ft)	L	00-06-08	05-07-08	517	258			n/a
4	5(i350)	Unf. Lin. (lb/ft)	L	05-04-08	06-08-08	141	70			n/a
5	5(i350)	Unf. Lin. (lb/ft)	L	05-07-08	06-11-08	292	146			n/a
6	5(i350)	Unf. Lin. (lb/ft)	L	06-04-08	07-02-00	187	94			n/a
7	J2(i2558)	Conc. Pt. (lbs)	L	06-03-08	06-03-08	475	237			n/a

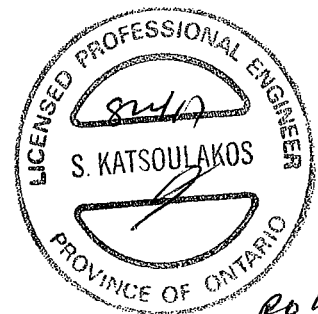
## Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	11,827 ft-lbs	60,415 ft-lbs	19.6%	1	03-07-08
End Shear	6,101 lbs	21,696 lbs	28.1%	1	01-05-06
Total Load Defl.	L/999 (0.051")	n/a	n/a	4	03-10-08
Live Load Defl.	L/999 (0.031")	n/a	n/a	5	03-10-08
Max Defl.	0.051"	n/a	n/a	4	03-10-08
Span / Depth	7.1	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 5-1/4"	7,056 lbs	45.8%	20%	Unspecified
B1 Wall/Plate	2-3/8" x 5-1/4"	6,082 lbs	91.3%	40%	Unspecified

## Notes



*Polk*

DWG NO. TAM 42847-17  
STRUCTURAL  
COMPONENT ONLY



Boise Cascade

**Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B1(i2554)**

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

August 21, 2017 08:11:29

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 1AEL-1.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B1(i255-

Specifier:

Designer:

Company:

Misc:

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.

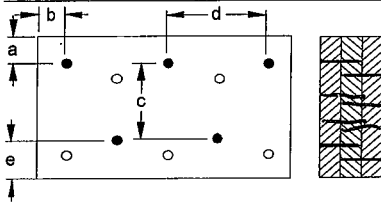
Resistance Factor phi has been applied to all presented results per CSA O86.

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

**Connection Diagram**

a minimum = 3"  
 b minimum = 3"  
 c = 6-7/8"  
 d = 4"  
 e minimum = 3"

Calculated Side Load = 629.0 lb/ft

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

Nailing schedule applies to both sides of the member.

Connectors are: 16d Nails

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

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 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 42849-17  
 STRUCTURAL  
 COMPONENT ONLY

**Basement Flush Beams B1A(i2733)**

Dry | 1 span | No cant.

March 14, 2018 14:51:19

BC CALC® Design Report

Build 6215

Job name:

Address:

City, Province, Postal Code: WAT...WN

Customer:

Code reports: CCMC 12472-R

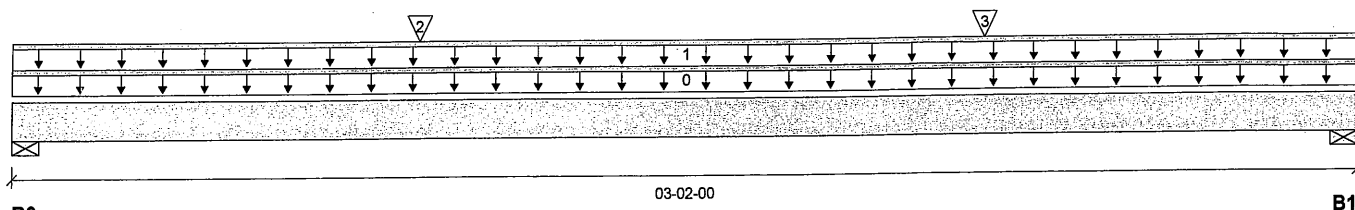
File name: ROSEWOOD 1A EL-1 WOD.mmdl

Description: Basement Flush Beams B1A(i2733)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 03-02-00

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

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	904 / 0	600 / 0		
B1, 3-1/2"	930 / 0	613 / 0		

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00	12				00-00-00
1	E1(i207)	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00	315	239			n/a
2	J2(i2723)	Conc. Pt. (lbs)	L	00-11-08	00-11-08	418	209			n/a
3	J2(i2728)	Conc. Pt. (lbs)	L	02-03-08	02-03-08	418	209			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1,331 ft-lbs	35,392 ft-lbs	3.8%	1	01-06-09
End Shear	808 lbs	14,464 lbs	5.6%	1	01-03-06
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	01-07-00
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	01-07-00
Max Defl.	0.001"	n/a	n/a	4	01-07-00
Span / Depth	2.7				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate 3-1/2" x 3-1/2"	2,105 lbs	40.2%	14.1%	Unspecified
B1	Wall/Plate 3-1/2" x 3-1/2"	2,160 lbs	41.3%	14.5%	Unspecified

**Notes**

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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


 DWG NO. TAM/5035  
 STRUCTURAL  
 COMPONENT ONLY

BC CALC® Design Report

Build 6215

Job name:

Address:

City, Province, Postal Code: WAT...WN

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

March 14, 2018 14:51:19

File name: ROSEWOOD 1A EL-1 WOD.mmdl

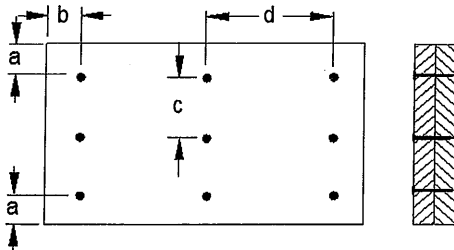
Description: Basement\Flush Beams\B1A(i2733)

Specifier:

Designer: AJ

Company:

## Connection Diagram



a minimum = 2"

b minimum = 3"

c = 4"

d = 4"

Calculated Side Load = 561.0 lb/ft

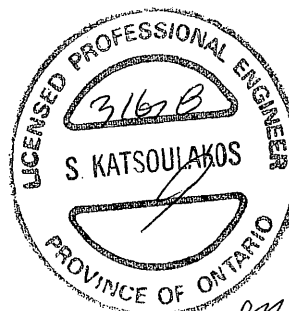
Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: 16d Nails

  
3-1/2" ARDOX SPIRAL

## Disclosure

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



DWG NO. TAM 15035.18  
STRUCTURAL  
COMPONENT ONLY

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BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 1A EL-1.mmdl

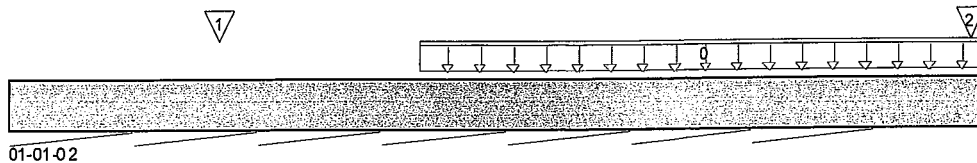
Description: Designs\Flush Beams\Basment\Flush Beams\B2(i2556)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 01-01-02

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

Bearing		Live	Dead	Snow	Wind					
Load Summary					Live	Dead	Snow	Wind	Trib.	
Tag	Description	Load Type	Ref.	Start	End	1.00	0.65	1.00	1.15	
0	6(i351)	Unf. Lin. (lb/ft)	L	00-05-08	01-01-02		81			n/a
1	-	Conc. Pt. (lbs)	L	00-02-13	00-02-13	55	39			n/a
2	6(i351)	Conc. Pt. (lbs)	L	01-00-14	01-00-14	8	4			n/a

<b>Controls Summary</b>	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Distributed Load(B0)	113 lb/ft	18,735 lb/ft	0.6%	0	n/a
Concentrated Load(B0)	123 lbs	8,407 lbs	1.5%	0	n/a

**CONFORMS TO OBC 2012**

**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 4205017  
**STRUCTURAL  
COMPONENT ONLY**



# Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\...\B4(i2557)

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

August 21, 2017 08:10:57

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 1A EL-1.mmdl

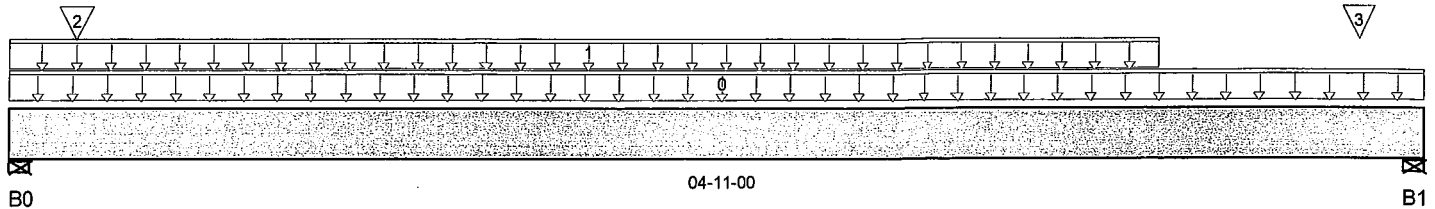
Description: Designs\Flush Beams\Basment\Flush Beams\B4(i2557)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 04-11-00

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

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,791 / 0	977 / 0		
B1, 3-1/2"	1,682 / 0	922 / 0		

## Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	04-11-00	346	172			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-00-00	26	13			n/a
2	E1(i207)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	865	484			n/a
3	E4(i204)	Conc. Pt. (lbs)	L	04-08-04	04-08-04	799	451			n/a

## Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,795 ft-lbs	38,727 ft-lbs	4.6%	1	02-11-06
End Shear	1,175 lbs	14,464 lbs	8.1%	1	03-07-10
Total Load Defl.	L/999 (0.005")	n/a	n/a	4	02-05-11
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	02-05-11
Max Defl.	0.005"	n/a	n/a	4	02-05-11
Span / Depth	4.5	n/a	n/a		00-00-00

Demand / Resistance

Support Member

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance	Support	Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	3,909 lbs	74.7%	26.2%	Unspecified	
B1 Wall/Plate	3-1/2" x 3-1/2"	3,675 lbs	70.2%	24.6%	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 OBC 2012



DWONG, YAM 4/20/17  
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 1A EL-1.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B4(i2557

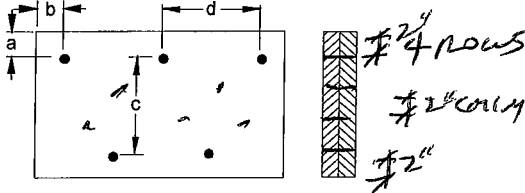
Specifier:

Designer:

Company:

Misc:

### Connection Diagram



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

Calculated Side Load = 730.7 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.

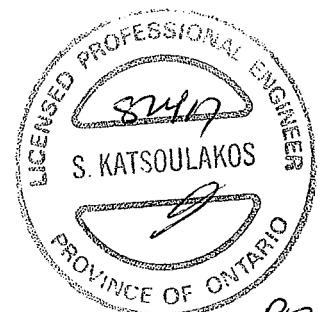
Connectors are: 16d Nails

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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DWG NO. TAM 42051-17  
STRUCTURAL  
COMPONENT ONLY





# Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B9(i2520)

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

August 21, 2017 08:10:57

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 1A EL-1.mmdl

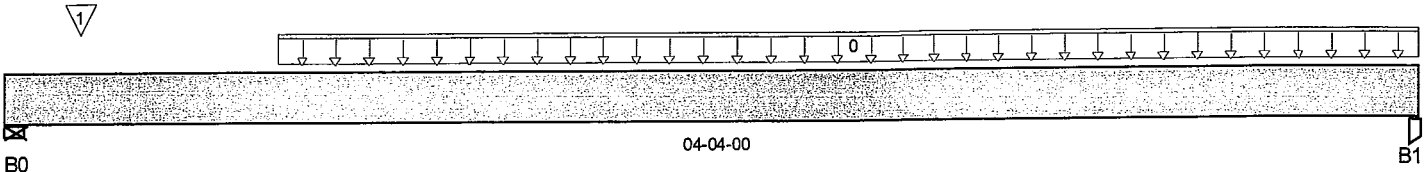
Description: Designs\Flush Beams\Basement\Flush Beams\B9(i2520)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 04-04-00

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

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	397 / 0	224 / 0		
B1, 3-1/2"	494 / 0	259 / 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	00-10-00	04-04-00	240	120			n/a
1	5(i350)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	49	36			n/a

## Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	865 ft-lbs	13,146 ft-lbs	6.6%	1	02-03-10
End Shear	742 lbs	7,232 lbs	10.3%	1	01-05-06
Total Load Defl.	L/999 (0.003")	n/a	n/a	4	02-03-00
Live Load Defl.	L/999 (0.002")	n/a	n/a	5	02-03-00
Max Defl.	0.003"	n/a	n/a	4	02-03-00
Span / Depth	3.7	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	5-1/2" x 1-3/4"	876 lbs	21.3%	7.5%	Unspecified
B1 Post	3-1/2" x 1-3/4"	1,065 lbs	26.8%	14.3%	Unspecified

## Notes

Design meets Code minimum (L/240) Total load deflection criteria.  
 Design meets Code minimum (L/360) Live load deflection criteria.  
 Calculations assume unbraced length of Top: 03-10-08, Bottom: 03-10-08.  
 Resistance Factor phi has been applied to all presented results per CSA O86.  
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.  
 Design based on Dry Service Condition.  
 Importance Factor: Normal Part code: Part 9

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 4205217  
 STRUCTURAL  
 COMPONENT ONLY

BC CALC® Design Report



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

August 21, 2017 08:10:57

Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 1A EL-1.mmdl

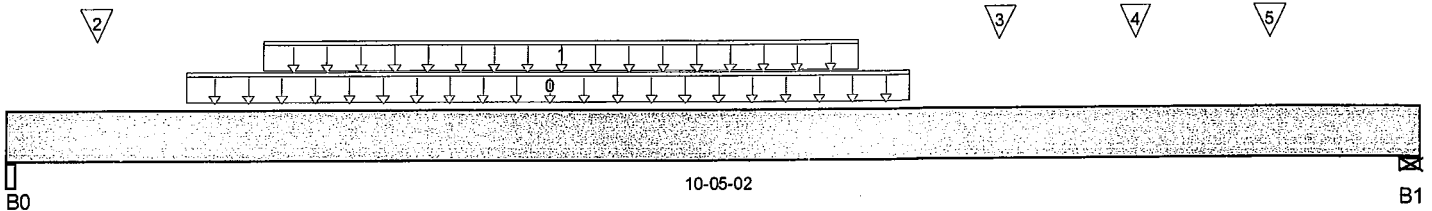
Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i2188)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 10-05-02

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

Bearing	Live	Dead	Snow	Wind
B0, 4-1/2"	2,258 / 0	1,222 / 0		
B1, 5-1/2"	2,043 / 0	1,116 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	01-03-14	06-07-14	338	168			n/a
1	User Load	Unf. Lin. (lb/ft)	L	01-10-10	06-03-02	240	120			n/a
2	J1(i2356)	Conc. Pt. (lbs)	L	00-07-14	00-07-14	299	150			n/a
3	J1(i2234)	Conc. Pt. (lbs)	L	07-03-14	07-03-14	394	197			n/a
4	J1(i2241)	Conc. Pt. (lbs)	L	08-03-14	08-03-14	338	169			n/a
5	J1(i2238)	Conc. Pt. (lbs)	L	09-03-14	09-03-14	387	194			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	12,710 ft-lbs	60,415 ft-lbs	21%	1	04-07-14
End Shear	4,425 lbs	21,696 lbs	20.4%	1	01-04-06
Total Load Defl.	L/999 (0.102")	n/a	n/a	4	05-01-14
Live Load Defl.	L/999 (0.066")	n/a	n/a	5	05-01-14
Max Defl.	0.102"	n/a	n/a	4	05-01-14
Span / Depth	9.8	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 5-1/4"	4,914 lbs	48.7%	17%	Unspecified
B1 Wall/Plate	5-1/2" x 5-1/4"	4,460 lbs	36.2%	12.7%	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.

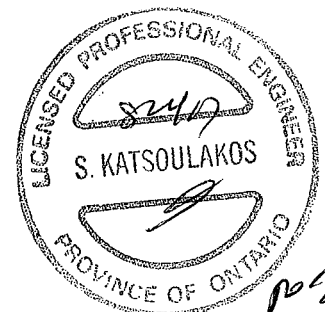
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA

O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012



DWG NO. TAM 4205317  
STRUCTURAL  
COMPONENT ONLY



Boise Cascade

**Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B7(i2188)**

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

August 21, 2017 08:10:57

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 1AEL-1.mmdl

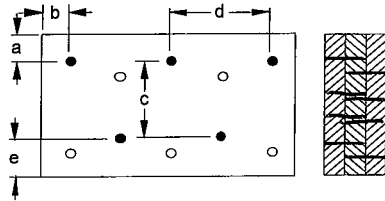
Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i2188)

Specifier:

Designer:

Company:

Misc:

**Connection Diagram**

a minimum = 4"    c = 6-7/8"  
 b minimum = 3"    d = 6"  
 e minimum = 2"

Calculated Side Load = 655.7 lb/ft

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

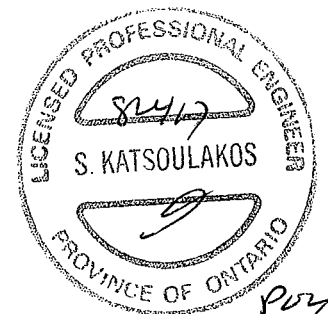
Nailing schedule applies to both sides of the member.

Connectors are: 16d Nails

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

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 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 4285317  
 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 1A EL-1.mmdl

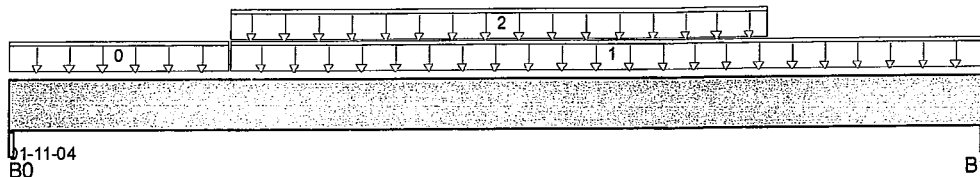
Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i2247)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 01-11-04

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

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	50 / 0	94 / 0	61 / 0	
B1, 5-1/4"	47 / 0	92 / 0	57 / 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	00-05-04	56	41	69		n/a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	01-11-04	48	36	59		n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	01-06-00		85			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	33 ft-lbs	25,173 ft-lbs	0.1%	0	00-11-10
End Shear	85 lbs	9,401 lbs	0.9%	0	01-05-02
Span / Depth	1.2	n/a	n/a		00-00-00

**Bearing Supports**

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 3-1/2"	235 lbs	3%	1%	Unspecified
B1 Beam	5-1/4" x 3-1/2"	224 lbs	2.8%	1%	Unspecified

**Notes**

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 product's verification.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9


 DWG NO. TAM 4285417  
 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 1A EL-1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i2247

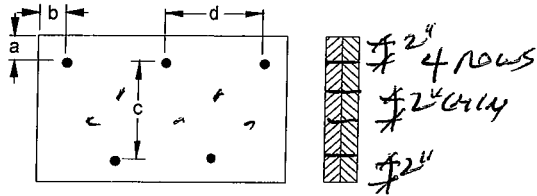
Specifier:

Designer:

Company:

Misc:

### Connection Diagram



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

Member has no side loads.

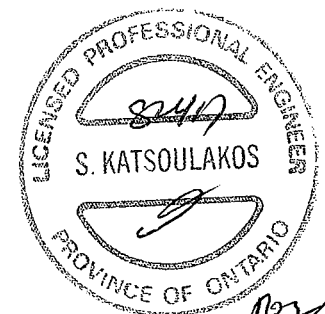
Connectors are: 16d Nails

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.

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DWG NO. TAM 4205417  
STRUCTURAL  
COMPONENT ONLY

BC CALC® Design Report



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

August 21, 2017 08:11:29

Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 1A EL-1.mmdl

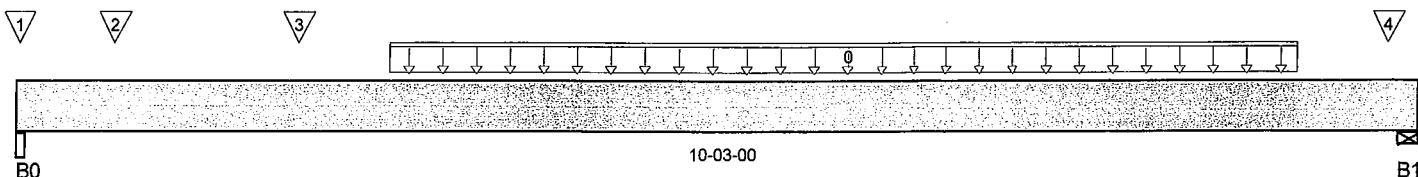
Description: Designs\Flush Beams\Basement\Flush Beams\B3(i2507)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 10-03-00

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

Bearing	Live	Dead	Snow	Wind
B0, 2-5/8"	2,602 / 0	1,428 / 0		
B1, 5-1/2"	5,072 / 0	3,808 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	02-08-08	09-04-08	595	298			n/a
1	7(i352)	Conc. Pt. (lbs)	L	00-00-04	00-00-04	149	110			n/a
2	J1(i2526)	Conc. Pt. (lbs)	L	00-08-08	00-08-08	362	181			n/a
3	J1(i2539)	Conc. Pt. (lbs)	L	02-00-08	02-00-08	692	346			n/a
4	4(i345)	Conc. Pt. (lbs)	L	10-00-04	10-00-04	2,503	2,428			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	14,755 ft-lbs	60,415 ft-lbs	24.4%	1	04-08-08
End Shear	5,545 lbs	21,696 lbs	25.6%	1	08-09-10
Total Load Defl.	L/999 (0.119")	n/a	n/a	4	05-00-08
Live Load Defl.	L/999 (0.078")	n/a	n/a	5	05-00-08
Max Defl.	0.119"	n/a	n/a	4	05-00-08
Span / Depth	9.8	n/a	n/a		00-00-00

### Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	2-5/8" x 5-1/4"	5,688 lbs	77.3%	33.8%	Unspecified
B1 Wall/Plate	5-1/2" x 5-1/4"	12,367 lbs	80.2%	35.1%	Unspecified

### Notes

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

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

Calculations assume member is fully braced.

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

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

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9



DWONG, YAM 42855-17  
STRUCTURAL  
COMPONENT ONLY



Boise Cascade

**Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B3(i2507)**

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

August 21, 2017 08:11:29

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: ROSEWOOD 1A EL-1.mmdl

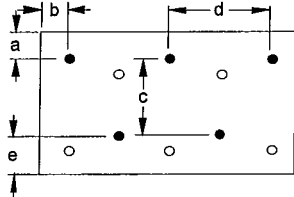
Description: Designs\Flush Beams\Basement\Flush Beams\B3(i2507

Specifier:

Designer:

Company:

Misc:

**Connection Diagram**

4 rows

a minimum = 2"      c = 6-7/8"  
 b minimum = 3"      d = 4"  
 e minimum = 2"

Calculated Side Load = 1,041.1 lb/ft

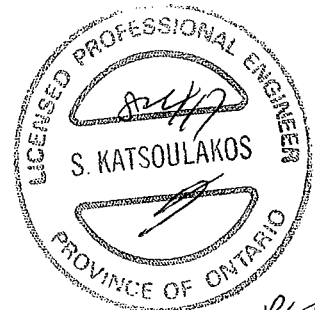
Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Nailing schedule applies to both sides of the member.

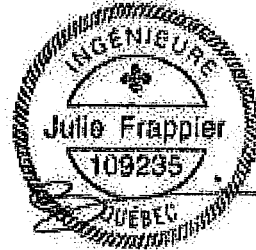
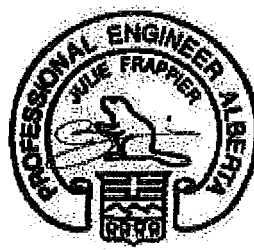
Connectors are: 16d <sup>16</sup>/<sub>16</sub> Nails**3 1/2" ARDOX SPIRAL****Disclosure**

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DWG NO. TAM 4285517  
 STRUCTURAL  
 COMPONENT ONLY



## Maximum Floor Spans

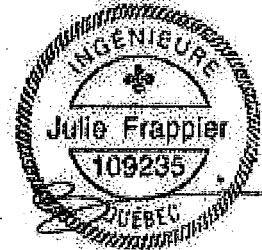
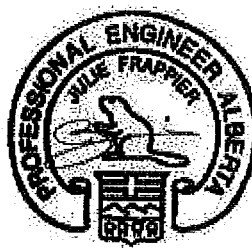
Live Load = 40 psf, Dead Load = 15 psf  
Simple Spans, L/480 Deflection Limit  
3/4" OSB G&N Sheathing

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

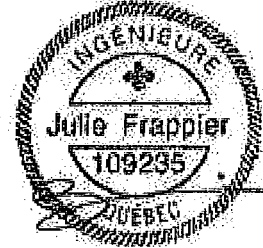
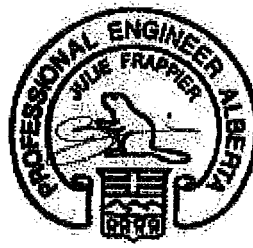
Live Load = 40 psf, Dead Load = 15 psf  
Simple Spans, L/480 Deflection Limit  
5/8" OSB G&N Sheathing

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

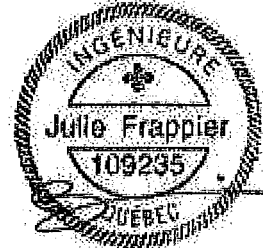
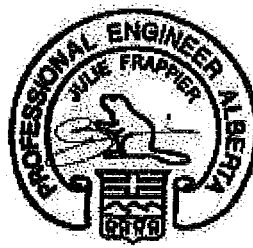
Live Load = 40 psf, Dead Load = 30 psf  
Simple Spans, L/480 Deflection Limit  
5/8" OSB G&N Sheathing

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"	18'-9"	19'-7"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
16"	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

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

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



## Maximum Floor Spans

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

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

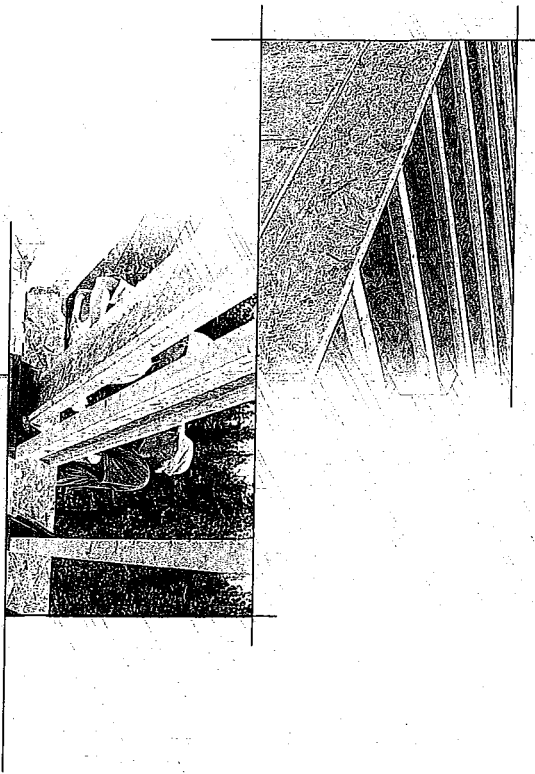
  

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-9"	16'-1"	15'-1"	13'-11"	17'-9"	16'-1"	15'-1"	13'-11"
	NI-60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

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



# INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



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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-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
  - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral resistant at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
  - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
5. Never install a damaged I-joist.

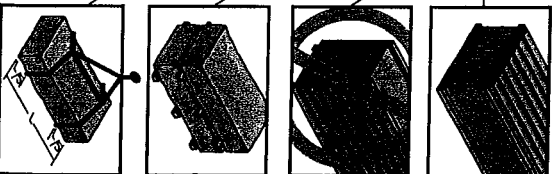


Never stack building materials over unsheathed I-joists. Once sheathed, do not over-stress I-joist with concentrated loads from building materials.

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-nail oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in 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 C86-09 Standard, and NBC 2010.
- SI units conversion: 1 inch = 25.4 mm  
1 foot = 0.305 m

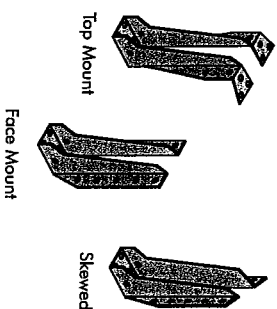
### MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTIPLE SPANS

Joist Depth	Joist Series	Simple spans				Multiple spans			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9 1/2"	NL-20	15.1	13.2	13.5	13.5	14.5	13.2	13.5	13.5
	NL-40	16.1	15.2	14.8	14.8	17.2	16.5	16.1	16.1
	NL-60	16.8	16.4	16.1	16.1	17.8	17.4	17.4	17.4
	NL-80	17.2	16.1	16.4	16.4	18.7	17.4	17.4	17.4
11 1/2"	NL-20	17.2	16.1	16.4	16.4	18.7	17.4	17.4	17.4
	NL-40	18.1	17.0	16.5	16.5	19.4	18.6	18.3	18.3
	NL-60	18.4	17.3	16.7	16.7	20.2	18.9	18.4	18.4
	NL-80	19.6	18.0	17.4	17.4	21.6	19.1	19.1	19.1
13 1/2"	NL-20	19.7	18.5	17.6	17.6	21.6	19.1	19.1	19.1
	NL-40	20.2	18.7	17.7	17.7	22.3	20.2	19.4	19.4
	NL-60	20.4	18.9	17.8	17.8	22.5	20.5	19.6	19.6
	NL-80	20.4	18.9	17.8	17.8	22.5	20.5	19.6	19.6
15 1/2"	NL-20	20.1	18.7	17.7	17.7	22.2	20.4	19.4	19.4
	NL-40	20.5	18.8	17.8	17.8	22.7	20.4	19.4	19.4
	NL-60	20.7	19.0	18.1	18.1	23.0	20.7	19.7	19.7
	NL-80	20.7	19.0	18.1	18.1	23.0	20.7	19.7	19.7
17 1/2"	NL-20	20.5	18.8	17.8	17.8	22.7	20.4	19.4	19.4
	NL-40	20.7	19.0	18.1	18.1	23.0	20.7	19.7	19.7
	NL-60	20.8	19.0	18.1	18.1	23.1	20.8	19.8	19.8
	NL-80	20.8	19.0	18.1	18.1	23.1	20.8	19.8	19.8
19 1/2"	NL-20	20.8	19.0	18.1	18.1	23.1	20.8	19.8	19.8
	NL-40	20.8	19.0	18.1	18.1	23.1	20.8	19.8	19.8
	NL-60	20.8	19.0	18.1	18.1	23.1	20.8	19.8	19.8
	NL-80	20.8	19.0	18.1	18.1	23.1	20.8	19.8	19.8
21 1/2"	NL-20	20.8	19.0	18.1	18.1	23.1	20.8	19.8	19.8
	NL-40	20.8	19.0	18.1	18.1	23.1	20.8	19.8	19.8
	NL-60	20.8	19.0	18.1	18.1	23.1	20.8	19.8	19.8
	NL-80	20.8	19.0	18.1	18.1	23.1	20.8	19.8	19.8

CCMC EVALUATION REPORT 13032-R

## I-JOIST HANGERS

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



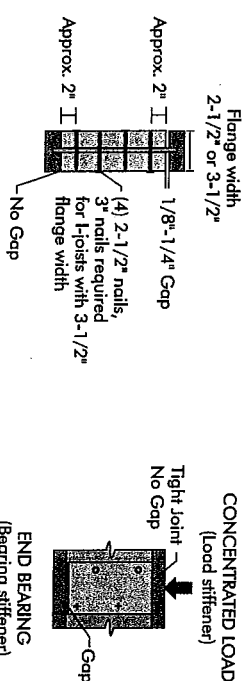
## WEB STIFFENERS

### 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 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

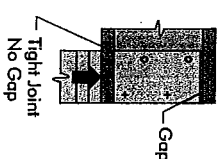
FIGURE 2  
WEB STIFFENER INSTALLATION DETAILS



See table below for web stiffener size requirements

### STIFFENER SIZE REQUIREMENTS

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



## NORDIC I-JOIST SERIES

S-F No. 2	1950F MSR	2100F MSR	1950F MSR	2100F MSR	2400F MSR	NPG Lumber
33 pieces per unit	33 pieces per unit	33 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit
NL-20	NL-40x	NL-60	NL-70	NL-80	NL-90	NL-90x
1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"
OSB 3/4"	OSB 3/4"	OSB 3/4"	OSB 3/4"	OSB 3/4"	OSB 3/4"	OSB 3/4"
1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"
9 1/2"	9 1/2"	9 1/2"	9 1/2"	9 1/2"	9 1/2"	9 1/2"
11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"
14"	14"	14"	14"	14"	14"	14"
16"	16"	16"	16"	16"	16"	16"

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

Nordic Engineered Wood I-joists use only finger-jointed back splice lumber in their flanges, ensuring consistent quality, superior strength, longer span carrying capacity.

2015-04-16

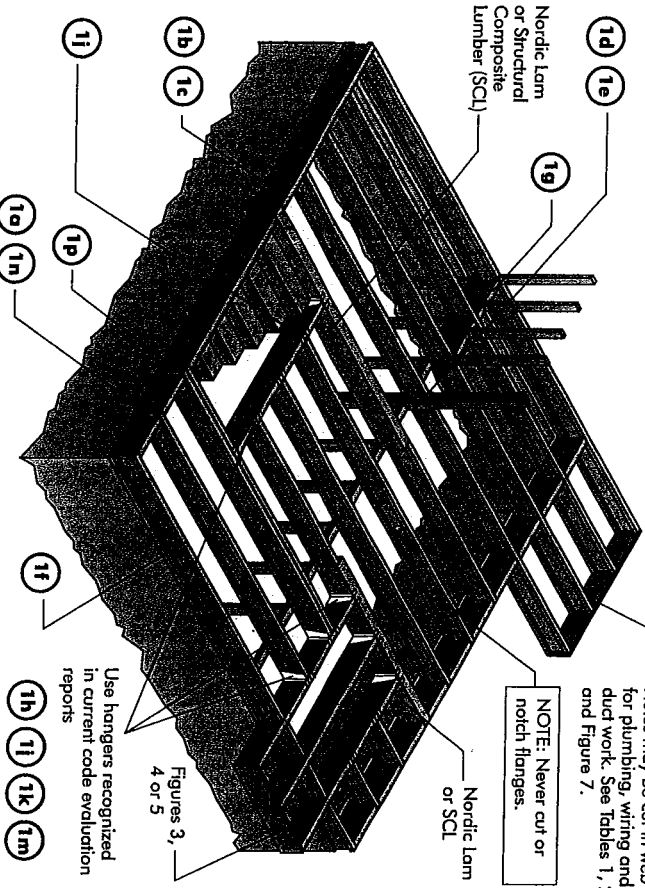
# INSTALLING NORDIC I-JOISTS

1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact your supplier.
2. Except for cutting to length, I-joist flanges should **never** be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple-span joists must be level.
5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings.
6. When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement.
7. Leave a 1/16-inch gap between the I-joist end and a header.
8. Concentrated loads greater than those that can normally be expected in residential construction should **only** be applied to the top surface of the top flange. Normal concentrated loads include track lighting fixtures, audio equipment and security cameras. Never suspend unusual or heavy loads from the I-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist webs.
9. Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonry.
10. Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
11. For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
12. Due to shrinkage, common framing lumber set on edge **may never** be used as blocking or rim boards. I-joist blocking panels or other engineered wood products – such as rim board – must be cut to fit between the I-joists, and an I-joist-compatible depth selected.
13. Provide permanent lateral support of the bottom flange of all I-joists at interior supports of multiple-span joists. Similarly, support the bottom flange of all cantilevered I-joists at the end support next to the cantilever extension. In the completed structure, the gypsum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporary bracing or struts must be used.
14. If square-edge panels are used, edges must be supported between I-joists with 2x4 blocking. Glue panels to blocking to minimize squeaks. Blocking is not required under structural finish flooring, such as wood strip flooring, or if a separate underlayment layer is installed.
15. Nail spacing: Space nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

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

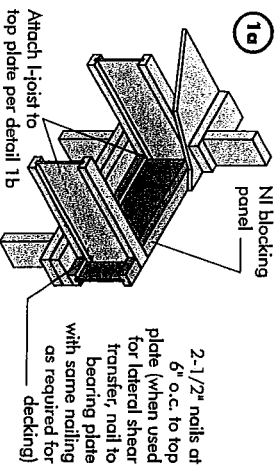
Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.



NOTE: Never cut or notch flanges.

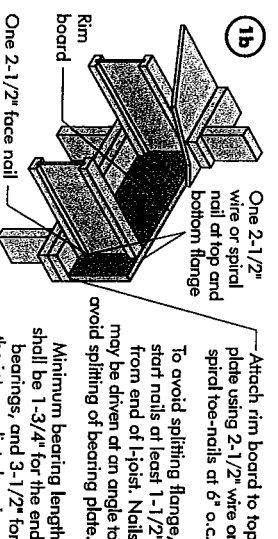
Use hangers recognized in current code evaluation reports

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



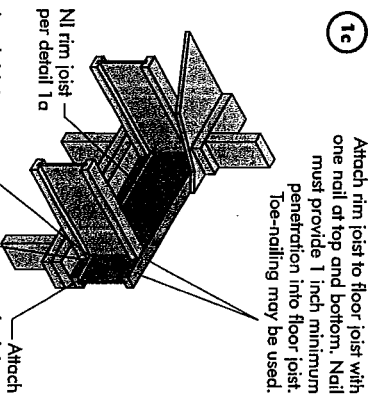
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
Nl Joists	3,300

\*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.



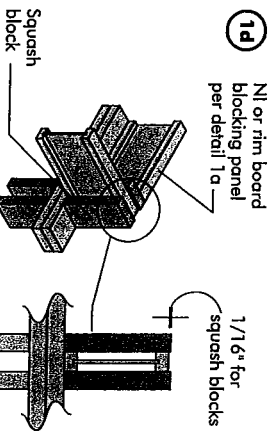
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

\*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.



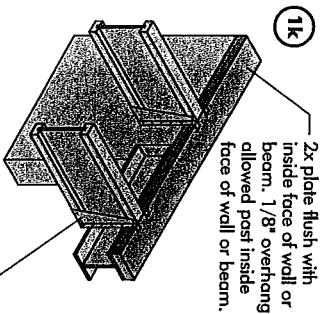
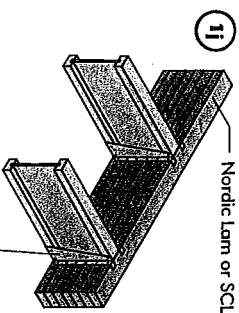
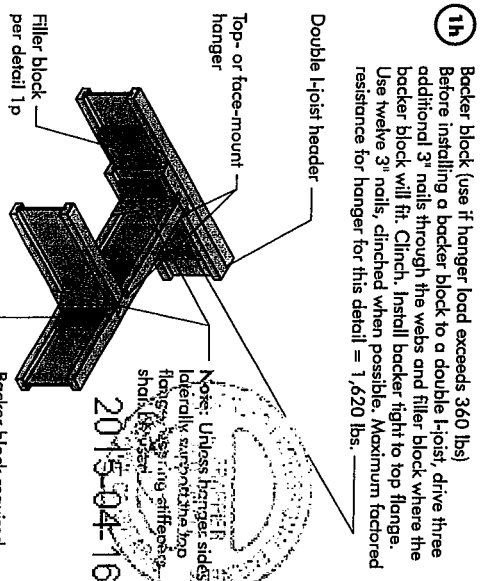
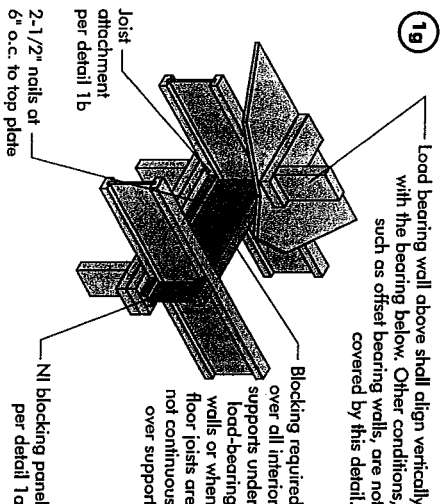
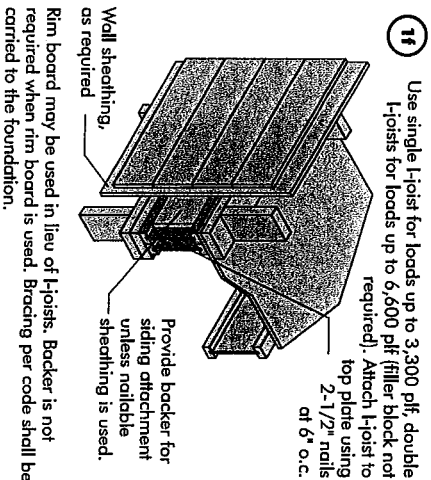
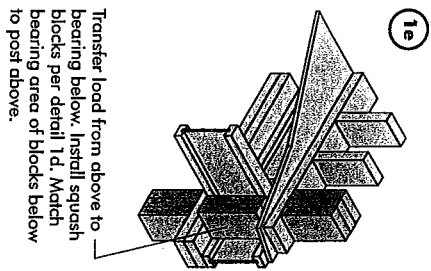
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
Nl rim joist	1a

Attach I-joist per detail 1a



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

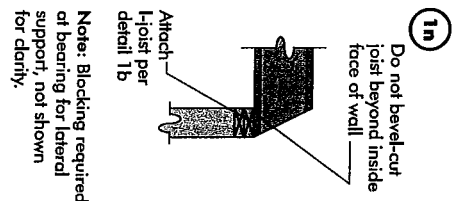
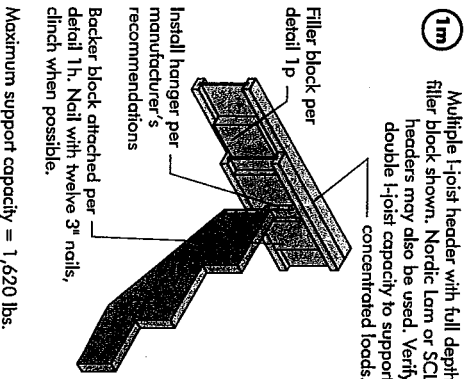
Provide lateral bracing per detail 1a, 1b, or 1c



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

Top-mount hanger installed per manufacturer's recommendations

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

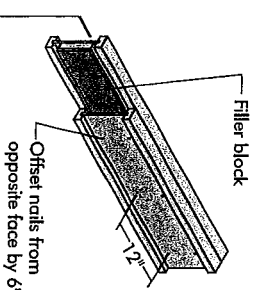


Note: Blocking required at bearing for lateral support, not shown for clarity.

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-C325 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".

1p

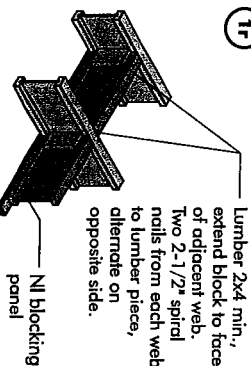


1/8" to 1/4" gap between top flange and filler block

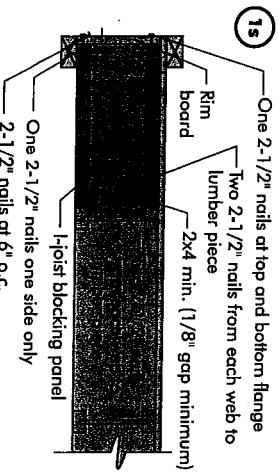
- Notes:
- Support back of I-joist web during nailing to prevent damage to web/flange connection.
  - Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
  - Filler block is required between joists for full length of span.
  - Nail joists together with two rows of 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" x 2-1/8" x 10"
3-1/2" x 1-1/2"	9-1/2" x 14"	2-1/8" x 12" x 3" x 8"
3-1/2" x 1-1/2"	11-7/8" x 14"	3" x 8" x 3" x 10"
3-1/2" x 1-1/2"	11-7/8" x 14"	3" x 7" x 3" x 11"



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



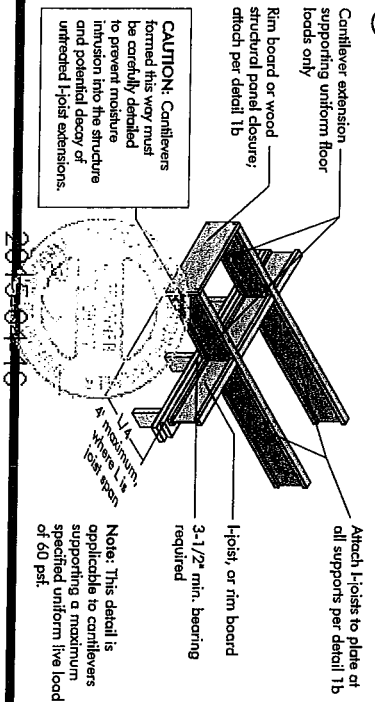
Notes:

- 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.

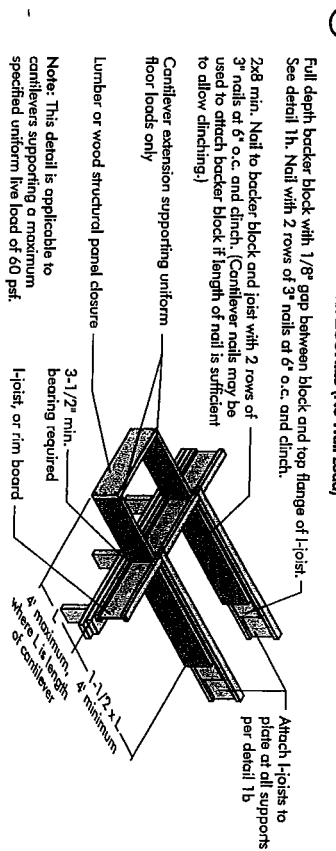


## CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

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

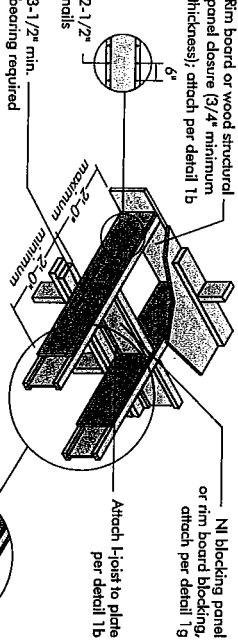


### 3b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



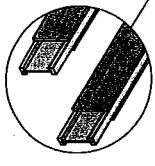
## CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

### 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".



### 4b Alternate Method 2 — DOUBLE I-JOIST

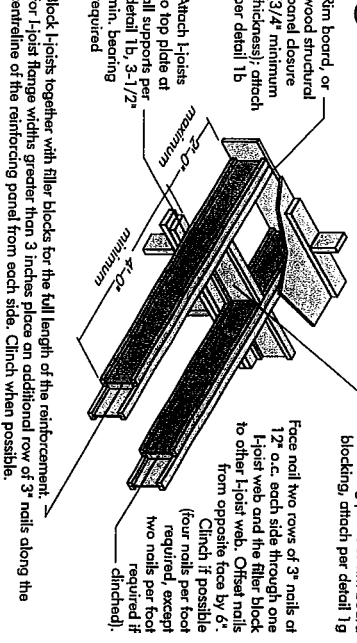
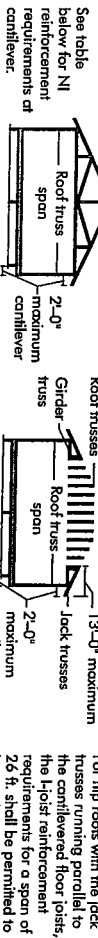


FIGURE 4 (continued)



### 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.)	LL = 60 psf, DL = 15 psf JOIST SPACING (in.)
12	12	12	12	12	12
16	16	16	16	16	16
19.2	19.2	19.2	19.2	19.2	19.2
24	24	24	24	24	24
30	30	30	30	30	30
36	36	36	36	36	36
42	42	42	42	42	42
48	48	48	48	48	48
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1000	1000	1000	1000	1000	1000

1. N = No reinforcement required.
2. 1 = NI reinforced with 3/4" wood structural panel on one side only.
3. 2 = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
4. For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
5. When floor joists are formed using a ridge board, the floor span requirements for a design dead 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.
6. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

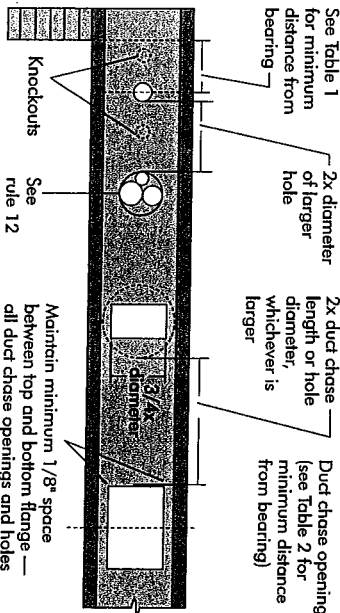


## RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS

## 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.



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

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

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

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

[illegible]

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

**OPTIONAL:**

The above table is based on the I-joists used at their maximum span. If the I-joists are placed at less than their full maximum span, the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:

SAF

## Where

$$\begin{array}{l} L_{\text{actual}} \\ \text{SAF} \\ D \end{array} \quad \begin{array}{l} = \\ = \\ = \end{array}$$

If  $\frac{\text{Local}}{\text{SAFE}}$  is greater than 1, use 1 in the above calculation for  $\frac{\text{Local}}{\text{SAFE}}$ .

**TABLE 2**

[illegible]

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

Maximum Fiber Spans  
in ft. The specified  
maximum fiber spans are  
shown in feet.

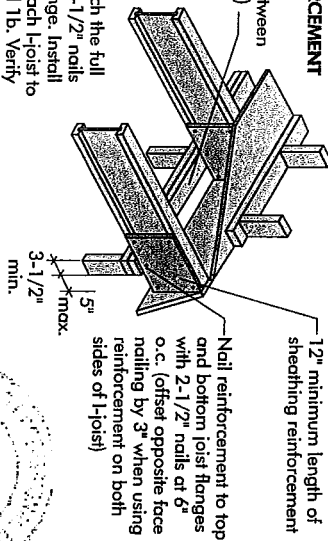
2015-04-16

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

## 5a SHEATHING REINFORCEMENT

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

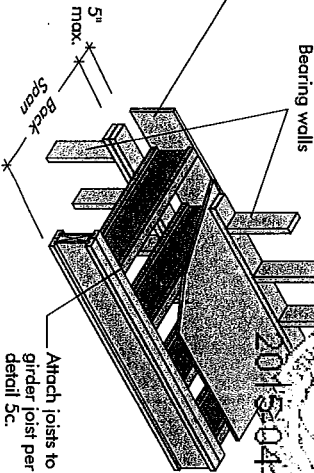
**Note:** Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail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



## 5b SET-BACK DETAIL

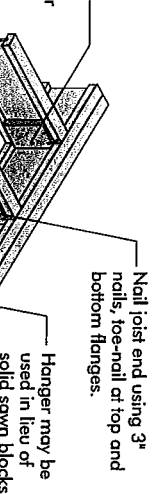
Rim board or wood structural panel closure (3/4" minimum thickness), attach per detail 1b.

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



## 5c SET-BACK CONNECTION

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



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

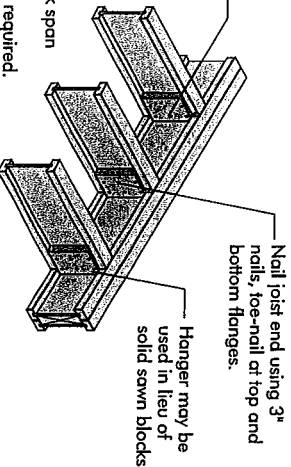
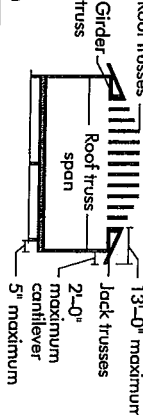
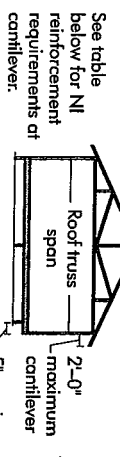


FIGURE 5 (continued)



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

## BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)				JOIST SPACING (in.)
		LL = 30 psf, DL = 15 psf	LL = 40 psf, DL = 15 psf	LL = 50 psf, DL = 15 psf		
12	12	12	12	12	12	
	16	16	16	16	16	
	19.2	19.2	19.2	19.2	19.2	
	24	24	24	24	24	
	12	12	12	12	12	
16	12	16	16	16	16	
	16	16	16	16	16	
	19.2	19.2	19.2	19.2	19.2	
	24	24	24	24	24	
	12	12	12	12	12	
19.2	12	19.2	19.2	19.2	19.2	
	16	16	16	16	16	
	19.2	19.2	19.2	19.2	19.2	
	24	24	24	24	24	
	12	12	12	12	12	
24	12	24	24	24	24	
	16	16	16	16	16	
	19.2	19.2	19.2	19.2	19.2	
	24	24	24	24	24	
	12	12	12	12	12	

## INSTALLING THE GLUED FLOOR SYSTEM

1. Wipe any mud, dirt, water, or ice from I-joint 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) then used on I-joist flanges.
8. Top the second row of panels into place, using a block to protect groove edges.
9. Stagger and 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 I-joist Spacing (in.)	Minimum Panel Thickness (in.)	Common Wire or Spiral Nails	Nail Size and Type	Staples	Maximum Spacing of Fasteners
16	5/8	2"	1-3/4"	2"	6"
20	5/8	2"	1-3/4"	2"	6"
24	3/4	2"	1-3/4"	2"	6"

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

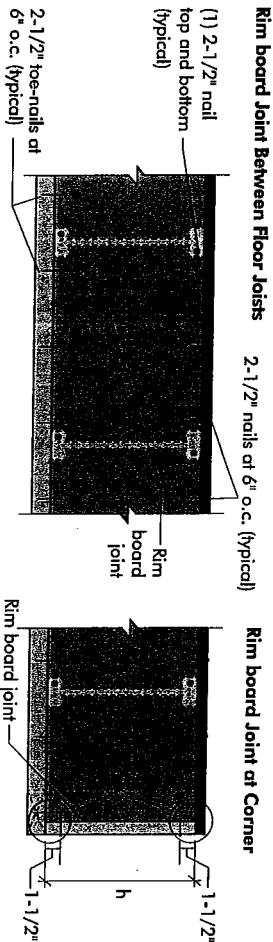
Ref.: NRC-CNRC, National Building Code of Canada 2010, Table 9.23.3.5.

#### IMPORTANT NOTE:

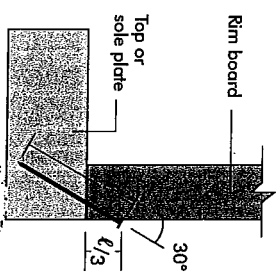
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

## RIM BOARD INSTALLATION DETAILS

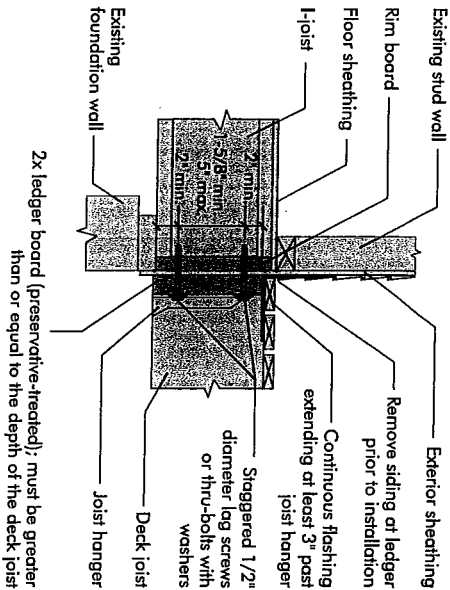
### 8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



### 8b TOE-NAIL CONNECTION AT RIM BOARD



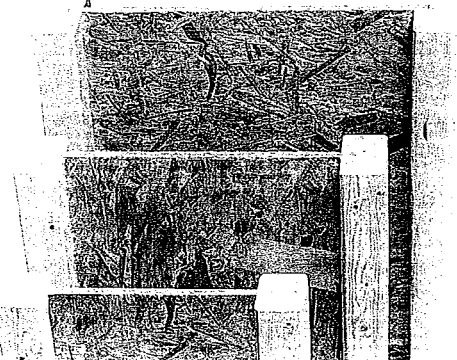
### 8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL



2013-04-16

## PRODUCT WARRANTY

**Customer Challenge:** Customers purchase this product with the understanding that it is a preservative-treated wood product. Customers are responsible for the proper use and maintenance of the product. Customers are responsible for the proper use and maintenance of the product.



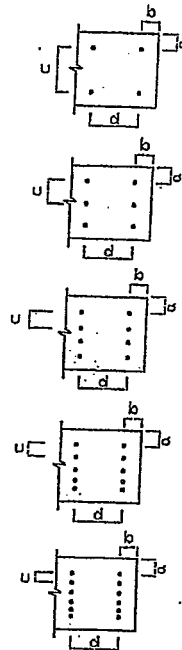
# MICRO CITY

## 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 CALCS  
BEARING THE  
STAMP BELOW

PROVIDE NAILING

DETAIL # X SEE

DWG #TAMN1001-14