



FROM PLAN DATED:

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: URBAN 2

ELEVATION: 1 ,2, 2A, 3 ,4 ,5

LOT:

CITY: CALEDON

SALESMAN: MD

DESIGNER: PL

REVISION: lbv

NOTES:

REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.

SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH

BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ.

I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR HOLES INCLUDING

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

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JUL 11 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO.

LOADING:

DESIGN LOADS: L/480.000

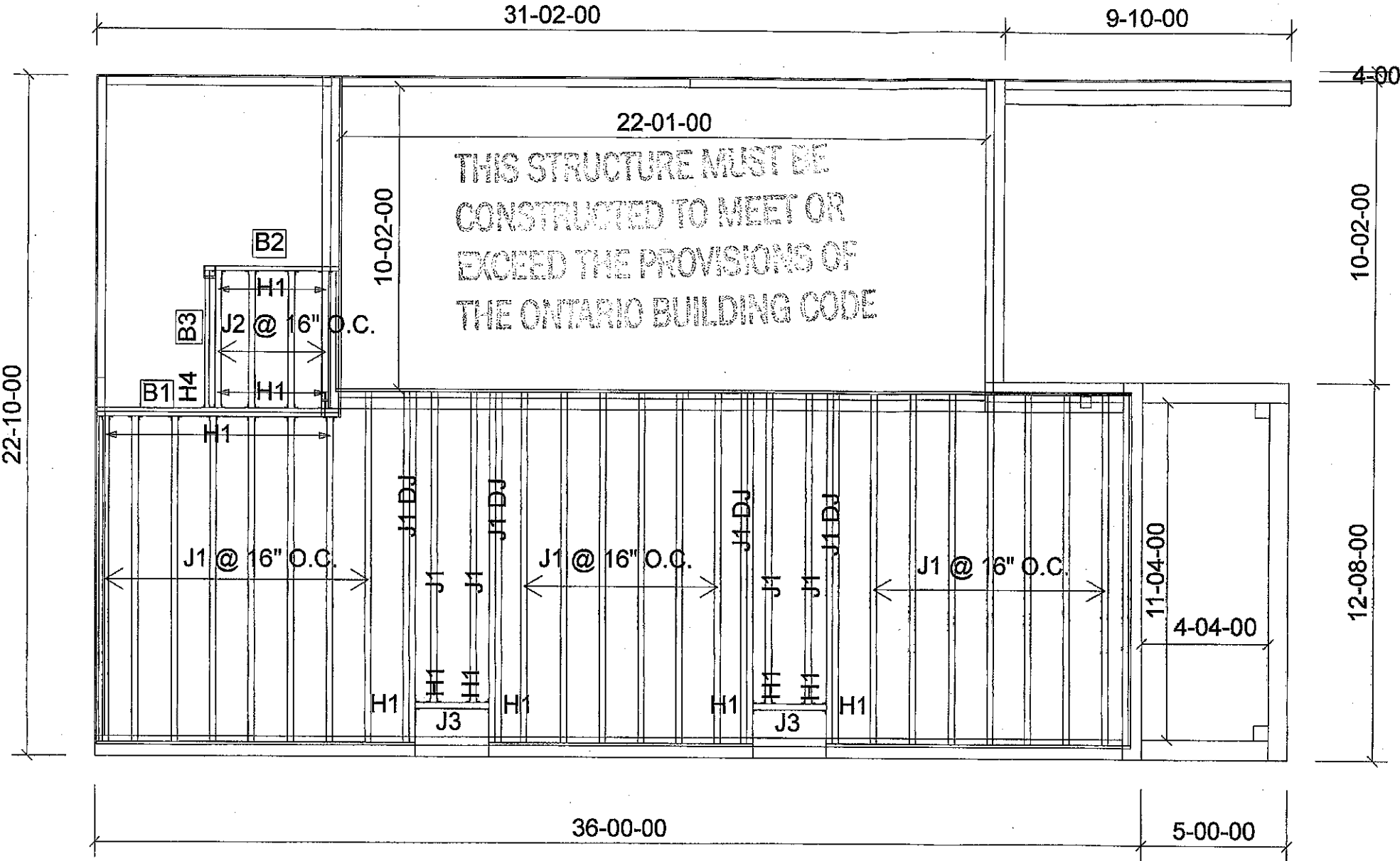
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DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

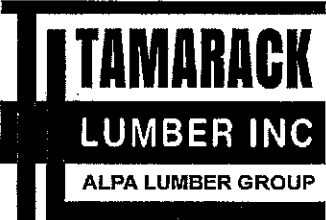
DATE: 2019-06-20

LOWER LEVEL



Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	25
J1 DJ	12-00-00	9 1/2" NI-40x	2	8
J2	6-00-00	9 1/2" NI-40x	1	4
J3	4-00-00	9 1/2" NI-40x	1	2
B1	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B2	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
4	H1	IUS2.56/9.5
11	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
1	H4	HUS1.81/10



FROM PLAN DATED:

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: URBAN 2

ELEVATION: 1 ,2, 2A, 3 ,4 ,5

LOT:

CITY: CALEDON

SALESMAN: MD

DESIGNER: PL

REVISION:

NOTES:

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

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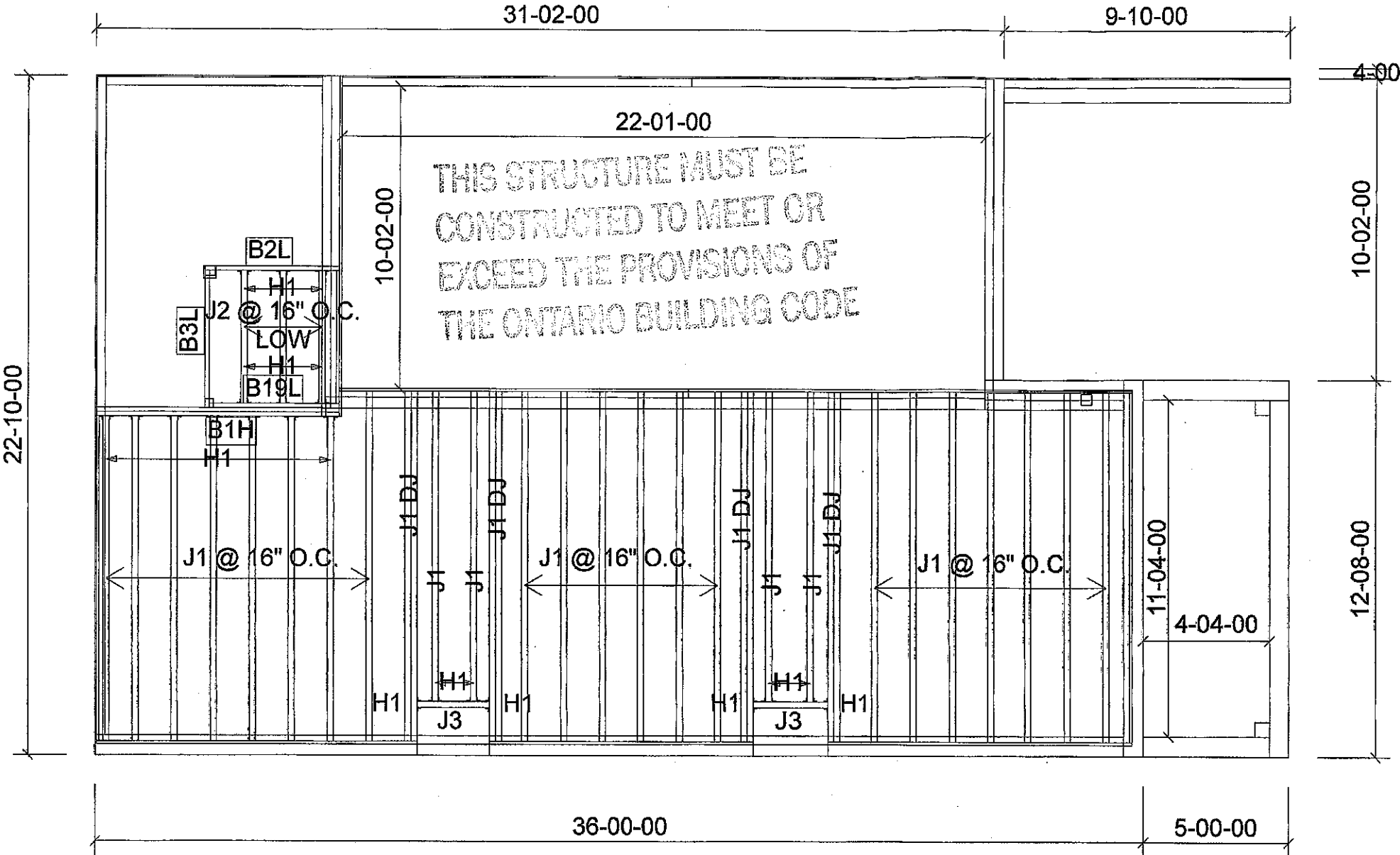
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DEAD LOAD: 20.0 PSF

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2019-06-20

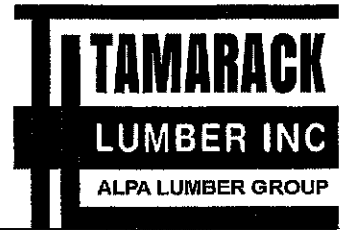
LOWER LEVEL

SUNKEN OPTION



Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	25
J1 DJ	12-00-00	9 1/2" NI-40x	2	8
J2	6-00-00	9 1/2" NI-40x	1	3
J3	4-00-00	9 1/2" NI-40x	1	2
B1H	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B19L	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1
B2L	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1
B3L	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5



FROM PLAN DATED:

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: URBAN 2

ELEVATION: 1

LOT:

CITY: CALEDON

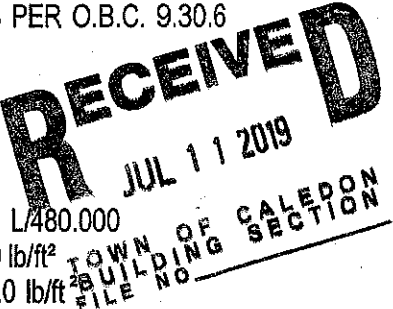
SALESMAN: MD

DESIGNER: PL

REVISION: lbv

NOTES:

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



LOADING:

DESIGN LOADS: L/480.000

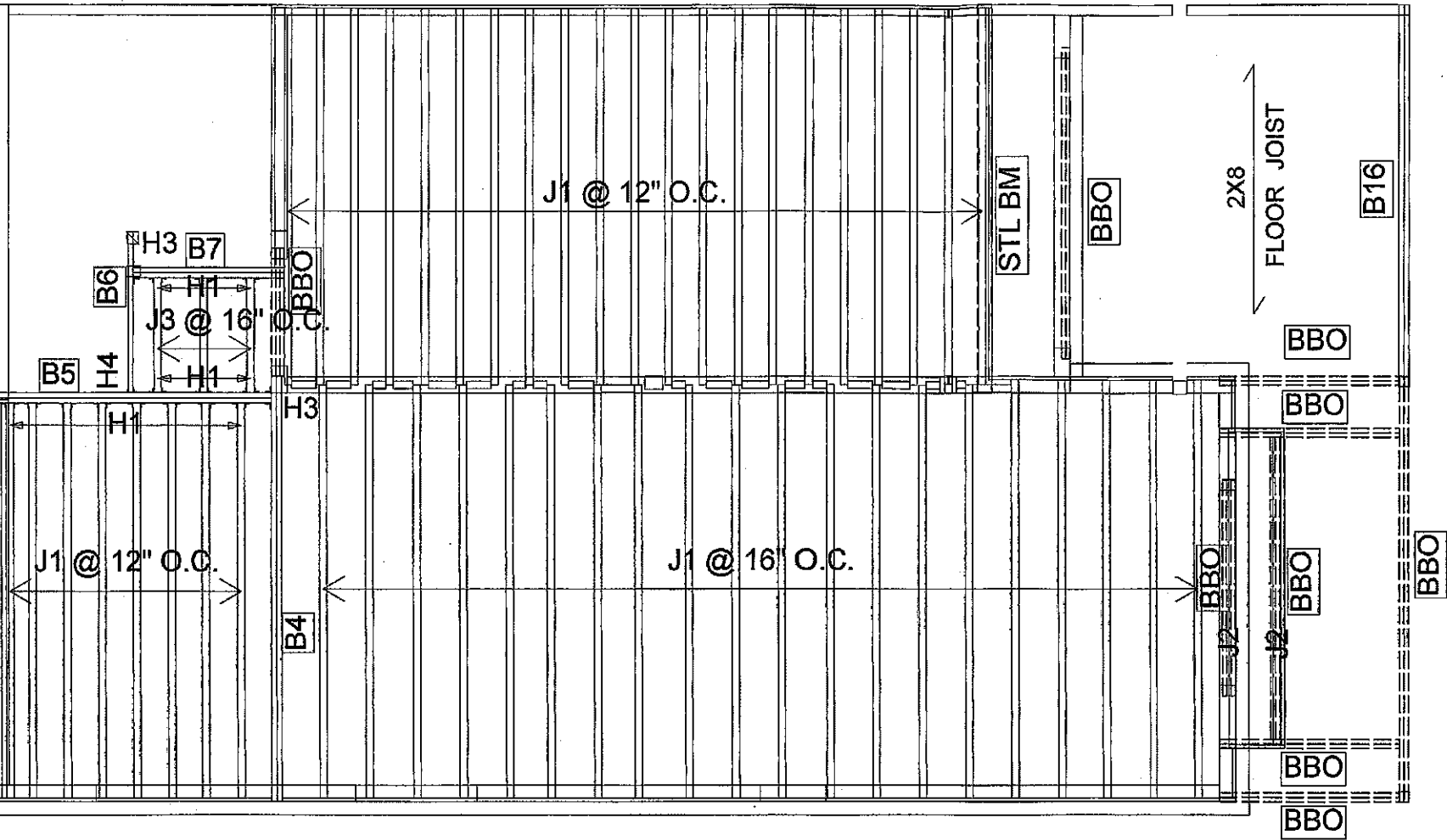
LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2019-06-20

MAIN LEVEL



Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	49
J2	10-00-00	9 1/2" NI-40x	1	2
J3	4-00-00	9 1/2" NI-40x	1	3
B16	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B4	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/9.5
1	H3	HGUS410
1	H3	HGUS410
1	H4	HUS1.81/10

THIS STRUCTURE MUST BE
CONSTRUCTED TO MEET OR
EXCEED THE PROVISIONS OF
THE ONTARIO BUILDING CODE



FROM PLAN DATED:

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: URBAN 2

ELEVATION: 1

LOT:

CITY: CALEDON

SALESMAN: MD

DESIGNER: PL

REVISION: lbv

NOTES:

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

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TOWN OF CALEDON
BUILDING SECTION
FILE NO.

LOADING:

DESIGN LOADS: L/480.000

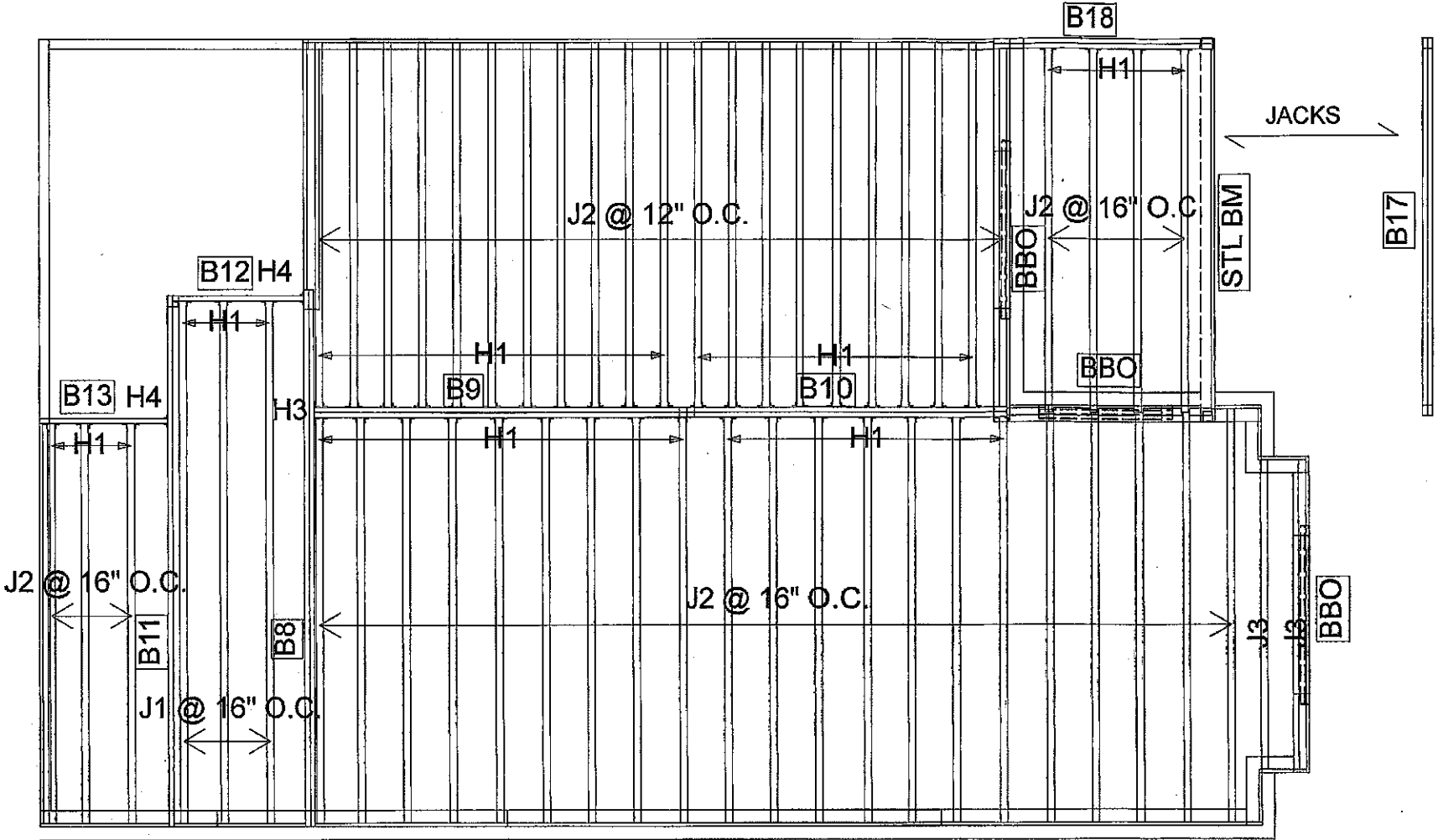
LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2019-06-20

UPPER LEVEL

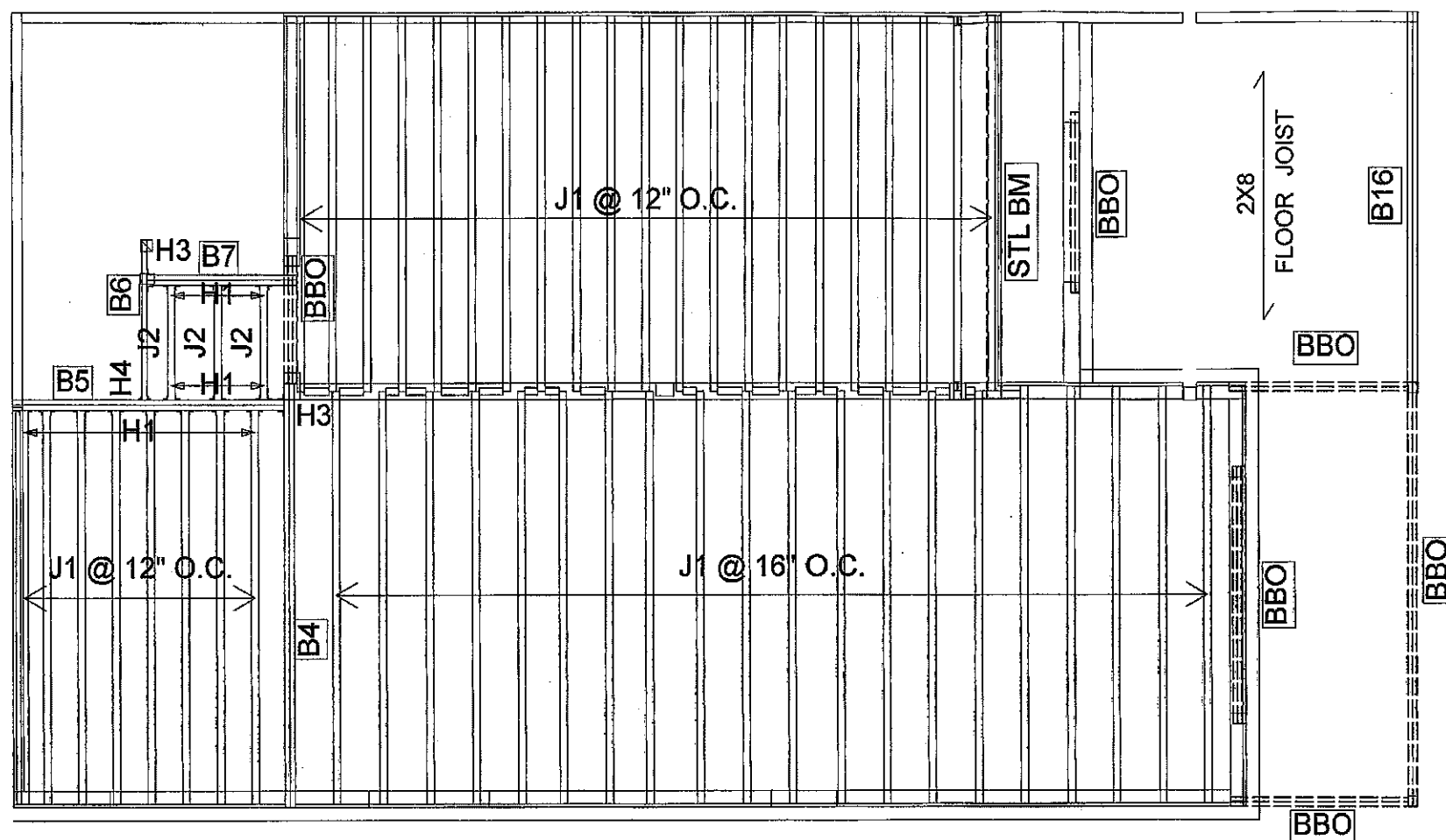


Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	11 7/8" NI-40x	1	3
J2	12-00-00	11 7/8" NI-40x	1	49
J3	10-00-00	11 7/8" NI-40x	1	2
B17	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B9	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B10	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B18	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B12	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B13	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/11.88
40	H1	IUS2.56/11.88
1	H1	IUS2.56/11.88
1	H4	HUS1.81/10
1	H4	HUS1.81/10

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Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	49
J2	4-00-00	9 1/2" NI-40x	1	3
B16	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B4	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/9.5
1	H3	HGUS410
1	H3	HGUS410
1	H4	HUS1.81/10

RECEIVED
JUL 11 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO.



FROM PLAN DATED:

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: URBAN 2

ELEVATION: 2 & 2A

LOT:

CITY: CALEDON

SALESMAN: MD

DESIGNER: PL

REVISION: lbv

NOTES:

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

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2019-06-20

MAIN LEVEL



FROM PLAN DATED:

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: URBAN 2

ELEVATION: 2,2A,3,4,5

LOT:

CITY: CALEDON

SALESMAN: MD

DESIGNER: PL

REVISION: lbv

NOTES:

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

LOADING:

DESIGN LOADS: L/480.000

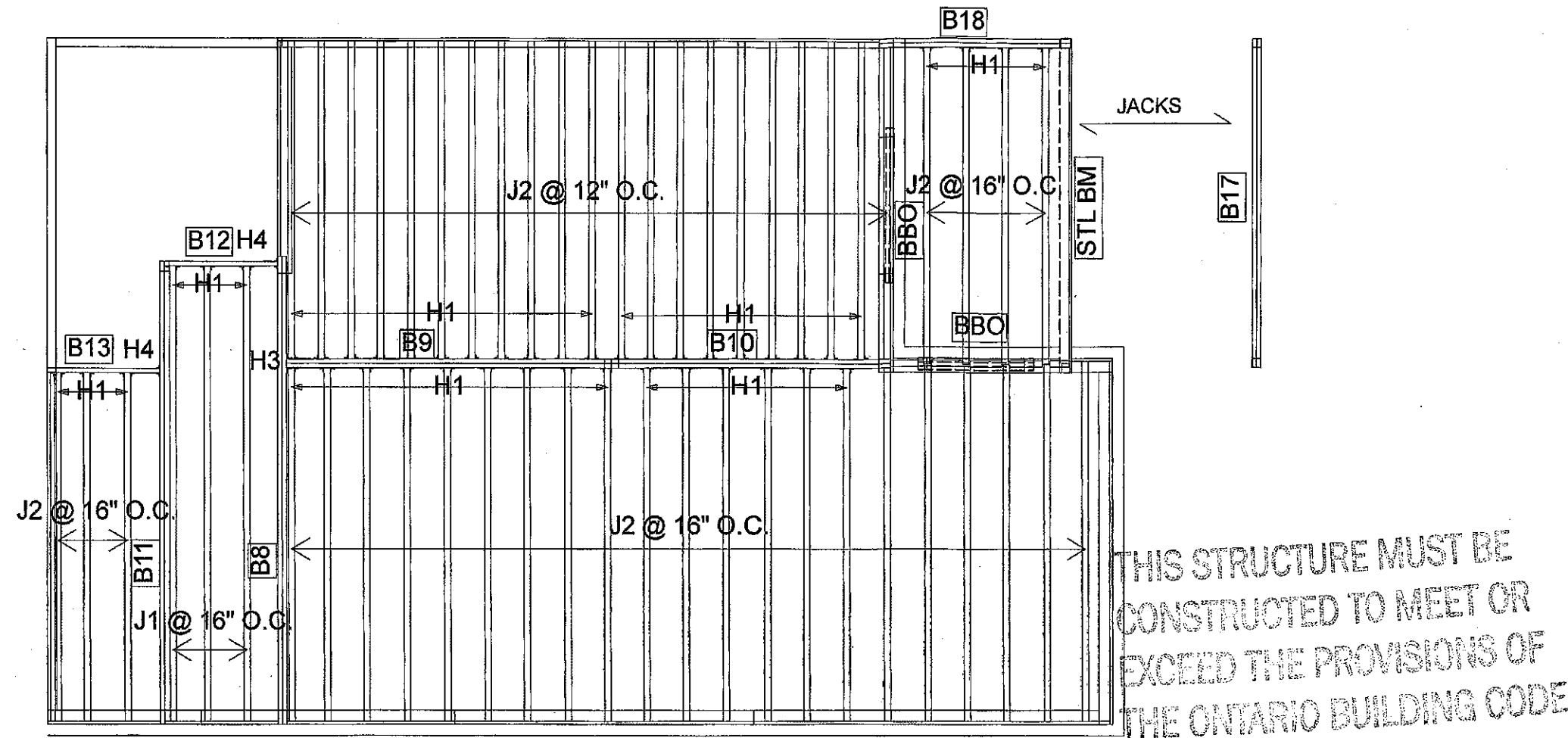
LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

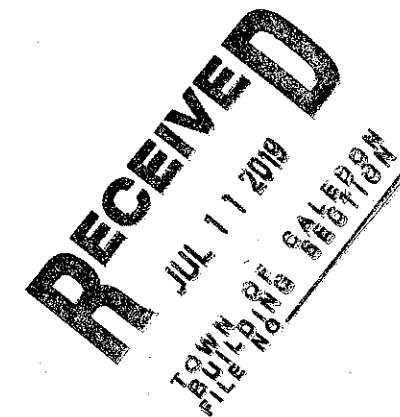
DATE: 2019-06-20

UPPER LEVEL



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	11 7/8" NI-40x	1	3
J2	12-00-00	11 7/8" NI-40x	1	49
B17	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B9	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B10	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B18	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B12	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B13	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/11.88
39	H1	IUS2.56/11.88
1	H1	IUS2.56/11.88
1	H4	HUS1.81/10
1	H4	HUS1.81/10





FROM PLAN DATED:

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: URBAN 2

ELEVATION: 3

LOT:

CITY: CALEDON

SALESMAN: MD

DESIGNER: PL

REVISION: lbv

NOTES:

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LOADING:

DESIGN LOADS: L/480.000

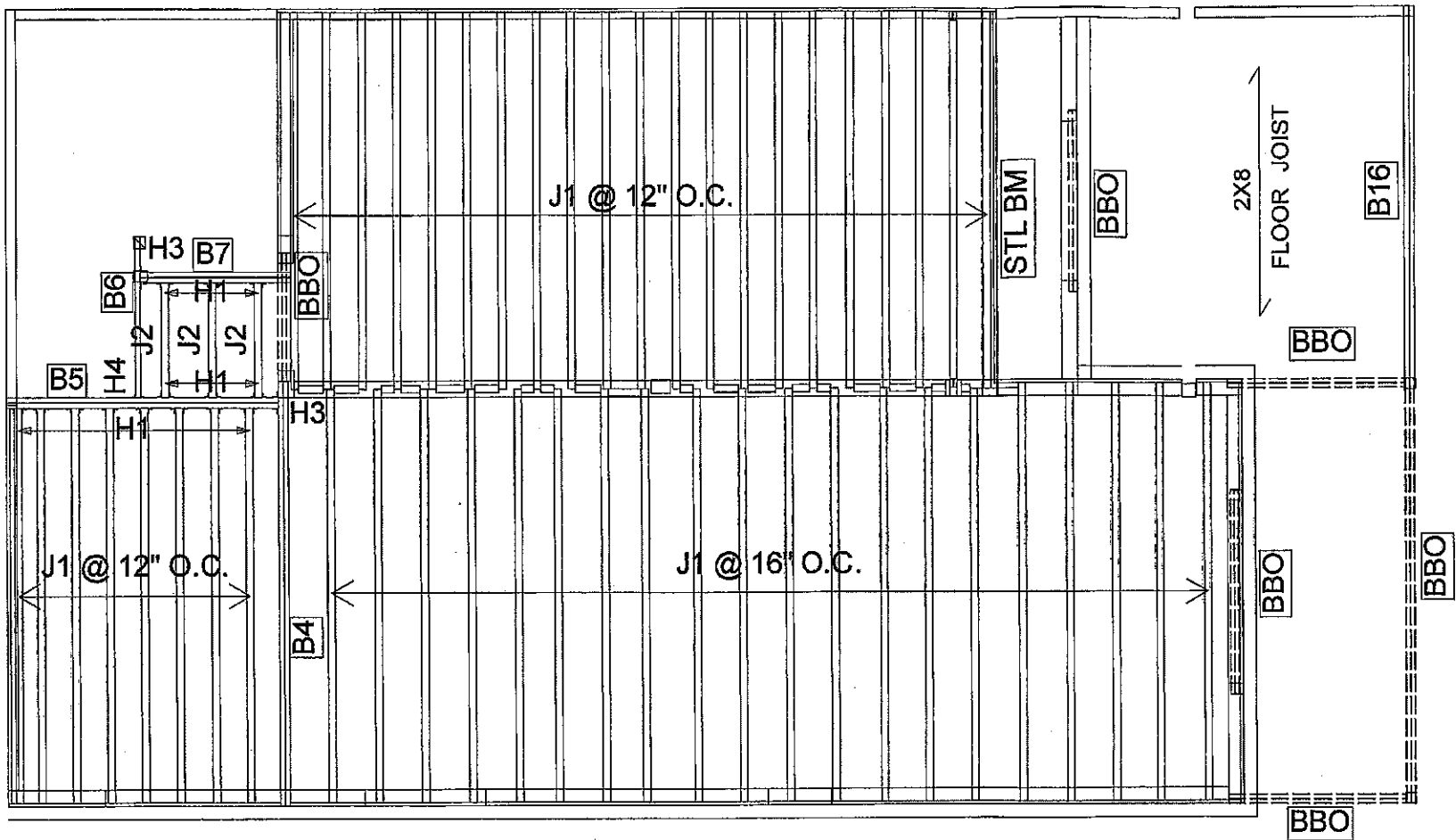
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DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2019-06-20

MAIN FLOOR



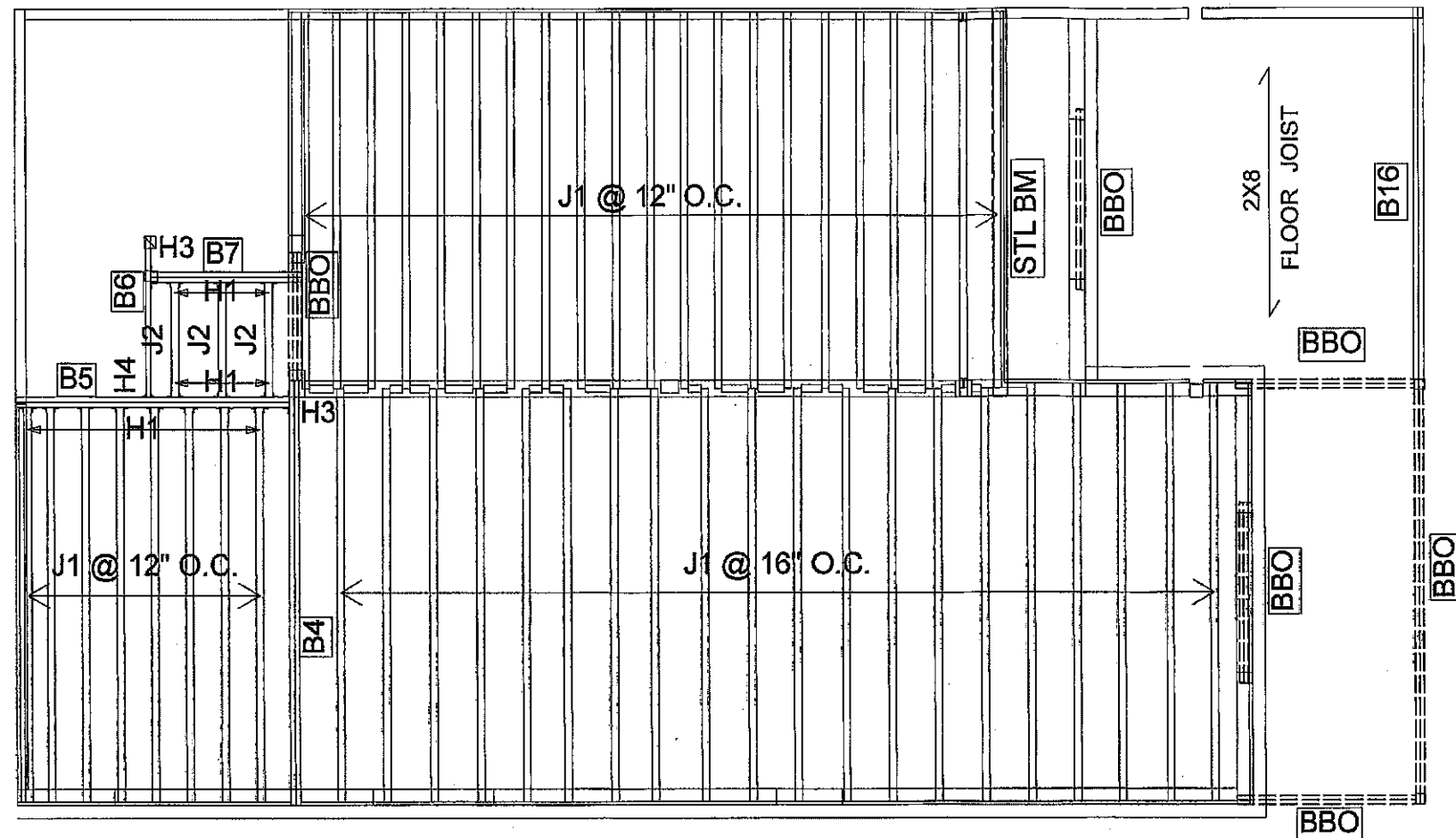
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Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	49
J2	4-00-00	9 1/2" NI-40x	1	3
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B4	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/9.5
1	H3	HGUS410
1	H3	HGUS410
1	H4	HUS1.81/10

RECEIVED
JUL 11 2019
TOWN OF CALEDON
FILED BY SALES/PM

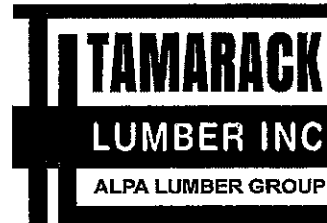
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Products				
PlotID	Length	Product	Plies	Net Qty
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B16	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B4	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/9.5
1	H3	HGUS410
1	H3	HGUS410
1	H4	HUS1.81/10

RECEIVED
JUL 11 2019
TOWN OF CALEDON
FILE NO. 6-2019-0016



FROM PLAN DATED: FEB 2019
BUILDER: GREENPARK HOMES
SITE: LAMBERTS LANE
MODEL: URBAN 2
ELEVATION: 4 & 5
LOT:
CITY: CALEDON
SALESMAN: MD
DESIGNER: PL
REVISION: lbv

NOTES:
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LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 20.0 lb/ft²
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2019-06-20

MAIN LEVEL



Refer to the Installation Guide for Residential Floors for additional information.
CCMC EVALUATION REPORT 13032-R

WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

- 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.
- 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 largest 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.
- 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.
- Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.

- A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that 3 meets the requirements of rule number 6 above.
- 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.
- Limit three maximum size holes per span, of which one may be a duct chase opening.
- A group of round holes of approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS

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

Joist Depth	Joist Series	Minimum Distance from Inside Face of Any Support to Centre of Hole (ft - in.)											
		Round Hole Diameter (in.)											
9-1/2"	NJ-20	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---
	NJ-40x	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---
	NJ-60	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---
	NJ-70	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---
	NJ-80	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---

- Above table may be used for I-joist spacing of 24 inches on centre or less.
- Hole location distance is measured from inside face of supports to centre of hole.
- Distances in this chart are based on uniformly loaded joists.
- The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

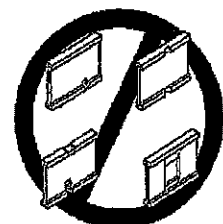
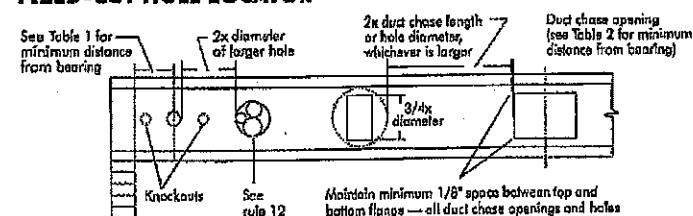
TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS

Simple Span Only

Joist Depth	Joist Series	Minimum Distance from Inside Face of Supports to Centre of Opening (ft - in.)											
		Duct Chase Length (in.)											
9-1/2"	NJ-20	4-11"	4-5"	10-12"	9-4"	5-8"	6-1"	6-1"	7-1"	7-5"	7-5"	7-5"	7-5"
	NJ-40x	5-3"	5-3"	6-0"	6-0"	6-0"	6-0"	6-0"	7-1"	7-5"	7-5"	7-5"	7-5"
	NJ-60	6-4"	6-4"	6-0"	6-0"	6-0"	6-0"	6-0"	7-1"	7-5"	7-5"	7-5"	7-5"
	NJ-70	5-1"	5-1"	5-10"	6-3"	6-7"	7-1"	7-1"	7-5"	7-5"	7-5"	7-5"	7-5"
	NJ-80	6-3"	6-3"	6-0"	6-0"	6-0"	6-0"	6-0"	7-1"	7-5"	7-5"	7-5"	7-5"

- Above table may be used for I-joist spacing of 24 inches on centre or less.
- Duct chase opening location distance is measured from inside face of supports to centre of opening.
- The above table is based on simple span joists only. For other applications, contact your local distributor.
- 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 1/400.
- The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

FIGURE 7
FIELD-CUT HOLE LOCATOR



Knockouts are precast 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 16 inches on centre along the length of the I-joist. Where possible, it is preferable to use knockouts instead of field-cut holes.

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

Holes in webs should be cut with a sharp saw.

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

SAFETY AND CONSTRUCTION PRECAUTIONS



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



Never stack building materials over unshathed I-joists. Once shathed, do not overstack I-joists with concentrated loads from building materials.

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

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

- Base and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bracing at joist ends. When I-joists are applied continuously over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
- When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Top ends of adjoining bracing over at least two I-joists.
 - Or sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
- For cantilevered I-joists, brace top and bottom flanges, and brace ends with cleave panels, rim board, or cross-bracing.
- 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.
- Never install a damaged I-joist.

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

PRODUCT WARRANTY

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

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

Blocking Panel or Rim Joist

Maximum Factored Uniform Vertical Load (psf)

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.

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

Blocking Panel or Rim Joist

Maximum Factored Uniform Vertical Load (psf)

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.

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

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

To avoid splitting flange, start nails at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate.

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

Pair of Squash Blocks

Maximum Factored Vertical Load per Pair of Squash Blocks (lbs)

3-1/2" wide: 5,500
5-1/2" wide: 8,500

2x lumber: 4,300
1-1/8" Rim Board Plus: 6,600

Provide lateral bracing per detail 1a or 1b

Transfer load from above to bearing below. Install squash blocks per detail 1d.

Match bearing area of blocks below to post above.

Joist attachment per detail 1b

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

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

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

Nail blocking panel per detail 1a

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

Flange Width

Material Thickness Required*

Minimum Depth**

2-1/2": 1"
3-1/2": 1-1/2"

* Minimum grade for backer block material shall be S-PF No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-Q325 or CAN/CSA-Q437 Standard.

** For face-mount hangers use nail depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use nail depth minus 4-1/4".

Top- or face-mount hanger

Double I-joist header

Filler block per detail 1p

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

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

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

Nordic Lam or Structural Composite Lumber (SCL)

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

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

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

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

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

Top-mount hanger installed per manufacturer's recommendations

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

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

Filler block per detail 1p

Install hanger per manufacturer's recommendations

Maximum support capacity = 1,620 lbs.

Do not bawl-cut joist beyond inside face of wall

Attach I-joist per detail 1a

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

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

Nail blocking panel

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

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

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

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

1-1/2" I-joist blocking panel

One 2-1/2" nail on side only

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

All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.125" dia.) common spiral nails may be substituted for 2-1/2" (0.125" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

Filler block

Offset nails from opposite face by 6"

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. (clinch when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
- The maximum factored load that may be applied to one side of the double I-joist using this detail is 860 lbs/ft. Verify double I-joist capacity.

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

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 at the Joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
- A load stiffener is required at locations where a factored concentrated load greater than 2,376 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.

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS

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

Approx. 2" gap

1/8"-1/4" Gap

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

No Gap

See the adjacent table for web stiffener size requirements

CONCENTRATED LOAD (Load stiffener)

Tight Joint No Gap

END BEARING (Bearing stiffener)

Tight Joint No Gap

STIFFENER SIZE REQUIREMENTS

Flange Width	Minimum Width
2"	1" x 2-3/16"
3-1/2"	1" x 2-3/16"

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

Method 1 - SHEATHING REINFORCEMENT ONE SIDE

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

2-1/2" nails

2-1/2" min. bearing required

Method 2 - SHEATHING REINFORCEMENT TWO SIDES

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

Use nailing pattern shown for Method 1 with opposite face nailing offset by 3".

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

RIM BOARD INSTALLATION DETAILS

(1a) ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim Board Joint Between Floor Joists

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

Rim board joint

Rim Board Joint at Corner

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

2-1/2" nails

1-1/2"

(1b) TOE-NAIL CONNECTION AT RIM BOARD

Rim board

Top or sole plate

30°



Boise Cascade



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

PASSED

1ST FLOOR \Flush Beams\B1\I4993

Dry | 1 span | No cant.

June 20, 2019 07:41:20

BC CALC® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

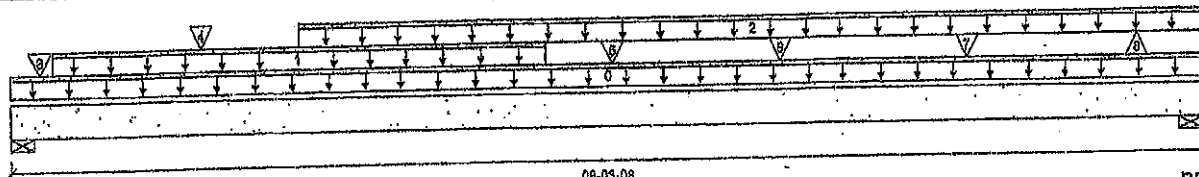
File name: URBAN 2.mmdl

Description: 1ST FLOOR \Flush Beams\B1\I4993

Specifier:

Designer: PL

Company:



B1

Total Horizontal Product Length = 08-03-08

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1,909 / 0	1,060 / 0		
B2, 6-7/16"	2,950 / 0	1,652 / 0	0 / 11	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-03-08	Top		10			00-00-00
1	STAIRS	Unf. Lin. (lb/ft)	L	00-03-08	03-08-07	Top	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	02-00-00	08-03-08	Top	236	118			n/a
3	-	Conc. Pt. (lbs)	L	00-02-07	00-02-07	Top	435	278			n/a
4	J1(I5266)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	Top	268	133			n/a
5	J2(I5098)	Conc. Pt. (lbs)	L	04-02-00	04-02-00	Top	78	39			n/a
6	J2(I5066)	Conc. Pt. (lbs)	L	05-04-00	05-04-00	Top	122	61			n/a
7	J2(I5067)	Conc. Pt. (lbs)	L	06-08-00	06-08-00	Top	122	61			n/a
8	J2(I5203)	Conc. Pt. (lbs)	L	07-10-00	07-10-00	Top	1,504	883	-11		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6,084 ft-lbs	23,220 ft-lbs	26.1%	1	04-00-00
End Shear	2,772 lbs	11,571 lbs	24.0%	1	01-01-00
Total Load Deflection	L/999 (0.09")	n/a	n/a	34	04-00-00
Live Load Deflection	L/999 (0.059")	n/a	n/a	50	04-00-00
Max Defl.	0.09"	n/a	n/a	34	04-00-00
Span / Depth	9.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 3-1/2"	4,189 lbs	64.0%	28.0%	Unspecified
B2	Wall/Plate 6-7/16" x 3-1/2"	6,490 lbs	63.6%	27.9%	Unspecified

Notes

- Design meets Code minimum (L/240) Total load deflection criteria.
- Design meets Code minimum (L/360) Live load deflection criteria.
- Calculations assume member is fully braced.
- Resistance Factor phi has been applied to all presented results per CSA O86.
- BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
- 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
- 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.

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



CONFORMS TO OBC2012



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

PASSED

1ST FLOOR Flush Beams(B2)(5248)

Dry | 1 span | No cant.

June 20, 2019 07:41:20

BC CALCO® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: QCMC 12472-R

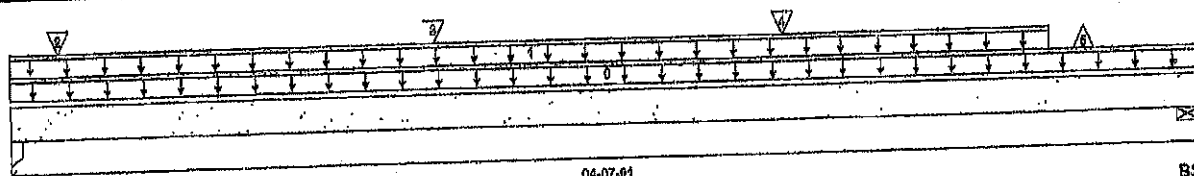
File name: URBAN 2.mxd

Description: 1ST FLOOR Flush Beams(B2)(5248)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 04-07-01

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1,643 / 0	989 / 0	0 / 0	
B2, 3-1/2"	838 / 0	476 / 0	0 / 2	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-07-01	Top	240	120			n/a
1	STAIRS	Unf. Lin. (lb/ft)	L	00-00-00	04-00-01	Top	954	632			n/a
2		Conc. Pt. (lbs)	L	00-02-04	00-02-04	Top	122	61			n/a
3	J2(15066)	Conc. Pt. (lbs)	L	01-07-09	01-07-09	Top	122	61			n/a
4	J2(15067)	Conc. Pt. (lbs)	L	02-11-09	02-11-09	Top	122	61			n/a
5		Conc. Pt. (lbs)	L	04-01-11	04-01-11	Top	319	207	-2		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,516 ft-lbs	11,810 ft-lbs	13.1%	11	02-04-09
End Shear	1,251 lbs	5,785 lbs	21.6%	11	03-08-01
Total Load Deflection	L/999 (0.013")	n/a	n/a	50	02-04-01
Live Load Deflection	L/999 (0.009")	n/a	n/a	34	02-04-01
Max Defl.	0.013"	n/a	n/a		
Span / Depth	5.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 1-3/4"	3,701 lbs	66.1%	43.3%	Unspecified
B2	Wall/Plate 3-1/2" x 1-3/4"	1,851 lbs	56.6%	24.8%	Unspecified

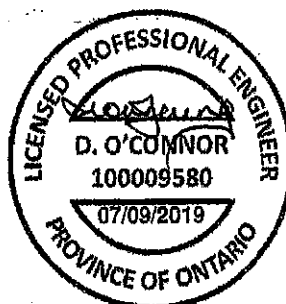
Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-00-00.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 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

Disclosure

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

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





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

PASSED

1ST FLOOR (Flush Beams) B3 (4876)

Dry | 1 span | No cant.

June 20, 2019 07:41:20

BC CALC® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

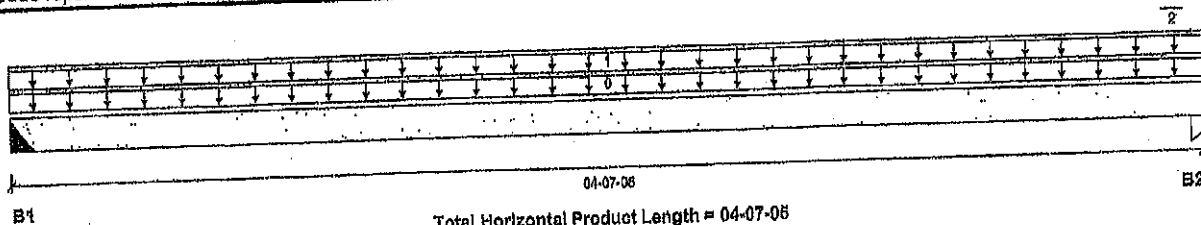
File name: URBAN 2.mmdl

Description: 1ST FLOOR (Flush Beams) B3 (4876)

Specifier:

Designer: PL

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	22 / 0	22 / 0		
B2, 2-1/4"	803 / 0	551 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-07-08	Top	1.00	0.05	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-07-08	Top	9	5			n/a
2	PBO2(163)	Conc. Pt. (lbs)	L	04-05-15	04-05-15	Top	782	530			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	59 ft-lbs	11,610 ft-lbs	0.5%	1	02-04-00
End Shear	33 lbs	5,785 lbs	0.6%	1	01-00-08
Total Load Deflection	1/999 (0.001")	n/a	n/a	4	02-04-00
Live Load Deflection	1/999 (0")	n/a	n/a	5	02-04-00
Max Defl.	0.001"	n/a	n/a	4	02-04-00
Span / Depth	6.4				

Bearing Supports

	B1m. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 3" x 1-3/4"	60 lbs	n/a	0.9%	HUS1.81/10
B2	Column 2-1/4" x 1-3/4"	1,894 lbs	69.2%	39.4%	Unspecified

Cautions

Header for the hanger HUS1.81/10 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.
Hanger model HUS1.81/10 and seat length were input by the user. †

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Hanger Manufacturer: Unassigned
Resistance Factor (phi) has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor: Normal Part code: Part 9



CONFORMS TO OBC2012

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.

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



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

PASSED

2ND FLOOR \Dropped Beams\B16(14865)

June 20, 2019 07:41:20

BC CALCO® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC-12472-R

Dry | 1 span | No cant.

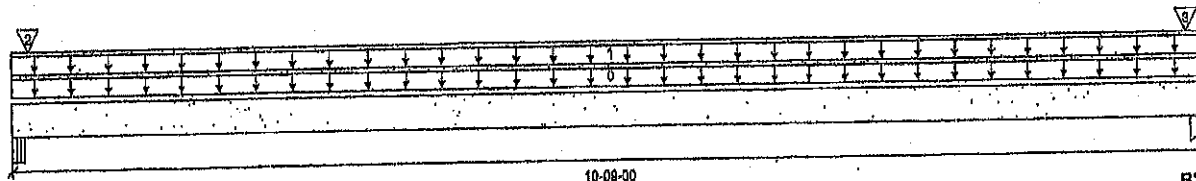
File name: URBAN 2.mmdl

Description: 2ND FLOOR \Dropped Beams\B16(14865)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 10-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-3/16"	688 / 0	626 / 0	2,612 / 0	
B2, 3-1/2"	688 / 0	626 / 0	2,619 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.88	Snow 1.00	Wind 1.18	Tributary 00-00-00
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-08-00	Top	80	40	324		n/a
1	PORCH	Unf. Lin. (lb/ft)	L	00-00-00	10-09-00	Top	237	359	774		n/a
2	PBO19(14351)	Cone. Pt. (lbs)	L	00-01-12	00-01-12	Top	237	359	774		n/a
3	PBO18(14346)	Cone. Pt. (lbs)	L	10-07-04	10-07-04	Top					n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8,364 ft-lbs	16,546 ft-lbs	53.7%	13	05-04-08
End Shear	2,703 lbs	11,571 lbs	23.4%	13	01-00-11
Total Load Deflection	L/636 (0.231")	n/a	44.8%	35	05-04-08
Live Load Deflection	L/802 (0.206")	n/a	59.9%	51	05-04-08
Max Defl.	0.231"	n/a	n/a	35	05-04-08
Span / Depth	13.0				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	3-3/16" x 3-1/2"	5,215 lbs	88.8%	38.0%	Unspecified
B2 Column	3-1/2" x 3-1/2"	5,230 lbs	62.8%	36.0%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume unbraced length of Top: 10-06-00, Bottom: 10-08-00.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC-CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 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
 Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
 Member has no side loads.

Nail one ply to another with
 3 1/2" spiral nails @ 60"
 o.c., staggered in 2 rows



CONFORMS TO OBC2012



BCALCO Member Report



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

2ND FLOOR (Flush Beams) B4(14998)

Dry | 1 span | No cant.

PASSED

June 20, 2019 07:41:20

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports:

CCMC 12472-R

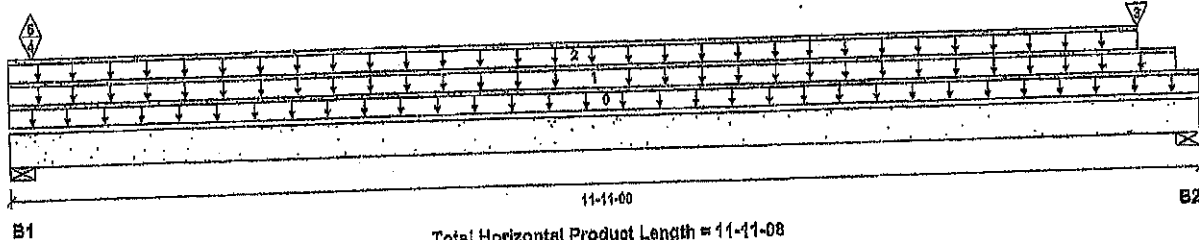
File name: URBAN 2.mmdl

Description: 2ND FLOOR (Flush Beams) B4(14998)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 11-11-08

Reaction Summary (Down / Up) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6-1/2"	593 / 1	492 / 0	395 / 0	
B2, 5-1/2"	1,622 / 0	931 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-11-08	Top	10				00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	11-08-12	Top	27	14			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	11-04-03	Top	20	10			n/a
3	B5(16288)	Conc. Pt. (lbs)	L	11-04-03	11-04-03	Top	1,357	741			n/a
4	E22(1751)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	312	294	395		n/a
5	E22(1751)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	-1				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,747 ft-lbs	23,220 ft-lbs	7.6%	1	05-11-12
End Shear	557 lbs	11,571 lbs	4.8%	1	10-08-08
Total Load Deflection	L/999 (0.056")	n/a	n/a	58	05-11-12
Live Load Deflection	L/999 (0.033")	n/a	n/a	55	05-11-12
Max Defl.	0.056"	n/a	n/a	58	05-11-12
Span / Depth	14.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 6-1/2" x 3-1/2"	1,901 lbs	18.6%	8.1%	Unspecified
B2	Wall/Plate 6-1/2" x 3-1/2"	3,596 lbs	35.0%	15.3%	Unspecified

Notes

- Design meets Code minimum (L/240) Total load deflection criteria.
- Design meets Code minimum (L/360) Live load deflection criteria.
- Calculations assume member is fully braced.
- Resistance Factor phi has been applied to all presented results per CSA O86.
- BCALCO analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
- Unbalanced snow loads determined from building geometry were used in selected products verification.
- Design based on Dry Service Condition.
- Importance Factor: Normal Part code: Part 9
- 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.

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



CONFORMS TO OBC2012



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

PASSED

2ND FLOOR (Flush Beams) B5(16268)

June 20, 2019 07:41:20

BC CALCO® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: OCMC 12472-R

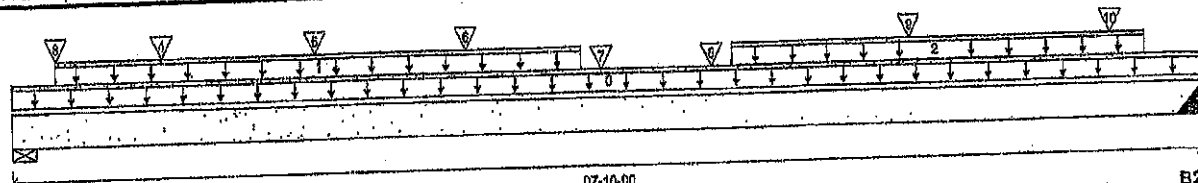
File name: URBAN 2.mmdl

Description: 2ND FLOOR (Flush Beams) B5(16268)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 07-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1,777 / 0	883 / 0		
B2, 4"	1,403 / 0	768 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-10-00	Top	1.00	0.86	1.00	1.15	00-00-00
1	STAIRS	Unf. Lin. (lb/ft)	L	00-03-08	03-08-13	Top	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	04-08-10	07-05-12	Top	241	121			n/a
3	-	Conc. Pt. (lbs)	L	00-03-09	00-03-09	Top	112	99			n/a
4	J1(16249)	Conc. Pt. (lbs)	L	00-11-12	00-11-12	Top	188	94			n/a
5	J1(16258)	Conc. Pt. (lbs)	L	01-11-12	01-11-12	Top	228	114			n/a
6	J1(16170)	Conc. Pt. (lbs)	L	02-11-12	02-11-12	Top	226	113			n/a
7	-	Conc. Pt. (lbs)	L	03-10-06	03-10-06	Top	641	378			n/a
8	J3(16262)	Conc. Pt. (lbs)	L	04-07-00	04-07-00	Top	74	37			n/a
9	J3(16130)	Conc. Pt. (lbs)	L	05-11-00	05-11-00	Top	94	47			n/a
10	J3(16131)	Conc. Pt. (lbs)	L	07-03-00	07-03-00	Top	72	36			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	7,072 ft-lbs	23,220 ft-lbs	30.5%	1	03-09-11
End Shear	3,088 lbs	11,571 lbs	26.7%	1	01-01-00
Total Load Deflection	L/999 (0.092")	n/a	n/a	4	03-09-11
Live Load Deflection	L/999 (0.06")	n/a	n/a	5	03-09-11
Max Defl.	0.092"	n/a	n/a	4	03-09-11
Span / Depth	9.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 3-1/2"	3,895 lbs	59.5%	28.1%	Unspecified
B2	Hanger 4" x 3-1/2"	3,065 lbs	n/a	17.9%	HGUS410

Cautions

Header for the hanger HGUS410 at B2 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HGUS410, and seat length were input by the user. Nail one ply to another with 3 1/2" spiral nails @ 8" o.c., staggered in 2 rows



CONFORMS TO OBC2012



Boise Cascade



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

2ND FLOOR \Flush Beams\B6(15025)

Dry | 1 span | No cant.

PASSED

June 20, 2019 07:41:20

BC CALC® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: OCMC 12472-R

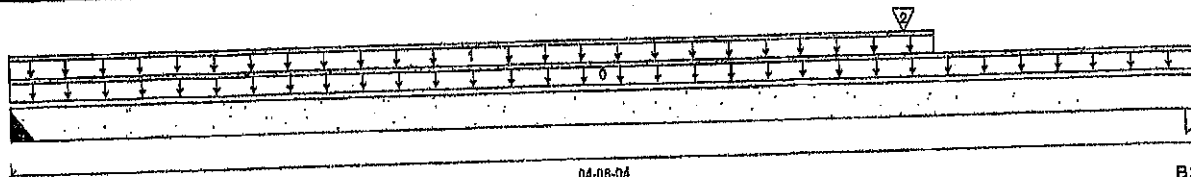
File name: URBAN 2.mmd

Description: 2ND FLOOR \Flush Beams\B6(15025)

Specifier:

Designer: PL

Company:



B1

Total Horizontal Product Length = 04-06-04

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	454 / 0	288 / 0		
B2, 4"	1,621 / 0	1,018 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-08-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	FO2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-08-04	Top	17	9			n/a
2		Conc. Pl. (lbs)	L	03-04-14	03-04-14	Top	2,015	1,255			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pcs. Moment	3,083 ft-lbs	11,810 ft-lbs	26.6%	1	03-04-08
End Shear	3,663 lbs	5,785 lbs	61.4%	1	03-04-12
Total Load Deflection	L/999 (0.02")	n/a	n/a	4	02-06-00
Live Load Deflection	L/999 (0.012")	n/a	n/a	5	02-06-00
Max Defl.	0.02"	n/a	n/a	4	02-06-00
Span / Depth	5.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 3" x 1-3/4"	1,042 lbs	n/a	18.3%	HUS1.81/10
B2	Column 4" x 1-3/4"	3,704 lbs	65.2%	43.4%	Unspecified

Cautions

Header for the hanger HUS1.81/10 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HUS1.81/10 and seat length were input by the user.

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: 01-00-00, Bottom: 01-00-00.
 Hanger Manufacturer: Unassigned
 Resistance Factor phi has been applied to all presented results per CSA Q86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA Q86.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 9

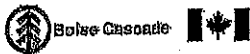


CONFORMS TO OBC2012

Disclosure

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



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

PASSED

2ND FLOOR (Flush Beams) B7(14978)

Dry | 1 span | No cant.

June 20, 2019 07:41:20

BC CALCO Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

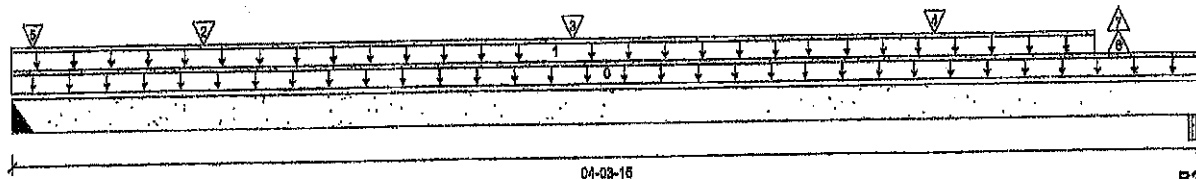
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Description: 2ND FLOOR (Flush Beams) B7(14978)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 04-03-15

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1,279 / 0	762 / 0		
B2, 4-1/2"	3,475 / 6	1,932 / 0	0 / 3	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-03-15	Top		10			00-00-00
1	STAIRS	Unf. Lin. (lb/ft)	L	00-00-00	03-11-07	Top	240	120			n/a
2	J3(15262)	Conc. Pl. (lbs)	L	00-08-07	00-08-07	Top	83	42			n/a
3	J3(15130)	Conc. Pl. (lbs)	L	02-00-07	02-00-07	Top	102	51			n/a
4	J3(15131)	Conc. Pl. (lbs)	L	03-04-07	03-04-07	Top	88	44			n/a
5	PBO7(1765)	Conc. Pl. (lbs)	L	00-01-00	00-01-00	Top	622	412			n/a
6	35(1789)	Conc. Pl. (lbs)	L	04-00-08	04-00-08	Top	2,904	1,625	-3		n/a
7	35(1789)	Conc. Pl. (lbs)	L	04-00-08	04-00-08	Top	-6				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,214 ft-lbs	23,220 ft-lbs	5.2%	1	02-00-07
End Shear	767 lbs	11,671 lbs	6.6%	1	03-01-15
Total Load Deflection	L/999 (0.004")	n/a	n/a	56	02-01-12
Live Load Deflection	L/999 (0.003")	n/a	n/a	83	02-01-12
Max Defl.	0.004"	n/a	n/a	56	02-01-12
Span / Depth	4.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 4" x 8-1/2"	2,871 lbs	n/a	16.8%	HGUS410
B2	Beam 4-1/2" x 3-1/2"	7,828 lbs	90.7%	39.7%	Unspecified

Cautions

Header for the hanger HGUS410 at B1 is a Single 1-3/4" x 8-1/2" VERSA-LAM® 1.7 2400 DF.
Hanger model HGUS410 and seat length were input by the user. Nail one ply to another with 3 1/2" spiral nails @ 6" o.c., staggered in 2 rows



CONFORMS TO OBC2012



Boise Cascade



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

3RD FLOOR \Dropped Beams\B17(15215)

Dry | 1 span | No cant.

PASSED

June 20, 2019 07:41:20

BCALCO Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

File name: URBAN 2.mmdl

Description: 3RD FLOOR \Dropped Beams\B17(15215)

Specifier:

Designer: PL

Company:



B1

Total Horizontal Product Length = 10-09-00

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	237 / 0	267 / 0	774 / 0	
B2, 3-1/2"	236 / 0	267 / 0	774 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-09-00	Top	44	40	144		00-00-00
1	ROOF	Unf. Lin. (lb/ft)	L	00-00-00	10-09-00	Top					n/a

Controls Summary

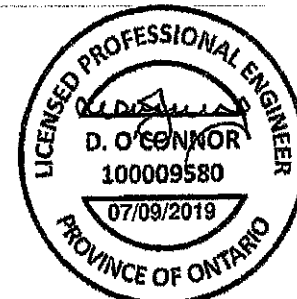
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4,284 ft-lbs	15,184 ft-lbs	28.1%	13	06-04-08
End Shear	1,382 lbs	11,671 lbs	11.9%	13	01-01-00
Total Load Deflection	L/999 (0.12")	n/a	n/a	51	06-04-08
Live Load Deflection	L/999 (0.095")	n/a	n/a	51	06-04-08
Max Defl.	0.12"	n/a	n/a	35	06-04-08
Span / Depth	13.0				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 3-1/2"	1,731 lbs	17.4%	11.6%	Unspecified
B2	Column 3-1/2" x 3-1/2"	1,731 lbs	17.4%	11.6%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume unbraced length of Top: 10-09-00, Bottom: 10-09-00.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BCALCO analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 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
 Member has no side loads.

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



CONFORMS TO OBC2012



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

PASSED

3RD FLOOR Flush Beams B1 (15236)

Dry | 1 span | No cant.

June 20, 2019 07:41:20

BC CALCO® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

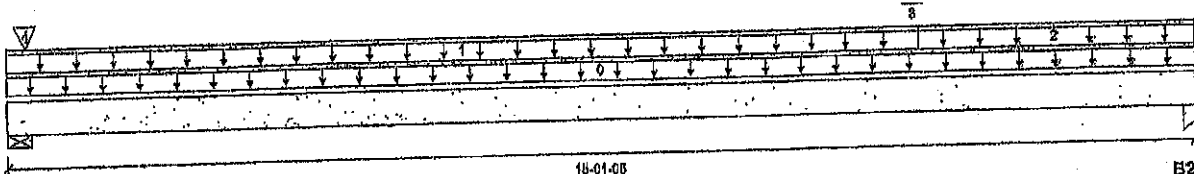
File name: URBAN 2.mxd

Description: 3RD FLOOR Flush Beams B1 (15236)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 15'-01"

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5'-1/2"	285 / 0	221 / 0		
B2, 3'-3/4"	374 / 0	321 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	15-01-05	Top	6				00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	11-07-07	Top	30	16			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	11-07-07	15-01-05	Top	0	4			n/a
3	B13(15108)	Conc. Pt. (lbs)	L	11-06-09	11-06-09	Top	280	256			n/a
4	55(13280)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	6				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3,137 ft-lbs	17,896 ft-lbs	17.7%	1	09-09-11
End Shear	928 lbs	7,232 lbs	12.8%	1	13-09-11
Total Load Deflection	L/1,007 (0.172")	n/a	23.8%	4	07-11-00
Live Load Deflection	L/989 (0.096")	n/a	n/a	5	07-11-00
Max Defl.	0.172"	n/a	n/a	4	07-11-00
Span / Depth	14.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5'-1/2" x 1-3/4"	704 lbs	13.7%	6.0%	Unspecified
B2	Column 3'-3/4" x 1-3/4"	962 lbs	18.0%	12.0%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALCO analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 0



Disclosure

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

BC CALCO®, BC FRAMER®, AJST™, ALLJOIST®, BC RIM BOARD™, BOJO®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®.



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

PASSED

3RD FLOOR Flush Beams B8(15095)

Dry | 1 span | No cant.

June 20, 2019 07:41:20

BC CALCO Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

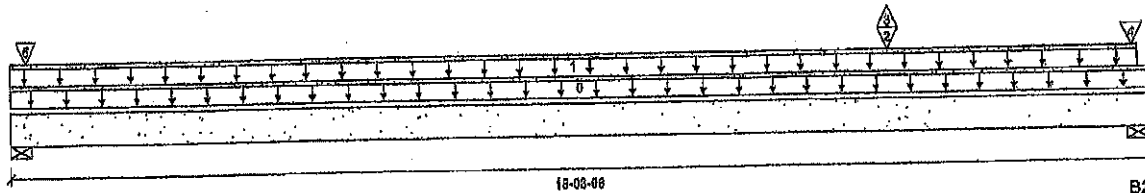
File name: URBAN 2.mind

Description: 3RD FLOOR Flush Beams B8(15095)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 15-03-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	730 / 1	509 / 0	126 / 0	
B2, 6-3/4"	2,867 / 6	1,586 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	15-03-06	Top	12				00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	15-01-05	Top	29	15			n/a
2	B9(15084)	Conc. Pt. (lbs)	L	11-09-07	11-09-07	Top	2,248	1,185			n/a
3	B9(15084)	Conc. Pt. (lbs)	L	11-09-07	11-09-07	Top	-7				n/a
4	B12(15013)	Conc. Pt. (lbs)	L	15-00-07	15-00-07	Top	868	445			n/a
5	52(13143)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	39	59			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	12,830 ft-lbs	35,392 ft-lbs	36.2%	1	11-09-06
End Shear	4,315 lbs	14,464 lbs	29.8%	1	13-08-12
Total Load Deflection	L/616 (0.28")	n/a	39.0%	58	08-04-11
Live Load Deflection	L/879 (0.176")	n/a	36.8%	86	08-04-11
Max Defl.	0.28"	n/a	n/a	58	08-04-11
Span / Depth	14.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	1,857 lbs	18.1%	7.9%	Unspecified
B2	Wall/Plate 6-3/4" x 3-1/2"	6,283 lbs	49.7%	21.8%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

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

Design based on Dry Service Condition.

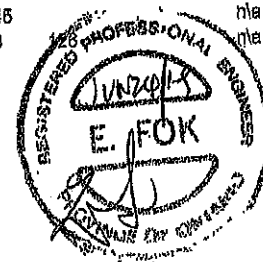
Importance Factor: Normal Part code: Part 9

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

Nail one ply to another with

3 1/2" spiral nails @ 10"

o.c., staggered in 2 rows



CONFORMS TO OBC2012



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

PASSED

3RD FLOOR (Flush Beams) B9 (I5084)

Dry | 1 span | No cant.

June 20, 2018 07:41:20

BC CALCO® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports:

CCMC 12472-R

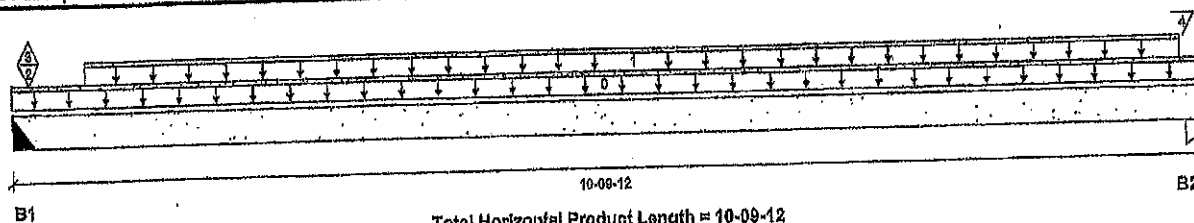
File name: URBAN 2.mmdl

Description: 3RD FLOOR (Flush Beams) B9 (I5084)

Specifier:

Designer: PL

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	2,281 / 7	1,203 / 0		
B2, 2-3/4"	2,490 / 0	1,313 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-09-12	Top	12	0.85	1.00	1.16	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-08-03	10-07-13	Top	426	214			n/a
2	-	Cons. Pt. (lbs)	L	00-01-13	00-01-13	Top	173	88			n/a
3	-	Cons. Pt. (lbs)	L	00-01-13	00-01-13	Top	-7				n/a
4	J2(4997)	Cons. Pt. (lbs)	L	10-08-03	10-08-03	Top	308	154			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	13,248 ft-lbs	35,392 ft-lbs	37.4%	1	06-04-03
End Shear	4,480 lbs	14,464 lbs	30.8%	1	01-01-14
Total Load Deflection	L/604 (0.191")	n/a	36.2%	6	06-04-03
Live Load Deflection	L/899 (0.126")	n/a	n/a	8	06-04-03
Max Defl.	0.191"	n/a	n/a	8	06-04-03
Span / Depth	10.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	2" x 3-1/2"	4,926 lbs	n/a	57.7%	IUS2.56/11.88
B2 Column	2-3/4" x 3-1/2"	5,376 lbs	68.6%	45.8%	Unspecified

Cautions

Header for the hanger IUS2.56/11.88 at B1 is a Double 1-3/4" x 11-7/8" VERSA-LAM® 1.7 2400 DF. Hanger model IUS2.56/11.88 and seat length were input by the user. Nail one ply to another with 3 1/2" spiral nails @ 8" o.c., staggered in 2 rows



CONFORMS TO OBC2012



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

3RD FLOOR (Flush Beams) B10(15107)

PASSED

June 20, 2019 07:41:20

BC CALCO® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports:

CCMC 12472-R

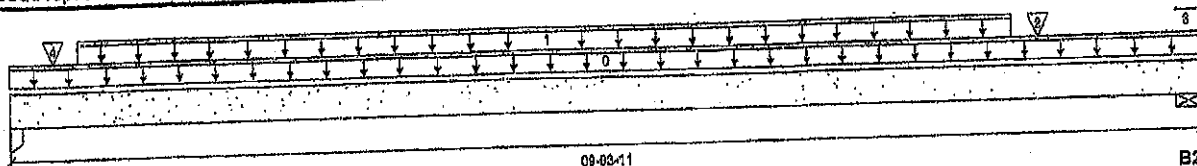
File name: URBAN 2.mmdl

Description: 3RD FLOOR (Flush Beams) B10(15107)

Specifier:

Designer: PL

Company:



B1

Total Horizontal Product Length = 09-03-11

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/4"	1,933 / 0	1,024 / 0		
B2, 4-9/16"	2,108 / 0	1,112 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-03-11	Top	1.00	0.85	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-08-07	07-10-01	Top	413	207			n/a
2		Conc. Pt. (lbs)	L	08-00-10	08-00-10	Top	504	282			n/a
3	J2(14913)	Conc. Pt. (lbs)	L	08-02-07	08-02-07	Top	307	164			n/a
4	J2(14992)	Conc. Pt. (lbs)	L	00-04-01	00-04-01	Top	211	106			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8,271 ft-lbs	35,392 ft-lbs	26.2%	1	04-04-01
End Shear	3,763 lbs	14,464 lbs	25.9%	1	01-02-10
Total Load Deflection	L/999 (0.094")	n/a	n/a	4	04-08-11
Live Load Deflection	L/999 (0.062")	n/a	n/a	5	04-08-11
Max Defl.	0.094"	n/a	n/a	4	04-08-11
Span / Depth	8.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 2-3/4" x 3-1/2"	4,178 lbs	53.6%	35.6%	Unspecified
B2	Wall/Plate 4-9/16" x 3-1/2"	4,560 lbs	53.6%	23.6%	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 CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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.

Nail one ply. to another with
3 1/2" spiral nails @ 8"
o.c, staggered in 2 rows



CONFORMS TO OBC2012



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

PASSED

3RD FLOOR Flush Beams B18(14989)

June 20, 2019 07:41:20

BC CALCO® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

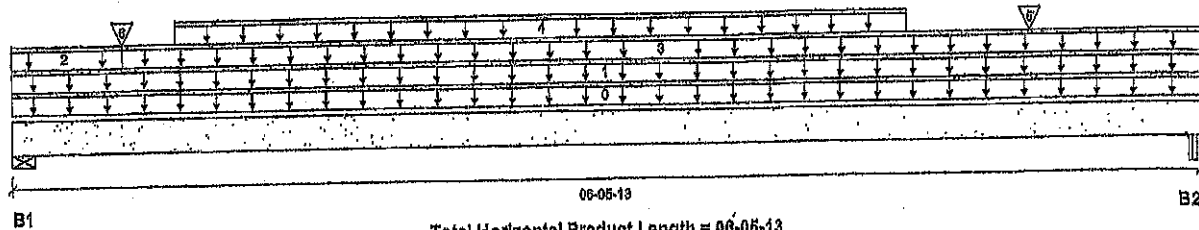
File name: URBAN 2.mmdl

Description: 3RD FLOOR Flush Beams B18(14989)

Specifier:

Designer: PL

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6-1/2"	1,224 / 0	1,236 / 0	2,337 / 0	
B2, 6"	703 / 0	643 / 0	349 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-06-13	Top		12			00-00-00
1	61(13643)	Unf. Lin. (lb/ft)	L	00-00-00	06-06-13	Top		66			n/a
2	61(13643)	Unf. Lin. (lb/ft)	L	00-00-00	00-07-05	Top	132	120	432		n/a
3	61(13643)	Unf. Lin. (lb/ft)	L	00-07-05	06-06-13	Top	33	30	108		n/a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-12	04-10-12	Top	216	108			n/a
5	J2(16222)	Conc. Pt. (lbs)	L	06-06-12	06-06-12	Top	243	122			n/a
6	61(13643)	Conc. Pt. (lbs)	L	00-07-05	00-07-05	Top	547	580	1,789		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3,084 ft-lbs	35,392 ft-lbs	8.7%	1	02-10-12
End Shear	1,890 lbs	14,464 lbs	13.1%	1	01-05-06
Total Load Deflection	L/999 (0.014")	n/a	n/a	35	03-02-12
Live Load Deflection	L/999 (0.008")	n/a	n/a	51	03-02-12
Max Defl.	0.014"	n/a	n/a	36	03-02-12
Span / Depth	5.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	8,278 lbs	61.1%	26.7%	Unspecified
B2	Beam 5" x 3-1/2"	2,207 lbs	23.6%	10.3%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

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

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.

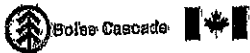
Nail one ply to another with

3 1/2" spiral nails @ 6"

o.c., staggered in 2 rows



CONFORMS TO OBC2012



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

PASSED

3RD FLOOR Flush Beams B12(I5013)

Dry | 1 span | No cant.

June 20, 2019 07:41:20

BC CALC® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: COMC 12472-R

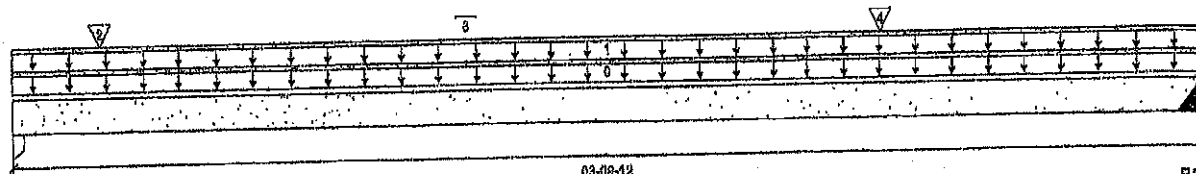
File name: URBAN 2.mmdl

Description: 3RD FLOOR Flush Beams B12(I5013)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 03-09-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	988 / 0	504 / 0		
B2, 3"	906 / 0	465 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-09-12	Top	240	120			n/a
1	STAIRS	Unf. Lin. (lb/ft)	L	00-03-07	00-03-07	Top	232	116			n/a
2	J1(I5017)	Conc. Pt. (lbs)	L	01-08-07	01-08-07	Top	372	186			n/a
3	J1(I5083)	Conc. Pt. (lbs)	L	02-09-07	02-09-07	Top	372	186			n/a
4	J1(I5104)	Conc. Pt. (lbs)	L								

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,732 ft-lbs	17,698 ft-lbs	9.8%	1	01-07-02
End Shear	1,127 lbs	7,232 lbs	15.6%	1	02-06-14
Total Load Deflection	L/999 (0.006")	n/a	n/a	4	01-10-08
Live Load Deflection	L/999 (0.004")	n/a	n/a	5	01-10-08
Max Defl.	0.006"	n/a	n/a	4	01-10-08
Span / Depth	3.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 2" x 1-3/4"	2,108 lbs	74.1%	49.3%	Unspecified
B2	Hanger 3" x 1-3/4"	1,940 lbs	n/a	30.3%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 at B2 is a Double 1-3/4" x 11-7/8" VERSA-LAM® 1.7 2400 DF. Hanger model HUS1.81/10 and seat length were input by the user.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Hanger Manufacturer: Unassigned
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor: Normal Part code: Part 9



CONFORMS TO OBC2012

Disclosure

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



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

3RD FLOOR (Flush Beams) B13 (15108)

Dry | 1 span | No cant.

PASSED

June 20, 2019 07:41:20

BC CALCO® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

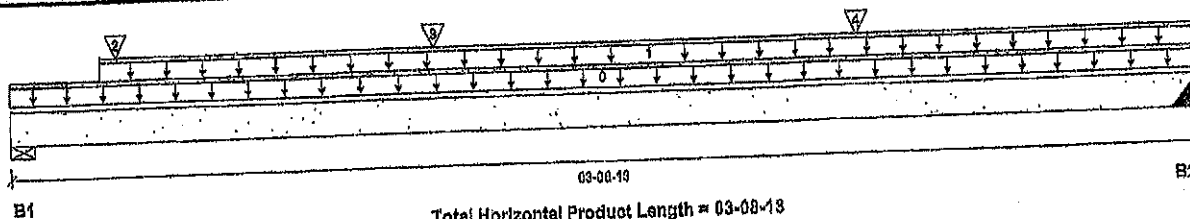
File name: URBAN 2.mmdl

Description: 3RD FLOOR (Flush Beams) B13 (15108)

Specifier:

Designer: PL

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	402 / 0	308 / 0		
B2, 3"	295 / 0	288 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-08-13	Top		6			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-03-08	03-08-13	Top		60			n/a
2	J2(15011)	Conc. Pt. (lbs)	L	00-04-02	00-04-02	Top	162	78			n/a
3	J2(15105)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	Top	284	182			n/a
4	J2(14894)	Conc. Pt. (lbs)	L	02-08-00	02-08-00	Top	281	141			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	891 ft-lbs	17,888 ft-lbs	3.9%	1	01-08-10
End Shear	582 lbs	7,232 lbs	8.1%	1	01-03-08
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	01-10-08
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	01-10-08
Max Defl.	0.002"	n/a	n/a	4	01-10-08
Span / Depth	3.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 1-3/4"	889 lbs	30.2%	13.2%	Unspecified
B2	Hanger 3" x 1-3/4"	779 lbs	n/a	12.2%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 at B2 is a Single 1-3/4" x 11-7/8" VERSA-LAM® 1.7 2400 DF. Hanger model HUS1.81/10 and seat length were input by the user.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Hanger Manufacturer: Unassigned
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor: Normal Part code: Part 9



CONFORMS TO OBC2012

Disclosure

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

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



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

1ST FLOOR Flush Beams B1H(15495)

Dry | 1 span | No cant.

PASSED

June 20, 2019 08:24:17

BC CALC® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC-12472-R

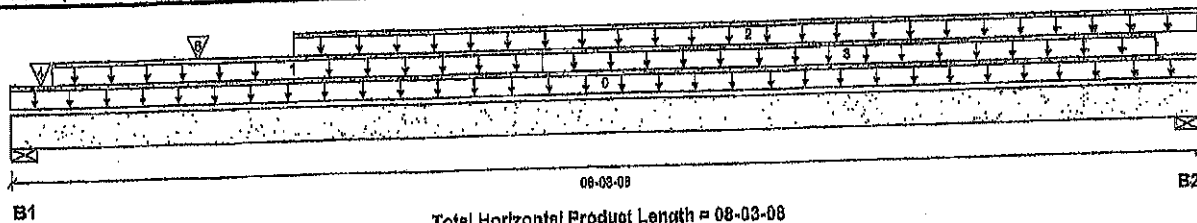
File name: URBAN 2 SUNKEN OPTION.mand

Description: 1ST FLOOR Flush Beams B1H(15495)

Specifier:

Designer: PL

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1,807 / 0	1,003 / 0		
B2, 5-1/2"	1,238 / 0	659 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-03-08	Top	1.00	0.85	1.00	1.15	00-00-00
1	STAIRS	Unf. Lin. (lb/ft)	L	00-03-08	03-08-07	Top	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	02-00-00	08-03-08	Top	236	118			n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-08-07	08-00-00	Top	8	4			n/a
4	"	Conc. Pt. (lbs)	L	00-02-07	00-02-07	Top	435	278			n/a
5	J1(15764)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	Top	266	133			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6,239 ft-lbs	23,220 ft-lbs	22.6%	1	03-06-14
End Shear	2,547 lbs	11,571 lbs	22.0%	1	01-01-00
Total Load Deflection	L/999 (0.078")	n/a	n/a	4	04-00-00
Live Load Deflection	L/999 (0.051")	n/a	n/a	5	04-00-00
Max Defl.	0.078"	n/a	n/a	4	04-00-00
Span / Depth	9.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 3-1/2"	3,964 lbs	60.6%	26.5%	Unspecified
B2	Wall/Plate 5-1/2" x 3-1/2"	2,678 lbs	26.1%	11.4%	Unspecified

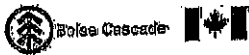
Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBC 2015 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.

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



CONFORMS TO OBC2012



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

PASSED

1ST FLOOR (Flush Beams) B19L (I5601)

Dry | 1 span | No cant.

June 20, 2010 08:24:17

BC CALCO® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMG 12472-R

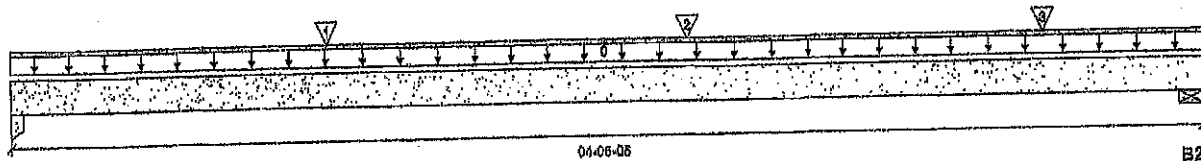
File name: URBAN 2 SUNKEN OPTION.mmdl

Description: 1ST FLOOR (Flush Beams) B19L (I5601)

Specifier:

Designer: PL

Company:



B1

Total Horizontal Product Length = 04-05-05

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	153 / 0	86 / 0		
B2, 3-1/2"	192 / 0	107 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-05-05	Top	1.00	0.85	1.00	1.15	00-00-00
1	J2(I5485)	Conc. Pt. (lbs)	L	01-02-04	01-02-04	Top	127	63			n/a
2	J2(I5699)	Conc. Pt. (lbs)	L	02-08-04	02-08-04	Top	127	63			n/a
3	J2(I5487)	Conc. Pt. (lbs)	L	03-10-04	03-10-04	Top	91	46			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	444 ft-lbs	11,810 ft-lbs	3.8%	1	02-06-04
End Shear	332 lbs	5,765 lbs	5.7%	1	00-11-04
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	02-01-12
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	02-01-12
Max Defl.	0.004"	n/a	n/a	4	02-01-12
Span / Depth	5.2				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Column	1-3/4" x 1-3/4"	337 lbs	13.8%	9.0%	Unspecified
B2 Wall/Plate	3-1/2" x 1-3/4"	422 lbs	12.9%	5.6%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALCO analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9

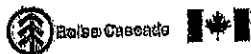


CONFORMS TO OBC2012

Disclosure

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

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



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

PASSED

1ST FLOOR (Flush Beams) B2L (16745)

Dry | 1 span | No cant.

June 20, 2019 08:24:17

BC CALCO® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: OCMC 12472-R

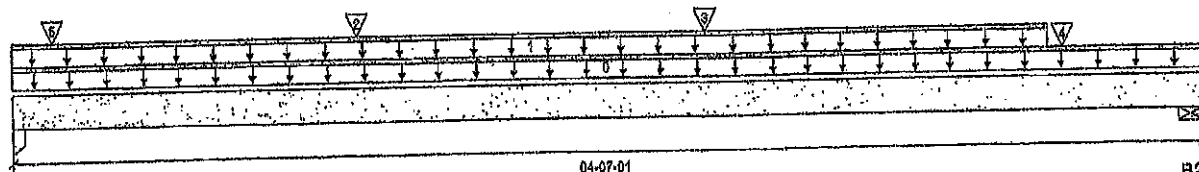
File name: URBAN 2 SUNKEN OPTION.mmdt

Description: 1ST FLOOR (Flush Beams) B2L (16745)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 04-07-01

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1,580 / 0	967 / 0		
B2, 3-1/2"	603 / 0	340 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.85	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-07-01	Top		5			00-00-00
1	STAIRS	Unf. Lin. (lb/ft)	L	00-00-00	04-00-01	Top	240	120			n/a
2	J2(15485)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	Top	127	63			n/a
3	J2(15699)	Conc. Pt. (lbs)	L	02-08-00	02-08-00	Top	127	63			n/a
4	-	Conc. Pt. (lbs)	L	04-00-12	04-00-12	Top	91	75			n/a
6	PBO2(1163)	Conc. Pt. (lbs)	L	00-01-15	00-01-15	Top	874	603			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,489 ft-lbs	11,810 ft-lbs	12.7%	1	02-05-00
End Shear	1,160 lbs	5,785 lbs	20.1%	1	03-06-01
Total Load Deflection	L/999 (0.012")	n/a	n/a	4	02-03-08
Live Load Deflection	L/999 (0.008")	n/a	n/a	5	02-03-08
Max Defl.	0.012"	n/a	n/a	4	02-03-08
Span / Depth	5.2				

Bearing Supports	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 1-3/4"	3,579 lbs	63.0%	41.9%	Unspecified
B2	Wall/Plate 3-1/2" x 1-3/4"	1,329 lbs	40.6%	17.8%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-00-00.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 9

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Boise Cascade



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

PASSED

1ST FLOOR Flush Beams B3L (15375)

Dry | 1 span | No cant.

June 20, 2019 08:24:17

BC CALC® Member Report

Build 7118

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

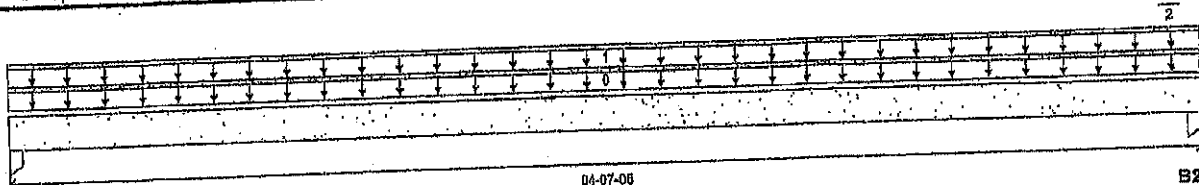
File name: URBAN 2 SUNKEN OPTION.mxd

Description: 1ST FLOOR Flush Beams B3L (15375)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 04-07-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	68 / 0	43 / 0		
B2, 2-1/4"	842 / 0	580 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lim. (lb/ft)	L	00-00-00	04-07-05	Top	1.00	0.85	1.00	1.15	00-00-00
1	FC4 Floor Material	Unf. Lim. (lb/ft)	L	00-00-00	04-07-05	Top	27	13			n/a
2	PBO2(1163)	Conc. Pl. (lbs)	L	04-05-15	04-05-15	Top	782	539			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	142 ft-lbs	11,610 ft-lbs	1.2%	1	02-04-04
End Shear	80 lbs	5,785 lbs	1.4%	1	01-01-00
Total Load Deflection	1/999 (0.001")	n/a	n/a	4	02-04-04
Live Load Deflection	1/999 (0.001")	n/a	n/a	6	02-04-04
Max Defl.	0.001"	n/a	n/a	4	02-04-04
Span / Depth	5.4				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	148 lbs	3.0%	2.0%	Unspecified
B2	Column 2-1/4" x 1-3/4"	1,988 lbs	62.2%	41.4%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2016 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 8



CONFORMS TO OBC2012

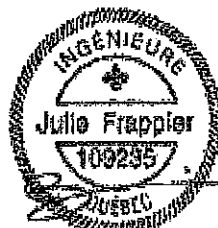
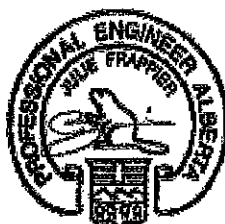
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BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCi®, BOISE OLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

Maximum Floor Spans

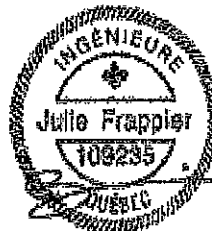
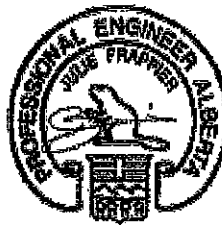
Live Load = 40 psf, Dead Load = 30 psf
Simple Spans, L/480 Deflection Limit
3/4" OSB G&N Sheathing



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'-2"	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'-0"	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.



Maximum Floor Spans

Live Load = 40 psf, Dead Load = 15 psf

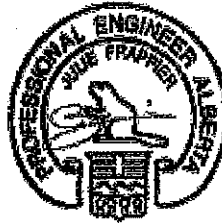
Simple Spans, L/480 Deflection Limit

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'-4"	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'-5"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
14"	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
16"	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

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

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



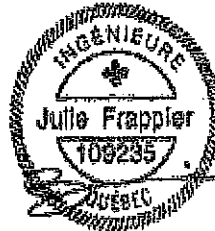
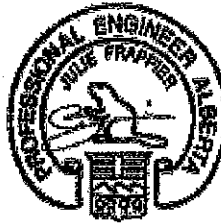
Maximum Floor Spans

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

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

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

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic 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'-9"	18'-5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
16"	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

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

1. 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.
2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. 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.
3. Minimum bearing length shall be 1-3/4 inches for the end bearings.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
5. This span chart is based on uniform loads. For applications with other than 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.
6. 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-1274C.



Construction Detail

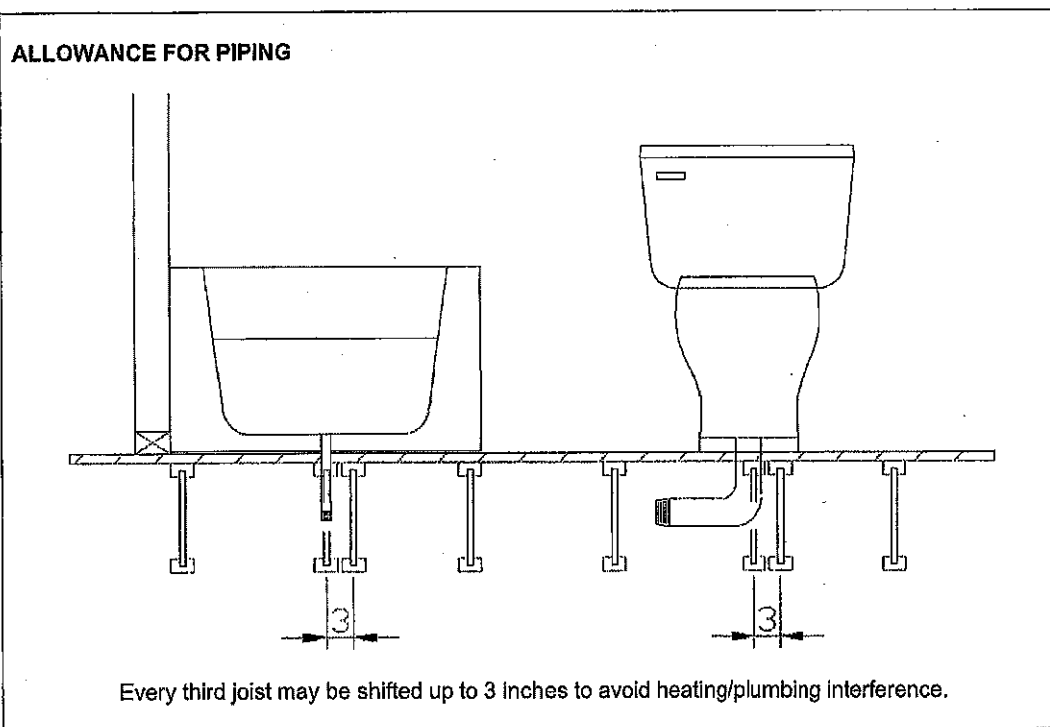
Limit States Design

Allowance for Piping (Installation Notes)

The floor layouts have usually not been checked for heating and/or plumbing interference. On-site adjustment of joists of up to 3 inches is permitted to avoid interferences. When moving a joist, the subfloor thickness shall be checked with code requirements when the joist spacing exceeds 19.2 inches. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.

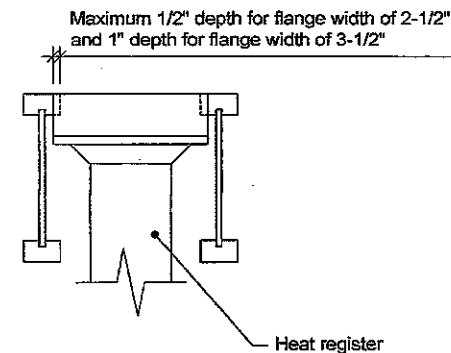
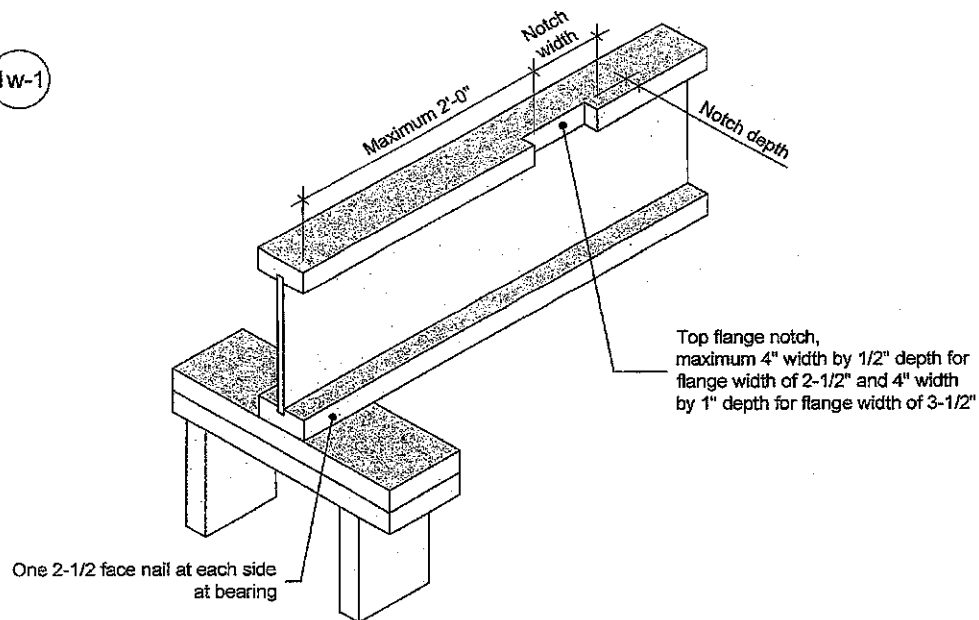
Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced for shorter spans; contact your distributor for additional information.

The detail below shows the 3-inch allowance for piping. Every third joist may be shifted up to 3 inches to avoid heating/plumbing interference. For other applications, please contact your distributor.



Revised April 12, 2012

1w-1



Notes:

1. Blocking required at bearing for lateral support, not shown for clarity.
2. The maximum dimensions for a notch on the side of the top flange are 4-inch width by 1/2-inch depth for flange width of 2-1/2 inches, and 4-inch width by 1-inch depth for flange width of 3-1/2 inches.
3. This detail applies to simple-span joists and multiple-span joists where the notch is located at the end half-span.
4. For other applications, contact Nordic Structures.

This document supersedes all previous versions. If the document has been in effect for more than one year, consult nordic.ca or contact Nordic Structures.

All nails shown in the details are assumed to be common nails unless otherwise noted. Nails shall have a diameter not less than 0.128 inch for 2-1/2-inch nails, or 0.144 inch for 3-inch nails. Individual components not shown to scale for clarity.

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TITLE

Notch in I-joist for Heat Register

CATEGORY

I-joist - Typical Floor Framing and Construction Details

DOCUMENT

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DATE

2018-04-10

NUMBER

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