



FROM PLAN DATED: SEPT 27 2018

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: WOODCROFT 3

ELEVATION: 1

LOT:

CITY: CALEDON

SALESMAN: M D

DESIGNER: PL

REVISION:

NOTES:

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

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

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

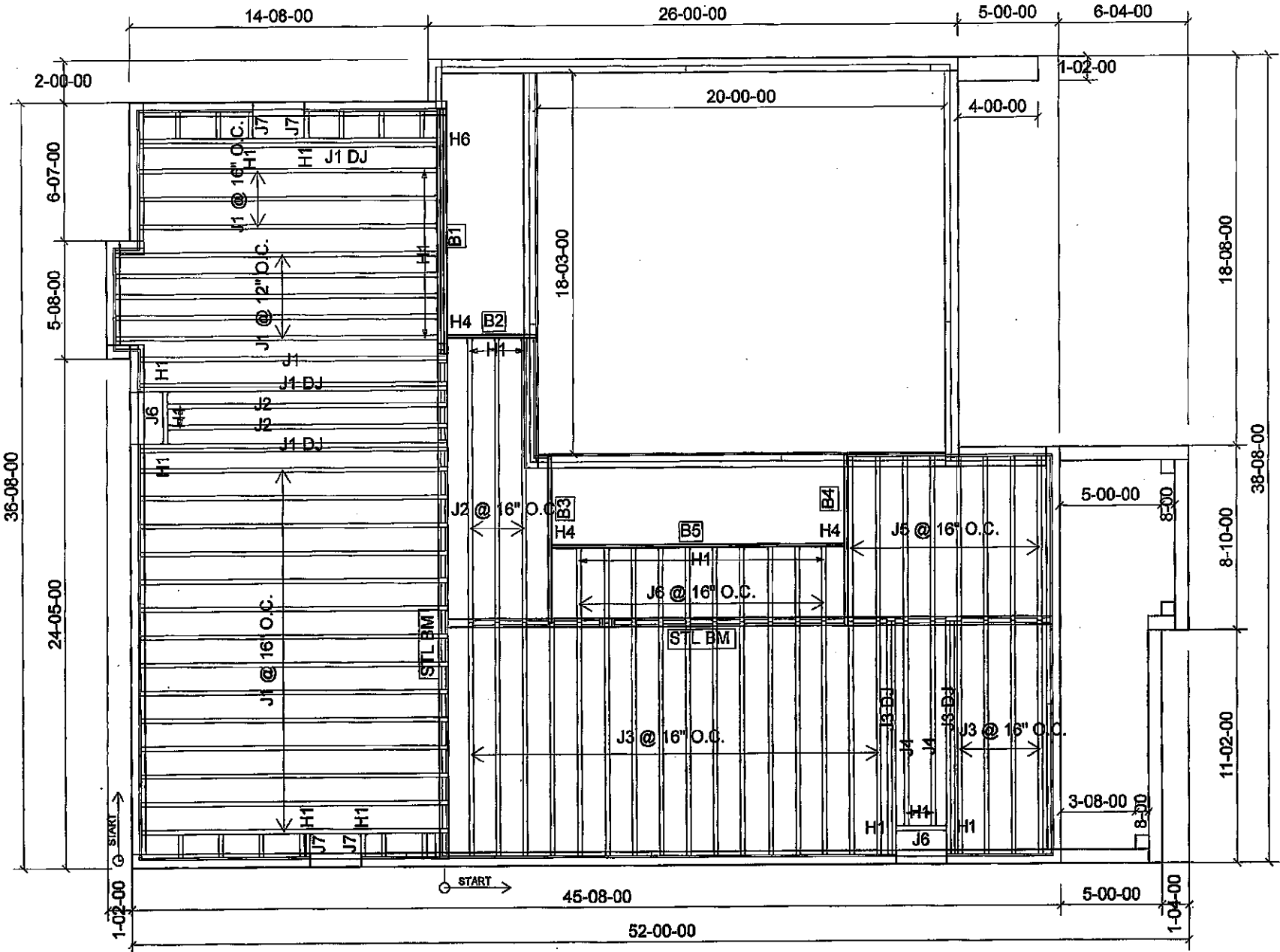
DEAD LOAD: 15.0 lb/ft²

TILED AREAS: 20 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 11/12/2018

1st FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	23
J1 DJ	16-00-00	9 1/2" NI-40x	2	6
J2	14-00-00	9 1/2" NI-40x	1	5
J3	12-00-00	9 1/2" NI-40x	1	20
J3 DJ	12-00-00	9 1/2" NI-40x	2	4
J4	10-00-00	9 1/2" NI-40x	1	2
J5	8-00-00	9 1/2" NI-40x	1	8
J6	4-00-00	9 1/2" NI-40x	1	12
J7	2-00-00	9 1/2" NI-40x	1	4
B5	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B4	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
13	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
2	H4	HUS1.81/10
1	H4	HUS1.81/10
1	H6	HU310-2

RECEIVED
JUN 10 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO.



FROM PLAN DATED: SEPT 27 2018

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: WOODCROFT 3

ELEVATION: 1

LOT:

CITY: CALEDON

SALESMAN: M D

DESIGNER: PL

REVISION:

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

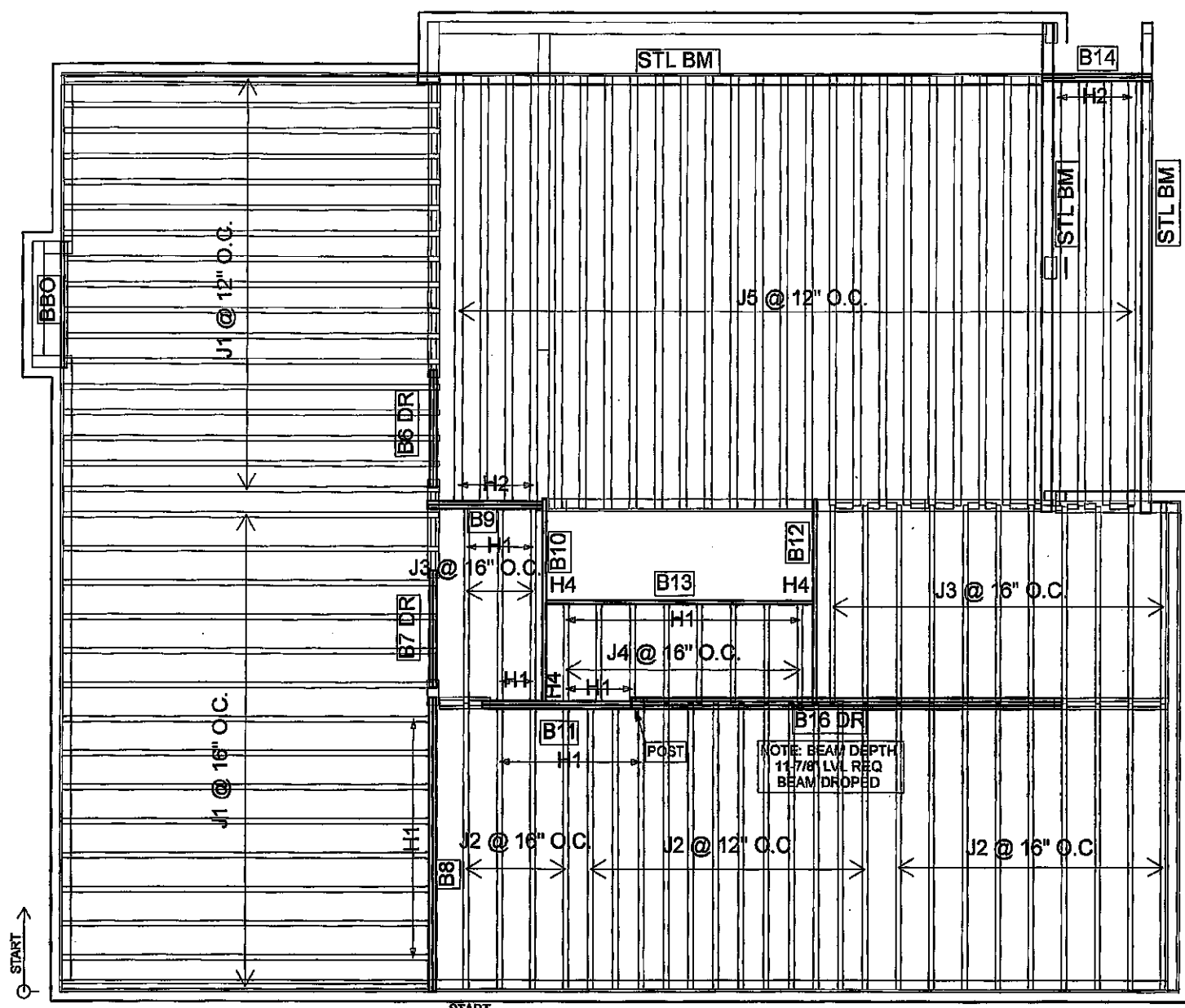
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft²
TILED AREAS: 20 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 11/9/2018

2nd FLOOR

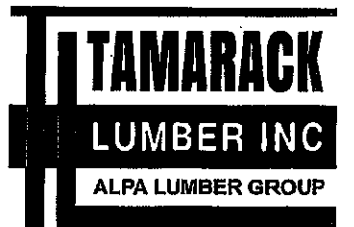
STANDARD



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	32
J2	12-00-00	9 1/2" NI-40x	1	25
J3	8-00-00	9 1/2" NI-40x	1	14
J4	4-00-00	9 1/2" NI-40x	1	8
J5	18-00-00	9 1/2" NI-80	1	28
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B11	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16 DR	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary		
Qty	Manuf	Product
8	H1	IUS2.56/9.5
22	H1	IUS2.56/9.5
8	H2	IUS3.56/9.5
2	H4	HUS1.81/10
1	H4	HUS1.81/10

RECEIVED
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TOWN OF CALEDON
BUILDING SECTION
FILE NO



FROM PLAN DATED: SEPT 27 2018

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: WOODCROFT 3

ELEVATION: 1

LOT:

CITY: CALEDON

SALESMAN: M D

DESIGNER: PL

REVISION:

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

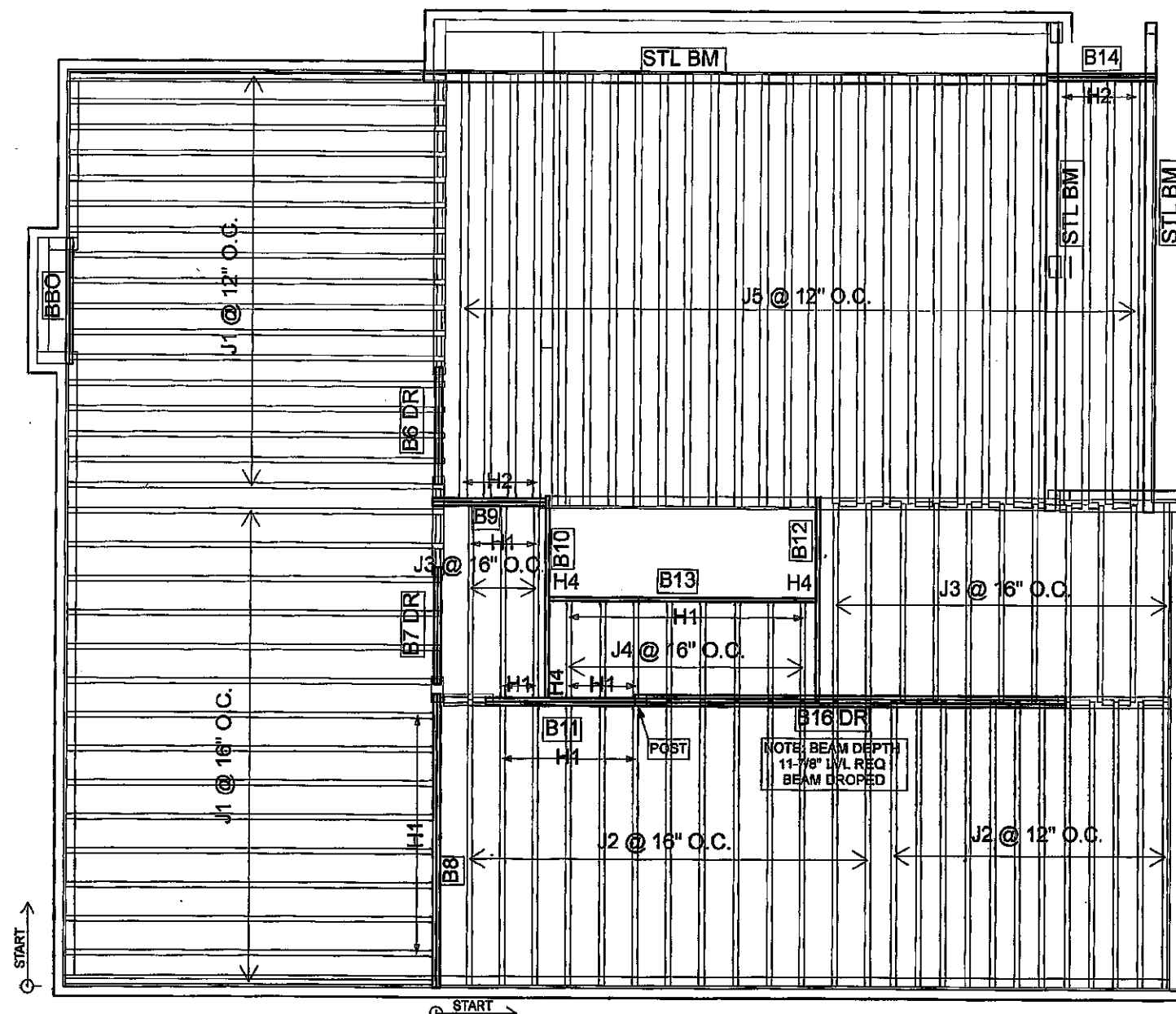
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft²
TILED AREAS: 20 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 11/9/2018

2nd FLOOR

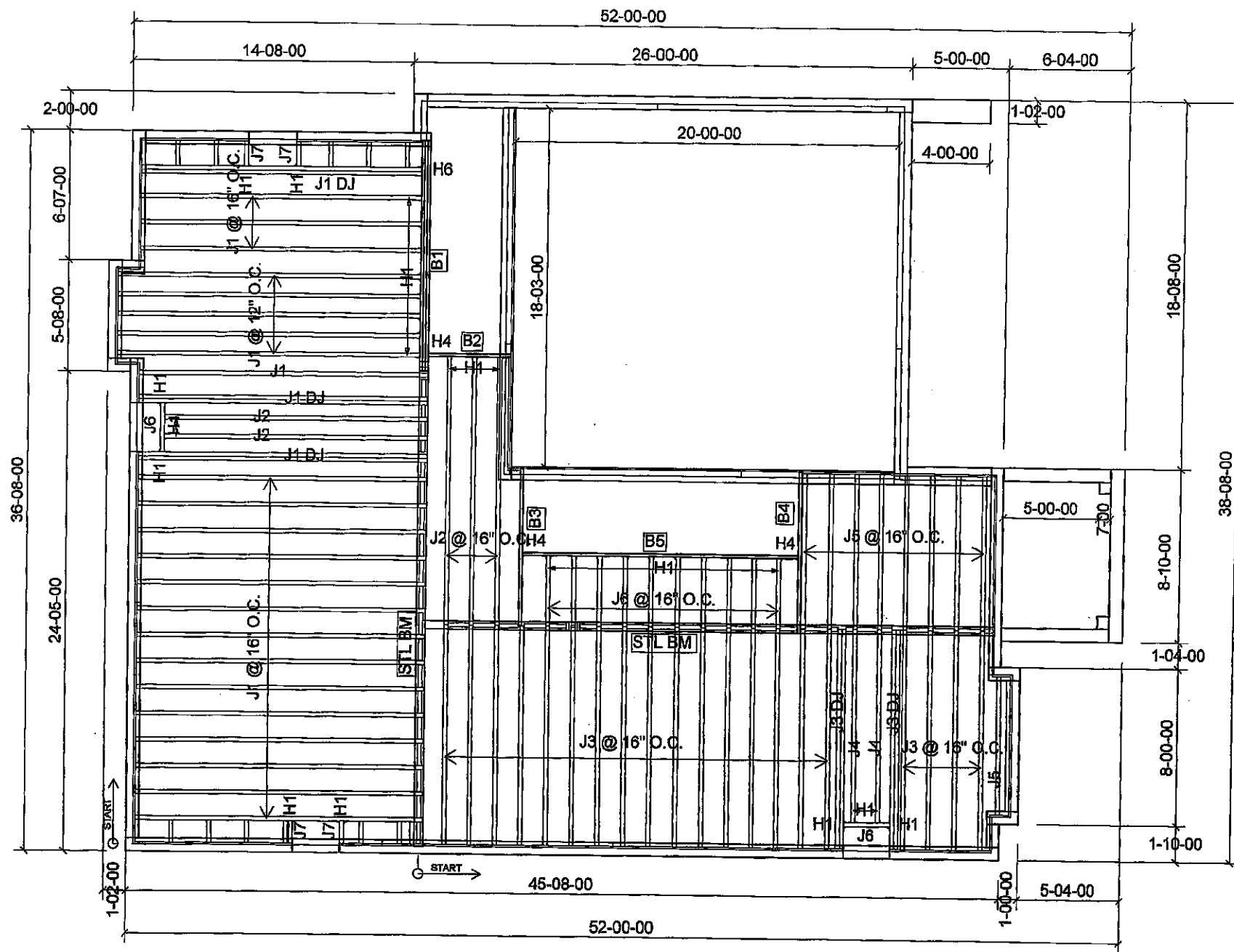
OPTIONAL 5 BEDROOM CONDITION



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	32
J2	12-00-00	9 1/2" NI-40x	1	25
J3	8-00-00	9 1/2" NI-40x	1	14
J4	4-00-00	9 1/2" NI-40x	1	8
J5	18-00-00	9 1/2" NI-80	1	28
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B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B11	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16 DR	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary		
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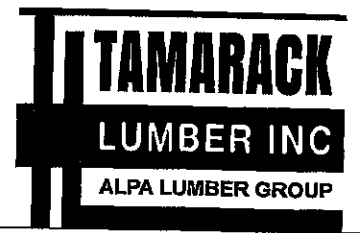
RECEIVED
JUN 10 2019
TOWN OF CALEDON
BUILDING DEPARTMENT
FILE NO.



Products				
PlotID	Length	Product	Piles	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	23
J1 DJ	16-00-00	9 1/2" NI-40x	2	6
J2	14-00-00	9 1/2" NI-40x	1	5
J3	12-00-00	9 1/2" NI-40x	1	20
J3 DJ	12-00-00	9 1/2" NI-40x	2	4
J4	10-00-00	9 1/2" NI-40x	1	2
J5	8-00-00	9 1/2" NI-40x	1	9
J6	4-00-00	9 1/2" NI-40x	1	12
J7	2-00-00	9 1/2" NI-40x	1	4
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B2	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
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6	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
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1	H4	HUS1.81/10
1	H6	HU310-2

RECEIVED
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TOWN OF CALEDON
BUILDING SECTION
FILE NO.



FROM PLAN DATED: SEPT 27 2018

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: WOODCROFT 3

ELEVATION: 2

LOT:

CITY: CALEDON

SALESMAN: M D

DESIGNER: PL

REVISION:

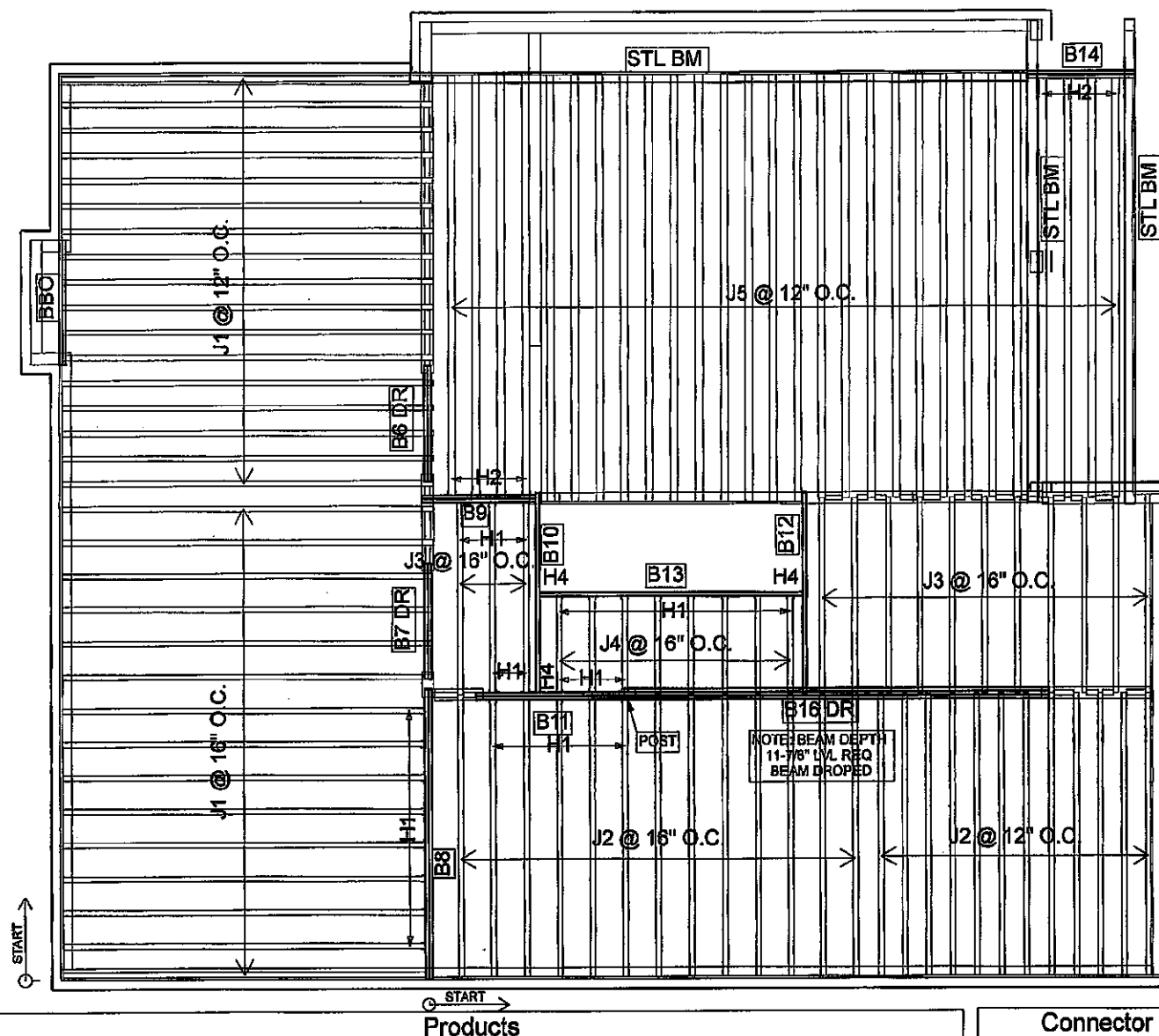
NOTES:
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SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING ALONG 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.

LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft²
TILED AREAS: 20 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 11/12/2018

1st FLOOR



Connector Summary		
Qty	Manuf	Product
8	H1	IUS2.56/9.5
21	H1	IUS2.56/9.5
8	H2	IUS3.56/9.5
2	H4	HUS1.81/10
1	H4	HUS1.81/10

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TOWN OF SALEDON
BUILDING SECTION
FILE NO. _____

OPTIONAL 5 BEDROOM CONDITION



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 centreline 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 centred 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 longest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- 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 it 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.

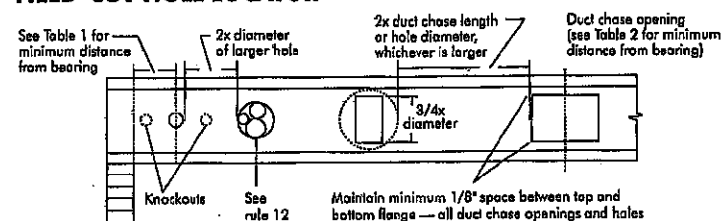
TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS

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"	NI-20	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---
	NI-40x	0-7"	1-6"	3-0"	4-4"	6-0"	6-4"	---	---	---	---	---	---
	NI-60	1-3"	2-6"	4-0"	5-4"	7-0"	7-5"	---	---	---	---	---	---
	NI-70	2-3"	3-4"	4-9"	6-3"	8-0"	8-4"	---	---	---	---	---	---
	NI-90x	2-3"	3-4"	5-0"	6-4"	8-2"	8-6"	---	---	---	---	---	---
11-7/8"	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-0"	7-0"	---	---	---
	NI-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-0"	8-4"	---	---	---
	NI-60	0-7"	1-8"	3-0"	4-3"	5-9"	6-0"	7-3"	8-10"	10-0"	---	---	---
	NI-70	1-3"	2-6"	4-0"	5-4"	6-9"	7-2"	8-4"	10-0"	11-2"	---	---	---
	NI-90	1-6"	2-10"	4-2"	5-6"	7-0"	7-5"	8-6"	10-3"	11-4"	---	---	---
14"	NI-20	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	---	---	---	---
	NI-40x	0-7"	0-8"	0-9"	2-5"	4-4"	4-9"	6-3"	---	---	---	---	---
	NI-60	0-7"	0-8"	0-8"	1-0"	2-4"	2-9"	3-9"	5-2"	6-0"	8-6"	8-8"	10-2"
	NI-70	0-7"	0-8"	1-8"	3-0"	4-3"	4-8"	5-8"	7-2"	8-0"	9-8"	10-1"	11-9"
	NI-90	0-7"	1-10"	3-0"	4-5"	5-10"	6-2"	7-3"	8-9"	9-9"	10-4"	12-0"	13-5"
16"	NI-20	0-7"	0-8"	0-10"	2-5"	4-0"	4-5"	5-9"	7-5"	8-8"	9-4"	11-4"	12-11"
	NI-40x	0-7"	0-8"	0-8"	2-0"	3-9"	3-9"	4-2"	5-5"	6-5"	7-3"	8-5"	9-2"
	NI-60	0-7"	0-8"	0-8"	1-6"	2-10"	3-2"	4-2"	5-6"	6-4"	7-0"	8-5"	9-8"
	NI-70	0-7"	1-0"	2-3"	3-6"	4-10"	5-3"	6-3"	7-8"	8-6"	9-2"	10-8"	12-0"
	NI-90	0-7"	1-3"	2-6"	3-10"	5-3"	5-6"	6-6"	8-0"	9-0"	9-5"	11-0"	12-3"

- 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.

FIGURE 7
FIELD-CUT HOLE LOCATOR



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 over-stress 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:

- Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
- 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, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
 - Or sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
- For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
- 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.

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

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

Holes in webs should be cut with a sharp saw.

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

PRODUCT WARRANTY

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

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

Blocking Panel or Rim Joist

Maximum Factored Uniform Vertical Load* (plf)
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]

Attach I-joist to top plate per detail 1b

Pair of Squash Blocks

Maximum Factored Uniform Vertical Load* (plf)
3-1/2" wide
5-1/2" wide
2x Lumber
5,500
1-1/8" Rim Board Plus
4,300
6,600

Provide lateral bracing per detail 1a or 1b

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

BACKER BLOCKS (Blocks must be long enough to permit required nailing without splitting)

Flange Width	Material Thickness Required*	Minimum Depth**
2-1/2"	1"	5-1/2"
3-1/2"	1-1/2"	7-1/4"

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

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

Top-mount hanger installed per manufacturer's recommendations

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

Filler block per detail 1p

Maximum support capacity = 1,620 lbs.

1p FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

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

Blocking Panel or Rim Joist

Maximum Factored Uniform Vertical Load* (plf)
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 flanges

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 plates.

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

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

Lead 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

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

NI blocking panel per detail 1a

1i Nordic Laminated or Structural Composite Lumber (SCL)

For 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.

Do not bevel-cut joist beyond inside face of wall.

Attach I-joist per detail 1b

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.

NI 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-joist blocking panel

One 2-1/2" nail one side only

NOTES:

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

WEB STIFFENERS

RECOMMENDATIONS:

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

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS

CONCENTRATED LOAD (Load stiffener)

END BEARING (Bearing stiffener)

Tight Joint No Gap

Gap

Tight Joint No Gap

STIFFENER SIZE REQUIREMENTS

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

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE

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

NI blocking panel or rim board blocking, attach per detail 1g

Attach I-joist to plate per detail 1b

2-1/2" nails

3-1/2" min. bearing required

4b 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

8a 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)

1-1/2"

1-1/2"

8b TOE-NAIL CONNECTION AT RIM BOARD

Rim board

Top or sole plate

30°

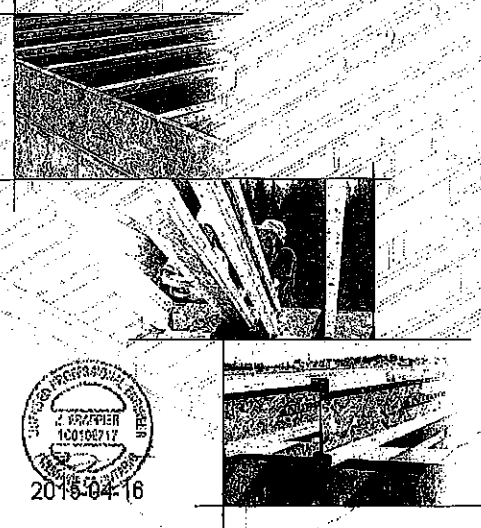
1/8"

NORDIC

ENGINEERED WOOD

INSTALLATION GUIDE

FOR RESIDENTIAL FLOORS



Distributed by:



SAFETY AND CONSTRUCTION PRECAUTIONS



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

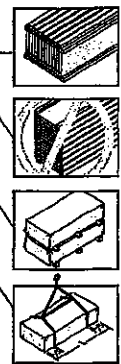


Never stack building materials over unshelved I-joists. Once shelved, do not over-stress I-joist with concentrated loads from building materials.

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

STORAGE AND HANDLING GUIDELINES

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



MAXIMUM FLOOR SPANS

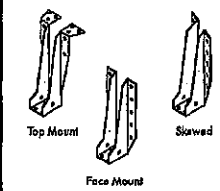
- Maximum clear spans applicable to single-span or multiple-span residential floor construction with a design load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent spans.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum end or a row of blocking at mid-span.
- Minimum bearing length shall be 1-3/4 inches for fire and bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
- Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NRC 2010.
- SI units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

Joist Depth	Joist Size	Simple spans				Multiple spans			
		On center spacing	On center spacing	On center spacing	On center spacing	On center spacing	On center spacing	On center spacing	On center spacing
9-1/2"	NJ-22	15'-1"	14'-2"	13'-5"	12'-5"	10'-5"	10'-0"	9'-0"	8'-0"
	NJ-40	16'-1"	15'-2"	14'-5"	13'-5"	11'-5"	11'-0"	10'-0"	9'-0"
	NJ-60	16'-3"	15'-4"	14'-7"	13'-7"	11'-7"	11'-2"	10'-2"	9'-2"
	NJ-70	17'-1"	16-1"	15-4"	14-7"	12'-5"	12-0"	11-0"	10-0"
11-7/8"	NJ-22	16'-1"	15-0"	14-0"	13-0"	10'-0"	9'-6"	8'-6"	7'-6"
	NJ-40	18'-1"	17-0"	16-0"	15-0"	11'-0"	10'-6"	9'-6"	8'-6"
	NJ-60	18'-4"	17-3"	16-3"	15-3"	11'-3"	10'-9"	9'-9"	8'-9"
	NJ-70	19'-0"	18-0"	17-0"	16-0"	11'-6"	11'-2"	10'-2"	9'-2"
14"	NJ-22	19'-0"	18-0"	17-0"	16-0"	12'-0"	11'-6"	10'-6"	9'-6"
	NJ-40	20'-1"	19-1"	18-1"	17-1"	12'-1"	11'-7"	10'-7"	9'-7"
	NJ-60	21'-1"	20-1"	19-1"	18-1"	12'-1"	11'-7"	10'-7"	9'-7"
	NJ-70	22'-5"	21-5"	20-5"	19-5"	12'-5"	12'-1"	11'-1"	10'-1"
16"	NJ-22	20'-0"	19-0"	18-0"	17-0"	11'-0"	10'-6"	9'-6"	8'-6"
	NJ-40	20'-1"	19-1"	18-1"	17-1"	11'-1"	10'-7"	9'-7"	8'-7"
	NJ-60	20'-1"	19-1"	18-1"	17-1"	11'-1"	10'-7"	9'-7"	8'-7"
	NJ-70	21'-1"	20-1"	19-1"	18-1"	11'-1"	10'-7"	9'-7"	8'-7"

I-JOIST HANGERS

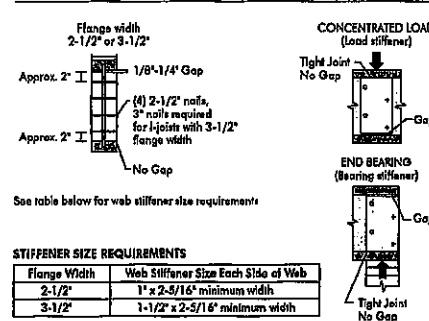
- Hangers shown illustrate the three most commonly used metal hangers to support I-joists.
- All nailing must meet the hanger manufacturer's recommendations.
- Hangers should be selected based on the joist depth, flange width and load capacity based on the maximum spans.
- Web stiffeners are required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



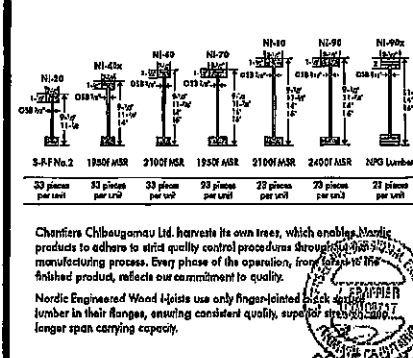
WEB STIFFENERS

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

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS



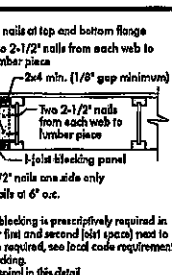
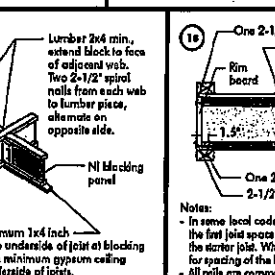
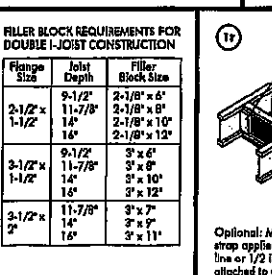
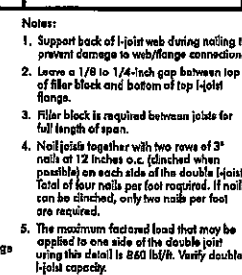
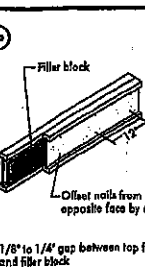
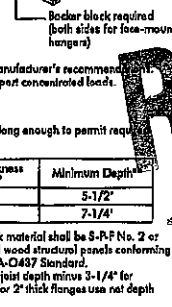
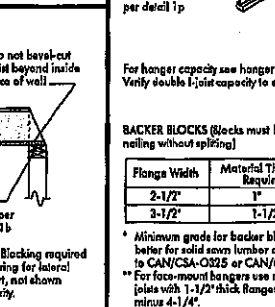
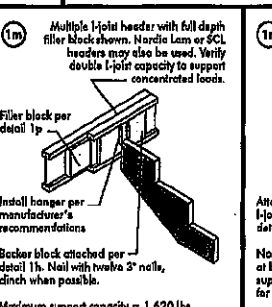
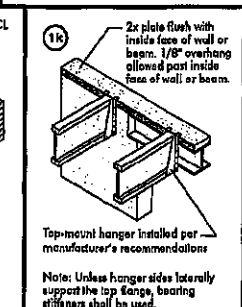
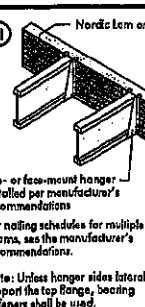
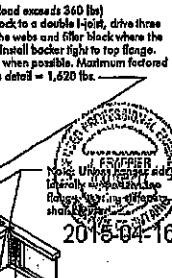
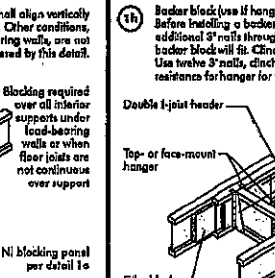
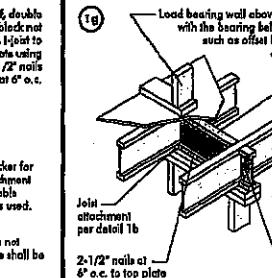
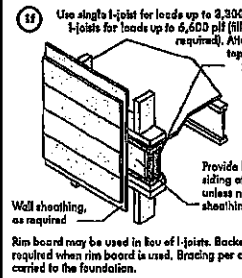
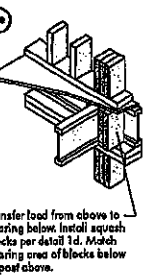
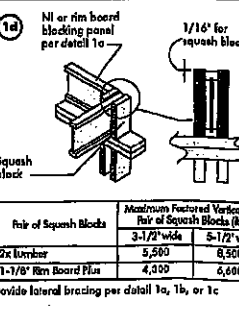
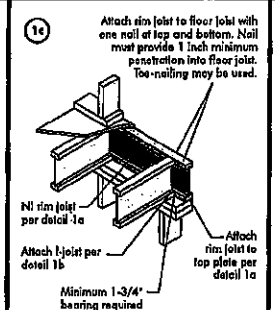
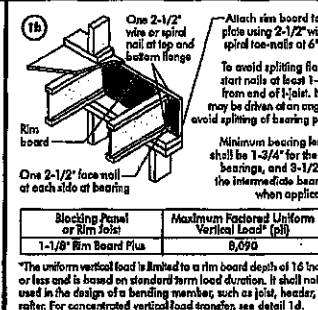
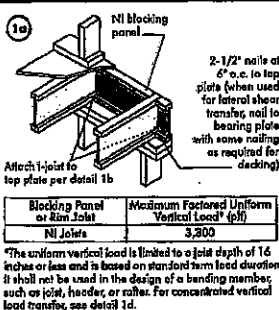
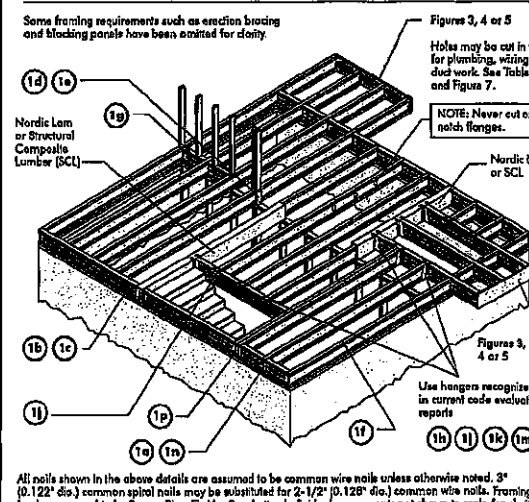
NORDIC I-JOIST SERIES



INSTALLING NORDIC I-JOISTS

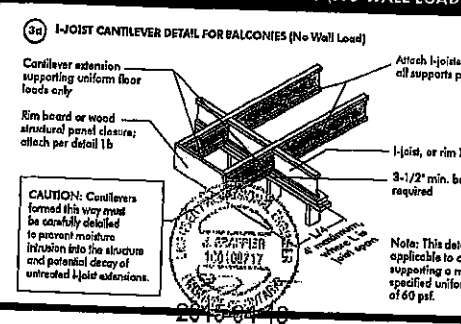
- Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, consult supplier.
- Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
- Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical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

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

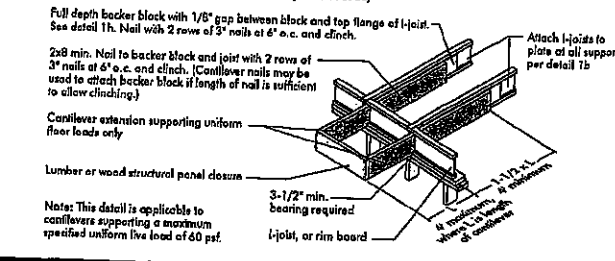


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FLOORING DEPARTMENT

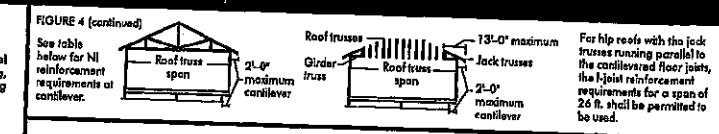
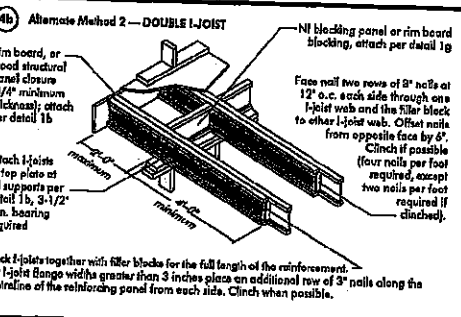
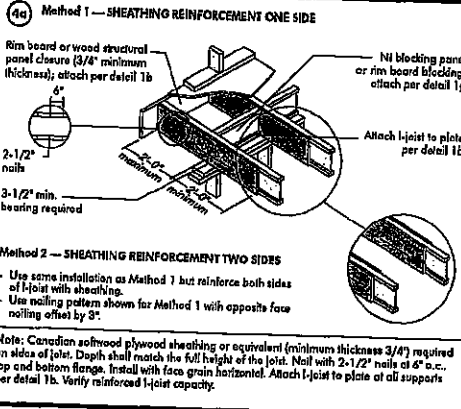
JOIST CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



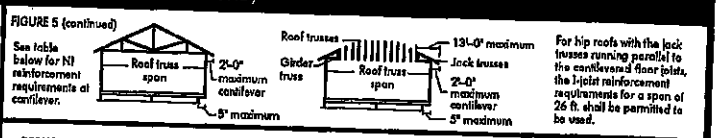
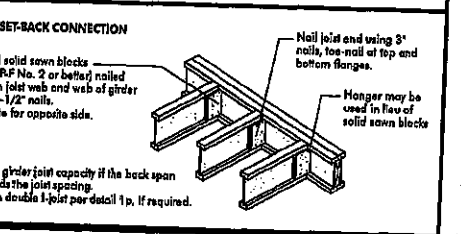
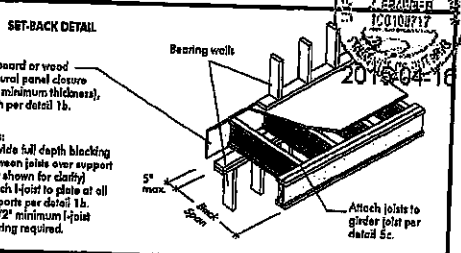
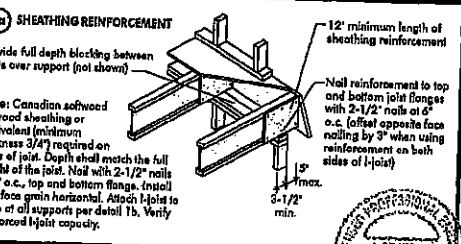
CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)



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

- N = No reinforcement required.
- Ni reinforced with 2x4 wood structural panel on one side only.
- Ni reinforced with 2x4 wood structural panel on both sides, or double joist.
- Try a deeper joist or closer spacing.
- Maximum design load shall be 15 psf roof dead load, 55 psf floor total load, and 60 psf wall load. Wall load is based on 5'-0" maximum width window or door openings.
- For larger openings, or multiple 3'-0" wide openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
- Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
- For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge beam, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
- Conditioned joist supporting girder trusses or roof beams may require additional reinforcing.

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



JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	ROOF LOADING (UNIFORM JOINT)											
		11 - 30 psf, DL = 15 psf				11 - 30 psf, DL = 15 psf				11 - 30 psf, DL = 15 psf			
		JOIST SPACING (in.)				JOIST SPACING (in.)				JOIST SPACING (in.)			
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
9-1/2"	28	N	X	X	X	2	X	X	X	2	X	X	X
	30	1	X	X	X	2	X	X	X	2	X	X	X
	32	1	X	X	X	2	X	X	X	2	X	X	X
	34	2	X	X	X	2	X	X	X	2	X	X	X
	36	2	X	X	X	2	X	X	X	2	X	X	X
11-7/8"	28	N	N	X	X	2	X	X	X	2	X	X	X
	30	N	1	2	X	1	1	X	X	1	2	X	X
	32	1	2	X	X	1	1	X	X	2	X	X	X
	34	1	2	X	X	2	X	X	X	2	X	X	X
	36	1	X	X	X	2	X	X	X	2	X	X	X
14"	28	N	N	2	X	N	2	X	X	N	2	X	X
	30	N	N	X	X	N	2	X	X	1	1	X	X
	32	N	N	2	X	1	1	X	X	2	X	X	X
	34	N	2	X	X	1	1	X	X	2	X	X	X
	36	N	1	X	X	1	X	X	X	2	X	X	X
16"	28	N	N	2	X	N	2	X	X	N	2	X	X
	30	N	N	1	X	N	2	X	X	1	1	X	X
	32	N	N	2	X	N	2	X	X	1	1	X	X
	34	N	N	X	X	N	2	X	X	1	1	X	X
	36	N	N	2	X	N	2	X	X	1	2	X	X

- N = No reinforcement required.
- Ni reinforced with 2x4 wood structural panel on one side only.
- Ni reinforced with 2x4 wood structural panel on both sides, or double joist.
- Try a deeper joist or closer spacing.
- Maximum design load shall be 15 psf roof dead load, 55 psf floor total load, and 60 psf wall load. Wall load is based on 5'-0" maximum width window or door openings.
- For larger openings, or multiple 3'-0" wide openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
- Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
- For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge beam, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
- Conditioned joist supporting girder trusses or roof beams may require additional reinforcing.

WEB HOLES

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.
- 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 joist web shall equal the clear distance between the flanges of the 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 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 longest rectangular hole or duct chase opening and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- 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 shall be 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 it 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 at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

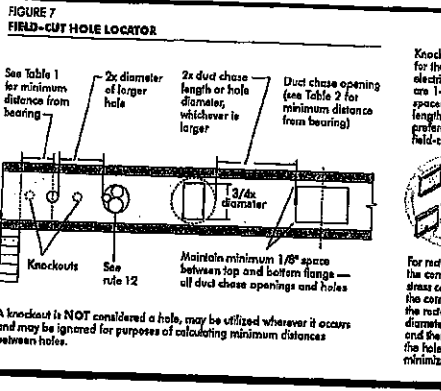


TABLE 1 LOCATION OF CIRCULAR HOLES IN JOIST WEBS
Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

Joist Depth (in.)	Joist Series	Minimum distance from inside face of any support to center of hole (in.)									
		1	2	3	4	5	6	7	8	9	10
9-1/2"	N-28	12	12	12	12	12	12	12	12	12	12
	N-30	12	12	12	12	12	12	12	12	12	12
	N-32	12	12	12	12	12	12	12	12	12	12
	N-34	12	12	12	12	12	12	12	12	12	12
11-7/8"	N-28	12	12	12	12	12	12	12	12	12	12
	N-30	12	12	12	12	12	12	12	12	12	12
	N-32	12	12	12	12	12	12	12	12	12	12
	N-34	12	12	12	12	12	12	12	12	12	12
14"	N-28	12	12	12	12	12	12	12	12	12	12
	N-30	12	12	12	12	12	12	12	12	12	12
	N-32	12	12	12	12	12	12	12	12	12	12
	N-34	12	12	12	12	12	12	12	12	12	12
16"	N-28	12	12	12	12	12	12	12	12	12	12
	N-30	12	12	12	12	12	12	12	12	12	12
	N-32	12	12	12	12	12	12	12	12	12	12
	N-34	12	12	12	12	12	12	12	12	12	12

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

OPTIONAL:

The above table is based on the joist used at its maximum span. If the joists are placed at less than their full maximum span (see Maximum Span Table), the minimum distance from the centerline of the hole to the face of any support (S) as given above may be reduced as follows:

Where: $S_{adj} = \frac{S}{S_{max}} \times S$

Actual = Distance from the inside face of any support to center of hole, reduced for less-than-maximum span application.
S = The actual measured span distance between the inside faces of supports.
S_{max} = Span Adjustment Factor given in this table.
S_{adj} = The minimum distance from the inside face of any support to center of hole from this table.
If S_{adj} is greater than 1, use 1 in the above calculation for S_{adj}.

TABLE 2 DUCT CHASE OPENING SIZES AND LOCATIONS - Simple Span Only

Joist Depth (in.)	Joist Series	Minimum distance from inside face of any support to center of opening (in.)									
		1	2	3	4	5	6	7	8	9	10
9-1/2"	N-28	12	12	12	12	12	12	12	12	12	12
	N-30	12	12	12	12	12	12	12	12	12	12
	N-32	12	12	12	12	12	12	12	12	12	12
	N-34	12	12	12	12	12	12	12	12	12	12
11-7/8"	N-28	12	12	12	12	12	12	12	12	12	12
	N-30	12	12	12	12	12	12	12	12	12	12
	N-32	12	12	12	12	12	12	12	12	12	12
	N-34	12	12	12	12	12	12	12	12	12	12
14"	N-28	12	12	12	12	12	12	12	12	12	12
	N-30	12	12	12	12	12	12	12	12	12	12
	N-32	12	12	12	12	12	12	12	12	12	12
	N-34	12	12	12	12	12	12	12	12	12	12
16"	N-28	12	12	12	12	12	12	12	12	12	12
	N-30	12	12	12	12	12	12	12	12	12	12
	N-32	12	12	12	12	12	12	12	12	12	12
	N-34	12	12	12	12	12	12	12	12	12	12

INSTALLING THE GLUED FLOOR SYSTEM

- Wipe any mud, dirt, water, or ice from joist flanges before gluing.
- Snap a chalk line across the joists four feet in from the wall for panel edge alignment and as a boundary for spreading glue.
- Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.
- Lay the first panel with tongue side to the wall, and nail in place. This protects the tongue of the next panel from damage when tamped into place with a block and sledgehammer.
- Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single joist. Apply glue in a winding pattern on wide areas, such as with double joists.
- Apply two lines of glue on joists where panel ends butt to assure proper gluing of each end.
- After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squirts-out by applying a thinner line (1/8 inch) than used on joist flanges.
- Top the second row of panels into place, using a block to protect groove edges.
- Stagger and joints in each succeeding row of panels. A 1/8-inch space between all end joints and 1/8-inch at all edges, including T&G edges, is recommended. (Use a spacer tool or an 1-1/2" common nail to assure accurate and consistent spacing.)
- Complete all nailing of each panel before glue sets. Check the manufacturer's recommendations for cure time. (Warm weather accelerates glue setting.) Use 2" ring- or screw-shank nails for panels 24-inch thick or less, and 2-1/2" ring- or screw-shank nails for thicker panels. Space nails per table below. Closer nail spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the glue bond.

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

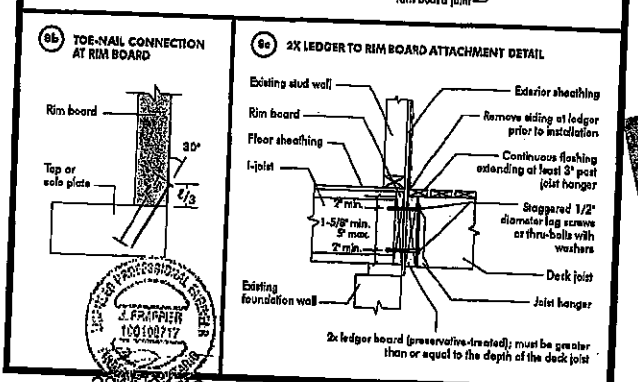
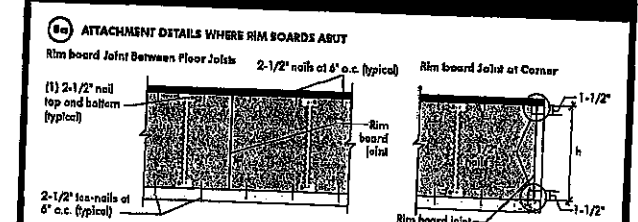
Maximum joist spacing (in.)	Minimum Panel Thickness (in.)	Nail Size and Type			Maximum Spacing of Fasteners
		Common Wire or Steel Nail	Ring Threaded Nail or Screw	Staples	
16	5/8	2"	1-3/4"	2"	6"
20	5/8	2"	1-3/4"	2"	6"
24	3/4	2"	1-3/4"	2"	6"

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

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

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

RIM BOARD INSTALLATION DETAILS



PRODUCT WARRANTY

Champion Chikmagasa warrants that, in accordance with our specifications, these products are free from manufacturing defects in material and workmanship.

Furthermore, Champion Chikmagasa warrants that our products, when installed in accordance with our building and installation instructions, will meet or exceed our specifications for the lifetime of the structure.

RECEIVED
JUN 10 2019
TOWN ENGINEERING SECTION



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

PASSED

1ST FLOOR FRAMING Flush Beams B5 (I5775)

Dry | 1 span | No cant.

November 9, 2018 16:03:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

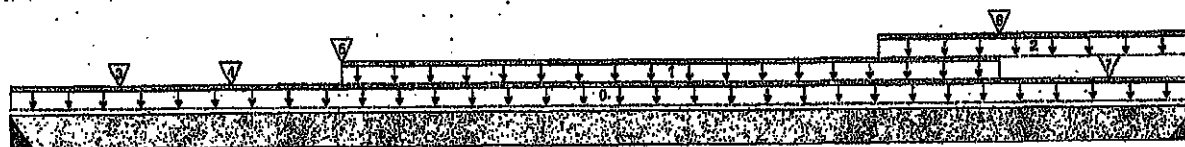
File name: WOODCROFT 3.mmdl

Description: 1ST FLOOR FRAMING Flush Beams B5 (I5775)

Specifier:

Designer: PL

Company:



B1

14-04-08

B2

Total Horizontal Product Length = 14-04-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	572 / 0	317 / 0		
B2, 3"	1,903 / 0	685 / 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	14-04-08	Top		5			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	04-00-04	12-00-04	Top	82	31			n/a
2	STAIRS	Unf. Lin. (lb/ft)	L	10-06-08	14-04-08	Top	240	120			n/a
3	J5(I4882)	Conc. Pt. (lbs)	L	01-04-04	01-04-04	Top	103	52			n/a
4	J5(I5771)	Conc. Pt. (lbs)	L	02-08-04	02-08-04	Top	81	26			n/a
5	J5(I4826)	Conc. Pt. (lbs)	L	04-00-04	04-00-04	Top	100	50			n/a
6	J5(I4826)	Conc. Pt. (lbs)	L	12-00-04	12-00-04	Top	100	50			n/a
7	J5(I4936)	Conc. Pt. (lbs)	L	13-04-04	13-04-04	Top	91	45			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5,826 ft-lbs	11,810 ft-lbs	50.2%	1	09-04-04
End Shear	2,267 lbs	5,785 lbs	39.2%	1	13-04-00
Total Load Deflection	1/288 (0.587")	n/a	83.9%	4	07-06-04
Live Load Deflection	1/441 (0.381")	n/a	81.6%	5	07-06-04
Max Defl.	0.587"	n/a	n/a	4	07-06-04
Span / Depth	17.7				

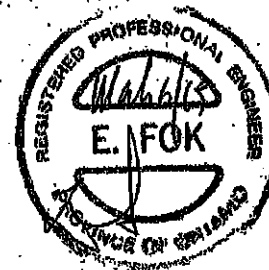
Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	3" x 1-3/4"	1,255 lbs	n/a	19.6%	HUS1.81/10
B2 Hanger	3" x 1-3/4"	2,810 lbs	n/a	49.9%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 at B1 is a Single 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. Hanger has not been analyzed for adequate capacity.

Header for the hanger HUS1.81/10 at B2 is a Single 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.



RECEIVED

JUN 10 2019

BUILDING SECTION

DWG NO. TAM 3:35/1018H
STRUCTURAL
COMPONENT ONLY

T-190105



Boise Cascade



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B5(16776)

Dry | 1 span | No cant.

November 9, 2018 18:03:06

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

File name: WOODCROFT 3.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B5(16776)

Specifier:

Designer: PL

Company:

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86. CONFORMS TO CBC 2012

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

RECEIVED
 JUN 10 2019
 TOWN OF CALEDON
 BUILDING SECTION
 FILE NO.

**Disclosure**

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

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

DRYING, TAM 3367-18H
 STRUCTURAL
 COMPONENT ONLY

T-1903105(2)



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B1(15737)

Dry | 1 span | No cant.

November 9, 2018 16:03:05

BC CALC® Member Report

Build 6475

Job name:

File name: WOODCROFT 3.mmdl

Address:

Description: 1ST FLOOR FRAMING\Flush Beams\B1(15737)

City, Province, Postal Code: CALEDON

Specifier:

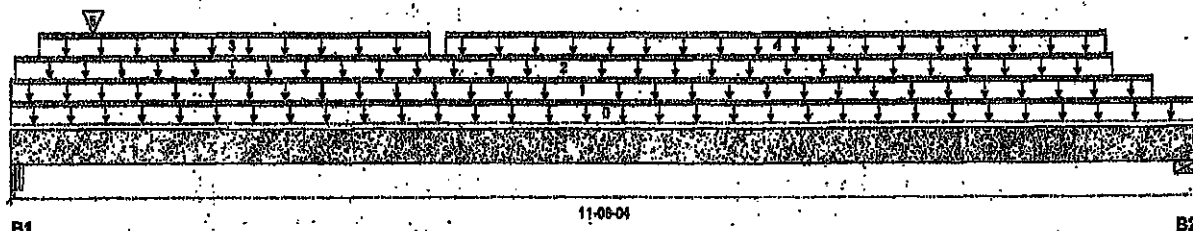
Customer:

Designer: PL

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 11-08-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	4,417 / 0	2,788 / 0		
B2, 3-1/2"	3,139 / 0	2,122 / 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	11-08-04	Top		14			00-00-00
1	6(1225)	Unf. Lin. (lb/ft)	L	00-00-00	11-02-12	Top		81			n/a
2	6(1225)	Unf. Lin. (lb/ft)	L	00-00-08	10-10-00	Top	302	162			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	00-03-04	04-01-04	Top	342	172			n/a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	04-03-04	10-09-04	Top	315	158			n/a
5	B2(15689)	Conc. Pt. (lbs)	L	00-09-12	00-09-12	Top	719	389			n/a

Controls Summary

Pos. Moment	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	22,897 ft-lbs	38,222 ft-lbs	63.0%	1	08-01-04
End Shear	8,398 lbs	17,358 lbs	48.4%	1	01-03-00
Total Load Deflection	L/278 (0.476")	n/a	86.4%	4	08-01-04
Live Load Deflection	L/458 (0.29")	n/a	78.6%	5	08-01-04
Max Defl.	0.476"	n/a	n/a	4	08-01-04
Span / Depth	14.0				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	5-1/2" x 5-1/4"	10,111 lbs	66.6%	28.7%	Unspecified
B2 Wall/Plate	3-1/2" x 5-1/4"	7,361 lbs	75.0%	32.8%	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 086. CONFORMS TO OBC 2012

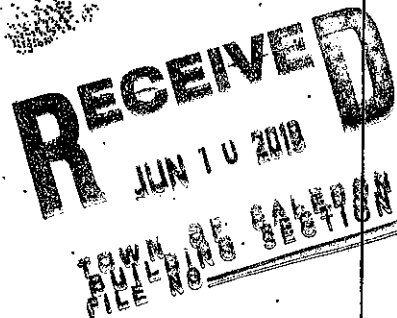
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

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.

Nailing schedule applies to both sides of the member.



DWG NO. TAN33476184
STRUCTURAL
COMPONENT ONLY

T-1903101



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

PASSED

1ST FLOOR FRAMING Flush Beams B1 (I5737)

Dry | 1 span | No cant.

November 9, 2018 16:03:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

File name: WOODCROFT 3.mxd

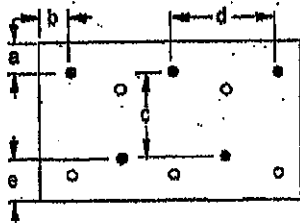
Description: 1ST FLOOR FRAMING Flush Beams B1 (I5737)

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member

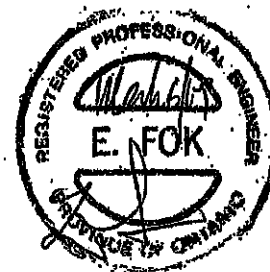


4 rows

a minimum = 1"
b minimum = 3"

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

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Nailing schedule applies to both sides of the member.
Connectors are: 3/4" ARBOX SPIRAL NAILS



Disclosure

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

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

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JUN 14 2019
TOWN OF CALEDON
FILE NO. 2018-05-001

DWG NO. TAM 33 97-18H
STRUCTURAL
COMPONENT ONLY

T-190310167



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B4\15776

Dry | 1 span | No cant.

November 9, 2018 15:03:05

BC CALCO Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

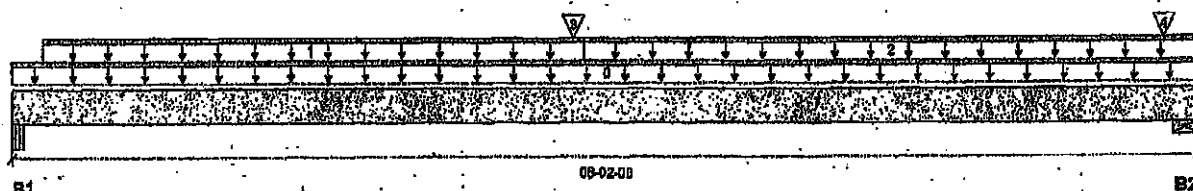
File name: WOODCROFT 3.mxd

Description: 1ST FLOOR FRAMING\Flush Beams\B4\15776

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 08-02-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6"	781 / 0	429 / 0		
B2, 3-1/2"	695 / 0	394 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-02-08	Top		5			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-08	03-11-04	Top	27	13			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-11-04	08-02-08	Top	6	3			n/a
3	B5\15776	Conc. Pt. (lbs)	L	03-10-08	03-10-08	Top	1,293	880			n/a
4	B\1224	Conc. Pt. (lbs)	L	07-11-12	07-11-12	Top	57	40			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5,574 ft-lbs	11,610 ft-lbs	48.0%	1	03-10-08
End Shear	1,644 lbs	5,788 lbs	28.4%	1	01-02-08
Total Load Deflection	L/888 (0.133")	n/a	35.0%	4	04-01-01
Live Load Deflection	L/999 (0.087")	n/a	n/a	5	04-01-01
Max Defl.	0.133"	n/a	n/a	4	04-01-01
Span / Depth	9.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 6" x 1-3/4"	1,708 lbs	36.6%	16.0%	Unspecified
B2	Wall/Plate 3-1/2" x 1-3/4"	1,534 lbs	46.9%	20.5%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

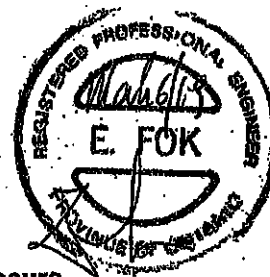
Resistance Factor phi has been applied to all presented results per CSA O86.

BC 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 OBC 2012



Disclosure

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

DWG NO. TAN 3350-18H
STRUCTURAL
COMPONENT ONLY

T. 1903104



Boise Cascade

**Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLOOR FRAMING\Flush Beams\B3(15762)**

Dry | 1 span | No cant.

November 9, 2018 16:03:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

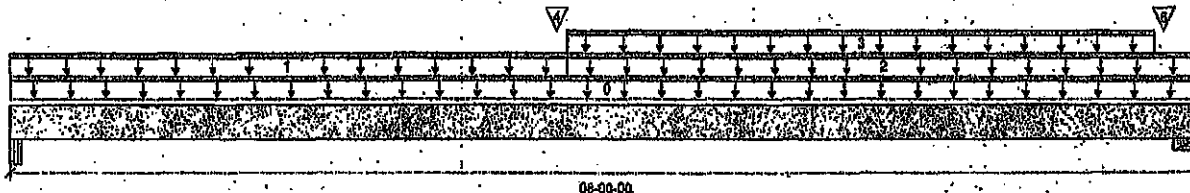
File name: WOODCROFT 3.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B3(15762)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 09-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-1/2"	753 / 0	413 / 0		
B2, 3-1/2"	1,163 / 0	628 / 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	08-00-00	Top	1.00	0.65	1.00	1.16	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-08-12	Top	53	27			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-08-12	08-00-00	Top	26	13			n/a
3	STAIRS	Unf. Lin. (lb/ft)	L	03-08-12	07-08-08	Top	240	120			n/a
4	B5(15775)	Conc. Pt. (lbs)	L	03-07-14	09-07-14	Top	582	323			n/a
5	2(1217)	Conc. Pt. (lbs)	L	07-09-04	07-09-04	Top	88	46			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4,882 ft-lbs	11,610 ft-lbs	42.9%	1	03-07-14
End Shear	1,899 lbs	5,766 lbs	32.6%	1	08-11-00
Total Load Deflection	L/871 (0.136")	n/a	35.7%	4	04-00-08
Live Load Deflection	L/899 (0.089")	n/a	n/a	5	04-00-08
Max Defl.	0.136"	n/a	n/a	4	04-00-08
Span / Depth	9.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 2-1/2" x 1-3/4"	1,646 lbs	70.5%	30.8%	Unspecified
B2	Wall/Plate 3-1/2" x 1-3/4"	2,629 lbs	77.3%	33.8%	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 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012**Disclosure**

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

OWNED, TAM 7/14/18
STRUCTURAL
COMPONENT ONLY

T-1903103



Boise Cascade



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

PASSED

1ST FLOOR FRAMING (Flush Beams) B2 (15689)

Dry | 1 span | No cant.

November 9, 2018 18:03:05

BC CALC® Member Report

Build 0475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

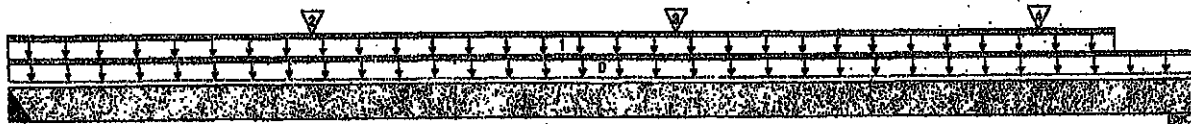
File name: WOODCROFT 3.mmdl

Description: 1ST FLOOR FRAMING (Flush Beams) B2 (15689)

Specifier:

Designer: PL

Company:



04-04-08

B1

B2

Total Horizontal Product Length = 04-04-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	748 / 0	385 / 0		
B2, 3-1/2"	802 / 0	424 / 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	04-04-08	Top	1.00	0.45	1.00	1.15	00-00-00
1	STAIRS	Unf. Lin. (lb/ft)	L	00-00-00	04-00-14	Top	120	60			n/a
2	J2(15677)	Conc. Pt. (lbs)	L	01-01-06	01-01-06	Top	374	187			n/a
3	J2(4942)	Conc. Pt. (lbs)	L	02-05-06	02-05-06	Top	369	185			n/a
4		Conc. Pt. (lbs)	L	03-09-08	03-09-08	Top	298	161			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Poe. Moment	1,709 ft-lbs	11,610 ft-lbs	14.7%	1	02-05-06
End Shear	1,320 lbs	5,785 lbs	22.8%	1	01-00-08
Total Load Deflection	L/999 (0.013")	n/a	n/a	4	02-01-14
Live Load Deflection	L/999 (0.008")	n/a	n/a	5	02-01-14
Max Defl.	0.013"	n/a	n/a	4	02-01-14
Span / Depth	5.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 3" x 1-3/4"	1,603 lbs	n/a	25.0%	HUS1.81/10
B2	Wall/Plate 3-1/2" x 1-3/4"	1,734 lbs	53.0%	23.2%	Unspecified

Cautions

Header for the hanger HUS1.81/10 at B1 is a Triple 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. Hanger has not been analyzed for adequate capacity.

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design per NBC 2015 and CSA 086.

Design based on Dry Service Condition.

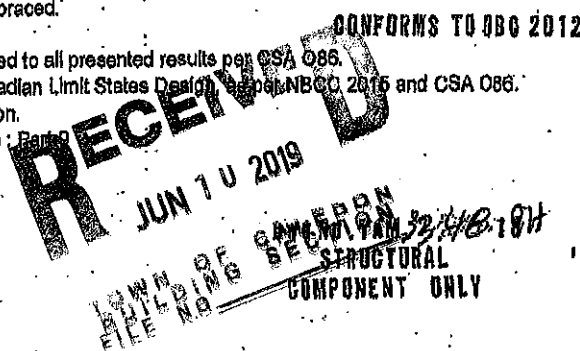
Importance Factor: Normal Part code: Part 9



Disclosure

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



T-1903102



Boise Cascade

**Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****2ND FLOOR FRAMING** Flush Beams B13(15705)**PASSED**

BC CALC® Member Report

Dry | 1 span | No cant.

November 9, 2018 16:03:06

Build 6476

Job name:

File name: WOODCROFT 3.mxd

Address:

Description: 2ND FLOOR FRAMING Flush Beams B13(15705)

City, Province, Postal Code: CALEDON

Specifier:

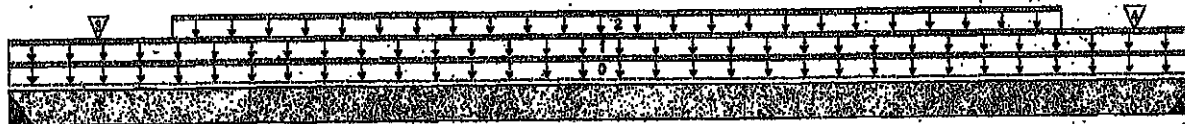
Customer:

Designer: PL

Code reports:

CCMC 12472-R

Company:



B1

10-08-00

B2

Total Horizontal Product Length = 10-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	404 / 0	549 / 0		
B2, 3"	415 / 0	553 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-08-00	Top		5			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	10-08-00	Top		80			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-05-12	09-05-12	Top	82	40			n/a
3	J4(15591)	Conc. Pt. (lbs)	L	00-09-12	00-09-12	Top	91	46			n/a
4	J4(15729)	Conc. Pt. (lbs)	L	10-01-12	10-01-12	Top	78	39			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3,338 ft-lbs	11,610 ft-lbs	28.8%	1	04-11-12
End Shear	1,152 lbs	5,785 lbs	19.9%	1	01-00-08
Total Load Deflection	L/658 (0.188")	n/a	36.5%	4	05-03-12
Live Load Deflection	L/999 (0.081")	n/a	n/a	5	05-03-12
Max Defl.	0.188"	n/a	n/a	4	05-03-12
Span / Depth	13.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Hanger	3" x 1-3/4"	1,293 lbs	n/a	20.2%	HUS1.81/10
B2 Hanger	3" x 1-3/4"	1,314 lbs	n/a	20.5%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 at B1 is a Single 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. Hanger has not been analyzed for adequate capacity.

Header for the hanger HUS1.81/10 at B2 is a Single 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.

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 NBC 2012

OWN NO. TAM 3255218H
STRUCTURAL
COMPONENT ONLY

**Disclosure**

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T-1903112



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING\Flush Beams\B8\15181**

Dry | 1 span | No cant.

November 9, 2016 16:09:05

BC CALCO Member Report

Build 8476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

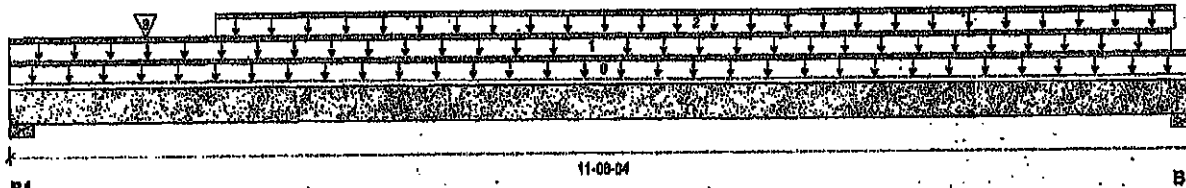
File name: WOODCROFT 9.mxd

Description: 2ND FLOOR FRAMING\Flush Beams\B8\15181

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 11-08-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1,649 / 0	880 / 0		
B2, 3-3/4"	1,769 / 0	934 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.18	Tributary
0	SelfWeight	Unf. Lin. (lb/ft)	L	00-00-00	11-08-04	Top		10			00-00-00
1	FG2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	11-03-08	Top	27	13			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	02-00-00	11-04-00	Top	294	147			n/a
3	J1(4498)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	Top	383	181			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	10,259 ft-lbs	23,220 ft-lbs	44.2%	1	05-04-00
End Shear	3,488 lbs	11,571 lbs	30.1%	1	01-03-00
Total Load Deflection	L/422 (0.309")	n/a	55.8%	4	05-10-00
Live Load Deflection	L/646 (0.202")	n/a	55.7%	5	05-10-00
Max Defl.	0.309"	n/a	n/a	4	05-10-00
Span / Depth	13.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	3,574 lbs	34.8%	18.2%	Unspecified
B2	Wall/Plate 3-3/4" x 3-1/2"	3,807 lbs	54.3%	23.8%	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.

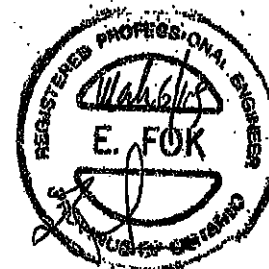
Resistance Factor phi has been applied to all presented results per CSA O86. **CONFORMS TO OBC 2012**

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.



UW880.TAM 33:6018H
STRUCTURAL
COMPONENT ONLY

T-193114



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B8(15181)

Dry | 1 span | No cant.

November 9, 2018 16:03:05

BC CALC® Member Report

Buld 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

File name: WOODCROFT 3.mmdl

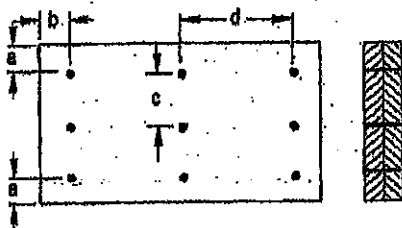
Description: 2ND FLOOR FRAMING\Flush Beams\B8(15181)

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 2-3/4"

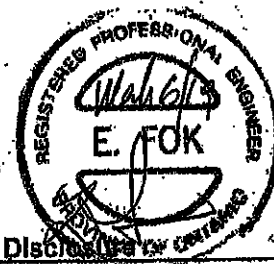
b minimum = 3"

d = 8"

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

Connectors are: 1 Nails

3/4" ARDOX SPIRAL



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OWNED, TAM 33/018H
STRUCTURAL
COMPONENT ONLY

T. 190711467



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

PASSED

2ND FLOOR FRAMING/Flush Beams/B10(15711)

Dry | 1 span | No cant.

November 9, 2018 18:09:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

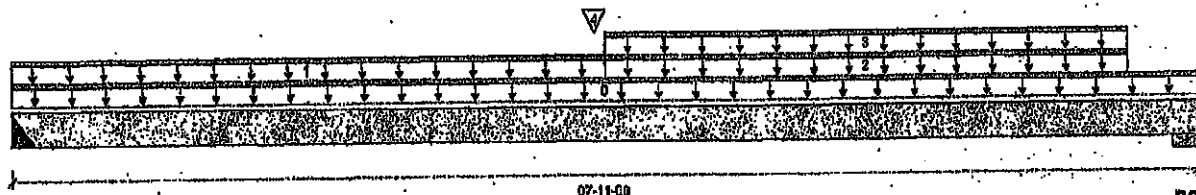
File name: WOODCROFT 3.mxd

Description: 2ND FLOOR FRAMING/Flush Beams/B10(15711)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 07-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	491 / 0	434 / 0		
B2, 6-1/2"	899 / 0	644 / 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	07-11-00	Top	1.00	0.65	1.00	1.18	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-11-08	Top	27	13			n/a
2	STAIRS	Unf. Lin. (lb/ft)	L	03-11-08	07-05-08	Top	240	120			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-11-08	07-05-08	Top	10	5			n/a
4	B13(15705)	Conc. Pt. (lbs)	L	03-10-10	03-10-10	Top	405	549			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Poe. Moment	4,366 ft-lbs	11,610 ft-lbs	37.6%	1	03-10-10
End Shear	1,720 lbs	5,785 lbs	29.7%	1	08-08-00
Total Load Deflection	L/999 (0.11")	n/a	n/a	4	03-11-08
Live Load Deflection	L/999 (0.06")	n/a	n/a	5	03-11-08
Max Defl.	0.111"	n/a	n/a	4	03-11-08
Span / Depth	9.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	1,279 lbs	n/a	-30.0%	HUS1.81/10
B2	Wall/Plate 6-1/2" x 1-3/4"	2,149 lbs	41.8%	18.3%	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 seal length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Hanger Manufacturer: Unassigned
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
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 CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC Floor Value®, VERSA-LAM®, VERSA-RIM PLUS®,

CONFORMS TO CBC 2012

040 NO. TAM 3355-18H
STRUCTURAL
COMPONENT ONLY

T-19310-9



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

PASSED

2ND FLOOR FRAMING Flush Beams B12 (15709)

Dry | 1 span | No cant.

November 9, 2018 16:03:05

BC CALCO® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

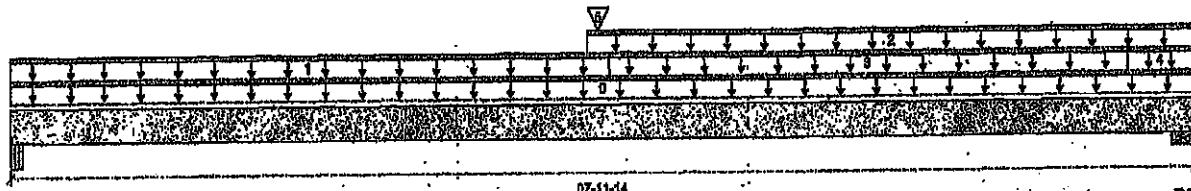
File name: WOODCROFT 3.mmdl

Description: 2ND FLOOR FRAMING Flush Beams B12 (15709)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 07-11-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	297 / 0	392 / 0		
B2, 5-1/2"	291 / 0	633 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-11-14	Top		5			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-00-08	Top	27	13			n/a
2	WALL	Unf. Lin. (lb/ft)	L	03-10-10	07-11-14	Top		80			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	04-00-08	07-08-08	Top	16	8			n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	07-08-08	07-11-14	Top	20				n/a
5	B13 (15705)	Conc. Pt. (lbs)	L	03-11-08	03-11-08	Top	414	553			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3,083 ft-lbs	11,610 ft-lbs	26.4%	1	03-11-08
End Shear	954 lbs	5,788 lbs	16.5%	1	06-08-14
Total Load Deflection	L/999 (0.076")	n/a	n/a	4	03-10-10
Live Load Deflection	L/999 (0.031")	n/a	n/a	5	03-10-10
Max Defl.	0.076"	n/a	n/a	4	03-10-10
Span / Depth	9.4				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	2-5/8" x 1-3/4"	935 lbs	18.7%	18.7%	Unspecified
B2 Wall/Plate	5-1/2" x 1-3/4"	746 lbs	22.3%	9.8%	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.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO CBC 2015

Disclosure

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

DWYER, TAM 33/5/18
STRUCTURAL
COMPONENT ONLY

T-190311 |



Bolton-Casade

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

PASSED

2ND FLOOR FRAMING Flush Beams B11(15712)

Dry | 1 span | No cant.

November 9, 2018 16:03:05

BC CALCO Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

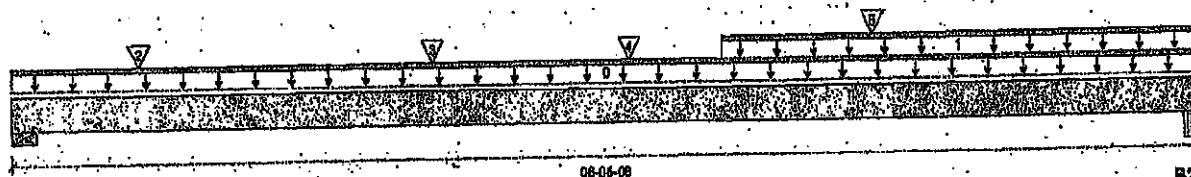
File name: WOODCROFT 3.mmdl

Description: 2ND FLOOR FRAMING Flush Beams B11(15712)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 08-05-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1,337 / 0	812 / 0		
B2, 5-5/8"	1,304 / 0	766 / 0		

Load Summary

Tap	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-06-08	Top	100	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	03-10-04	08-06-08	Top	295	147			n/a
2		Conc. Pt. (lbs)	L	00-08-04	00-08-04	Top	500	251			n/a
3		Conc. Pt. (lbs)	L	02-03-06	02-03-06	Top	916	641			n/a
4		Conc. Pt. (lbs)	L	03-04-04	03-04-04	Top	347	174			n/a
5	J4(15575)	Conc. Pt. (lbs)	L	04-08-04	04-08-04	Top	109	55			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4,414 ft-lbs	23,220 ft-lbs	19.0%	1	02-05-10
End Shear	2,474 lbs	11,571 lbs	21.4%	1	01-01-00
Total Load Deflection	L/999 (0.037")	n/a	n/a	4	03-00-04
Live Load Deflection	L/999 (0.022")	n/a	n/a	5	03-00-04
Max Defl.	0.037"	n/a	n/a	4	03-00-04
Span / Depth	7.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 3-1/2"	3,020 lbs	46.2%	20.2%	Unspecified
B2	Beam 5-5/8" x 3-1/2"	2,901 lbs	13.5%	12.1%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

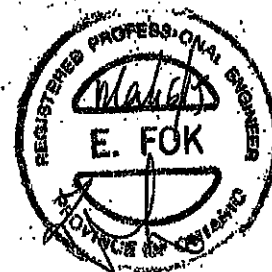
Resistance Factor phi has been applied to all presented results per CSA O86. **CONFORMS TO NBC 2012**

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.



DWG NO. TAM 3356-18 H
STRUCTURAL
COMPONENT ONLY

T. 1903110



Boise Cascade



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B11\16712

Dry | 1 span | No cant.

November 9, 2018 16:03:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

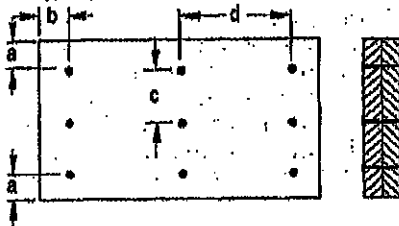
File name: WOODCROFT 3.mxd

Description: 2ND FLOOR FRAMING\Flush Beams\B11\16712

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member

a minimum = 2"
b minimum = 3"

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

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

Connectors are: 1 Nails

3/2" ARDOX SPIRAL



RECEIVED
JUN 10 2019
TOWN OF CALEDON
FILE NO. 3356181

Disclosure

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JYUNG.TAM 3356181
STRUCTURAL
COMPONENT ONLY

PLW

T-19034060



Boise Cascade



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

2ND FLOOR FRAMING\Flush Beams\B14(14395)

PASSED

November 9, 2018 16:03:05

BC CALCO Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

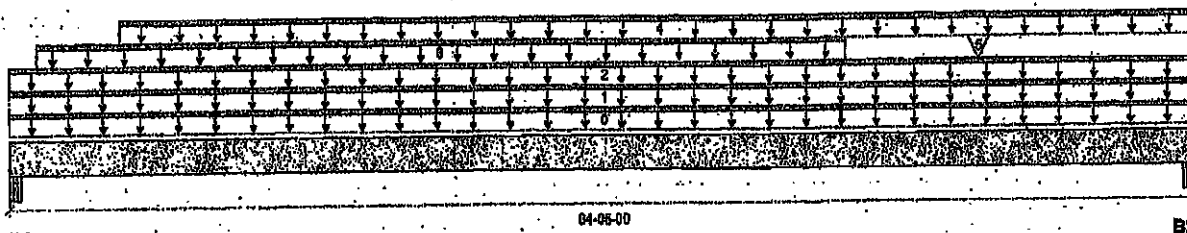
File name: WOODCROFT 3.mmd

Description: 2ND FLOOR FRAMING\Flush Beams\B14(14395)

Specifier:

Designer: PL

Company:



B1

04-05-00

B2

Total Horizontal Product Length = 04-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6"	845 / 0	676 / 0	408 / 0	
B2, 6"	760 / 0	639 / 0	450 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-05-00	Top		10			00-00-00
1	LOWROOF	Unf. Lin. (lb/ft)	L	00-00-00	04-05-00	Top	33	30	102		n/a
2	E23(2600)	Unf. Lin. (lb/ft)	L	00-00-00	04-05-00	Top		81			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	00-01-04	03-01-04	Top	340	170			n/a
4	E23(2600)	Unf. Lin. (lb/ft)	L	00-05-00	04-05-00	Top	33	30	102		n/a
5	J5(4247)	Conc. Pt. (lbs)	L	03-07-04	03-07-04	Top	308	154			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2,069 ft-lbs	23,220 ft-lbs	8.9%	1	02-04-04
End Shear	1,489 lbs	11,571 lbs	12.7%	1	03-02-08
Total Load Deflection	L/999 (0.008")	n/a	n/a	35	02-02-12
Live Load Deflection	L/999 (0.005")	n/a	n/a	51	02-02-12
Max Defl.	0.008"	n/a	n/a	35	02-02-12
Span / Depth	4.7				



Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	6" x 3-1/2"	2,521 lbs	27.0%	11.8%	Unspecified
B2 Beam	6" x 3-1/2"	2,390 lbs	25.8%	11.2%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA 086. CONFORMS TO OBC 2012

BC CALCO analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

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.

DWG NO. TAM3359-18H
STRUCTURAL
COMPONENT ONLY

T-1903113



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****2ND FLOOR FRAMING\Flush Beams\B14(14395)****PASSED**

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

November 9, 2018 16:03:05

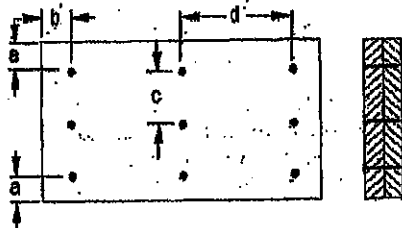
File name: WOODCROFT 3.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B14(14395)

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member

a minimum = 2"

c = 2-3/4"

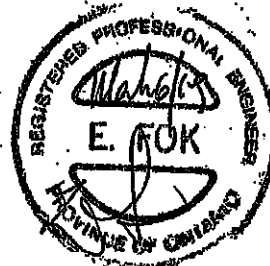
b minimum = 3"

d = 4"

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

Connectors are: Nails

3/4" ARDOX SPIRAL

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

DWYND. YAM 3255918
STRUCTURAL
COMPONENT ONLY

PLM

T-1903113(V)



Boise Cascade



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

PASSED

2ND FLOOR FRAMING\Dropped Beams\B6 DR\4400

Dry | 1 span | No cant.

November 9, 2018 16:03:05

BC CALCO® Member Report

Build 0476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CGMC 12472-R

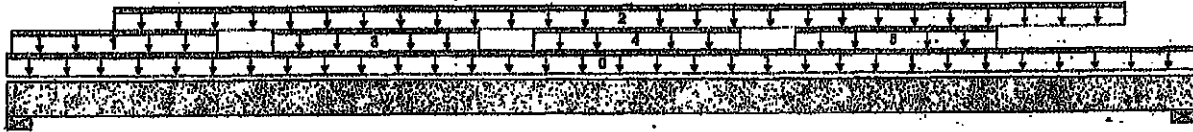
File name: WOODCROFT 3.mmdl

Description: 2ND FLOOR FRAMING\Dropped Beams\B6 DR\4400

Specifier:

Designer: PL

Company:



B1

04-07-00

B2

Total Horizontal Product Length = 04-07-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	694 / 0	320 / 0		
B2, 3-1/2"	663 / 0	355 / 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	04-07-00	Top	10				00-00-00
1	Bk1(4446)	Unf. Lin. (lb/ft)	L	00-00-04	00-09-12	Top	20	10			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-05-00	04-03-12	Top	303	152			n/a
3	Bk1(4392)	Unf. Lin. (lb/ft)	L	01-00-04	01-09-12	Top	20	10			n/a
4	Bk1(4377)	Unf. Lin. (lb/ft)	L	02-00-04	02-09-12	Top	20	10			n/a
5	Bk1(4290)	Unf. Lin. (lb/ft)	L	03-00-04	03-09-12	Top	20	10			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,455 ft-lbs	23,220 ft-lbs	6.3%	1	01-11-00
End Shear	1,130 lbs	11,571 lbs	9.8%	1	01-01-00
Total Load Deflection	L/999 (0.006")	n/a	n/a	4	02-03-04
Live Load Deflection	L/999 (0.004")	n/a	n/a	5	02-03-04
Max Defl.	0.006"	n/a	n/a	4	02-03-04
Span / Depth	5.2				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 3-1/2"	1,291 lbs	13.0%	8.6%	Unspecified
B2	Wall/Plate 3-1/2" x 3-1/2"	1,437 lbs	14.4%	9.6%	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: 00-01-15, Bottom: 00-01-15.

Resistance Factor phi has been applied to all presented results per CSA 086. CONFORMS TO OBC 2012

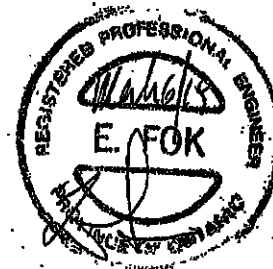
BC CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 0

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.



NO. TAM335318 H
STRUCTURAL
COMPONENT ONLY

T. 080107



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

PASSED

2ND FLOOR FRAMING\Dropped Beams\B6 DR(14400)

Dry | 1 span | No cant.

November 9, 2018 16:03:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

File name: WOODCROFT 3.mxd

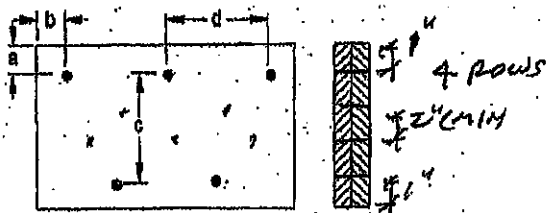
Description: 2ND FLOOR FRAMING\Dro...ed Beams\B6 DR(14400)

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

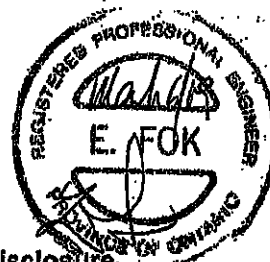
c = 7-1/2"
d = 8"

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

Member has no side loads.

Connectors are: 1" Nails

3/4" ARDOX SPIRAL.



Disclosure

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

OWN NO. YAW 335318H
STRUCTURAL
COMPONENT ONLY

T. (9036076)



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING\Dropped Beams\B7 DR\16235**

Dry | 1 span | No cant:

November 9, 2018 16:03:05

BC CALCO Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

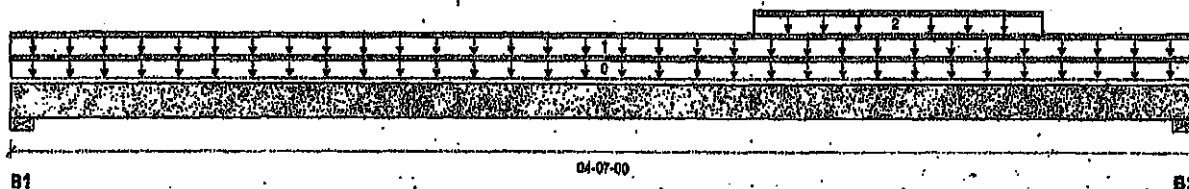
File name: WOODCROFT 3.mxd

Description: 2ND FLOOR FRAMING\Dropped Beams\B7 DR\16235

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 04-07-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	860 / 0	462 / 0		
B2, 3-1/2"	777 / 0	410 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-07-00	Top		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	04-07-00	Top	340	170			n/a
2	Bk1(16287)	Unf. Lin. (lb/ft)	L	02-10-04	03-11-12	Top	63	32			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,452 ft-lbs	23,220 ft-lbs	6.3%	1	02-09-00
End Shear	1,049 lbs	11,571 lbs	9.1%	1	03-08-00
Total Load Deflection	L/999 (0.006")	n/a	n/a	4	02-04-00
Live Load Deflection	L/999 (0.004")	n/a	n/a	5	02-04-00
Max Defl.	0.006"	n/a	n/a	4	02-04-00
Span / Depth	5.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 3-1/2"	1,855 lbs	18.6%	12.4%	Unspecified
B2	Wall/Plate 3-1/2" x 3-1/2"	1,878 lbs	16.9%	11.2%	Unspecified

Notes

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

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

Calculations assume unbraced length of Top: 00-01-16; Bottom: 00-01-15.

Resistance Factor phi has been applied to all presented results per CSA O86. **CONFORMS TO CBC 2012**

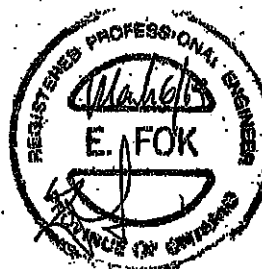
BC CALCO analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

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.

Member has no side loads.



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TOWN OF CALEDON
BUILDING SECTION

JUN 10 2019 3:54 PM
STRUCTURAL
COMPONENT ONLY

T-1903108



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING/Dropped Beams/B7 DR/(5235)
Dry | 1 span | No cant.

PASSED

November 8, 2018 18:03:05

BC CALC® Member Report

Build 8475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

File name: WOODCROFT 3.mxd

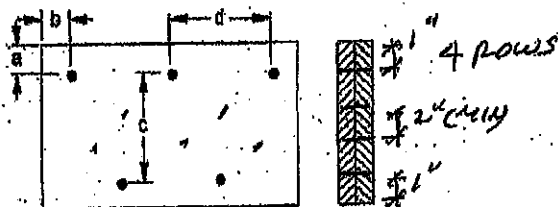
Description: 2ND FLOOR FRAMING/Dropped Beams/B7 DR/(5235)

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member



a minimum = 1/2"

c = 7-1/2"

b minimum = 3"

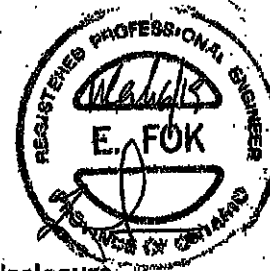
d = 2' 6"

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

Member has no side loads.

Connectors are: 7 Nails

3/4" ARDOX SPIRAL



Disclosure

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

NO. 1111 3254-18H
STRUCTURAL
COMPONENT ONLY

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

T-190310860



2ND FLOOR FRAMING\Flush Beams\B9(15584)

November 9, 2018 16:03:05

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 04-07-04

B2

Load Summary

Controls Summary

REGISTERED PROFESSIONAL ENGINEER
 E. FOR
 NO. 10000
 STATE OF CALIFORNIA

Notes

CONFORMS TO QBC 2012

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

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TOWN OF CALEDON
 BUILDING SECTION

DWG NO. TAM 32.6-18 H
STRUCTURAL
COMPONENT ONLY

T-9111



Boise Cascade



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

2ND FLOOR FRAMING\Flush Beams\B9(15584)

PASSED

November 9, 2018 16:03:05

BC CALC® Member Report

Build 8476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMG 12472-R

File name: WOODCROFT 3.mmdl

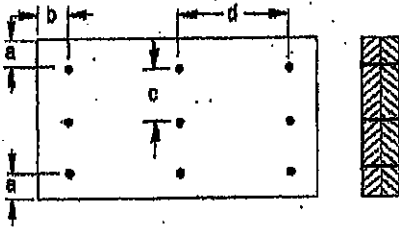
Description: 2ND FLOOR FRAMING\Flush Beams\B9(15584)

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member



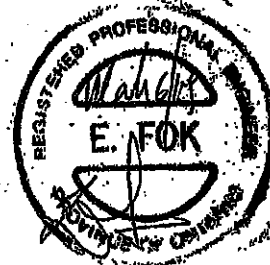
a minimum = 2"
b minimum = 3"

c = 2-3/4"
d = 6"

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

Connectors are: 1 in Nails

3/4" ARBOX SPIRAL



Disclosure

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

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TOWN OF CALEDON
BUILDING SECTION
FILE NO.

WOOD NO. 4AM 32/10/18
STRUCTURAL
COMPONENT ONLY

16/11/18

T-1903156



Boise Cascade



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

2ND FLOOR FRAMING\Dropped Beams\B16 DR\15782

PASSED

BC CALQ® Member Report

Dry | 1 span | No cant.

November 9, 2018 16:03:06

Build 6476

Job name:

File name: WOODCROFT 3.mxd

Address:

Description: 2ND FLOOR FRAMING\Drop...d Beams\B16 DR\15782

City, Province, Postal Code: CALEDON

Specifier:

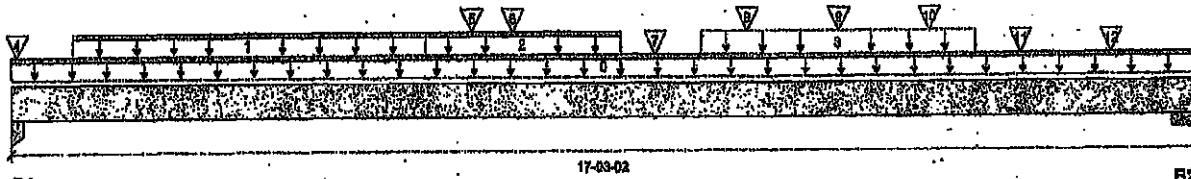
Customer:

Designer: PL

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 17-03-02

Reaction Summary (Down / Uplift) (lbs)

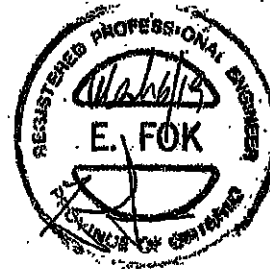
Bearing	Live	Dead	Snow	Wind
B1, 6-1/4"	3,802 / 0	2,305 / 0		
B2, 3-1/2"	2,594 / 0	1,655 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	17-03-02	Top		18			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-06	06-09-06	Top	296	145			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	06-00-06	08-10-06	Top	234	116			n/a
3	Smoothed Load	Trapezoidal (lb/ft)	L	10-00-06		Top	221	22			n/a
					14-00-06		221	129			
4	B11(15712)	Conc. Pl. (lbs)	L	00-01-00	00-01-00	Top	1,306	757			n/a
5	J4(15729)	Conc. Pl. (lbs)	L	06-08-06	06-08-06	Top	78	39			n/a
6	B12(15709)	Conc. Pl. (lbs)	L	07-03-08	07-03-08	Top	302	397			n/a
7	J2(15773)	Conc. Pl. (lbs)	L	09-04-06	09-04-06	Top	257	129			n/a
8	-	Conc. Pl. (lbs)	L	10-08-06	10-08-06	Top	103	147			n/a
9	-	Conc. Pl. (lbs)	L	12-00-06	12-00-06	Top	207	147			n/a
10	J3(15740)	Conc. Pl. (lbs)	L	13-04-06	13-04-06	Top	103	62			n/a
11	-	Conc. Pl. (lbs)	L	14-08-06	14-08-06	Top	397	199			n/a
12	-	Conc. Pl. (lbs)	L	16-00-06	16-00-06	Top	501	251			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	25,502 ft-lbs	55,212 ft-lbs	46.2%	1	08-04-06
End Shear	5,712 lbs	21,696 lbs	26.3%	1	15-11-12
Total Load Deflection	L/325 (0.615")	n/a	73.8%	4	08-04-06
Live Load Deflection	L/529 (0.378")	n/a	68.0%	5	08-04-06
Max Defl.	0.615"	n/a	n/a	4	08-04-06
Span / Depth	16.8				



Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 5-1/4" x 5-1/4"	8,583 lbs	38.4%	25.6%	Unspecified
B2	Wall/Plate 3-1/2" x 5-1/4"	6,835 lbs	39.1%	26.0%	Unspecified

DWG NO. YAM 335 2018 H
STRUCTURAL
COMPONENT ONLY
pg 4

T-1903106



Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING/Dropped Beams/B16 DR(15782)

PASSED

November 9, 2018 16:03:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CGMC 12472-R

File name: WOODCROFT 3.mmdl

Description: 2ND FLOOR FRAMING/Dropped Beams/B16 DR(15782)

Specifier:

Designer: PL

Company:

Notes

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

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

Calculations assume unbraced length of Top: 00-07-11, Bottom: 00-07-11.

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

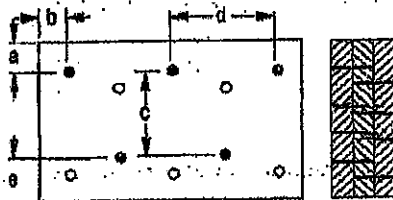
Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Nailing schedule applies to both sides of the member.

Member has no side loads.

CONFORMS TO CBC 2012

Connection Diagram: Full Length of Member



4 POUNDS

a minimum = 1"
b minimum = 3"

c = 6-7/8"
d = 8"
e minimum = 2"

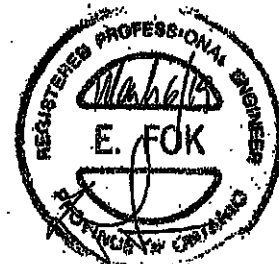
Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Nailing schedule applies to both sides of the member.

Member has no side loads.

Connectors are: 1/2" Nails

3/4" ARDOX SPIRAL



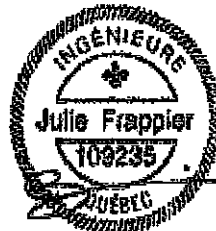
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 ALLJOIST®, BC RIM BOARD™, BCI®,
 BOISE GLULAM™, BC FloorValue®,
 VERSA-LAM®, VERSA-RIM PLUS®,
 STRUCTURAL COMPONENT ONLY

T-1903106(1)



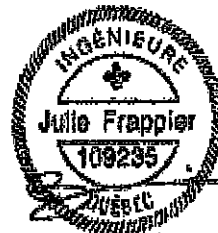
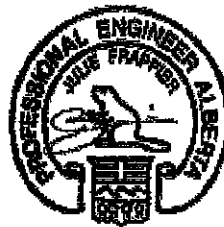
Maximum Floor Spans

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

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

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

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



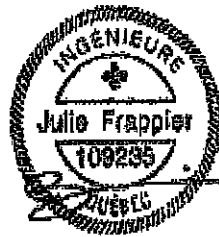
Maximum Floor Spans

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

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

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

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



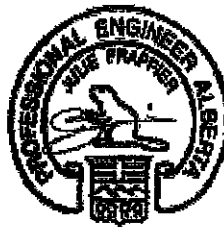
Maximum Floor Spans

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

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

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

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



Maximum Floor Spans

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

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

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

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other loading conditions, engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design (LSD) per CAN/CSA S16.01, CAN/CSA A58.3, and CAN/CSA A58.3-2012.
- 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 1101274C.

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Construction Detail

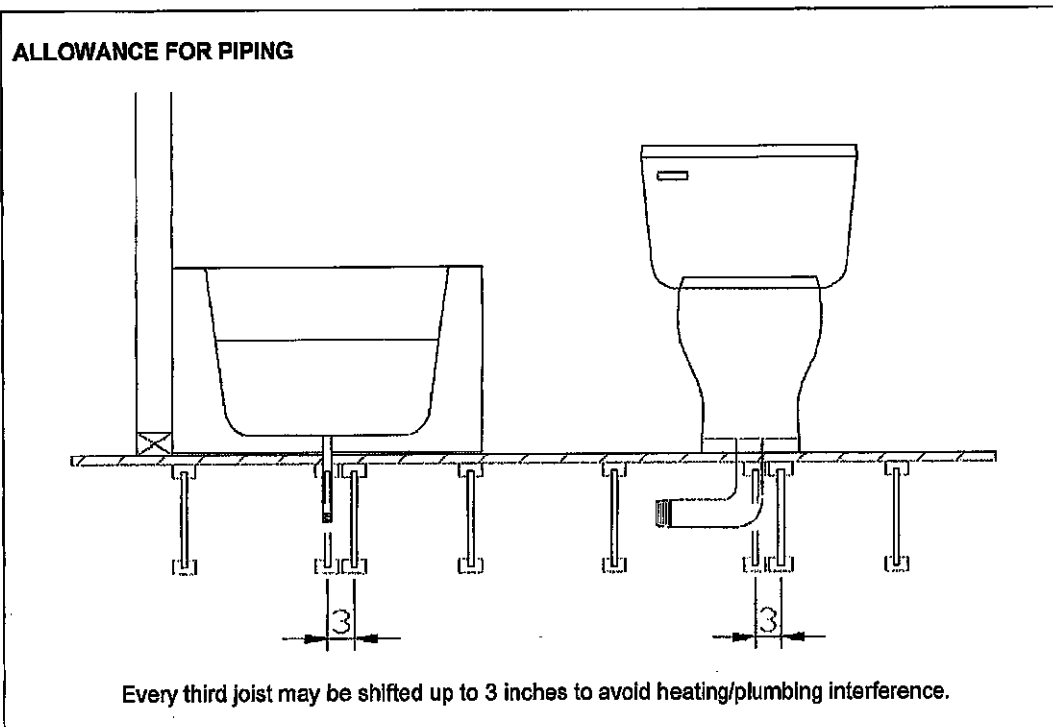
Limit States Design

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.



Every third joist may be shifted up to 3 inches to avoid heating/plumbing interference.

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Revised April 12, 2012

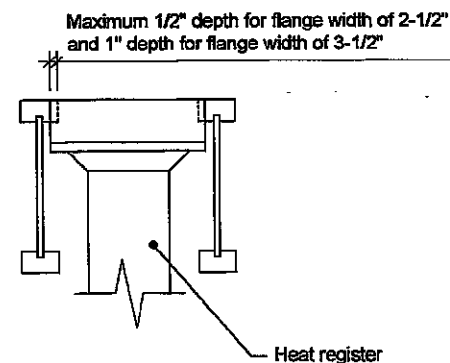
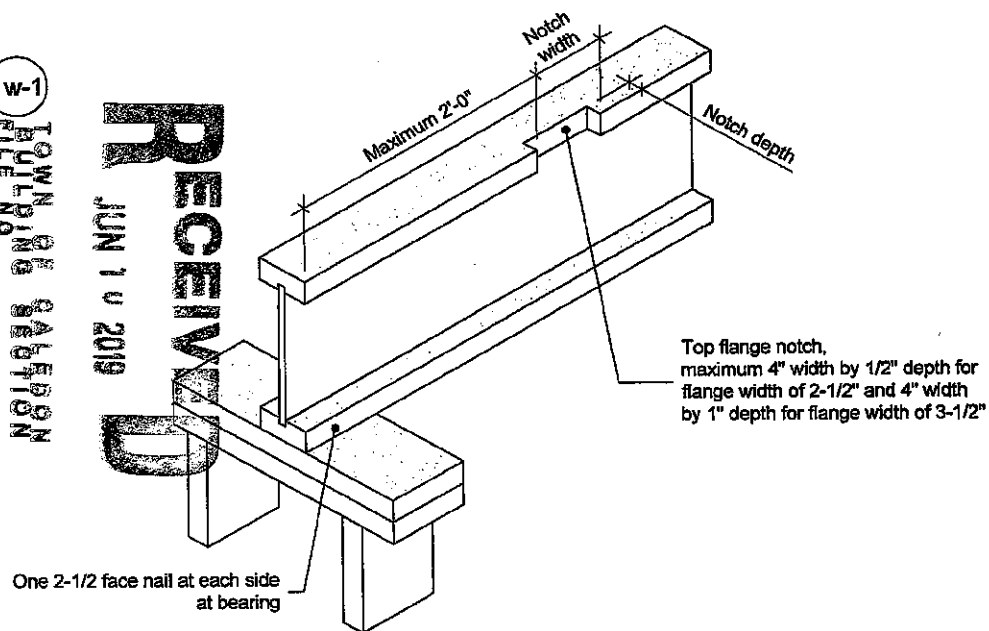
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Notes:

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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STRUCTURES

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TITLE

Notch in I-joist for Heat Register

CATEGORY

I-joist - Typical Floor Framing and Construction Details

DOCUMENT

DATE

2018-04-10

NUMBER

1w-1