

FROM PLAN DATED: SEPT 25 2018

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: PRESTON 2

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

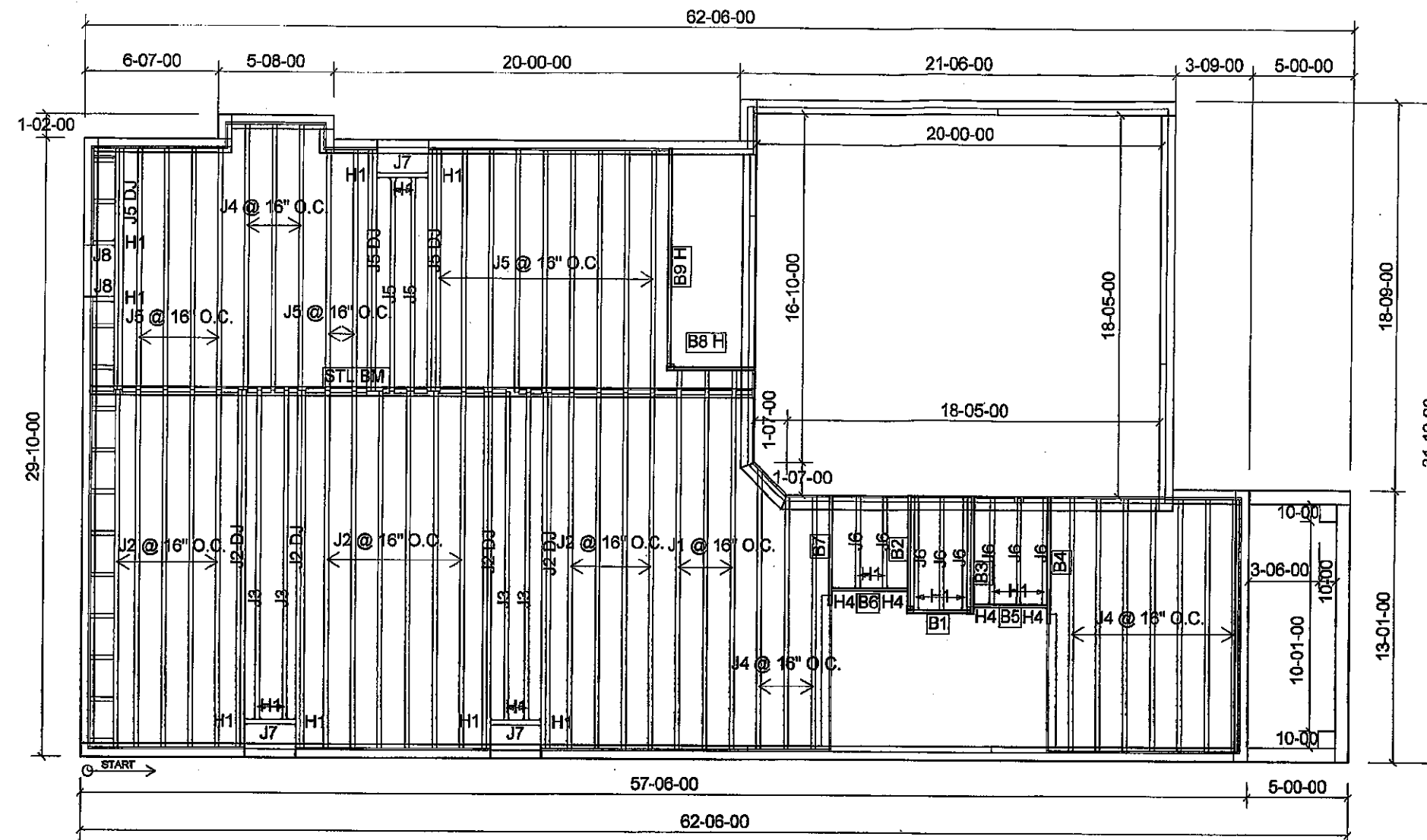
DEAD LOAD: 15.0 lb/ft^2

TILED AREAS: 20 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

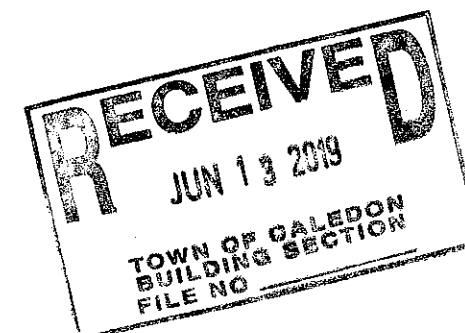
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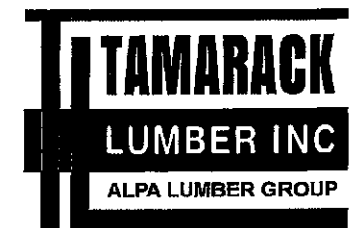
1st FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	3
J2	18-00-00	11 7/8" NI-40x	1	15
J2 DJ	18-00-00	11 7/8" NI-40x	2	8
J3	16-00-00	11 7/8" NI-40x	1	4
J4	14-00-00	11 7/8" NI-40x	1	13
J5	12-00-00	11 7/8" NI-40x	1	17
J5 DJ	12-00-00	11 7/8" NI-40x	2	6
J6	6-00-00	11 7/8" NI-40x	1	8
J7	4-00-00	11 7/8" NI-40x	1	3
J8	2-00-00	11 7/8" NI-40x	1	2
B9 H	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B3	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B7	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8 H	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B5	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

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





FROM PLAN DATED: SEPT 25 2018

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: PRESTON 2

ELEVATION: 1

LOT:

CITY: CALEDON

SALESMAN: M D

DESIGNER: PL

REVISION:

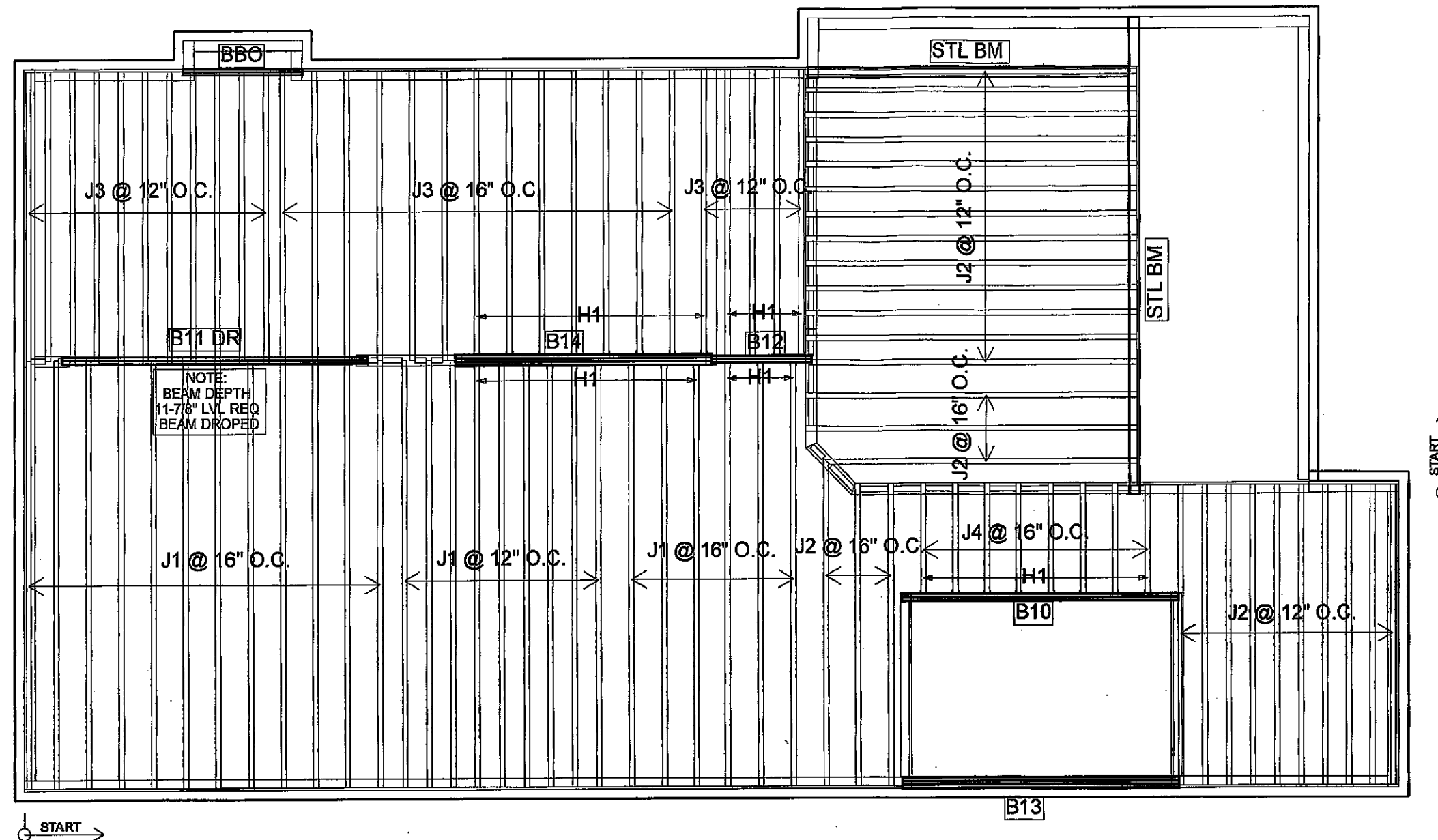
NOTES:
REFER TO THE NORDIC **INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION. **SQUASH BLOCKS** OF 2x4, 2x6, 2x8 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER 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

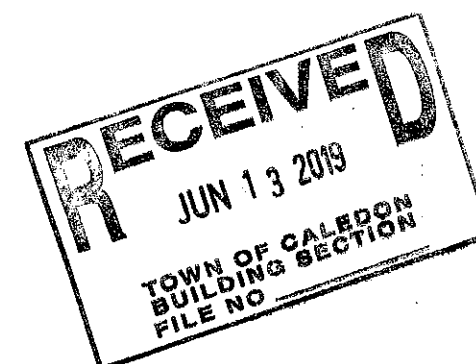
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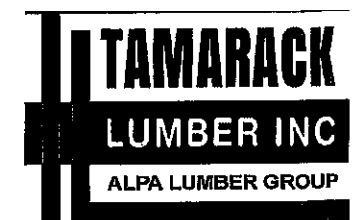
2nd FLOOR

STANDARD



Products					Connector Summary		
PlotID	Length	Product	Plies	Net Qty	Qty	Manuf	Product
J1	18-00-00	11 7/8" NI-40x	1	27	15	H1	IUS2.56/11.88
J2	14-00-00	11 7/8" NI-40x	1	29	17	H1	IUS2.56/11.88
J3	12-00-00	11 7/8" NI-40x	1	29			
J4	6-00-00	11 7/8" NI-40x	1	8			
B11 DR ✓	14-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2			
B10 ✓	12-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2			
B13	12-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	3	3			
B14 ✓	12-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	3	3			
B12 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2			





FROM PLAN DATED: SEPT 25 2018

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: PRESTON 2

ELEVATION: 1

LOT:

CITY: CALEDON

SALESMAN: M D

DESIGNER: PL

REVISION:

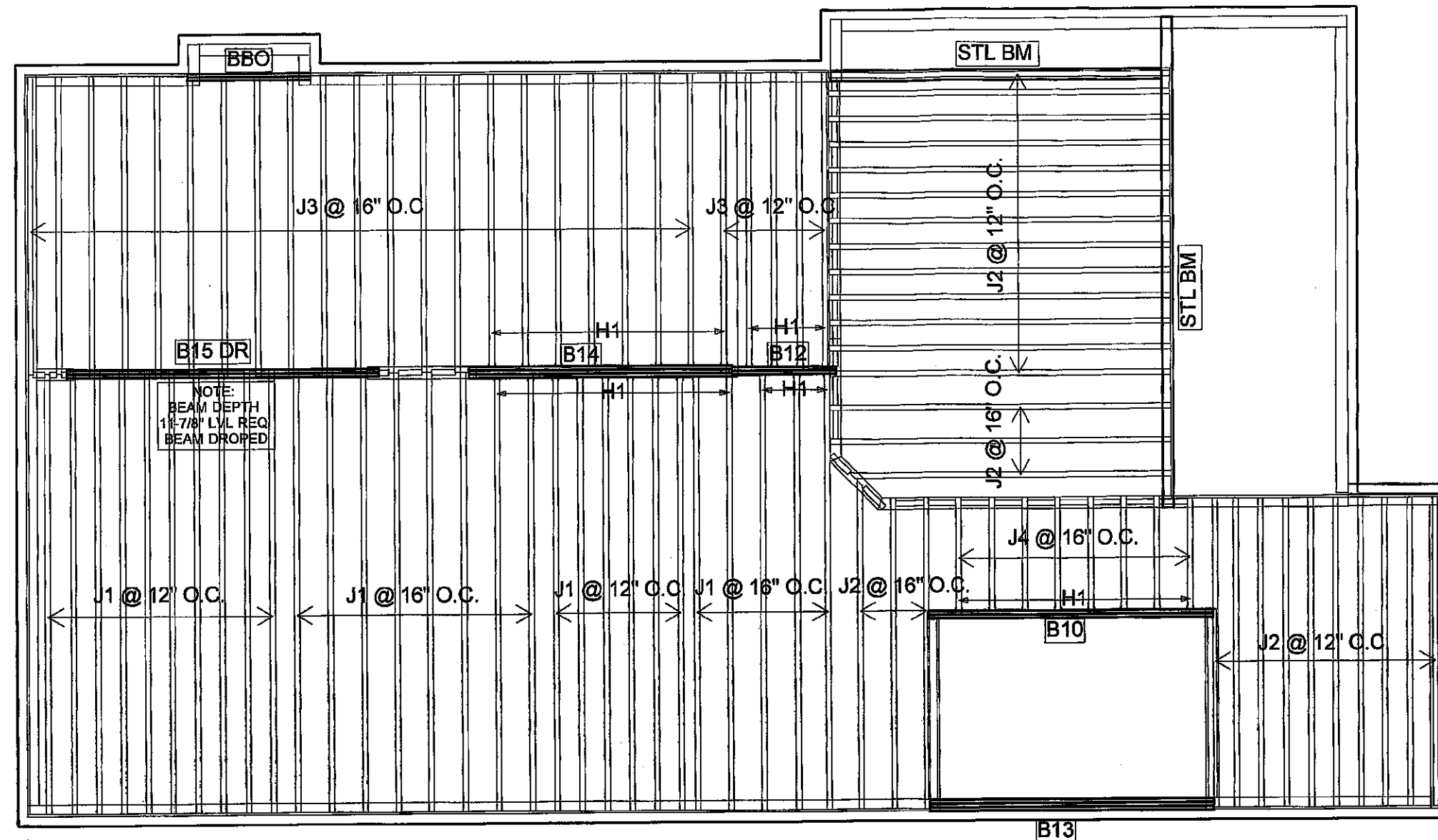
NOTES:
REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION. **SQUASH BLOCKS** OF 2x4, 2x6, 2x8 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK** REQ. 1-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: 11/8/2018

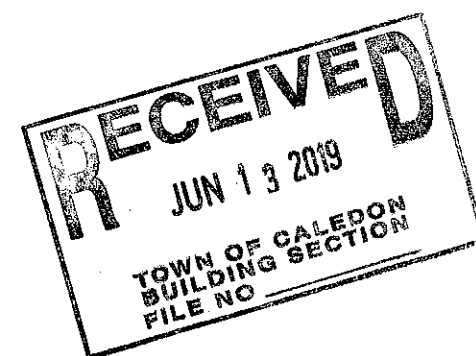
2nd FLOOR

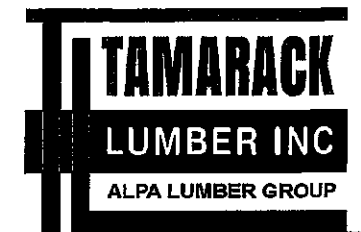
OPTIONAL 5 BEDROOM CONDITION



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	29
J2	14-00-00	11 7/8" NI-40x	1	29
J3	12-00-00	11 7/8" NI-40x	1	26
J4	6-00-00	11 7/8" NI-40x	1	8
B15 DR ✓	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B10 ✓	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B13 ✓	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B14 ✓	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B12 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
15	H1	IUS2.56/11.88
18	H1	IUS2.56/11.88





FROM PLAN DATED: SEPT 25 2018

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: PRESTON 2

ELEVATION: 2

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

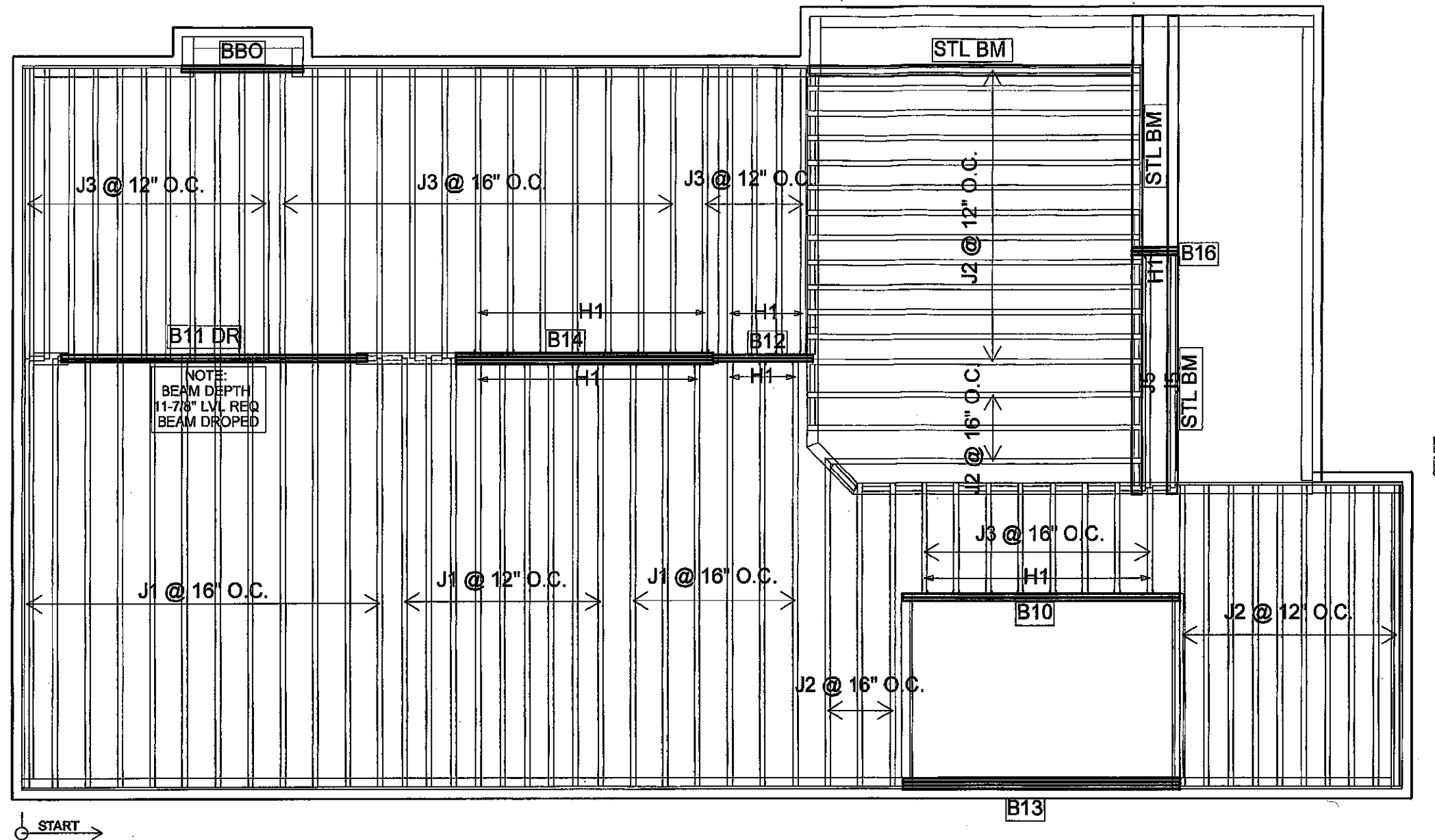
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft²
TILED AREAS: 20 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 11/8/2018

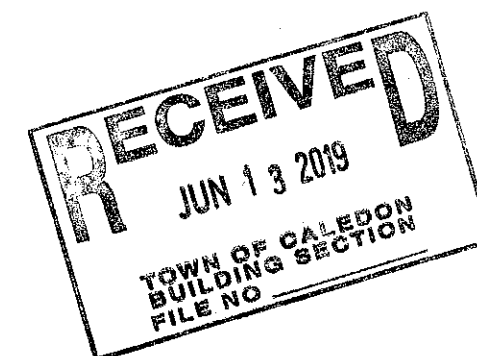
2nd FLOOR

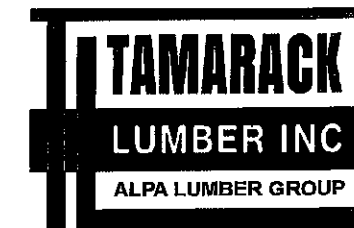
STANDARD



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	27
J2	14-00-00	11 7/8" NI-40x	1	29
J3	12-00-00	11 7/8" NI-40x	1	29
J5	10-00-00	11 7/8" NI-40x	1	2
J3	6-00-00	11 7/8" NI-40x	1	8
B11 DR	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B10 ✓	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B13 ✓	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B14 ✓	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B12 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B16 ✓	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
16	H1	IUS2.56/11.88
17	H1	IUS2.56/11.88





FROM PLAN DATED: SEPT 25 2018

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: PRESTON 2

ELEVATION: 2

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

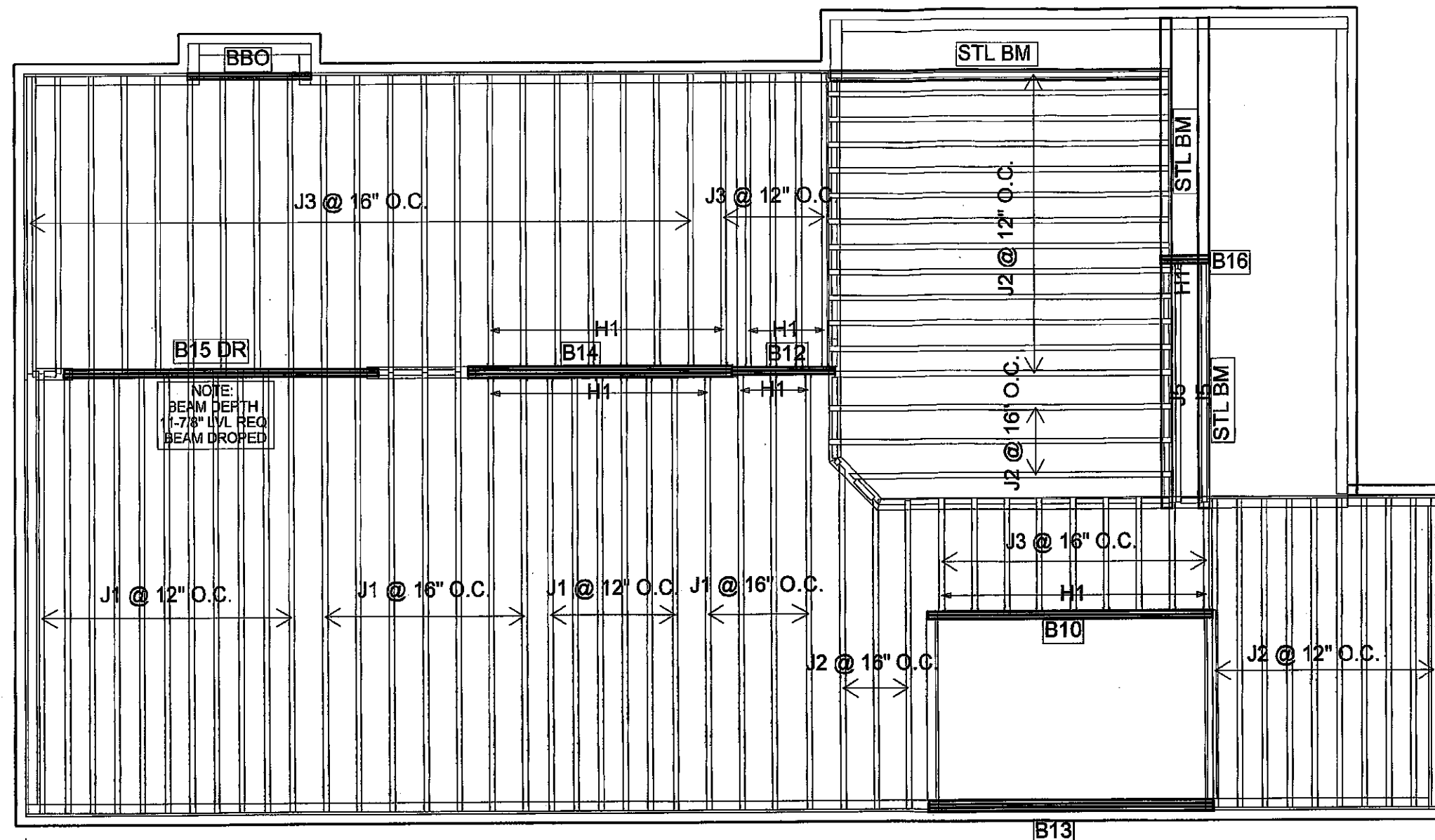
TILED AREAS: 20 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 11/8/2018

2nd FLOOR

OPTIONAL 5 BEDROOM CONDITION

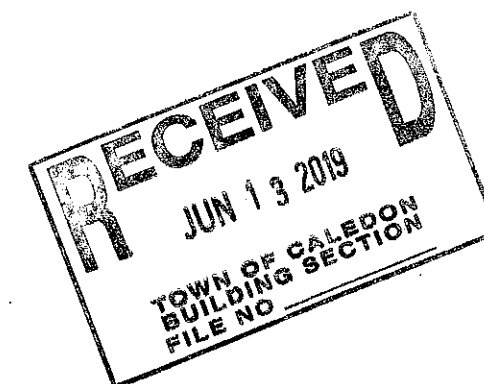


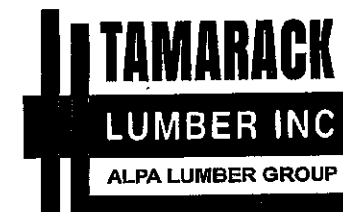
START
↑

START
→

Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	28
J2	14-00-00	11 7/8" NI-40x	1	29
J3	12-00-00	11 7/8" NI-40x	1	26
J5	10-00-00	11 7/8" NI-40x	1	2
J3	6-00-00	11 7/8" NI-40x	1	9
B16	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15 DR	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B10	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B13	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B14	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B12	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
1	H1	IUS2.56/11.88
16	H1	IUS2.56/11.88
17	H1	IUS2.56/11.88





FROM PLAN DATED: SEPT 25 2018

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: PRESTON 2

ELEVATION: 1

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. JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR HOLES INCLUDING DUCT CHASE AND FIELD CUT OPENINGS SEE FIGURE 7, TABLES 1 & 2. CERAMIC TILE APPLICATION AS PER O.B.C 9.30.6.

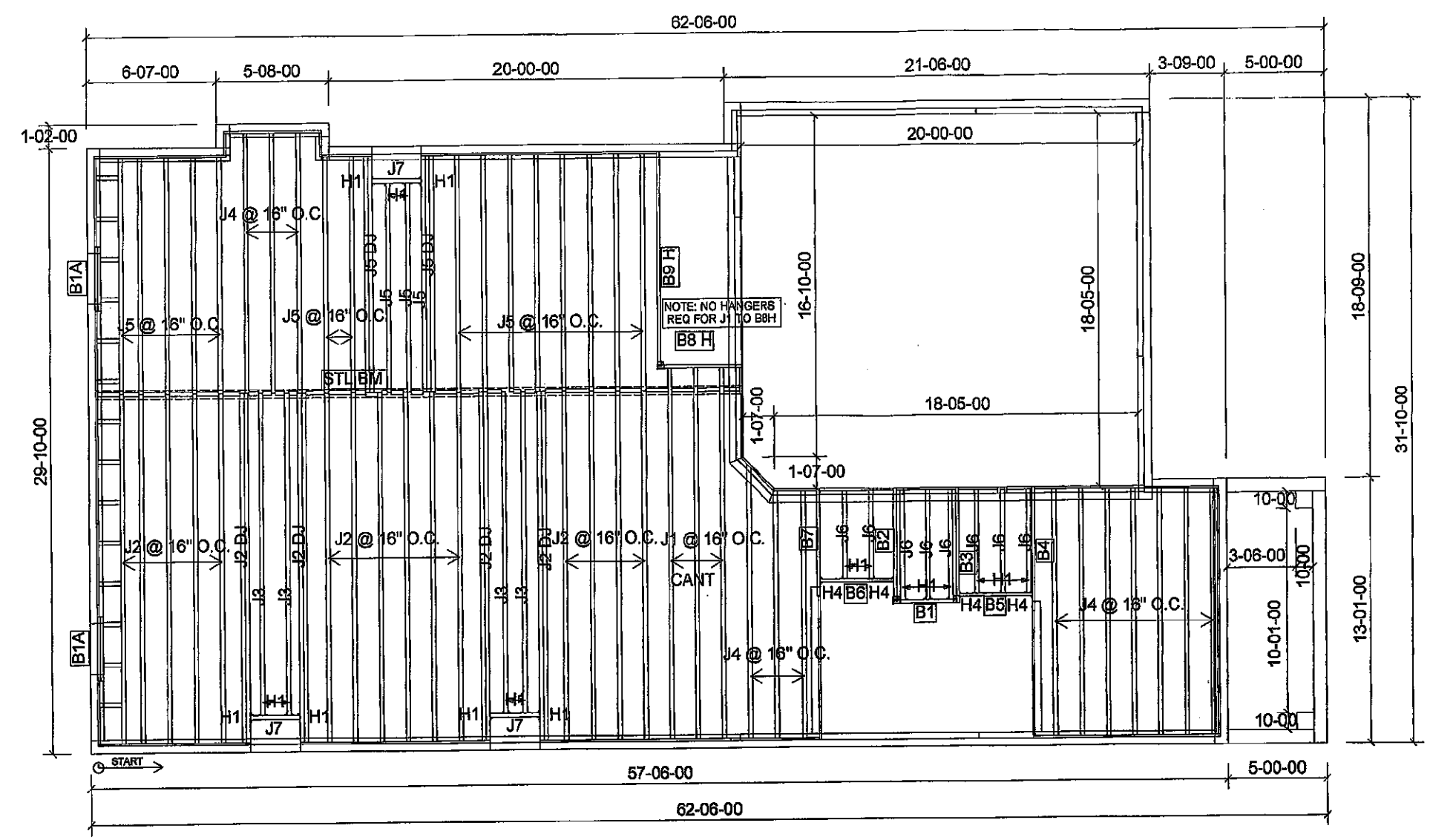
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DEAD LOAD: 15.0 lb/ft²
TILED AREAS: 20 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2019-01-15

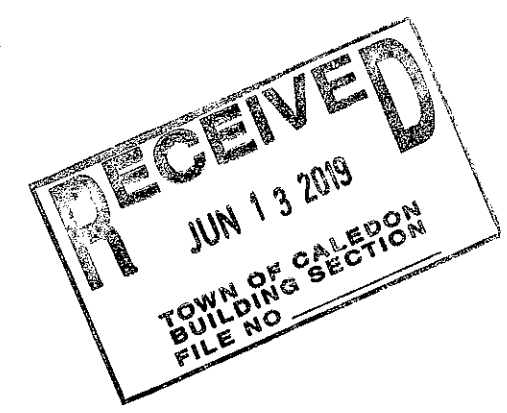
1st FLOOR

DECK



Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	3
J2	18-00-00	11 7/8" NI-40x	1	15
J2 DJ	18-00-00	11 7/8" NI-40x	2	8
J3	16-00-00	11 7/8" NI-40x	1	4
J4	14-00-00	11 7/8" NI-40x	1	13
J5	12-00-00	11 7/8" NI-40x	1	18
J5 DJ	12-00-00	11 7/8" NI-40x	2	4
J6	6-00-00	11 7/8" NI-40x	1	8
J7	4-00-00	11 7/8" NI-40x	1	3
B9 H	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B3	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B7	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8 H	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B5	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1A	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	4

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





FROM PLAN DATED: SEPT 25 2018

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: PRESTON 2

ELEVATION: 2

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NOTES:

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

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LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 15.0 lb/ft²

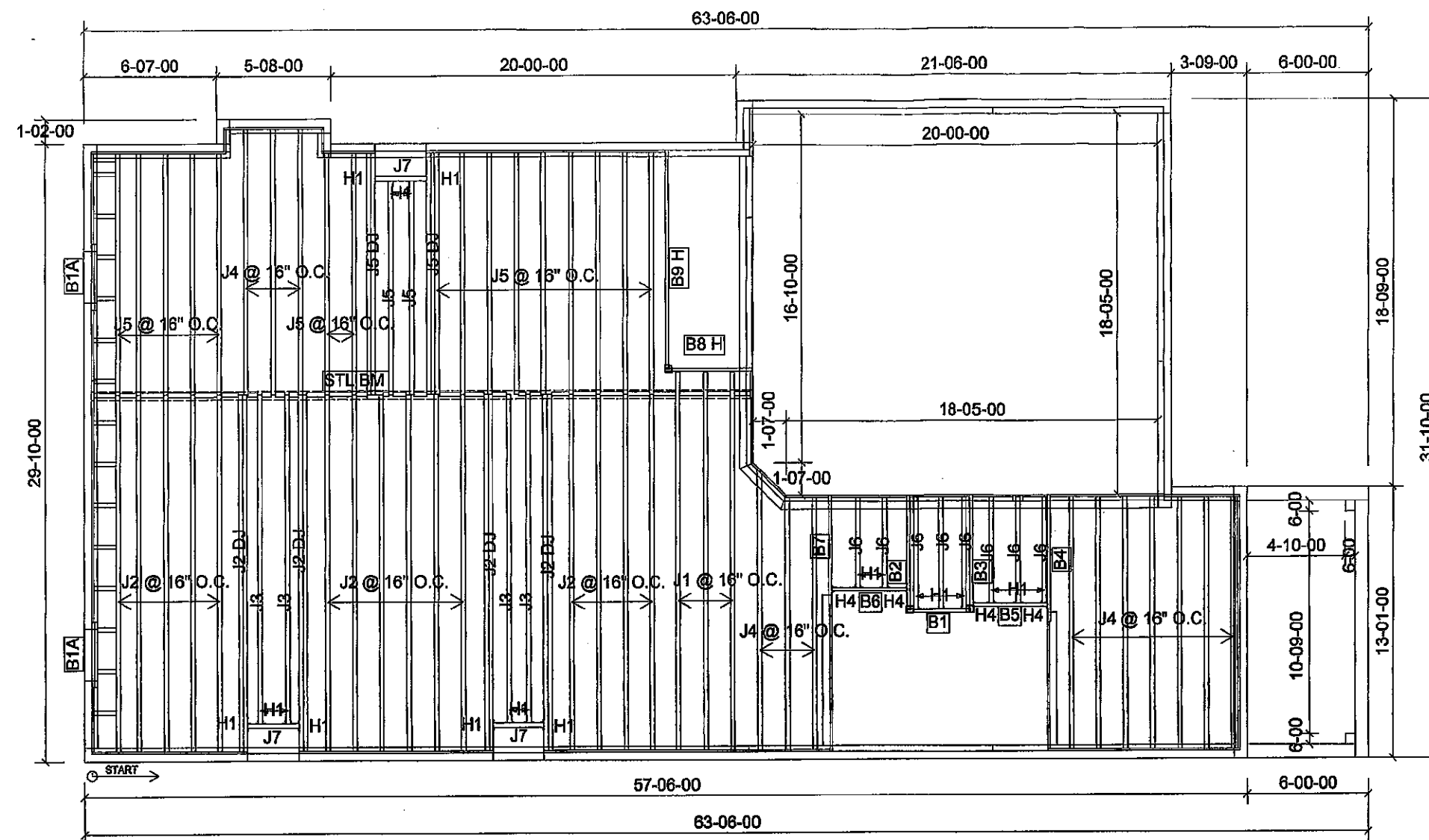
TILED AREAS: 20 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2019-01-15

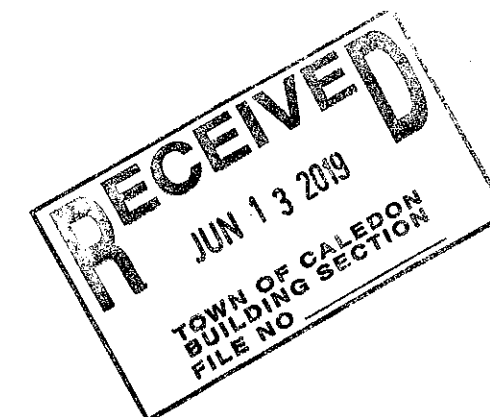
1st FLOOR

DECK



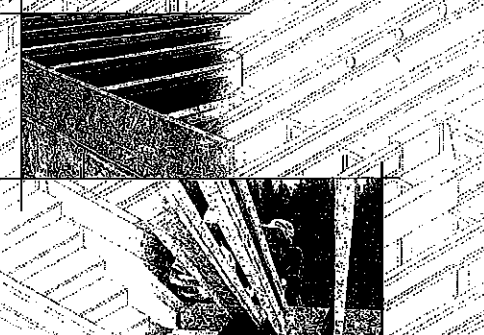
Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	3
J2	18-00-00	11 7/8" NI-40x	1	15
J2 DJ	18-00-00	11 7/8" NI-40x	2	8
J3	16-00-00	11 7/8" NI-40x	1	4
J4	14-00-00	11 7/8" NI-40x	1	13
J5	12-00-00	11 7/8" NI-40x	1	18
J5 DJ	12-00-00	11 7/8" NI-40x	2	4
J6	6-00-00	11 7/8" NI-40x	1	8
J7	4-00-00	11 7/8" NI-40x	1	3
B9 H	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B3	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B7	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8 H	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B5	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1A	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	4

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





INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



Distributed by:

LC501 / November 2014

SAFETY AND CONSTRUCTION PRECAUTIONS



WARNING

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

Avoid Accidents by Following these Important Guidelines:

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

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

STORAGE AND HANDLING GUIDELINES

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



MAXIMUM FLOOR SPANS

1. Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8" inch for a joist spacing of 19.2 inches or less, or 3/4" inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGA-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
3. Minimum bearing length shall be 1-3/4 inches for the end bearings, and 5-1/2 inches for the intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
5. This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
6. Tables are based on Unit States Design per CAN/CSA C08-09 Standard, and NBC 2010.
7. SI units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

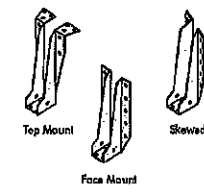
MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTISPAN

Joist Depth	Joist Series	Simple spans On centre spacing				Multiple spans On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NL-20	16'1"	14'2"	13'5"	12'5"	15'4"	14'10"	14'2"	13'2"
	NL-40s	16'1"	14'2"	14'5"	14'0"	17'5"	16'5"	16'10"	15'5"
	NL-60	16'3"	15'4"	14'10"	14'1"	17'7"	16'7"	16'4"	15'1"
	NL-70	17'1"	16'1"	15'6"	15'7"	18'7"	17'4"	16'9"	16'10"
11-7/8"	NL-20	16'11"	14'9"	13'5"	12'5"	15'4"	14'10"	14'2"	13'2"
	NL-40s	18'1"	17'0"	16'5"	16'6"	20'0"	18'6"	17'9"	17'5"
	NL-60	18'4"	17'3"	16'7"	16'9"	20'3"	18'9"	18'0"	18'1"
	NL-70	19'4"	18'2"	17'4"	17'5"	21'6"	19'11"	19'0"	19'1"
14"	NL-20	19'5"	18'3"	17'6"	17'7"	21'9"	20'2"	19'4"	19'4"
	NL-40s	20'2"	18'7"	17'10"	17'1"	22'3"	20'7"	19'8"	19'9"
	NL-60	20'4"	18'9"	17'11"	18'0"	22'5"	20'9"	19'10"	19'1"
	NL-70	21'1"	19'7"	18'10"	18'1"	23'2"	21'4"	20'5"	20'6"
16"	NL-20	20'5"	18'11"	18'1"	18'2"	22'7"	20'11"	20'0"	20'1"
	NL-40s	21'7"	20'0"	19'1"	19'2"	23'10"	21'1"	21'1"	21'2"
	NL-60	21'11"	20'3"	19'4"	19'5"	24'3"	22'6"	21'6"	21'6"
	NL-70	22'5"	20'8"	19'9"	19'10"	24'9"	22'10"	21'10"	21'10"
18"	NL-20	22'3"	20'11"	19'11"	20'0"	23'0"	21'1"	21'0"	21'0"
	NL-40s	23'2"	21'2"	20'2"	20'3"	23'9"	21'9"	21'9"	21'10"
	NL-60	23'6"	21'6"	20'6"	20'7"	24'0"	22'10"	22'10"	22'10"
	NL-70	24'1"	22'1"	21'2"	21'2"	24'5"	23'5"	23'5"	23'6"
20"	NL-20	24'8"	22'8"	21'8"	21'9"	24'11"	24'10"	23'9"	23'9"
	NL-90s	24'8"	22'8"	21'8"	21'10"	27'5"	25'2"	24'9"	24'1"

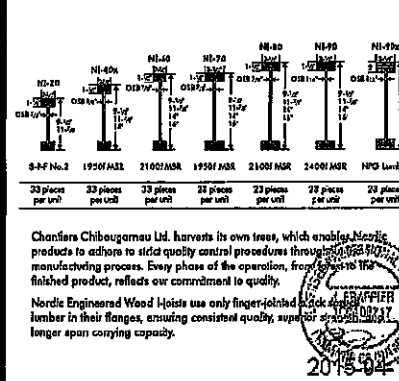
CCMC EVALUATION REPORT 13019-R

I-JOIST HANGERS

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



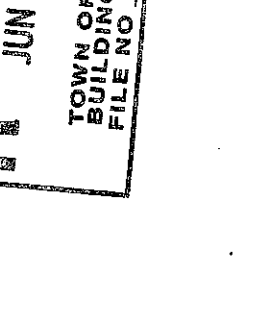
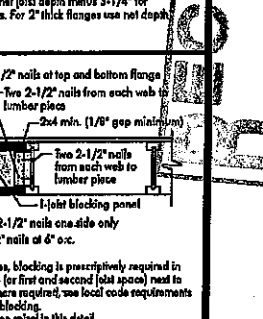
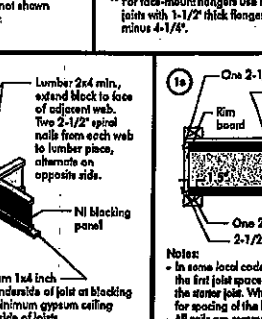
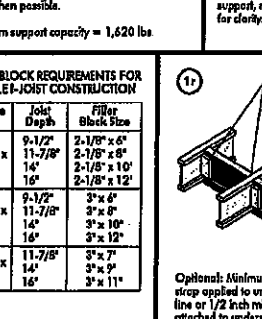
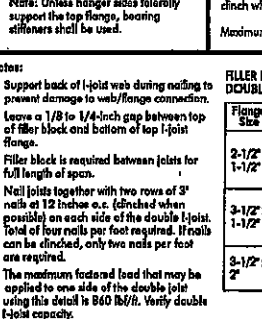
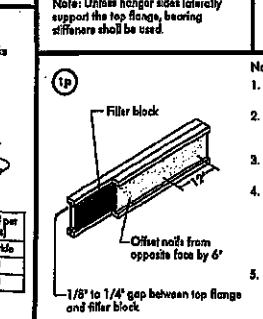
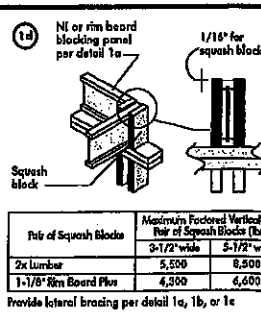
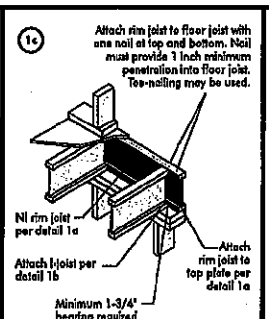
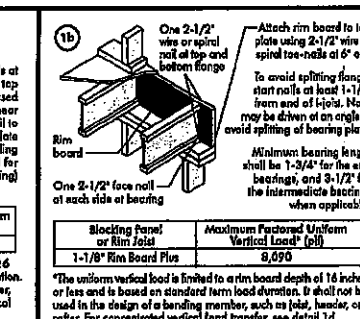
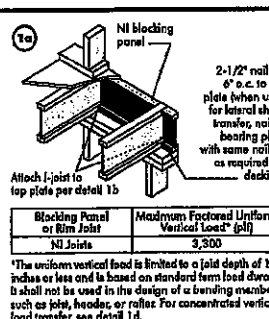
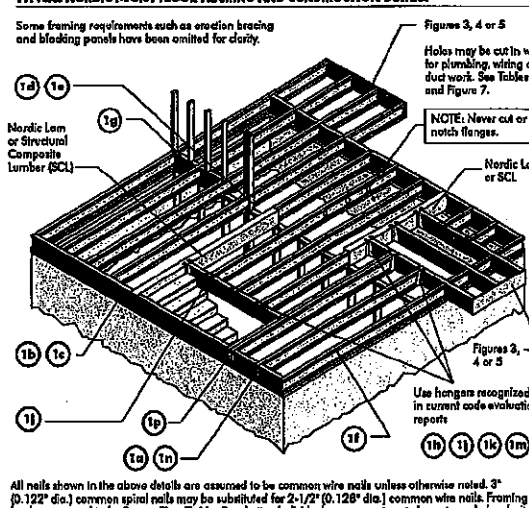
NORDIC I-JOIST SERIES



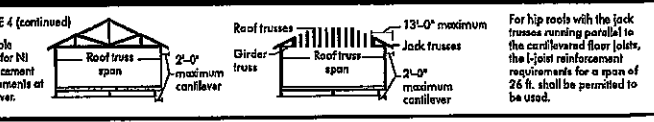
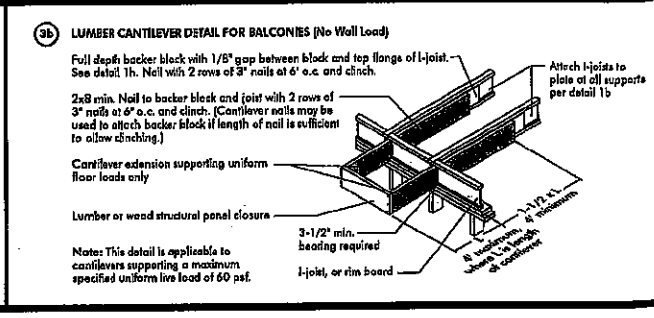
INSTALLING NORDIC I-JOISTS

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

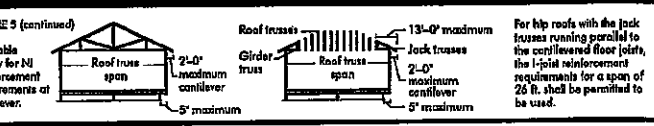
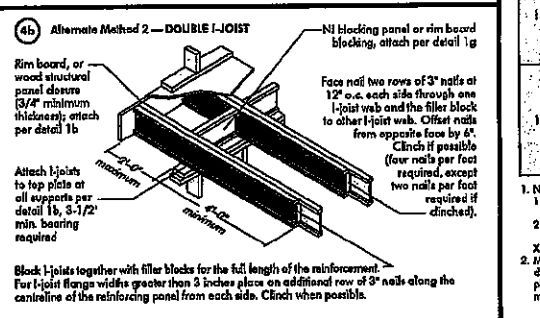
FIGURE 1 TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS



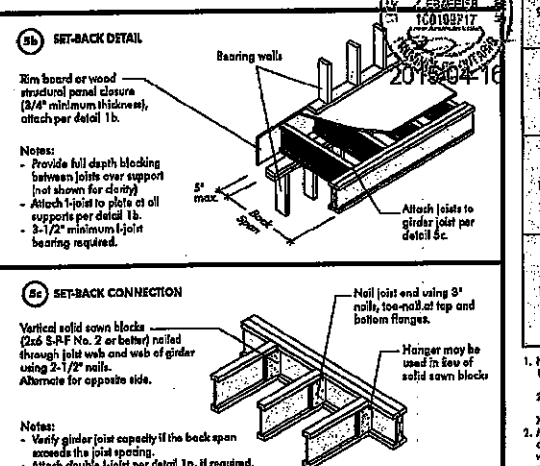
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CANTILEVER REINFORCEMENT METHODS ALLOWED													
JOIST DEPTH (in.)		ROOF JOIST SPACING (in.)				ROOF EXPOSURE (FACTORED)							
		1 - 70 psf, DL + 15 psf				1 - 40 psf, DL + 15 psf				1 - 50 psf, DL + 15 psf			
		ROOF SPACING (in.)				ROOF SPACING (in.)				ROOF SPACING (in.)			
	17	16	19.7	24	12	16	19.7	24	12	16	19.7	24	
9 1/2"	28	N	N	1	2	N	1	2	X	N	2	X	X
	30	N	N	1	1	N	1	2	X	N	2	X	X
	32	N	N	1	2	X	N	2	X	X	1	X	X
	34	N	N	1	2	X	N	2	X	X	1	X	X
	36	N	N	1	2	1	2	2	2	1	2	2	2
11 7/8"	28	N	N	N	1	N	N	1	2	N	N	1	2
	30	N	N	N	1	N	N	1	2	N	N	1	2
	32	N	N	N	1	N	N	1	2	N	N	1	2
	34	N	N	N	1	2	N	1	2	N	1	2	X
	36	N	N	N	1	2	N	1	2	X	N	2	X
14"	28	N	N	N	1	N	N	1	1	N	N	1	2
	30	N	N	N	N	N	N	1	1	N	N	1	2
	32	N	N	N	1	N	N	1	1	N	N	1	2
	34	N	N	N	1	N	N	1	1	N	N	1	2
	36	N	N	N	1	N	N	1	2	N	N	1	2
16"	28	N	N	N	1	N	N	1	1	N	N	1	2
	30	N	N	N	N	N	N	1	1	N	N	1	2
	32	N	N	N	N	N	N	1	1	N	N	1	2
	34	N	N	N	N	N	N	1	1	N	N	1	2
	36	N	N	N	N	N	N	1	2	N	N	1	2



JOIST DEPTH (in.)	TRUSS SPAN (in.)	ROOF LOADING (UNFACTORED)															
		LL = 30 psf, DL = 15 psf JOIST SPACING (in.)								LL = 50 psf, DL = 15 psf JOIST SPACING (in.)							
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24				
9 1/2"	28	1	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	2	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	2	X	X	1	X	X	X	2	X	X	X				
	30	1	2	X	X	1	X	X	X	2	X	X	X				
	32	1	1	X	X	1	X	X	X	2	X	X	X				
	34	1	1	X	X	2	X	X	X	2	X	X	X				
	36	1	1	X	X	2	X	X	X	2	X	X	X				
14"	28	N	1	X	X	N	2	X	X	1	X	X	X				
	30	N	2	X	X	1	2	X	X	1	X	X	X				
	32	N	2	X	X	1	X	X	X	2	X	X	X				
	34	N	2	X	X	1	X	X	X	2	X	X	X				
	36	N	1	2	X	1	X	X	X	2	X	X	X				
16"	28	N	1	2	X	2	1	X	X	N	2	X	X				
	30	N	1	2	X	N	2	X	X	1	2	X	X				
	32	N	1	2	X	N	1	2	X	1	X	X	X				
	34	N	2	X	X	1	1	X	X	1	X	X	X				
	36	N	2	X	X	1	1	X	X	2	X	X	X				



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

Joint Depth	Joint Section	Minimum distance from inside face of any support to centre of hole, [in. (mm.)]												Span adjustment factor
		Round hole diameter [in.]												
		1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 3/4	3
9-1/2"	N-20	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2
	N-40	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2
	N-60	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2
	N-76	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2
11/8"	N-20	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2
	N-40	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2
	N-60	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2
	N-76	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2
14"	N-20	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2
	N-40	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2
	N-60	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2
	N-76	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2
16"	N-20	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2
	N-40	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2
	N-60	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2
	N-76	0-7	1-0	1-10	1-3	1-6	1-8	2-0	2-2	2-4	2-6	2-8	3-0	3-2

OPTIONAL:

The above table is based on the J-points used at their maximum span. If the J-points are spaced at less than their full maximum span (see Maximum Span table), the minimum distance from the centreline of the hole in the face of any support (D) or at chain angle may be reduced as follows:

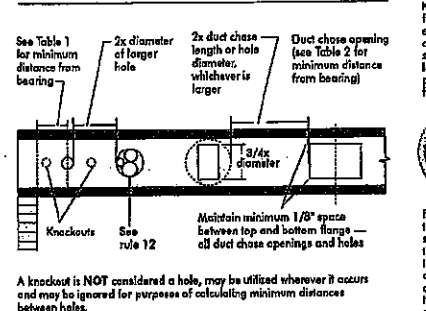
Reduced = $\frac{\text{actual span}}{\text{max span}} \times D$

Where:

- $\frac{\text{actual span}}{\text{max span}}$ = Distance from the inside face of any support to centre of hole, reduced for less-than-maximum span application (see Maximum Span table). This distance shall not be less than 1/4 inch from the face of the support to which the hole is attached.
- $\frac{\text{actual span}}{\text{max span}}$ = The actual measured span distance between the inside face of supports [A].
- $\frac{\text{max span}}{\text{max span}}$ = Span Adjustment Factor given in this table.
- D = The minimum distance from the inside face of any support to the centre of hole from this table.

If $\frac{\text{actual span}}{\text{max span}}$ is greater than 1, use 1 in the above calculations for $\frac{\text{actual span}}{\text{max span}}$.

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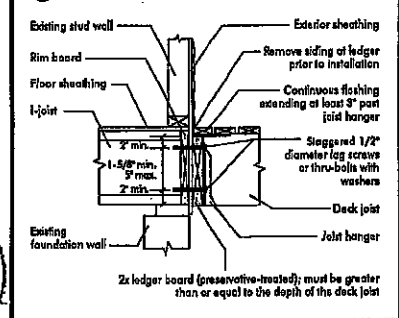
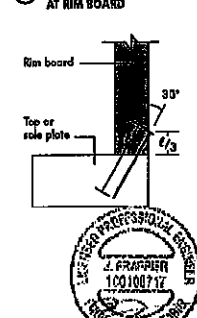
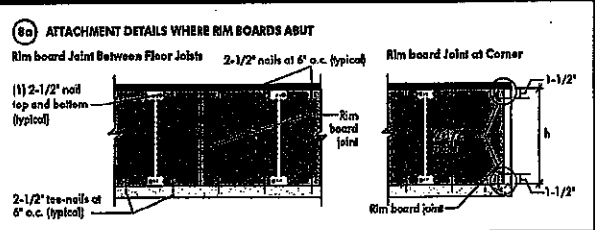
		(Min. min. distance from inside face of all supports to centre of opening (in inches))											
Joist Depth	Joist Series	Duct chase length (in.)											
		8	10	12	14	16	18	20	22	24	26	28	30
9-1/2"	N-20	4-1	4-5	4-10	5-4	5-8	6-1	7-2	7-8	8-3	8-9	9-4	9-10
	N-40	5-4	5-9	5-12	6-7	7-1	7-9	8-4	8-9	9-4	9-10	9-11	9-14
	N-70	5-1	5-5	5-9	6-3	6-7	7-1	7-6	8-0	8-5	8-10	8-11	8-14
11-7/8"	N-20	5-9	6-2	6-6	7-1	7-5	7-9	8-3	8-7	9-1	9-5	9-9	9-13
	N-40	6-9	7-3	7-8	8-0	8-4	8-9	9-3	9-7	10-1	10-5	10-9	11-0
	N-70	7-1	7-5	7-9	8-3	8-7	9-1	9-5	9-9	10-3	10-7	11-1	11-4
14"	N-20	7-1	7-5	7-9	8-3	8-7	9-1	9-5	9-9	10-3	10-7	11-1	11-4
	N-40	7-5	7-9	8-3	8-7	9-1	9-5	9-9	10-3	10-7	11-1	11-5	11-8
	N-70	7-9	8-3	8-7	9-1	9-5	9-9	10-3	10-7	11-1	11-5	11-9	12-2
16"	N-20	8-3	8-7	9-1	9-5	9-9	10-3	10-7	11-1	11-5	11-9	12-3	12-6
	N-40	10-3	10-7	11-1	11-5	11-9	12-3	12-7	13-1	13-5	13-9	14-3	14-6
	N-70	10-7	11-1	11-5	11-9	12-3	12-7	13-1	13-5	13-9	14-3	14-7	15-0

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

Maximum Jaw Span (in.)	Minimum Femur Length (in.)	Tail Size and Type			Maximum Spread of Feathers	
		Common Vibe or Spand Head	Ring Head Male or Female	Stapler	Wings Furges	Interns Support
16	5/8	2"	1-3/4"	2"	6"	12"
20"	5/8	2"	1-3/4"	2"	6"	15"
24	7/8	2"	1-3/4"	2"	8"	12"

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

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



PRODUCT WARRANTY

Champion Chimneys guarantees that, in accordance with our specifications, flexible products are free from manufacturing defects in material and workmanship.

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

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BUILDING SECTION
FILE NO

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.
- 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 a joist web shall equal the clear distance between the flanges of the joist minus 1/4 inch. A minimum of 1/8 inch shall 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 shall 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 3 meets the requirements of rule number 6 above.
- All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
- Limit three maximum size holes per span, of which one may be a duct chase opening.
- A group of round holes of approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS

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

Joist Depth	Joist Series	Minimum Distance from Inside Face of Any Support to Centre of Hole (ft - in.)												
		Round Hole Diameter (in.)												
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11
9-1/2"	NI-20	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---	---
	NI-40x	0-7"	1-6"	2-10"	4-4"	6-0"	---	---	---	---	---	---	---	---
	NI-60	0-7"	2-6"	4-0"	5-4"	7-0"	7-5"	---	---	---	---	---	---	---
	NI-70	0-7"	3-4"	4-8"	6-3"	8-0"	8-4"	---	---	---	---	---	---	---
	NI-80	0-7"	3-6"	5-0"	6-6"	8-2"	8-8"	---	---	---	---	---	---	---
11-7/8"	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---	---
	NI-40x	0-7"	0-8"	1-3"	2-8"	4-4"	4-4"	5-6"	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-80	1-8"	2-10"	4-2"	5-6"	7-0"	7-8"	8-6"	10-3"	11-8"	---	---	---	---
14"	NI-20	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---	---
	NI-40x	0-7"	0-8"	0-9"	2-5"	4-4"	4-9"	6-3"	---	---	---	---	---	---
	NI-60	0-7"	0-8"	1-0"	2-8"	4-0"	4-5"	5-9"	7-5"	8-8"	10-4"	---	---	---
	NI-70	0-7"	0-8"	1-0"	2-8"	4-0"	4-5"	5-9"	7-5"	8-8"	10-4"	---	---	---
	NI-80	0-7"	0-8"	1-0"	2-8"	4-0"	4-5"	5-9"	7-5"	8-8"	10-4"	---	---	---
16"	NI-20	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---	---
	NI-40x	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---	---
	NI-60	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---	---
	NI-70	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---	---
	NI-80	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---	---

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

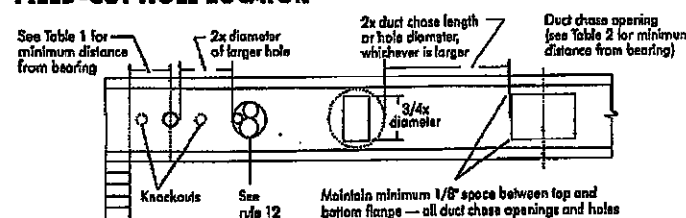
TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS

Simple Span Only

Joist Depth	Joist Series	Minimum distance from inside face of supports to centre of opening (ft - in.)												
		Duct Chase Length (in.)												
		8	10	12	14	16	18	20	22	24				
9-1/2"	NI-20	4-1"	4-5"	4-10"	5-4"	5-8"	6-1"	6-5"	7-1"	7-5"				
	NI-40x	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-2"	8-6"				
	NI-60	5-4"	5-9"	6-1"	6-7"	7-1"	7-5"	8-0"	8-3"	8-9"				
	NI-70	5-1"	5-5"	5-10"	6-3"	6-7"	7-1"	7-6"	8-1"	8-4"				
	NI-80	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-2"	8-6"				
11-7/8"	NI-20	6-9"	6-2"	6-6"	7-1"	7-6"	7-9"	8-3"	8-9"	9-4"				
	NI-40x	6-8"	7-2"	7-6"	8-1"	8-6"	9-1"	9-6"	10-1"	10-5"				
	NI-60	7-5"	7-8"	8-1"	8-6"	9-0"	9-3"	9-9"	10-3"	11-0"				
	NI-70	7-5"	7-8"	8-1"	8-6"	9-0"	9-3"	9-9"	10-3"	11-0"				
	NI-80	7-2"	7-7"	8-0"	8-5"	8-10"	9-3"	9-8"	10-2"	10-8"				
14"	NI-20	7-6"	7-11"	8-4"	8-9"	9-2"	9-7"	10-1"	10-7"	10-11"				
	NI-40x	7-7"	8-1"	8-5"	8-10"	9-4"	9-8"	10-2"	10-8"	11-2"				
	NI-60	8-1"	8-7"	9-0"	9-6"	10-1"	10-7"	11-2"	12-0"	12-8"				
	NI-70	8-9"	9-3"	9-8"	10-1"	10-6"	11-1"	11-6"	12-3"	13-0"				
	NI-80	8-7"	9-1"	9-5"	9-10"	10-4"	10-8"	11-2"	11-7"	12-3"				
16"	NI-20	9-0"	9-3"	9-7"	10-1"	10-7"	11-1"	11-6"	12-1"	12-6"				
	NI-40x	9-4"	9-8"	10-2"	10-6"	11-1"	11-5"	11-9"	12-4"	12-9"				
	NI-60	10-3"	10-8"	11-2"	11-6"	12-1"	12-6"	13-2"	14-1"	14-10"				
	NI-70	10-4"	10-9"	11-3"	11-7"	12-1"	12-6"	13-2"	13-8"	14-4"				
	NI-80	10-9"	11-2"	11-8"	12-0"	12-6"	13-0"	13-6"	14-2"	14-10"				

- Above table may be used for joist spacing of 24 inches on centre or less.
- Duct chase opening location distance is measured from inside face of support to centre of opening.
- The above table is based on simple-span joists only. For other applications, contact your local distributor.
- Distances are based on uniformly loaded floor joists that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of 1/480.
- The above table is based on the joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

FIGURE 7
FIELD-CUT HOLE LOCATOR



Knockouts are 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 18 inches on centre along the length of the 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 joist.

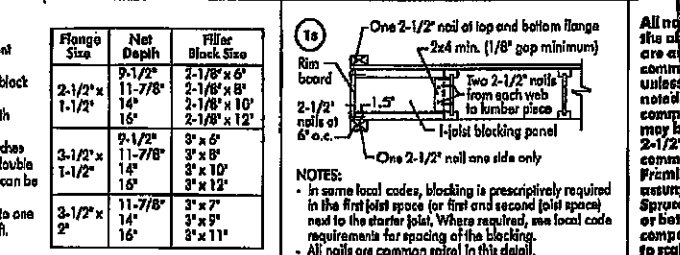
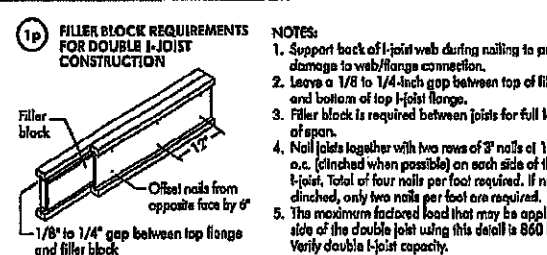
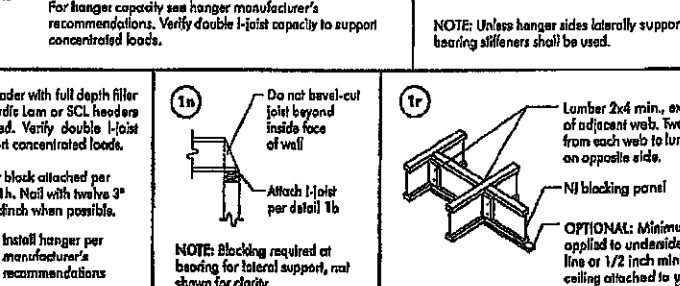
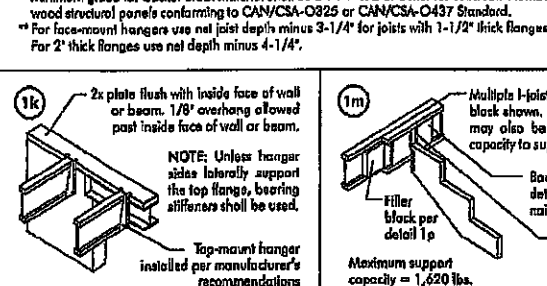
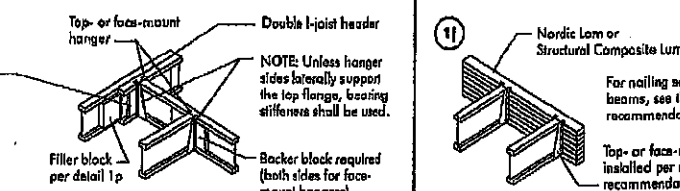
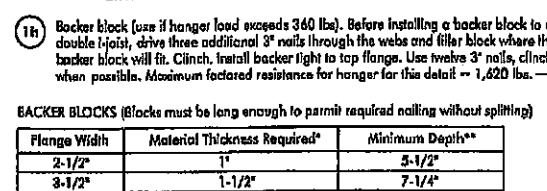
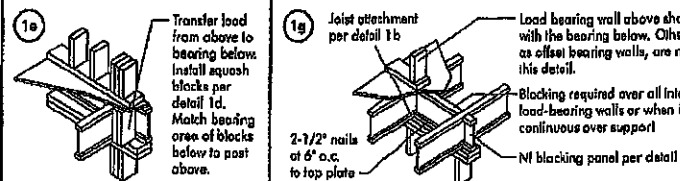
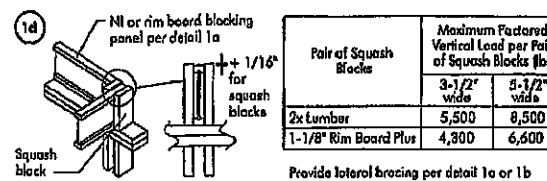
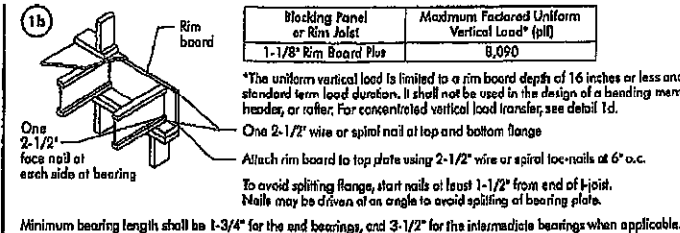
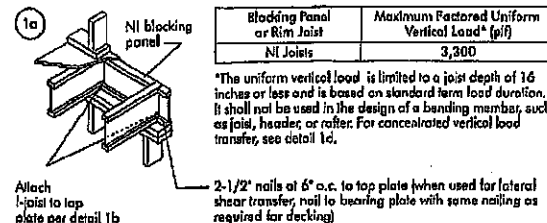
SAFETY AND CONSTRUCTION PRECAUTIONS

- WARNING:** 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 joist as it is installed, using hangers, blocking panels, rim board, and/or cross-briding at joist ends. When joists are applied continuously over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
 - When the building is completed, the floor sheathing will provide lateral support for the top flanges of the joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent 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 joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two joists.
 - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of joists at the end of the bay.
 - For cantilevered joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-briding.
 - Install and fully nail permanent sheathing to each joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
 - Never install a damaged joist.
- Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.

PRODUCT WARRANTY

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

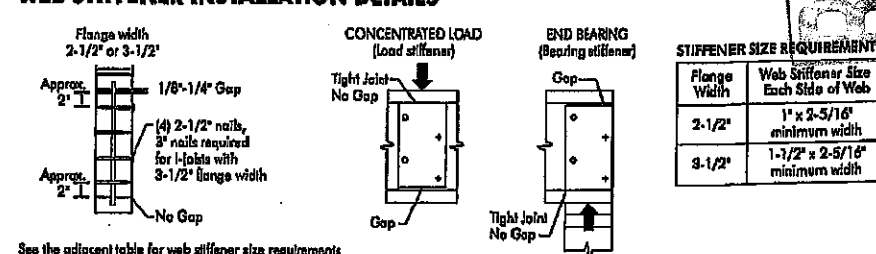
Furthermore, Chambers Chibougamau warrants that our products, when installed in accordance with our handling and installation instructions, will meet or exceed our specifications for the lifetime of the structure.



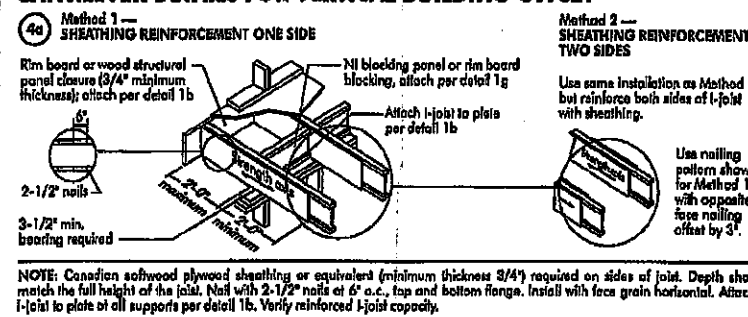
WEB STIFFENERS

- RECOMMENDATIONS:**
- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the Joist properties table found in the Joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.
 - A bearing stiffener is required when the 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.

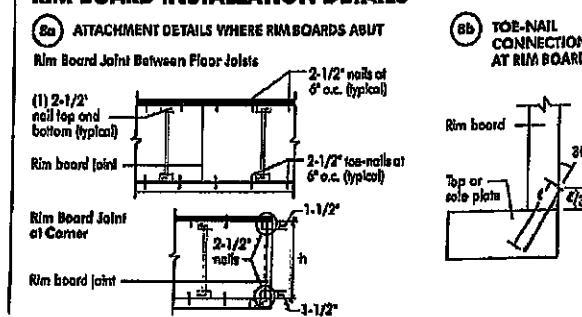
FIGURE 2
WEB STIFFENER INSTALLATION DETAILS



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET



RIM BOARD INSTALLATION DETAILS



TOWN OF CALEDON
BUILDING SECTION
FILE NO.

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER INC.
3289 NORTH SERVICE ROAD
BURLINGTON ONTARIO
Nov. 8, 2018 15:03

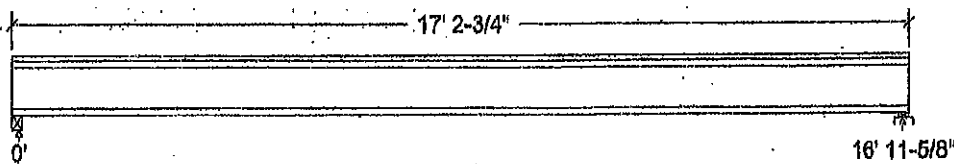
PROJECT
J2 1ST FLOOR

Design Check Calculation Sheet Nordic Sizer - Canada 7.1

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area			20.00	psf
Load2	Live	Full Area			40.00	psf

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



Unfactored:			
Dead	226		226
Live	452		452
Factored:			
Total	962		962
Bearing:			
Resistance			
Joist	2119		2102
Support	-		3981
Des ratio			
Joist	0.45		0.46
Support	-		0.24
Load case	#2		#2
Length	2-1/2		2-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	-		1.00
fcp sup	-		769
Kzop sup	-		1.09

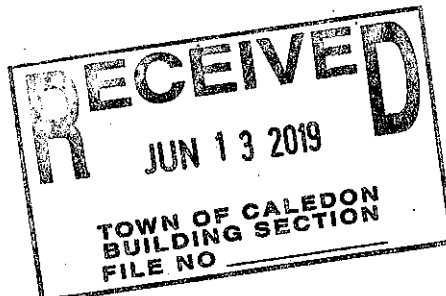


Nordic 11-7/8" NI-40x Floor joist @ 16" o.c.

Supports: 1 - Steel Beam, W; 2 - Lumber Sill plate, No.1/No.2;

Total length: 17' 2-3/4"; Clear span: 16' 9-7/8"; 3/4" nailed and glued OSB sheathing

This section PASSES the design code check.



DWG NO. TAM 1926-18H
STRUCTURAL
COMPONENT ONLY
P6/E

T-19011094

Limit States Design using CSA 086-14 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$V_f = 962$	$V_r = 2336$	lbs	$V_f/V_r = 0.41$
Moment(+)	$M_f = 4079$	$M_r = 6255$	lbs-ft	$M_f/M_r = 0.65$
Perm. Defl'n	$0.12 = < L/999$	$0.57 = L/360$	in.	0.22
Live Defl'n	$0.25 = L/827$	$0.42 = L/480$	in.	0.58
Total Defl'n	$0.37 = L/551$	$0.85 = L/240$	in.	0.44
Bare Defl'n	$0.30 = L/683$	$0.57 = L/360$	in.	0.53
Vibration	$L_{max} = 16'-11.6$	$L_v = 18'-1.3$	ft	0.94
Defl'n	$= 0.030$	$= 0.037$	in	0.82

Additional Data:

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

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L

Moment(+): LC #2 = 1.25D + 1.5L

Deflection: LC #1 = 1.0D (permanent)

LC #2 = 1.0D + 1.0L (live)

LC #2 = 1.0D + 1.0L (total)

LC #2 = 1.0D + 1.0L (bare joist)

Bearing : Support 1 - LC #2 = 1.25D + 1.5L

Support 2 - LC #2 = 1.25D + 1.5L

Load Types: D=dead W=wind S=snow H=earth, groundwater E=earthquake
L=live (use, occupancy) Ls=live (storage, equipment) f=live

Load Patterns: s=S/2 L=L+Ls =no pattern load in this span

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

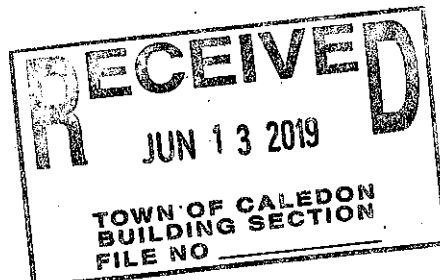
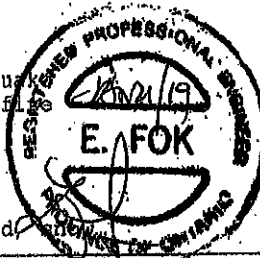
CALCULATIONS:Deflection: $EI_{eff} = 460e06 \text{ lb-in}^2$ $K = 6.18e06 \text{ lbs}$

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

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA 086-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic Joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.

CONFORMS TO OBC 2012



DWG NO. 1926-18H
STRUCTURAL
COMPONENT ONLY

T-190110900

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER INC.
3289 NORTH SERVICE ROAD
BURLINGTON ONTARIO
Nov. 8, 2018 15:03

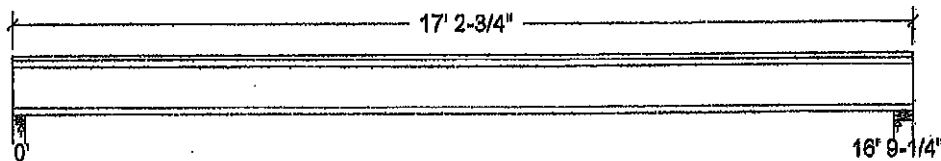
PROJECT
J1 2ND FLOOR

Design Check Calculation Sheet Nordic Sizer - Canada 7.1

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area			20.00	psf
Load2	Live	Full Area			40.00	psf

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



Unfactored:			
Dead	224		224
Live	447		447
Factored:			
Total	950		950
Bearing:			
Resistance			
Joist	2173		2336
Support	5028		7744
Des ratio			
Joist	0.44		0.41
Support	0.19		0.12
Load case	#2		#2
Length	2-7/8		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		1.00
fop sup	769		769
Kzcp sup	1.14		1.15



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

Nordic 11-7/8" NI-40x Floor Joist @ 16" o.c.

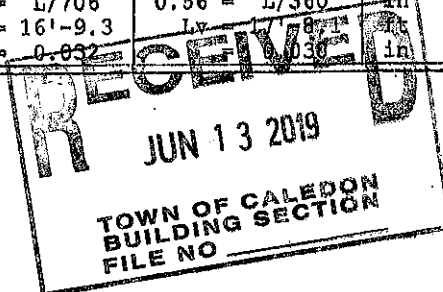
Supports: All - Lumber Wall, No.1/No.2

Total length: 17' 2-3/4"; Clear span: 16' 7-1/2"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 950	Vr = 2336	lbs	Vf/Vr = 0.41
Moment (+)	Mf = 3984	Mr = 6255	lbs-ft	Mf/Mr = 0.64
Perm. Defl'n	0.12 = < L/999	0.56 = L/360	in	0.22
Live Defl'n	0.24 = L/834	0.42 = L/480	in	0.58
Total Defl'n	0.36 = L/556	0.84 = L/240	in	0.43
Bare Defl'n	0.28 = L/706	0.56 = L/360	in	0.51
Vibration	Lmax = 16'-9.3	Lv = 17'-0.3	in	0.95
Defl'n	0.032	0.33	in	0.85



DWG NO. TAM 1927-18/12
STRUCTURAL
COMPONENT ONLY
T-19011095

Additional Data:

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

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L
 Moment (+) : LC #2 = 1.25D + 1.5L
 Deflection: LC #1 = 1.0D (permanent)
 LC #2 = 1.0D + 1.0L (live)
 LC #2 = 1.0D + 1.0L (total)
 LC #2 = 1.0D + 1.0L (bare joist)

Bearing : Support 1 - LC #2 = 1.25D + 1.5L
 Support 2 - LC #2 = 1.25D + 1.5L

Load Types: D=dead W=wind S=snow H=earth, groundwater E=earthquake
 L=live (use, occupancy) Ls=live (storage, equipment) f=fire

Load Patterns: s=S/2 L=L+Ls =no pattern load in this span
 All Load Combinations (LCs) are listed in the Analysis output

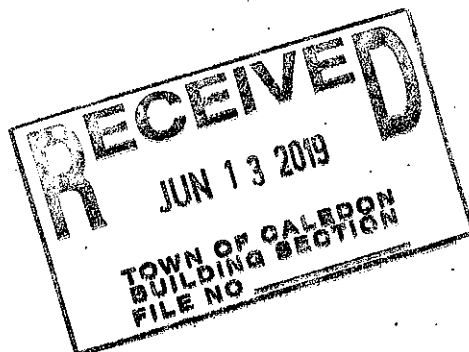
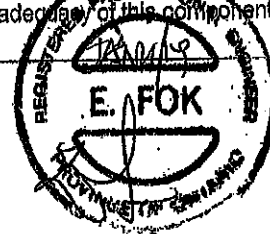
CALCULATIONS:

Deflection: E_{IEff} = 448e06 lb-in² K= 6.18e06 lbs
 "Live" deflection = Deflection from all non-dead loads (live, wind, snow...)

Design Notes:

CONFORMS TO OBC 2012

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building or the suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



DWG NO. TAM 1927-18H
 STRUCTURAL
 COMPONENT ONLY

T-190110956



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

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 8, 2018 11:32:49

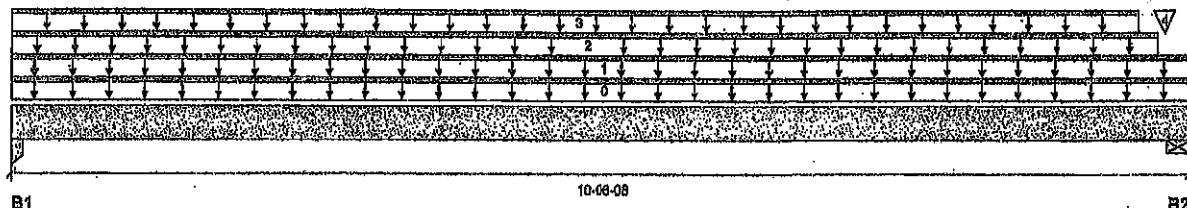
File name: PRESTON 2.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B0 H(7356)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 10-06-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	91 / 0	809 / 0		
B2, 3-1/2"	129 / 0	807 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tripartite
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-08-08	Top	1.00	0.66	1.00	1.16	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-08-08	Top	17	9			n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-00-00	10-03-00	Top		60			n/a
3	12(I410)	Unf. Lin. (lb/ft)	L	00-00-00	10-01-00	Top		81			n/a
4	E5(389)	Conc. Pt. (lbs)	L	10-03-12	10-03-12	Top	34	29			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2,849 ft-lbs	11,602 ft-lbs	24.8%	0	05-02-08
End Shear	979 lbs	4,701 lbs	20.8%	0	09-03-02
Total Load Deflection	L/999 (0.087")	n/a	n/a	4	05-02-08
Live Load Deflection	L/999 (0.009")	n/a	n/a	6	05-02-08
Max Defl.	0.087"	n/a	n/a	4	05-02-08
Span / Depth	10.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 1-3/4" x 1-3/4"	1,132 lbs	70.1%	46.6%	Unspecified
B2	Wall/Plate 3-1/2" x 1-3/4"	1,129 lbs	53.1%	23.2%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

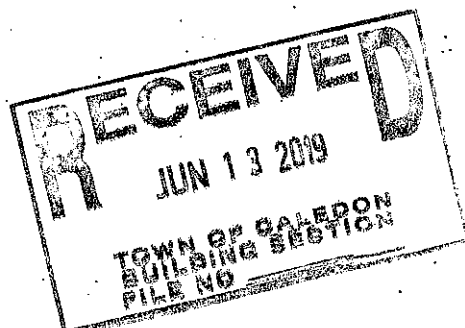
Importance Factor : Normal Part code : Part 9



Disclosure

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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. This 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®,



DWG NO. TAM 192B-18H
STRUCTURAL
COMPONENT ONLY

T-19011096



Boise Cascade

**Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****1ST FLOOR FRAMING\Flush Beams\B4\17466****PASSED**

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

November 8, 2018 11:32:49

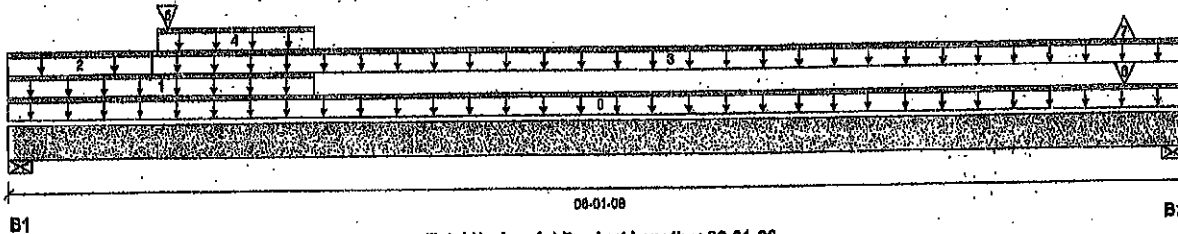
File name: PRESTON 2.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B4\17466\

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 06-01-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1,401 / 0	806 / 0		
B2, 3-1/2"	299 / 3	236 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-01-08	Top		6			00-00-00
1	10\406	Unf. Lin. (lb/ft)	L	00-00-00	01-07-00	Top		81			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-09-00	Top	24				n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-09-00	06-01-08	Top	27	13			n/a
4	10\406	Unf. Lin. (lb/ft)	L	00-09-04	01-07-00	Top	1,019	588			n/a
5	B5\7415	Conc. Pt. (lbs)	L	00-09-14	00-09-14	Top	842	332			n/a
6	5\401	Conc. Pt. (lbs)	L	05-09-12	05-09-12	Top	51	74			n/a
7	5\401	Conc. Pt. (lbs)	L	05-09-12	05-09-12	Top	-3				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,846 ft-lbs	17,896 ft-lbs	10.4%	1	01-06-06
End Shear	2,174 lbs	7,232 lbs	30.1%	1	01-06-06
Total Load Deflection	L/999 (0.012")	n/a	n/a	6	02-09-11
Live Load Deflection	L/999 (0.007")	n/a	n/a	8	02-09-11
Max Defl.	0.012"	n/a	n/a	6	02-09-11
Span / Depth	5.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	3,234 lbs	62.9%	27.5%	Unspecified
B2	Wall/Plate 3-1/2" x 1-3/4"	743 lbs	22.7%	9.9%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

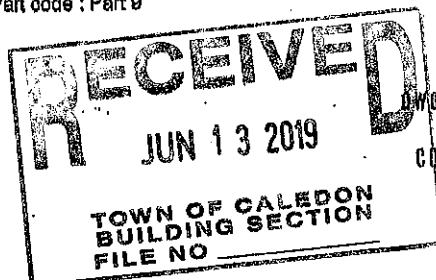
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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



OWN NO. TAM 1929-18H
STRUCTURAL
COMPONENT ONLY

T-19011097



Boise Cascade

**Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLOOR FRAMING/Flush Beams/B2(I7406)**

November 8, 2018 11:32:49

BC CALCO® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: GCMC 12472-R

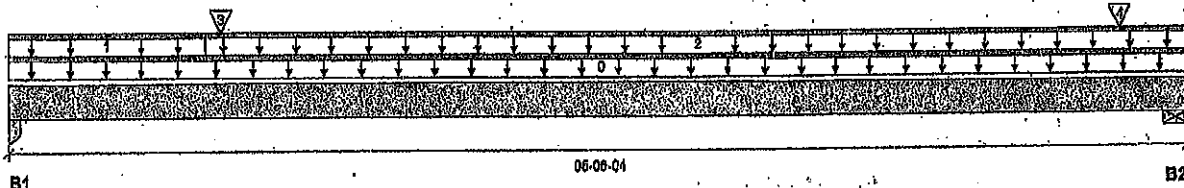
File name: PRESTON 2.mmdl

Description: 1ST FLOOR FRAMING/Flush Beams/B2(I7406)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 06-08-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	536 / 0	294 / 0		
B2, 3-1/2"	283 / 0	209 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-08-04	Top	1.00	0.86	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-10-14	Top	9				n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-10-14	06-08-04	Top	31	16			n/a
3	B6(I7446)	Cono. Pt. (lbs)	L	00-11-12	00-11-12	Top	567	294			n/a
4	5(I401)	Cono. Pt. (lbs)	L	06-02-08	06-02-08	Top	80	100			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,036 ft-lbs	17,696 ft-lbs	5.9%	1	00-11-12
End Shear	967 lbs	7,232 lbs	13.4%	1	01-01-10
Total Load Deflection	L/999 (0.006")	n/a	n/a	4	02-06-06
Live Load Deflection	L/999 (0.004")	n/a	n/a	5	02-06-06
Max Defl.	0.008"	n/a	n/a	4	02-06-06
Span / Depth	5.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 1-3/4" x 1-3/4"	1,170 lbs	47.1%	31.3%	Unspecified
B2	Wall/Plate 3-1/2" x 1-3/4"	656 lbs	20.0%	8.8%	Unspecified

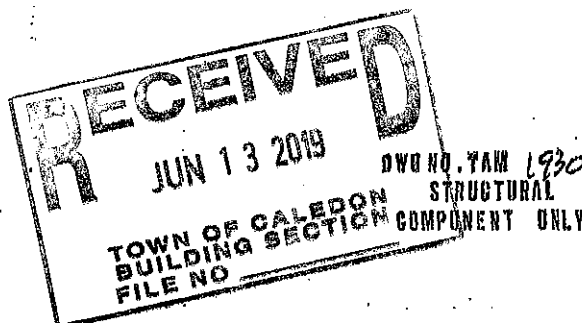
Notes

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

**Disclosure**

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 Installation of Boise Cascade engineered wood products must be in accordance with current installation Guide and applicable building codes. To obtain installation Guide or ask questions, please call (800)232-0788 before installation.

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





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

PASSED

1ST FLOOR FRAMING\Flush Beams\B3(17467)

Dry | 1 span | No cant.

November 8, 2018 11:32:49

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

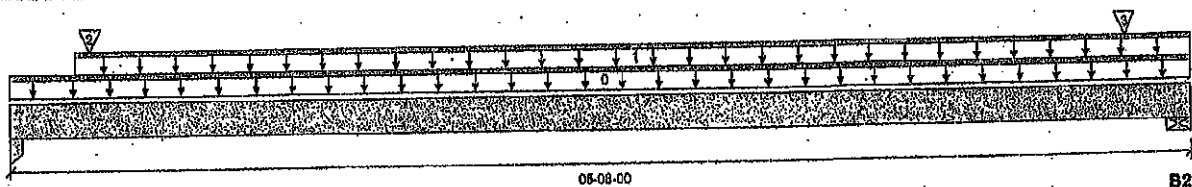
File name: PRESTON 2.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B3(17467)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 05-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	648 / 0	363 / 0		
B2, 3-1/2"	155 / 0	145 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.95	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	05-08-00	Top		6			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-03-08	05-08-00	Top	26	13			n/a
2	B5(17415)	Conc. Pt. (lbs)	L	00-04-06	00-04-06	Top	595	309			n/a
3	5(1401)	Conc. Pt. (lbs)	L	05-04-04	05-04-04	Top	86	84			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	318 ft-lbs	17,096 ft-lbs	1.8%	1	02-04-03
End Shear	163 lbs	7,232 lbs	2.3%	1	01-03-06
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	02-08-13
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	02-08-13
Max Defl.	0.002"	n/a	n/a	4	02-08-13
Span / Depth	5.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	1,413 lbs	28.4%	18.9%	Unspecified
B2	Wall/Plate 3-1/2" x 1-3/4"	414 lbs	12.7%	5.5%	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 086. CONFORMS TO CBC 2012

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

Design based on Dry Service Condition.

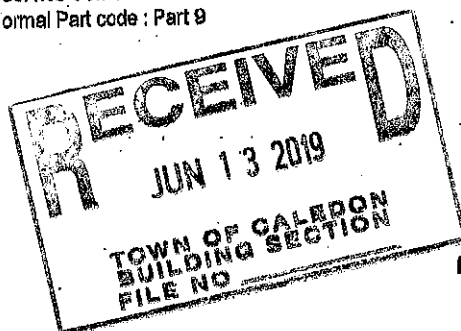
Importance Factor: Normal Part code: Part 9



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®,



BWH NO. TAM 1921-18H
STRUCTURAL
COMPONENT ONLY

T-19011097



Bolt-Cascade



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

PASSED

BC CALC® Member Report

Build 8476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: COMC 12472-R

Dry | 1 span | No cant.

November 8, 2018 11:32:49

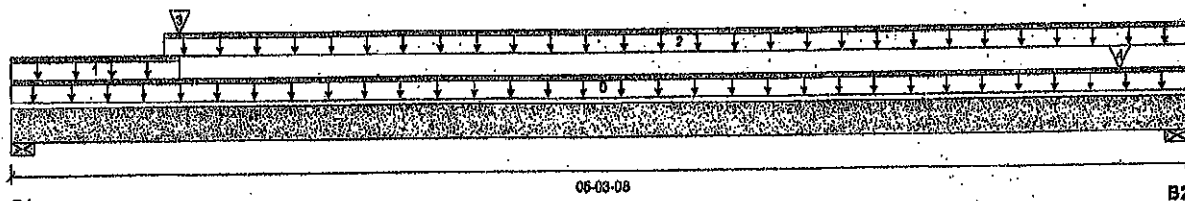
File name: PRESTON 2.mxd

Description: 1ST FLOOR FRAMING\Flush Beams\B7(17402)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 06-03-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1,766 / 0	1,036 / 0		
B2, 3-1/2"	312 / 0	256 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-03-08	Top	1.00	0.05	1.00	1.16	00-00-00
1	9(1406)	Unf. Lin. (lb/ft)	L	00-00-00	00-09-00	Top	1,560	941			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-08-02	06-03-08	Top	42	21			n/a
3	B6(17446)	Conc. Pt. (lbs)	L	00-09-00	00-09-00	Top	559	291			n/a
4	5(1401)	Conc. Pt. (lbs)	L	04-11-12	04-11-12	Top	144	154			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	690 ft-lbs	17,696 ft-lbs	3.9%	1	01-04-06
End Shear	1,446 lbs	7,232 lbs	20.0%	1	01-06-06
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	02-06-13
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	02-06-13
Max Defl.	0.004"	n/a	n/a	4	02-06-13
Span / Depth	4.7				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	3,943 lbs	76.7%	33.6%	Unspecified
B2	Wall/Plate 3-1/2" x 1-3/4"	786 lbs	24.0%	10.5%	Unspecified

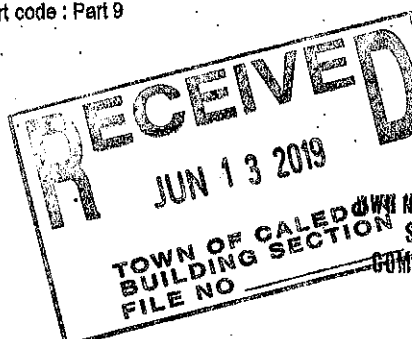
Notes

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 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

Disclosure

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 Installation of Bolt-Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

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



T-19011100



Boise Cascade

**Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLOOR FRAMING\Flush Beams\B8 H(I7360)**

Dry | 1 span | No cant.

November 8, 2018 11:32:49

BC CALC® Member Report

Build 6475

Job name:

File name: PRESTON 2.mxd

Address:

Description: 1ST FLOOR FRAMING\Flush Beams\B8 H(I7360)

City, Province, Postal Code: CALEDON

Specifier:

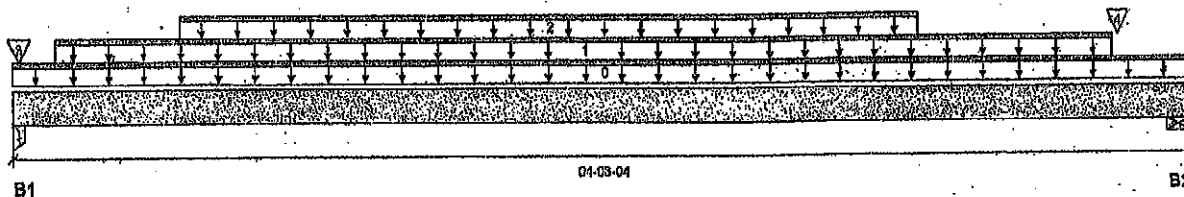
Customer:

Designer: PL

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 04-03-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	471 / 0	304 / 0		
B2, 3-1/2"	604 / 0	368 / 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	04-03-04	Top	120	80			00-00-00
1	STAIRS	Unf. Lin. (lb/ft)	L	00-01-12	03-11-12	Top	24	12			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-07-04	03-03-04	Top	192	161			n/a
3	12(I410)	Conc. Pt. (lbs)	L	00-00-04	00-00-04	Top	368	233			n/a
4	13(I860)	Conc. Pt. (lbs)	L	04-00-00	04-00-00	Top					n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	679 ft-lbs	17,696 ft-lbs	3.3%	1	02-01-10
End Shear	310 lbs	7,232 lbs	4.3%	1	01-03-08
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	02-01-10
Live Load Deflection	L/999 (0.001")	n/a	n/a	6	02-01-10
Max Defl.	0.002"	n/a	n/a	4	02-01-10
Span / Depth	3.9				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Column	3-1/2" x 1-3/4"	1,086 lbs	21.6%	14.6%	Unspecified
B2 Wall/Plate	3-1/2" x 1-3/4"	1,367 lbs	41.8%	18.3%	Unspecified

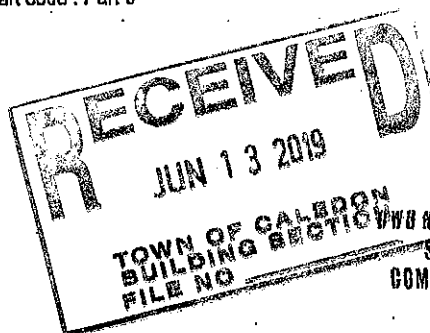
Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA O86. CONFORMS TO OBC 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

**Disclosure**

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



T-19011601



Boise Cascade



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B1(17471)

Dry | 1 span | No cant.

November 8, 2018 11:32:49

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

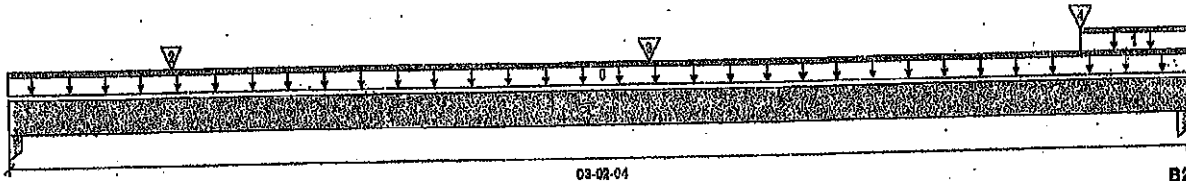
File name: PRESTON2.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B1(17471)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 03-02-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	160 / 0	90 / 0		
B2, 1-3/4"	161 / 0	89 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-02-04	Top	1.00	0.66	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	02-10-12	03-02-04	Top	12	6			n/a
2	J6(17475)	Conc. Pt. (lbs)	L	00-06-04	00-05-04	Top	94	47			n/a
3	J6(17490)	Conc. Pt. (lbs)	L	01-08-10	01-08-10	Top	138	69			n/a
4	J6(17494)	Conc. Pt. (lbs)	L	02-10-12	02-10-12	Top	86	42			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	258 ft-lbs	17,896 ft-lbs	1.6%	1	01-08-10
End Shear	188 lbs	7,232 lbs	2.6%	1	02-00-10
Total Load Deflection	L/999 (0")	n/a	n/a	4	01-08-05
Live Load Deflection	L/999 (0")	n/a	n/a	5	01-08-05
Max Defl.	0"	n/a	n/a	4	01-08-05
Span / Depth	2.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	362 lbs	7.1%	4.7%	Unspecified
B2	Column 1-3/4" x 1-3/4"	362 lbs	14.2%	9.4%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

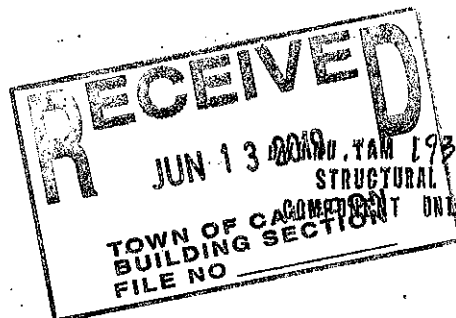
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Disclosure

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T-19011402



BOLSCASCADE



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B5(17415)

Dry | 1 span | No cant.

November 8, 2018 11:32:49

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

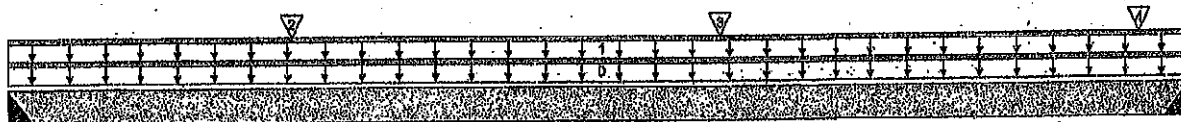
File name: PRESTON 2.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B5(17415)

Specifier:

Designer: PL

Company:



B1

03-08-08

B2

Total Horizontal Product Length = 03-08-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	597 / 0	310 / 0		
B2, 3"	640 / 0	331 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-08-08	Top	1.00	0.66	1.00	1.15	00-00-00
1	STAIRS	Unf. Lin. (lb/ft)	L	00-00-00	03-08-08	Top	240	120			n/a
2	J8(17500)	Conc. Pt. (lbs)	L	00-10-10	00-10-10	Top	122	61			n/a
3	J8(17479)	Conc. Pt. (lbs)	L	02-02-10	02-02-10	Top	142	71			n/a
4	J8(17404)	Conc. Pt. (lbs)	L	03-08-10	03-08-10	Top	83	41			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,010 ft-lbs	17,698 ft-lbs	5.7%	1	01-11-11
End Shear	668 lbs	7,232 lbs	7.7%	1	02-06-10
Total Load Deflection	L/999 (0.003")	n/a	n/a	4	01-10-03
Live Load Deflection	L/999 (0.002")	n/a	n/a	6	01-10-03
Max Defl.	0.003"	n/a	n/a	4	01-10-03
Span / Depth	3.4				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 3" x 1-3/4"	1,282 lbs	n/a	20.0%	HUS1.81/10
B2	Hanger 3" x 1-3/4"	1,374 lbs	n/a	21.4%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 at B1 is a Single 1-3/4" x 11-7/8" VERSA-LAM® 1.7 2400 DF. Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Header for the hanger HUS1.81/10 at B2 is a Single 1-3/4" x 11-7/8" VERSA-LAM® 1.7 2400 DF.

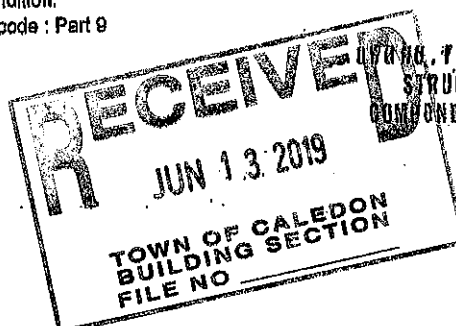
Notes

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

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



17415.1AM 1935-1811
 STRUCTURAL
 COMPONENT ONLY

T-19011103



Boise Cascade



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

1ST FLOOR FRAMING\Flush Beams\B6(17445)

Dry | 1 span | No cant.

PASSED

November 8, 2018 11:32:49

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

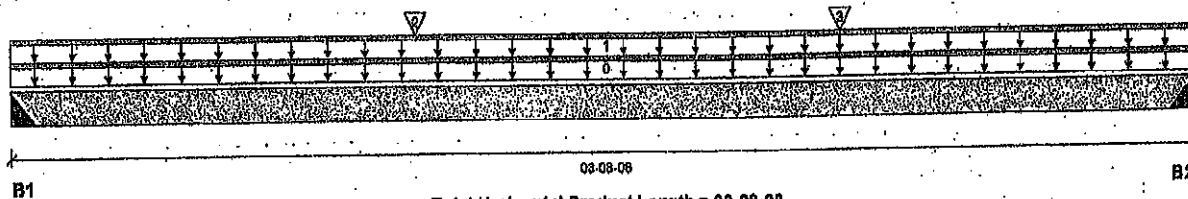
File name: PRESTON 2.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B6(17445)

Specifier:

Designer: PL

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	559 / 0	291 / 0		
B2, 3"	567 / 0	294 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-08-08	Top	8				00-00-00
1	STAIRS	Unf. Lin. (lb/ft)	L	00-00-00	03-08-08	Top	240	120			n/a
2	J6(17625)	Conc. Pt. (lbs)	L	01-03-02	01-03-02	Top	121	61			n/a
3	J6(17438)	Conc. Pt. (lbs)	L	02-07-02	02-07-02	Top	115	57			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	970 ft-lbs	17,696 ft-lbs	5.5%	1	01-09-15
End Shear	661 lbs	7,232 lbs	7.8%	1	01-02-14
Total Load Deflection	L/999 (0.003")	n/a	n/a	4	01-10-08
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-10-08
Max Defl.	0.003"	n/a	n/a	4	01-10-08
Span / Depth	3.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 3" x 1-3/4"	1,202 lbs	n/a	18.8%	HUS1.81/10
B2	Hanger 3" x 1-3/4"	1,218 lbs	n/a	19.0%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 at B1 is a Single 1-3/4" x 11-7/8" VERSA-LAM® 1.7 2400 DF. Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Header for the hanger HUS1.81/10 at B2 is a Single 1-3/4" x 11-7/8" VERSA-LAM® 1.7 2400 DF.

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.

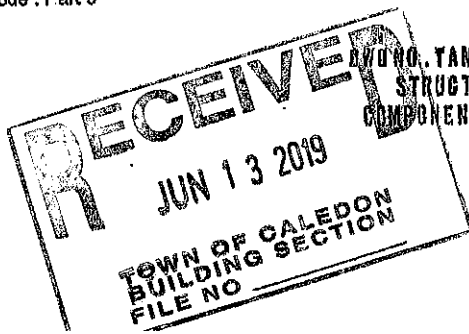
Importance Factor: Normal Part code: Part 9



Disclosure

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





BC Building Code



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

2ND FLOOR FRAMING/Dropped Beams/B11 DR(I7332)

PASSED

November 8, 2018 11:32:49

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: GCMC 12472-R

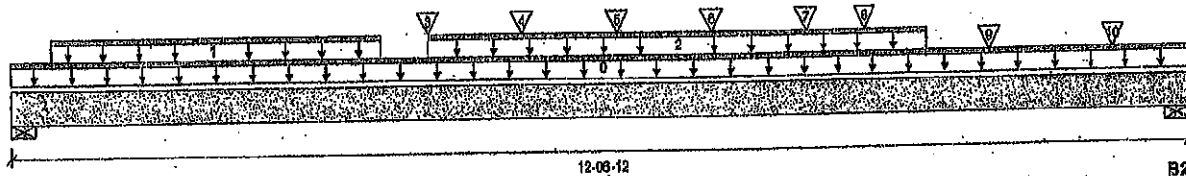
File name: PRESTON 2.mxd

Description: 2ND FLOOR FRAMING/Dro...d Beams/B11 DR(I7332)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 12-06-12

Reaction Summary (Down / Uplift) (lbs)

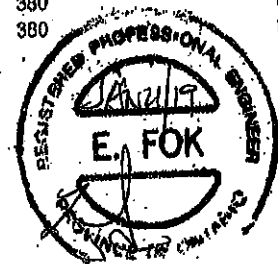
Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	2,892 / 0	1,620 / 0		
B2, 5-1/4"	2,931 / 0	1,544 / 0		

Load Summary

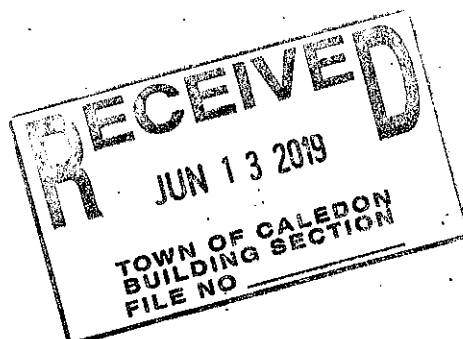
Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-06-12	Top	12	12			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-06-00	03-11-00	Top	660	326			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	04-06-00	09-09-00	Top	170	86			n/a
3	J3(I7333)	Conc. Pt. (lbs)	L	04-05-00	04-05-00	Top	114	57			n/a
4	J3(I7294)	Conc. Pt. (lbs)	L	05-05-00	05-05-00	Top	117	58			n/a
5	J3(I7286)	Conc. Pt. (lbs)	L	06-05-00	06-05-00	Top	233	117			n/a
6	J3(I7326)	Conc. Pt. (lbs)	L	07-05-00	07-05-00	Top	233	117			n/a
7	J3(I7360)	Conc. Pt. (lbs)	L	08-05-00	08-05-00	Top	194	97			n/a
8	J3(I7301)	Conc. Pt. (lbs)	L	09-01-00	09-01-00	Top	233	117			n/a
9	-	Conc. Pt. (lbs)	L	10-05-00	10-05-00	Top	758	380			n/a
10	-	Conc. Pt. (lbs)	L	11-09-00	11-09-00	Top	758	380			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	16,605 ft-lbs	35,392 ft-lbs	46.9%	1	06-05-00
End Shear	5,801 lbs	14,484 lbs	39.7%	1	01-03-08
Total Load Deflection	L/457 (0.314")	n/a	52.6%	4	06-02-00
Live Load Deflection	L/898 (0.206")	n/a	51.6%	5	06-02-00
Max Defl.	0.314"	n/a	n/a	4	06-02-00
Span / Depth	12.1				



Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 3-1/2"	6,238 lbs	62.7%	41.7%	Unspecified
B2	Wall/Plate 5-1/4" x 3-1/2"	6,327 lbs	42.4%	28.2%	Unspecified



NOV 19 1937 18H
STRUCTURAL
COMPONENT ONLY

T-1901105



Волга Саянск



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

2ND FLOOR FRAMING\Dropped Beams\B11 DR(I7332)

Dry | 1 span | No cant.

PASSED

November 8, 2018 11:32:49

BC CALCO® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer;

Code reports: CCMC 12472-R

File name: PRESTON 2.mmdf

Description: 2ND FLOOR FRAMING\Drop...d Beams\B11 DR(17332)

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: 00-03-01, Bottom: 00-03-01.

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

CONFORMS TO QBC 2012

BC CALCO analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA Q86.

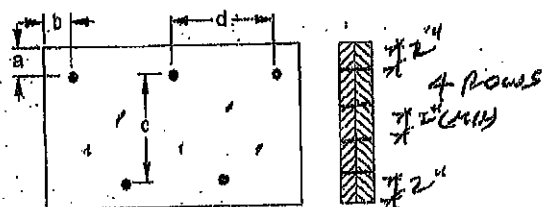
Design based on Dry Service Condition.

Importance Factor ; Normal Part code : Part 9

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.

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

$C = 7-7/8"$

d = 0.15 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: . . . Nails

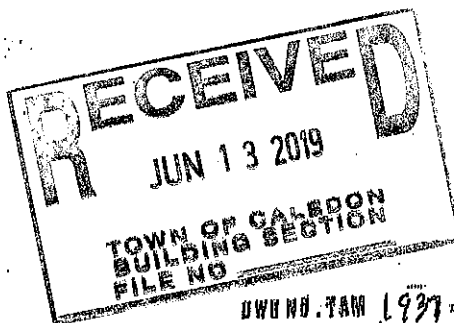
3-1/2" ARDOX SPIRAL



Disclosure

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

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



DUW NO. TAM 1937-18H
STRUCTURAL
COMPONENT ONLY

T-190111056



Bolee Casade



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

2ND FLOOR FRAMING\Flush Beams\B10(I7452)

PASSED

November 8, 2018 11:32:49

BC CALCO Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

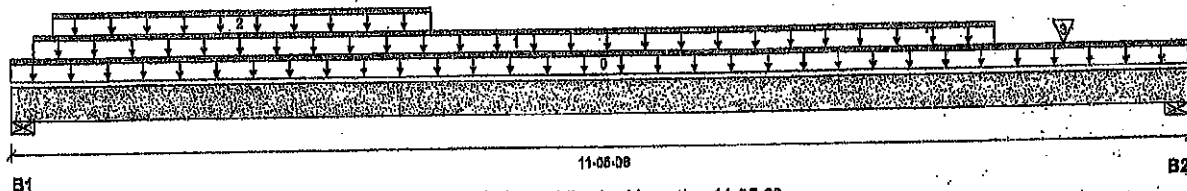
File name: PRESTON 2.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B10(I7452)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 11-05-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-3/4"	1,259 / 0	699 / 0		
B2, 3-3/4"	845 / 0	391 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.95	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-05-08	Top		12			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-02-12	09-05-12	Top	98	48			n/a
2	STAIRS	Unf. Lin. (lb/ft)	L	00-04-12	04-00-12	Top	240	120			n/a
3	J4(I7419)	Conc. Pt. (lbs)	L	10-02-12	10-02-12	Top	120	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5,248 ft-lbs	35,392 ft-lbs	14.8%	1	04-10-12
End Shear	2,101 lbs	14,464 lbs	14.6%	1	01-04-10
Total Load Deflection	L/999 (0.081")	n/a	n/a	4	05-06-12
Live Load Deflection	L/999 (0.051")	n/a	n/a	6	05-06-12
Max. Defl.	0.081"	n/a	n/a	4	05-06-12
Span / Depth	11.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4-3/4" x 3-1/2"	2,761 lbs	31.1%	13.6%	Unspecified
B2	Wall/Plate 3-3/4" x 3-1/2"	1,457 lbs	20.8%	8.1%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

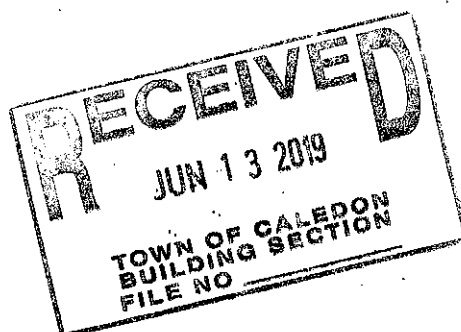
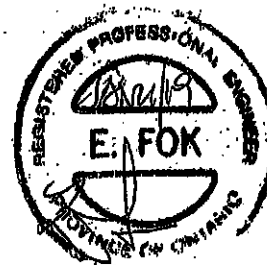
Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALCO analysis is based on Canadian Limit States Design, as per NBCC 2016 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 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.



OWNED BY 193B-18H
STRUCTURAL
COMPONENT ONLY P612

T-1901106



Boise Cascade



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B10(I7452)

Dry | 1 span | No cant.

November 8, 2018 11:32:49

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CQMC 12472-R

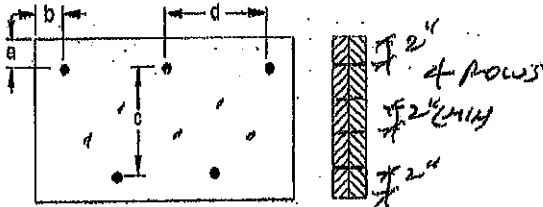
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Description: 2ND FLOOR FRAMING\Flush Beams\B10(I7452)

Specifier:

Designer: PL

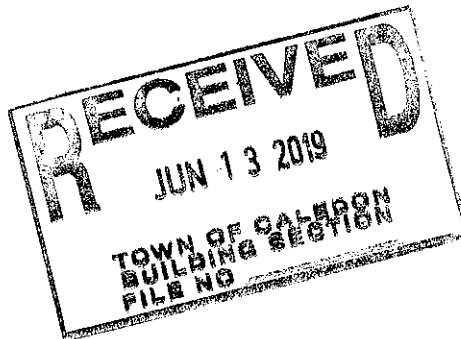
Company:

Connection Diagram: Full Length of Membera minimum = 2"
b minimum = 3"c = 7-7/8"
d = 12"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Connectors are: 3-1/2" ARDOX SPIRAL

**Disclosure**

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OWNED BY: YAM 1930-18H
STRUCTURAL COMPONENT ONLY
BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC®
BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®

T-190140667



Boles Cascade

**Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING\Flush Beams\B14\I7273**

BC CALCO® Member Report

Dry | 1 span | No cant.

November 8, 2018 11:32:49

Build 8476

Job name:

File name: PRESTON 2.mxd

Address:

Description: 2ND FLOOR FRAMING\Flush Beams\B14\I7273

City, Province, Postal Code: CALEDON

Specifier:

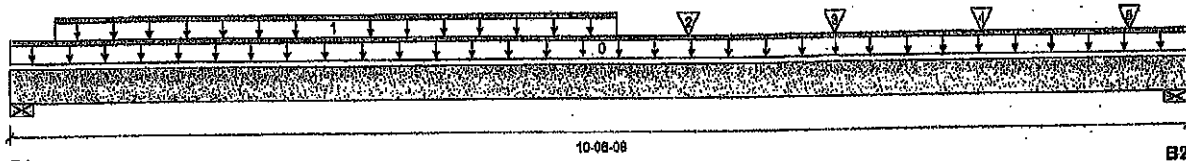
Customer:

Designer: PL

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 10-08-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/4"	2,857 / 0	1,522 / 0		
B2, 2-3/4"	3,071 / 0	1,831 / 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	10-08-08	Top		18			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-04-12	06-04-12	Top	580	295			n/a
2	-	Conc. Pt. (lbs)	L	06-00-08	06-00-08	Top	710	355			n/a
3	-	Conc. Pt. (lbs)	L	07-04-08	07-04-08	Top	767	384			n/a
4	-	Conc. Pt. (lbs)	L	08-08-08	08-08-08	Top	767	384			n/a
5	-	Conc. Pt. (lbs)	L	10-00-04	10-00-04	Top	728	384			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	16,172 ft-lbs	55,212 ft-lbs	29.3%	1	04-10-12
End Shear	5,648 lbs	21,696 lbs	26.0%	1	01-03-02
Total Load Deflection	L/843 (0.145")	n/a	28.5%	4	05-04-12
Live Load Deflection	L/999 (0.095")	n/a	n/a	5	06-04-12
Max Defl.	0.145"	n/a	n/a	4	06-04-12
Span / Depth	10.3				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/4" x 5-1/4"	6,187 lbs	87.9%	29.7%	Unspecified
B2	Wall/Plate 2-3/4" x 5-1/4"	6,645 lbs	86.2%	37.7%	Unspecified

**Notes**

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

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

Calculations assume member is fully braced.

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

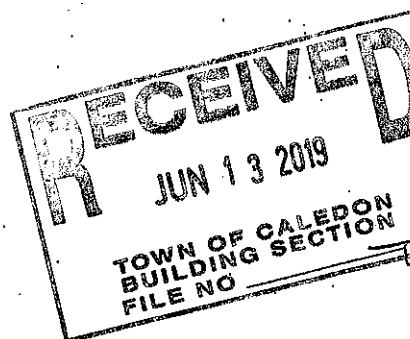
BC CALCO analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

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.

Nailing schedule applies to both sides of the member.



DATE NO. YAM 1939-18H
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B14\17273

Dry | 1 span | No cant.

November 8, 2018 11:32:49

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

File name: PRESTON 2.mmdl

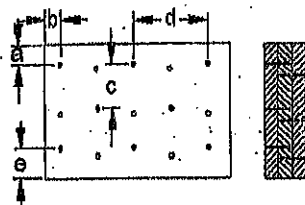
Description: 2ND FLOOR FRAMING\Flush Beams\B14\17273

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 3-1/2"

d = 3-1/2"

e minimum = 3"

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.

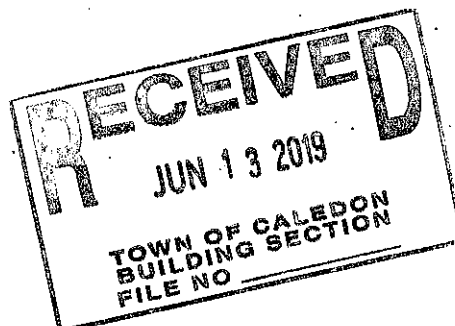
Connectors are: Nails

3-1/2" ARDOX SPIRAL



Disclosure

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OWNED BY 1939-18H
STRUCTURAL
COMPONENT ONLY

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

T-190110760



Boise Cascade

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING\Flush Beams\B12\17462**

Dry | 1 span | No cant.

November 8, 2018 11:32:49

BC CALC® Member Report

Build 8476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

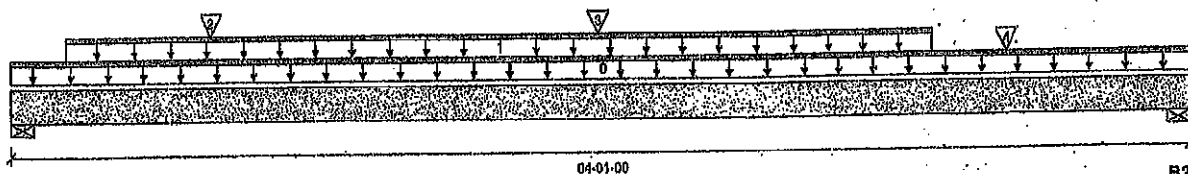
File name: PRESTON 2.mxd

Description: 2ND FLOOR FRAMING\Flush Beams\B12\17462

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 04-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/4"	1,108 / 0	577 / 0		
B2, 2-3/4"	1,072 / 0	561 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.85	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-01-00	Top		12			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-02-04	03-02-04	Top	231	115			n/a
2	J1(17455)	Conc. Pt. (lbs)	L	00-00-04	00-08-04	Top	455	228			n/a
3	J1(17411)	Conc. Pt. (lbs)	L	02-00-04	02-00-04	Top	455	228			n/a
4		Conc. Pt. (lbs)	L	03-05-05	03-05-05	Top	575	288			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2,279 ft-lbs	35,392 ft-lbs	6.4%	1	02-00-04
End Shear	1,580 lbs	14,464 lbs	10.9%	1	01-02-10
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	02-00-04
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	02-00-04
Max Defl.	0.004"	n/a	n/a	4	02-00-04
Span / Depth	3.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/4" x 3-1/2"	2,381 lbs	46.3%	20.3%	Unspecified
B2	Wall/Plate 2-3/4" x 3-1/2"	2,309 lbs	44.9%	19.7%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

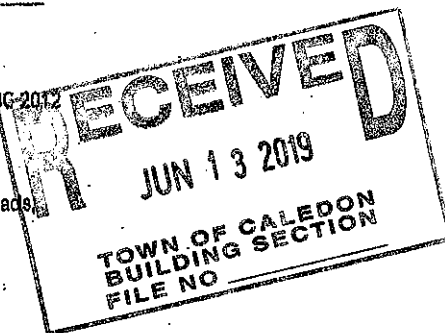
Resistance Factor phi has been applied to all presented results per CSA O86. CONFORMS TO OBC-2012

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

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.

OWN NO. TAM 1940-18H
STRUCTURAL
COMPONENT ONLY. *pb*

T-19011108



Boise Cascade



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

PASSED

2ND FLOOR FRAMING/Flush Beams/B12(I7462)

Dry | 1 span | No cant.

November 8, 2018 11:32:49

BC CALCO® Member Report

Build 8476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

File name: PRESTON 2.mxd

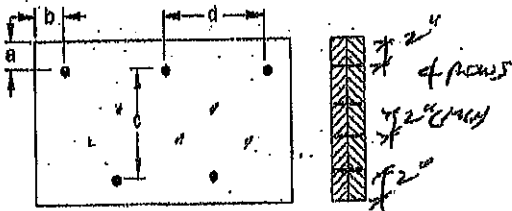
Description: 2ND FLOOR FRAMING/Flush Beams/B12(I7462)

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member

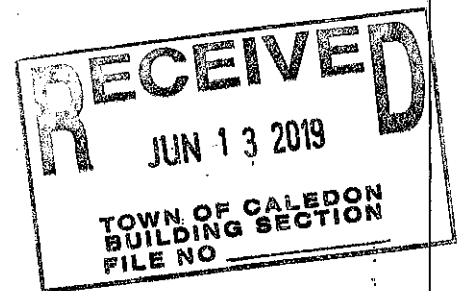


a minimum = 2"
b minimum = 3"

c = 7-7/8"
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: Nails

3-1/2" ARDOX SPIRAL



Disclosure

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

DW NO. TAM 19401
STRUCTURAL
COMPONENT ONLY

T-190111086



Bolton Casade



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

2ND FLOOR FRAMING\Dropped Beams\B15 DR\17946

PASSED

BC CALCO Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant,

November 8, 2018 14:54:23

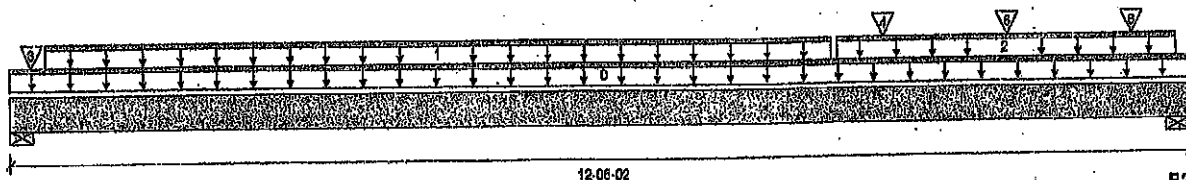
File name: PRESTON 2 5 BED.mxd

Description: 2ND FLOOR FRAMING\Drop...d Beams\B15 DR\17946

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 12-06-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-7/8"	3,626 / 0	1,837 / 0		
B2, 6-1/4"	3,610 / 0	1,881 / 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	12-06-02	Top		12			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-04-06	08-08-00	Top	550	275			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	08-08-12	12-04-06	Top	253	127			n/a
3	J1(17846)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	340	170			n/a
4	J1(18031)	Conc. Pt. (lbs)	L	09-02-12	09-02-12	Top	398	198			n/a
5	J1(17990)	Conc. Pt. (lbs)	L	10-06-12	10-06-12	Top	453	226			n/a
6	J1(17981)	Conc. Pt. (lbs)	L	11-10-12	11-10-12	Top	453	226			n/a

Controls Summary

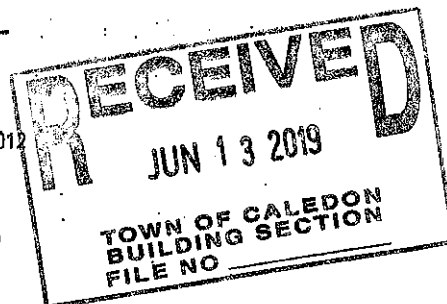
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	22,110 ft-lbs	36,392 ft-lbs	62.5%	1	08-02-12
End Shear	6,714 lbs	14,464 lbs	46.4%	1	01-02-12
Total Load Deflection	L/360 (0.41")	n/a	88.8%	4	08-01-08
Live Load Deflection	L/532 (0.27")	n/a	67.8%	5	08-01-08
Max Defl.	0.41"	n/a	n/a	4	08-01-08
Span / Depth	12.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-7/8" x 3-1/2"	7,684 lbs	92.8%	61.8%	Unspecified
B2	Wall/Plate 6-1/4" x 3-1/2"	7,786 lbs	62.1%	34.6%	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: 00-02-03, Bottom: 00-02-03.
 Resistance Factor phi has been applied to all presented results per CSA 088.
 BC CALCO analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 088.
 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.



AWARD, TAM 1941-184
 STRUCTURAL
 COMPONENT ONLY

T-19011109



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING\Dropped Beams\B15 DR\17946

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

November 8, 2018 14:54:23

Build 6475

Job name:

File name: PRESTON 2 6 BED.mmdl

Address:

Description: 2ND FLOOR FRAMING\Dro...d Beams\B15 DR\17946

City, Province, Postal Code: CALEDON

Specifier:

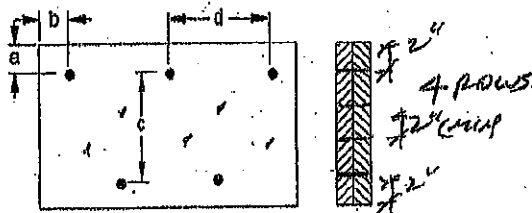
Customer:

Designer: PL

Code reports: CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

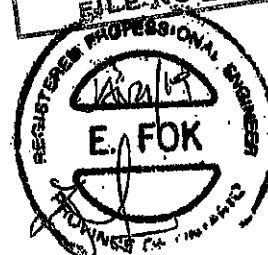
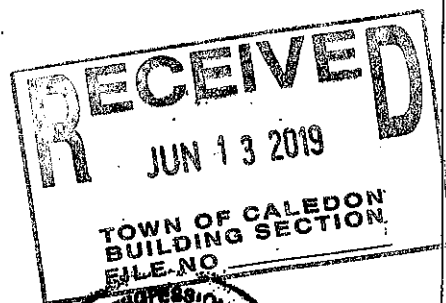
d = 8"

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

Member has no side loads.

Connectors are: 1" Nails

3-1/2" ARDOX SPIRAL



Disclosure

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

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

DWG NO. TAM 1941-18H
STRUCTURAL
COMPONENT ONLY

T-1901110964

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING/Flush Beams/B16(18882)**

November 8, 2018 14:55:33

BC CALC® Member Report

Dry | 1 span | No cant.

Build 6476

Job name:

File name: PRESTON 2 ELEV 2.mmd

Address:

Description: 2ND FLOOR FRAMING/Flush Beams/B16(18882)

City, Province, Postal Code: CALEDON

Specifier:

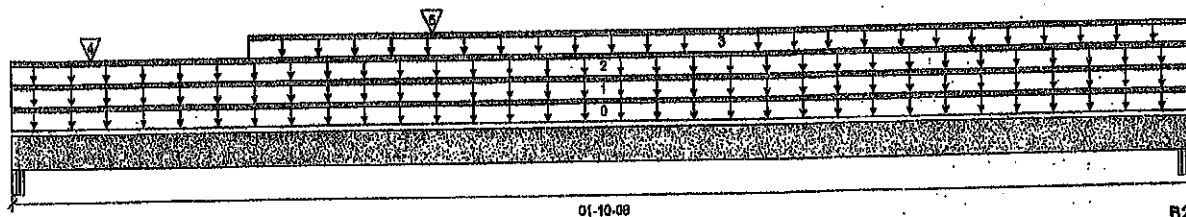
Customer:

Designer: PL

Code reports:

CCMC 12472-R

Company:



B1

B2

Total Horizontal Product Length = 01-10-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6"	417 / 0	603 / 0	862 / 0	
B2, 6"	101 / 0	163 / 0	191 / 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	01-10-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	LOW ROOF	Unf. Lin. (lb/ft)	L	00-00-00	01-10-08	Top	33	30	102		n/a
2	E18(18850)	Unf. Lin. (lb/ft)	L	00-00-00	01-10-08	Top		81			n/a
3	E18(18850)	Unf. Lin. (lb/ft)	L	00-04-08	01-10-08	Top	33	30	102		n/a
4	E18(18850)	Conc. Pt. (lbs)	L	00-01-08	00-01-08	Top	268	316	709		n/a
5	J5(18887)	Conc. Pt. (lbs)	L	00-08-00	00-08-00	Top	148	74			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	140 ft-lbs	35,392 ft-lbs	0.4%	1	00-09-04
End Shear	267 lbs	14,484 lbs	1.8%	13	01-04-14
Span / Depth	1.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	6" x 3-1/2"	2,339 lbs	26.0%	11.0%	Unspecified
B2 Beam	6" x 3-1/2"	592 lbs	6.3%	2.8%	Unspecified

Notes

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O88. CONFORMS TO OBC 2012

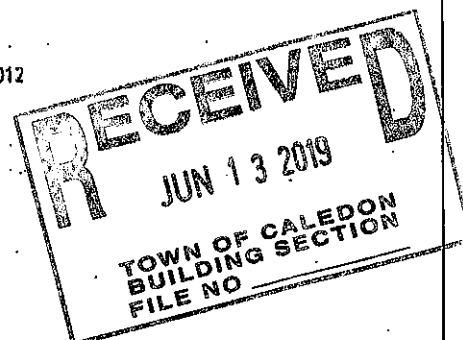
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O88.

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.



DWNG. PAM 1942-18H
STRUCTURAL
COMPONENT ONLY

T-19011110



Boise Cascade

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING\Flush Beams\B16(18882)**

Dry | 1 span | No cant.

November 8, 2018 14:55:33

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

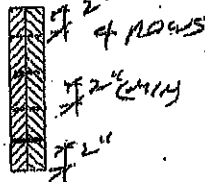
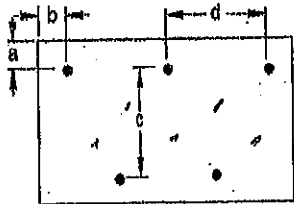
File name: PRESTON2 ELEV 2.nwdl

Description: 2ND FLOOR FRAMING\Flush Beams\B16(18882)

Specifier:

Designer: PL

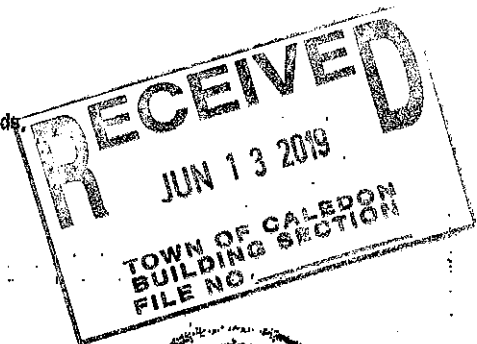
Company:

Connection Diagram: Full Length of Member

a minimum = 2"
b minimum = 3"

c = 7-7/8"
d = 2" 4"

Connect: 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: 3-1/2" ARDOX SPIRAL Nails

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

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure the 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.

BOISE CASCADE, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,
DWG NO. YAM 1942-18H
STRUCTURAL
COMPONENT ONLY

T-19011106J

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLOOR FRAMING Flush Beams B1A(17825)**

Dry | 1 span | No cent.

January 15, 2019 09:44:38

BC CALCO® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

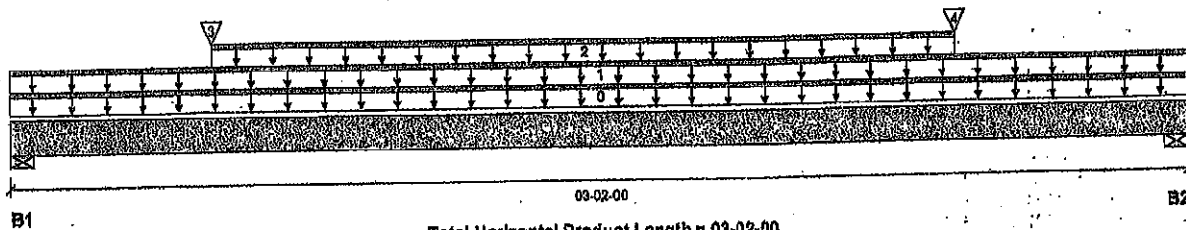
File name: PRESTON 2 ELEV 1 DECK.mmdl

Description: 1ST FLOOR FRAMING Flush Beams B1A(17825)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 03-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	81 / 0	197 / 0		
B2, 4"	81 / 0	197 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.85	Snow 1.00	Wind 1.15	Tributary 00-00-00
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00	Top		12			n/a
1	E12(399)	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00	Top	24	99			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-08-08	02-08-08	Top	27	13			n/a
3	Bk57(17921)	Conc. Pt. (lbs)	L	00-08-08	00-08-08	Top	15	8			n/a
4	Bk58(17932)	Conc. Pt. (lbs)	L	02-08-08	02-08-08	Top	18	9			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	152 ft-lbs	23,005 ft-lbs	0.7%	0	01-07-00
End Shear	112 lbs	14,464 lbs	0.8%	1	01-03-14
Total Load Deflection	L/999 (0")	n/a	n/a	4	01-07-00
Live Load Deflection	L/999 (0")	n/a	n/a	5	01-07-00
Max Defl.	0"	n/a	n/a	4	01-07-00
Span / Depth	2.7				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	276 lbs	5.7%	2.5%	Unspecified
B2	Wall/Plate 4" x 3-1/2"	275 lbs	5.7%	2.5%	Unspecified

Notes

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

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

Calculation assumes member is fully braced.

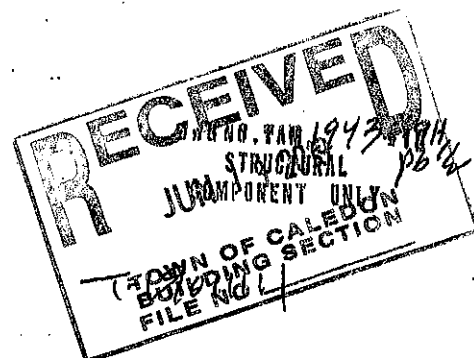
Resistance Factor phi has been applied to all presented results per CSA O86.

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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





Boise Cascade



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

PASSED

1ST FLOOR FRAMING Flush Beams B1A(17825)

Dry | 1 span | No cant.

January 15, 2019 09:44:38

BC CALCO Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CGMC 12472-R

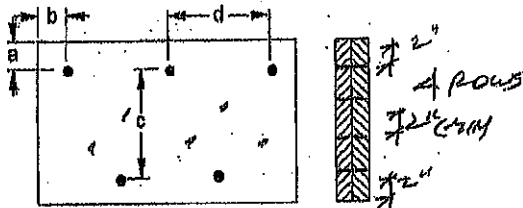
File name: PRESTON 2 ELEV 1 DECK.mmd

Description: 1ST FLOOR FRAMING Flush Beams B1A(17825)

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member

a minimum = 2"
b minimum = 3"

c = 7-7/8"
d = 6"

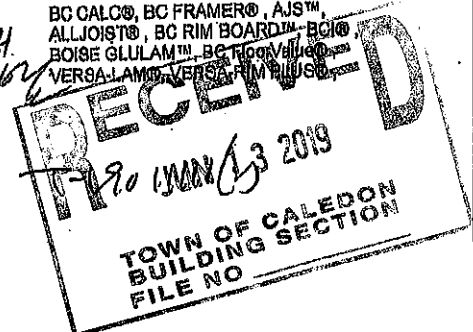
Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Connectors are: 3-1/2" ARDOX SPIRAL

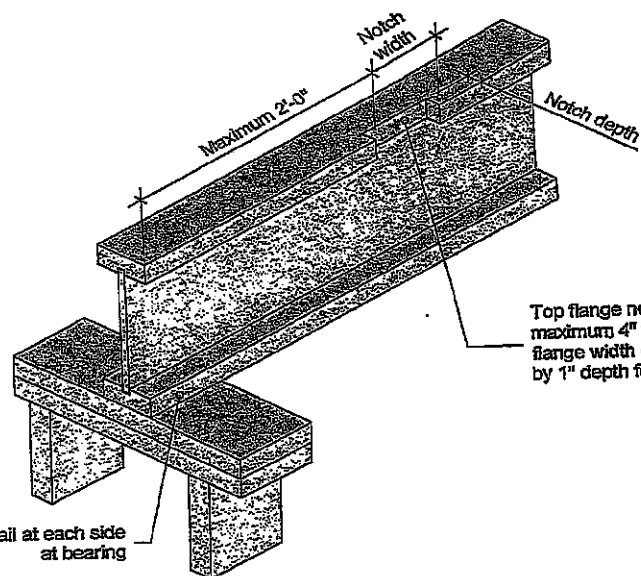
**Disclosure**

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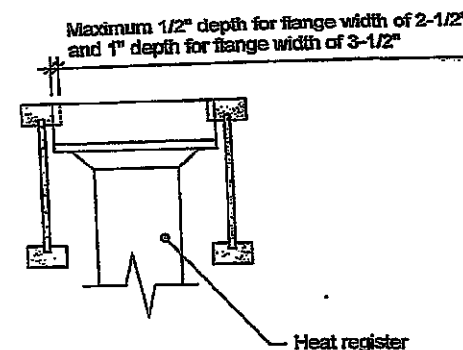
UNW NO. 74M L 947-184
STRUCTURAL
COMPONENT ONLY

BC CALCO, BC FRAMER®, AJST®,
ALLJOIST®, BC RIM BOARD™, BC
BOISE GLULAM™, BC HOGANVILLE
VERSA-LAM®, VERSA-FRAM®,





Top flange notch,
maximum 4" width by 1/2" depth for
flange width of 2-1/2" and 4" width
by 1" depth for flange width of 3-1/2"



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.

T 514-871-8526
1 888 817-3418
nordic.ca

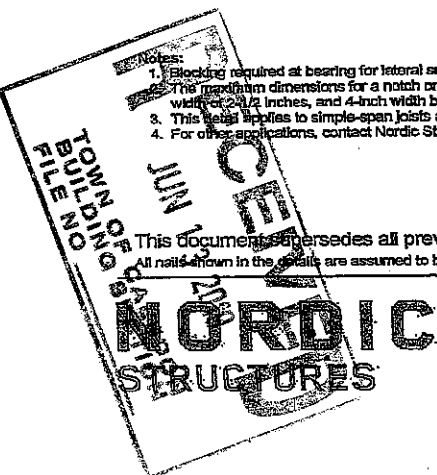
TITLE
Notch in I-joist for Heat Register

CATEGORY
I-joist - Typical Floor Framing and Construction Details

DOCUMENT

DATE
2018-04-10

NUMBER
1W-1





Construction Detail

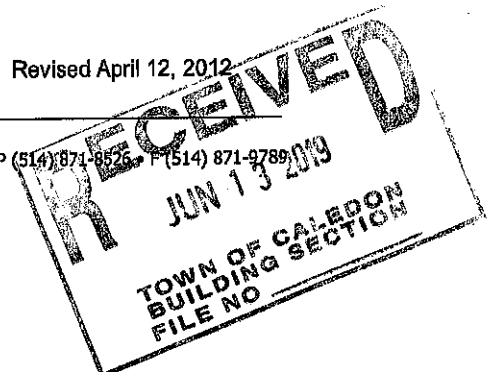
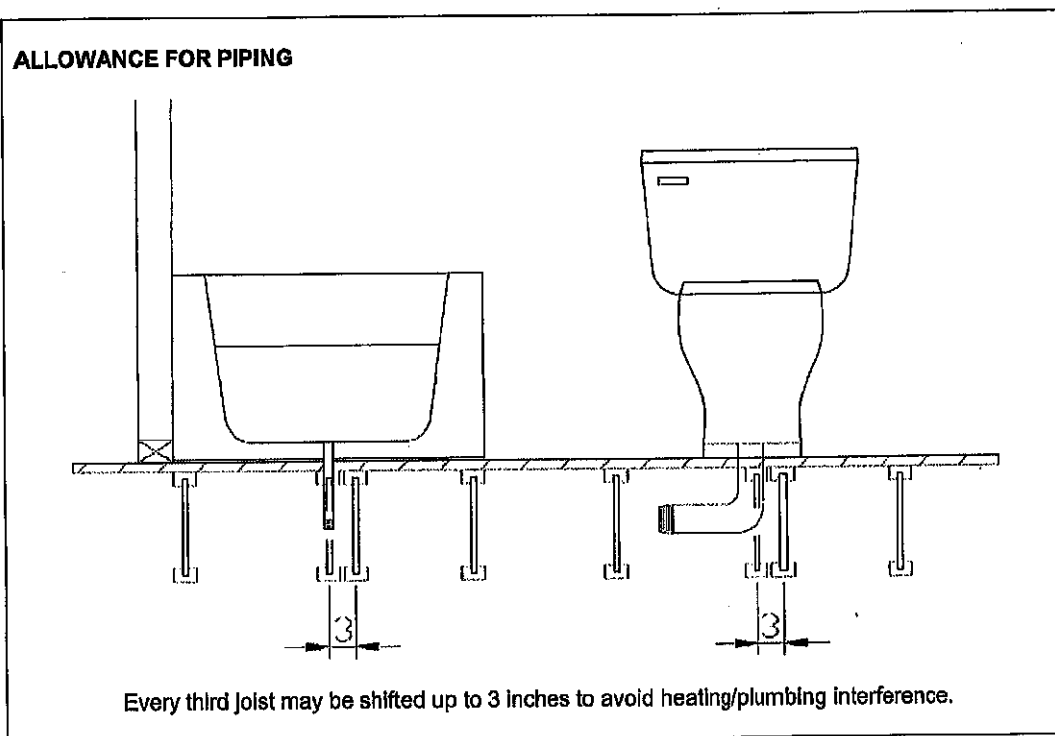
Limit States Design

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.

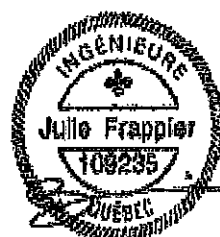
Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced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



Maximum Floor Spans

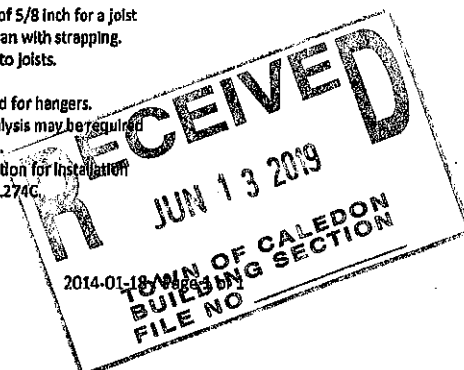
Live Load = 40 psf, Dead Load = 15 psf
Simple Spans, L/480 Deflection Limit
5/8" OSB G&N Sheathing



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

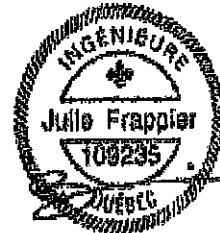
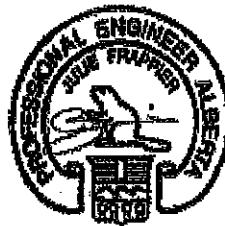
Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-8"	15'-3"	14'-5"	N/A	16'-8"	15'-3"	14'-5"	N/A
	NI-40x	17'-11"	16'-11"	16'-1"	N/A	18'-5"	17'-1"	16'-1"	N/A
	NI-60	18'-2"	17'-1"	16'-4"	N/A	18'-7"	17'-4"	16'-4"	N/A
	NI-70	19'-2"	17'-10"	17'-2"	N/A	19'-7"	18'-3"	17'-7"	N/A
	NI-80	19'-5"	18'-0"	17'-4"	N/A	19'-10"	18'-5"	17'-8"	N/A
11-7/8"	NI-20	19'-6"	18'-1"	17'-3"	N/A	19'-11"	18'-3"	17'-3"	N/A
	NI-40x	21'-0"	19'-6"	18'-8"	N/A	21'-7"	20'-2"	19'-2"	N/A
	NI-60	21'-4"	19'-9"	18'-11"	N/A	21'-11"	20'-4"	19'-6"	N/A
	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-5"	20'-5"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-8"	N/A
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
14"	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
	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
16"	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 Spans - A3
Limit States Design (CAN)



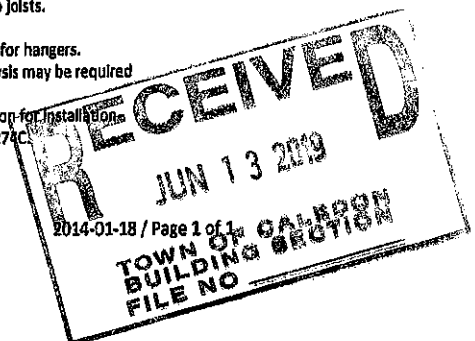
Maximum Floor Spans

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'-6"	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'-8"	21'-6"
	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"

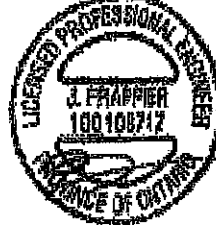
Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-8"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
	NI-60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

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-1274C.



Maximum Floor Spans

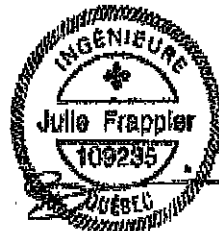
Live Load = 40 psf, Dead Load = 30 psf
Simple Spans, L/480 Deflection Limit
5/8" OSB G&N Sheathing



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'-6"	16'-7"	16'-0"	N/A
11-7/8"	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
14"	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
16"	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

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

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and CBC 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-1274C.



Maximum Floor Spans

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

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

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

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L2746.

